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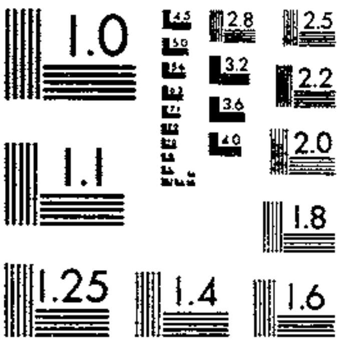

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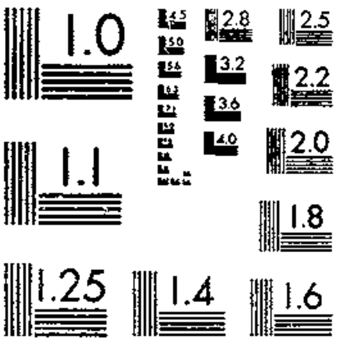

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TECHNICAL BULLETIN No. 288 — FEBRUARY, 1932

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

FARM-MORTGAGE CREDIT

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CONTENTS

INTRODUCTION

Dominance of farm mortgages as a source of farm credit results naturally from the fact that three-fourths of the farmers' property consists of land and buildings. During the last 20 years farmers

[1] Credit is due to Carrie W. Strawbridge for supervising the handling of schedules and for work on the extensive computations and to Marguerite Foy Golden for assistance in the preparation of tables and other materials.

have greatly increased their use of credit secured by real estate, largely because of higher price levels, increased cost of farm equipment, and the funding of debt accumulated in other forms. This expanded use of long-term credit has been aided by improved lending facilities, notably the Federal farm-loan system, and by more favorable mortgage interest rates in many sections. The inducement of lower cost as well as the distressed condition of many banks incident to the price decline following the World War prompted numerous transfers of short-term credit to long-term farm mortgages.

Taken all together, the farmers' fixed obligations have acquired volume and importance greater than ever before. The total farm-mortgage debt, which in 1910 represented less than 10 per cent of the value of all farm real estate, in 1928 amounted to 21 per cent.

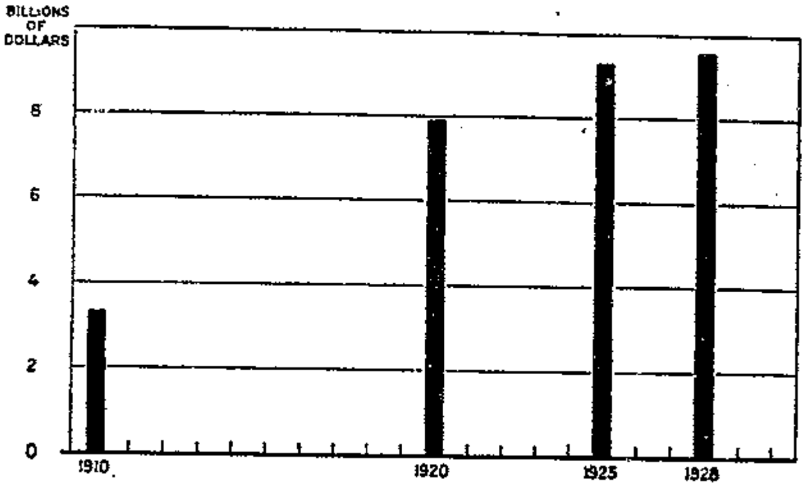

FIGURE 1.—TOTAL FARM-MORTGAGE DEBT, JANUARY 1, 1910, 1920, 1925, AND 1928

The total farm-mortgage debt of the United States increased from $3,320,470,000 January 1, 1910, to $9,468,526,000 in 1928. Most of this increase occurred between 1910 and 1920 when the debt rose 136 per cent, compared with a further increase of 19 per cent between 1920 and 1925, and 1 per cent from 1925 to 1928.

This increased volume of farm mortgages acquired especial significance with the reversal of the general price trend in 1920. For a long period prior to that date a ready supply of funds was looked upon as a favorable factor, aiding the purchase and equipment of farms and the attainment of more profitable production combinations of land, labor, and capital in developing the agricultural areas.

Following the marked turn in the price trend in 1920, the favorable view of the farm mortgage has given way to a more discriminating attitude toward borrowing. The fixed obligations of many farms have become heavy items of expense, and rates of return on the invested capital often have been less than rates on the borrowed capital. By 1925, the mortgage debt had become 19 per cent of the value of all farm real estate, but the outlay for interest on this debt was equal to about one-third of the net return from farm real estate and equal to about one-half of the net return on the equity of all such real estate.

Recent mortgage experience shows the necessity for centering more attention on long-term aspects of farm finance. Events of the last two decades have indicated that borrowing and loaning policies based on short-term considerations have been inadequate for meeting the problems involved. Changes in price level have become increasingly important as prices have receded from their position in 1920. After the change in price trend the volume of mortgage debt continued to increase for eight years, thus causing further disparity between income and expenditures for interest and principal. In view of the fact that the average mortgaged farm remains under mortgage usually from 25 to 35 years or longer, the owner of such property becomes subject to all the consequences which the changes of a generation may bring about.

This bulletin aims to present the facts concerning farm mortgages as they have developed during recent years and then to suggest various methods by which the farmer can so manage his long-term financing as to make adjustment to problems that are likely to be encountered over a period of years.

The war years and the decade following have brought a train of significant developments in farm-mortgage finance. During those years loans secured by farm land and buildings increased in both volume and numbers in the United States up to 1928. Beginning with a farm mortgage debt of $3,320,470,000 in 1910, a steady rise in the following decade, with special stimulus in the war years, amounted to an increase of 136 per cent and an estimated total debt of $7,857,700,000 in 1920. The debt was further increased to $9,360,620,000 on January 1, 1925, or 19 per cent above 1920. Three years later estimates indicated an additional increase of only about 1 per cent, with a total debt of $9,468,526,000 on January 1, 1928. (Fig 1 and Table 1.)

TABLE 1.—*Total farm mortgage debt*[1] *and percentage changes by geographic divisions and States January 1, 1910, 1920, 1925, and 1928*

State and geographic division	Farm mortgage debt, Jan. 1—				Percentage changes					
					1910–1920		1920–1925		1925–1928	
	1910	1920	1925	1928	Increase	Decrease	Increase	Decrease	Increase	Decrease
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Maine	13,210	20,690	26,097	25,252	58.1	------	24.9	------	------	3.2
New Hampshire	5,870	8,600	7,732	7,780	48.5	------	------	10.1	0.6	------
Vermont	15,850	29,040	28,001	28,822	83.2	------	------	3.6	1.1	------
Massachusetts	22,890	34,180	32,207	31,262	49.3	------	------	5.8	------	2.9
Rhode Island	2,210	2,350	2,435	2,455	6.3	------	3.6	------	.8	------
Connecticut	16,080	25,800	27,276	27,423	60.4	------	5.7	------	.5	------
New England	[illegible],110	120,860	123,748	122,494	58.8	------	2.4	------	------	1.0
New York	154,190	224,060	226,776	219,812	45.3	------	1.2	------	------	3.1
New Jersey	31,720	39,500	41,741	40,370	24.5	------	5.7	------	------	3.3
Pennsylvania	95,620	133,080	120,281	116,432	39.2	------	------	9.6	------	3.2
Middle Atlantic	281,530	396,640	388,798	376,614	40.0	------	------	2.0	------	3.1
Ohio	113,320	210,760	214,409	222,101	86.0	------	1.7	------	3.6	------
Indiana	111,280	206,600	264,483	277,269	85.7	------	28.0	------	4.8	------
Illinois	266,780	502,850	650,353	685,365	88.5	------	29.3	------	5.4	------

[1] In addition to the farm-mortgage debt as reported by the Census, the estimated farm-mortgage debt on other farms has been added.

TABLE 1.—*Total farm mortgage debt and percentage changes by geographic divisions and States January 1, 1910, 1920, 1925, and 1928*—Continued

State and geographic division	Farm mortgage debt, Jan. 1—				Percentage changes					
	1910	1920	1925	1928	1910–1920		1920–1925		1925–1928	
					Increase	Decrease	Increase	Decrease	Increase	Decrease
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Michigan	109, 970	215, 740	228, 069	235, 399	96. 2		5. 7		3. 2	
Wisconsin	193, 600	455, 470	504, 553	529, 992	135. 3		10. 8		5. 0	
East North Central	794, 950	1, 591, 420	1, 861, 887	1, 950, 126	100. 2		17. 0		4. 7	
Minnesota	146, 160	455, 540	553, 784	558, 458	211. 7		21. 6		. 8	
Iowa	431, 500	1, 098, 370	1, 424, 352	1, 402, 178	154. 7		29. 6			1. 0
Missouri	202, 650	385, 790	449, 022	447, 351	90. 4		16. 4			. 4
North Dakota	101, 450	267, 780	226, 714	230, 250	164. 0			15. 3	1. 6	
South Dakota	88, 700	278, 880	372, 004	370, 946	214. 4		33. 4			. 3
Nebraska	161, 850	416, 860	617, 930	599, 418	157. 6		48. 2			3. 0
Kansas	163, 770	295, 870	482, 566	447, 536	80. 7		63. 1			7. 3
West North Central	1, 296, 080	3, 199, 690	4, 126, 402	4, 056, 187	146. 9		29. 0			1. 7
Delaware	6, 500	8, 990	8, 695	9, 469	38. 3			3. 3	8. 9	
Maryland	29, 580	49, 230	50, 422	54, 980	66. 4		2. 4		9. 0	
District of Columbia	290	340	304	354	17. 2			10. 6	16. 4	
Virginia	24, 300	61, 600	79, 709	87, 117	156. 7		29. 4		9. 3	
West Virginia	8, 210	15, 960	18, 570	20, 155	94. 4		16. 4		8. 5	
North Carolina	18, 960	56, 560	78, 606	90, 866	198. 4		38. 9		15. 6	
South Carolina	20, 530	51, 220	68, 735	77, 214	149. 5		34. 2		12. 3	
Georgia	28, 800	83, 840	109, 060	123, 305	191. 1		30. 1		13. 1	
Florida	4, 380	19, 710	25, 508	28, 436	350. 0		29. 4		11. 5	
South Atlantic	141, 250	347, 470	439, 609	491, 896	146. 0		26. 5		11. 9	
Kentucky	40, 510	104, 100	94, 549	103, 798	157. 0			9. 2	9. 8	
Tennessee	26, 850	83, 130	85, 857	96, 711	209. 6		3. 3		12. 6	
Alabama	24, 880	55, 450	66, 410	69, 488	122. 9		19. 8		4. 6	
Mississippi	31, 320	77, 420	109, 562	111, 500	147. 2		41. 5		1. 8	
East South Central	123, 560	320, 100	356, 378	381, 497	159. 1		11. 3		7. 0	
Arkansas	22, 200	76, 870	97, 809	103, 464	246. 3		27. 2		5. 8	
Louisiana	19, 000	41, 250	57, 910	61, 769	116. 1		40. 4		6. 6	
Oklahoma	77, 680	188, 890	218, 963	228, 513	143. 2		15. 9		4. 4	
Texas	172, 240	396, 670	485, 587	507, 515	130. 3		22. 4		4. 5	
West South Central	291, 210	703, 680	860, 269	901, 252	141. 6		22. 3		4. 8	
Montana	19, 620	154, 940	116, 616	104, 862	689. 7			24. 7		10. 1
Idaho	24, 270	115, 350	107, 355	100, 033	375. 3			6. 9		6. 8
Wyoming	7, 820	32, 970	43, 364	40, 922	321. 6		31. 5			5. 6
Colorado	41, 800	138, 400	153, 727	144, 464	231. 1		11. 1			6. 0
New Mexico	4, 810	23, [illegible]70	28, 784	26, 900	392. 1		21. 6			6. 5
Arizona	4, 880	31, 790	29, 545	29, 006	551. 4			7. 1		1. 8
Utah	7, 170	35, 550	39, 152	36, 367	395. 8		10. 1			7. 1
Nevada	3, 340	11, 880	15, 244	13, 997	255. 7		28. 3			8. 2
Mountain	113, 710	544, 550	533, 787	496, 551	378. 9			2. 0		7. 0
Washington	45, 040	116, 740	121, 371	120, 523	159. 2		4. 0			. 7
Oregon	34, 950	91, 090	105, 503	110, 875	160. 6		15. 8		5. 1	
California	122, 080	425, 460	442, 868	460, 511	248. 5		4. 1		4. 0	
Pacific	202, 070	633, 290	669, 742	691, 909	213. 4		5. 8		3. 3	
United States	3, 320, 470	7, 857, 700	9, 360, 620	9, 468, 526	136. 6		19. 1		1. 2	

Table 1 indicates the total farm-mortgage debt for each of the States and geographic divisions for each of the four dates for which data are available and the percentage changes between those dates. In the decade 1910 to 1920 the increase in debt on farm real estate was shared by every State to some extent, and in the Mountain division there was a notable rise of nearly 380 per cent over 1910. The 5-year period 1920 to 1925 continued the increase in total debt for 38 States, the West North Central division rising 29 per cent above 1920. The relatively slight increase in the country as a whole during the 3-year period 1925 to 1928 suggested that the prolonged rise in amount of farm mortgages was approaching a turning point. Further evidence of this tendency appeared in the definite decline in the amount of mortgages held by several principal lending agencies during 1928 and 1929.

The great increase in long-term agricultural credit during this period was brought about by a number of factors, but chiefly by higher prices for land. The average value of farm land in the United States rose from $39.60 per acre in 1910 to $69.38 in 1920. Larger indebtedness per farm became the natural consequence of higher prices whenever a mortgage was used in settling land purchases, a practice employed in most land sales. Larger numbers of transfers stimulated by rising prices increased the number of mortgages which reflected the higher values.

Shifting of credit from the form of short-term loans already made to the form of farm mortgages constituted a major part of the post-war adjustment of the farmer's finances. As late as 1923 commercial banks reported that 55 per cent of their farm-mortgage loans were made for the purpose of paying other debts.[2] Meanwhile, the banks were steadily removing mortgages from their portfolios by encouraging farmers to transfer their land-secured loans to specialized mortgage agencies. The net result of this latter movement was a decline in the volume of mortgages held by commercial banks from $1,447,500,000 on January 1, 1921, to about $1,020,000,000 in 1928.

Following 1920 and the passing of greatest activity in farm transfers, the volume of farm-mortgage debt was further enlarged by the unfavorable balance of income and expense which bore heavily on the farmer in the immediate postwar years. A sharp decline in the prices of farm products to levels much below prices of other commodities, together with increased costs from taxes and labor, led many farmers to use mortgage loans to meet current expense.

Compared with 1913 as 100, the farmers' outlay for taxes rose continuously to 263 in 1928 (*18*).[3] Farm wages, after the drop in 1921–22, rose to a level in 1928 that was 69 per cent above pre-war amounts (*18*). Meanwhile, the farmer has expended greatly increased amounts for farm machinery and equipment in his effort to reduce cost of production. In all parts of the country farmers reporting in 1928 on the causes of debt frequently mention expense for the purchase of machinery as a contributing factor. (Table 42.)

A further element has been the increased outlay for automobiles on farms, even during the postwar depression. Available data indicate that the number of motor vehicles on farms increased from over 3,100,000 in 1922 to about 4,900,000 in 1929 (*14*).

After 1920 the volume of debt secured by real estate was further enlarged by the process of refunding short-term indebtedness incurred during the war years or through the following period of rapidly

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[2] This and other figures in text not found in tables or readily derived therefrom and not attributed to named sources are derived from investigations by the Division of Agricultural Finance, Bureau of Agricultural Economics.
[3] Italic numbers in parentheses refer to Literature Cited, p. 100.

falling prices, a process best indicated by the farm-credit operations of commercial banks.

The personal and collateral loans made by banks to farmers were estimated at $3,870,000,000 on December 31, 1920 (*28*). Three years later it was slightly less than $3,000,000,000 (*15*). This reduction, averaging more than $270,000,000 a year, compares with an average annual increase in the total amount of farm mortgages of more than $300,000,000 during the five years from the beginning of 1920 to the beginning of 1925. Doubtless much of this short-term bank credit was liquidated by the sale of crops and livestock and by the completion of other operations for which the advances had been made. The funding process was utilized much more, however, during the immediate postwar years than later because of the efforts of banks to provide or strengthen security on loans made when prices were high.

Important among the causes of the recent reductions in loan operations has been a smaller demand for credit. Whereas much of the rapid increase in farm mortgages in the years prior to 1920 arose out of transfers of land at high prices, more recently, and especially since 1925, land transfers have been much less frequent, lower prices have resulted in smaller considerations and in smaller new farm mortgages. Prices for articles which farmers have had to buy have slowly declined. Completion of most of the fundings of war-time obligations reduced the importance of that cause of mortgages, and a more conservative attitude of lenders in making new loans and renewals has operated to reduce the volume of outstanding farm-mortgage indebtedness.

Throughout the post-war years, including the period 1925 to 1928, the number of farms mortgaged increased for the country as a whole and for most of the principal divisions, thus continuing the upward trend of the last 40 years. Tenant-operated farms showed a greater increase in the percentage mortgaged than did owner-operated farms. Data regarding both transferred and nontransferred farms indicate a larger number of farms carrying mortgages in 1928 than in 1925, and transferred farms report larger amounts per farm as well. The ratio of debt to value of mortgaged farms averaged 41.9 per cent on owner-operated farms in 1925 and 46 per cent in 1928, although the average amount of debt per farm mortgaged was slightly less in 1928 than in 1925. This increase in the average ratio of debt to current value of farms mortgaged was partly due to increased debt, but was principally the result of the declining value of land.

One of the most significant developments since 1920 has been the change in relative importance among the principal sources of farm-mortgage credit. In general this change has taken the form of shifting of loans out of the hands of former owners, other individuals, and commercial banks into the possession of larger and more centralized agencies. In 1920 commercial banks were the largest source of such credit, having 18.4 per cent of all such loans. By 1928 banks had declined to third place with 10.8 per cent of the total, life-insurance companies had risen to first rank with 22.9 per cent, the Federal land banks had 12.1 per cent, and the joint-stock land banks had 7 per cent of the total mortgage debt. (Table 8.)

The natural tendency toward decline in loan volume, which was induced by lower land values and completion of funding, received a further impetus in 1928 and 1929 from rising interest rates on the central money markets. During the latter part of 1928 and especially during 1929, higher rates and higher bond yields restricted the flow of funds into long-term loans of all kinds. These higher rates, by cutting off the supply of funds to the Federal and joint-stock land banks which operate under legal interest rate limitations, and by offering more attractive outlets for funds of other lenders, probably restricted the volume of new mortgages to a smaller total than would otherwise have been true.

After nearly two years of rising interest rates, during which period rates on farm mortgages also rose, the break in the stock market in October and November, 1929, brought the beginning of a period of lower interest rates on central money markets. Although the effect of this change was slow to show itself on farm loans in common with other long-term borrowings, both the availability and cost of farm-mortgage credit became more favorable to farmers during 1930.

The farm-mortgage experience of the country thus far has brought into relief a number of problems to which attention must be given if the most advantageous handling of the farmer's long-term credit requirements is to be secured. These questions include not only favorable terms and items concerned with the original negotiation of loans, but also a consideration of the problem of carrying the loan and of repaying it. In the principal agricultural areas interest rates quoted by local sources are commonly the most expensive. Moreover, because of the necessity of relieving local stress by funding of short-term loans, there is a tendency for the volume of new mortgages to be largest at those times when rates are higher than usual. The term for which most loans are contracted is found to have little or no relation to the period for which indebtedness remains on the farm. The comparative brevity of the average term of loans made under these circumstances has its sequel in the hazards and uncertainties of refinancing when temporary disruptions in the money market may imperil the chances of securing an adequate loan on reasonable terms.

The long period that typically ensues before the mortgaged farm is cleared of debt calls for greater consideration of methods of repayment and more attention to price level than have generally been given. The relation of credit cost to the rate of return from the land mortgaged requires careful planning early in the life of the loan if the danger of foreclosure is to be avoided.

Farmers do not have the alternative method of financing possessed by some other lines of business. In conducting the large annual amount of agricultural financing a farmer must remain aware of these limitations and so, whenever possible, choose such methods as will most nearly accomplish his purpose without loss of title to the property.

METHODS OF ESTIMATE AND COMPUTATION

The total farm-mortgage debt of the United States has been determinable only by means of estimating the debt on land of certain tenures. The census reports of 1890, 1910, 1920, and 1925 gave the indebtedness of farms entirely owned by their operators. Although these reports included over half of the total farms, they omitted the debt on tenant-operated farms, manager-operated farms, and part-owner farms, that is, those partly owned and partly rented. For these farms estimates have been necessary.

Methods used in arriving at a total figure for mortgage debt have begun with use of the amount for full-owner farms reported by the United States census for the year in question or the nearest date for which census data were available. The debt carried by farms of other tenures has been computed by applying to their census values ratios assumed to be the same as for owner farms, or ratios indicated by sample studies of such farms of other tenure. Inasmuch as the available data concerning debt on farms of other tenure have varied in extent during the periods since estimates were first made, the methods used have caused some differences in the results.

The first official estimate, published in 1916 for the year 1910, assumed that farms of all tenures had the same ratio of debt to value as farms operated by their owners. The total debt of $3,598,985,000 originally estimated for that year was obtained by—

assuming that the ratio between the mortgage debt on farms operated by their owners and the total value of all such farms holds good for tenant farms also. It is possible that this ratio may be too high for the tenant farms in some of the States, in which case the estimates will be too large; but even if this is the case, the figures presented have considerable value as representing the maximum amount of farm mortgages probably outstanding in the census year (*16, p. 9, footnote 1.*)

As late as 1920 no data were available to indicate any difference in debt on farms of different tenures. Accordingly an estimate of total farm-mortgage debt for 1920 employed the same method as that used for the year 1910.

The figures for estimated total farm mortgage indebtedness * * * are based on the assumption that in each State all farms are on the average mortgaged to the same percentage of their value as are the owner-operated farms for which data are available. This is a somewhat bold assumption, as no comprehensive study has been made of the relative amount of indebtedness on owner-operated farms as compared with that on farms of other tenures. It seems probable that these figures are somewhat high for many States, or, in other words, that they represent the maximum rather than the actual amount (*27, p. 2*).

Debt calculations for 1920 and earlier underestimated the encumbrance on part-owner farms by failing to allow for the greater percentage of such farms under mortgage, amounting in 1925 to 42 per cent more than for full-owner farms. It was not until 1925, however, that the census made available data on the relative acreage of owned and rented land in these part-owner farms, thus permitting allowance for greater debt on the owned part. In the absence of data on the ratio of debt to value of part-owner farms the estimates for 1925 and 1928 assumed this ratio to be the same as for full-owner farms. Some understatement probably results on this account. When data become available on the amount of debt on this class of farms they are likely to reveal higher debt ratios than occur on full-owner farms, though the difference probably is less than for the percentage of farms mortgaged. A high correlation usually occurs between frequency and debt ratio.

An inquiry addressed to farm owners in 1922 showed that, in 1920, mortgage debt on owner farms amounted to 13.3 per cent of the value of all such farms, while mortgage on tenant farms was only 9.2 per cent of the value of all tenant farms. A new estimate of total farm-mortgage debt for 1920 was made by Leon E. Truesdell and V. N. Valgren in which this lower ratio was applied to tenant-operated farms. Manager farms and part-owner farms were considered as having the same ratio as full-owner farms. The result was a total substantially below the first estimate for 1920. Later a new estimate for 1910 was made by applying to the census data for owners of that year a proportion for tenants indicated by the inquiry for 1920. The detailed figures of this estimate, used here for the first time, were considerably less than in the original estimate for 1910 (*9*).

It is possible that this method still leaves the estimated debt on tenant farms in 1910 too high. The closeness of the tenant and owner ratios in 1925 and 1928 when compared with the difference between 13.3 and 9.2 in 1920 suggests that the divergence may have been greater before 1920.

Estimates of indebtedness of manager-operated farms for 1910 and 1920 assumed that such farms had the same ratio of debt to value as owner farms. Manager farms average much larger than do farms of any other class. Large farms are mortgaged in more than the average number of cases, but carry debt bearing a lower-than-average ratio to the farm values. The net result as indicated by the 1925-1928 studies suggests that treatment of manager farms on the basis of owner farms, as done in previous estimates, probably gave results slightly too high for manager farms. The assumption of debt ratios equal to those of owner farms is particularly unwarranted for the North Atlantic States where many farms of this class are not operated for profit.

Estimated debt supplementing full-owner debt in 1910 and 1920 was distributed as proportionate parts of totals for the geographic divisions, whereas estimates for owners in 1928 were made for individual States in all but a few instances, and estimates for tenant farms were made by States for the divisions having most of the mortgage debt.

DIFFERENCES IN CENSUSES

Computations in the estimates for 1925 and 1928 were aligned with the 1925 census data on value of land, percentage of farms mortgaged, and ratio of debt to value as reported for full-owner farms. Any understatement or overstatement as shown in that census, therefore, will be reflected in the estimates of total debt for 1925 and 1928. Doubtless some understatement results from incomplete reporting and failure to ask for the existence of the debt separate from the amount. The 1920 census schedule carried a question asking whether the farm was mortgaged and another question asking the amount of the mortgage (*19*). The number of full-owner farms reporting the amount of mortgage in that year was 1,193,047, or 24,187 less than the total reported number of mortgaged farms operated by their owners. This is a 2 per cent difference. In addition, 9.9 per cent of owner-operated farms gave no report on mortgage whatever. Inasmuch as the 1925 census asked only the amount of mortgage on the farm, the number of farms that had mortgages in 1925 but did not report either the fact or the amount is not known. This fact probably has resulted in an underestimate for 1925 and 1928, especially in some areas.

Any reluctance of farmers about reporting the debt on their farms probably is more likely to appear if the debt is large. The doubling of the mortgage debt between 1910 and 1920 may have contributed to the unusually high percentage of "unknown" farms in that year as compared with earlier census reports. The further increase of farm-mortgage debt between 1920 and 1925 may be assumed also to have continued any bias due to this reason. In view of the large number of "unknown" farms in the Southern States as shown by the 1920 census, any bias on account of this class of farms is likely to be pronounced for that region.

Notwithstanding the approximations and inexactness which must occur in any statement based on other than complete data, the estimates for 1925 and 1928 seem to have a fair degree of accuracy as indicated by Table 2.

TABLE 2.—*Percentage of error in 1928 national estimates of farm-mortgage debt*

Lending agency	Holdings indicated by reporting farms (weighted)		Actual holdings		Difference between estimate and actual holdings	
	Ratio to total holdings	Amount	Ratio to total holdings	Amount	Amount	Error
	Per cent	*1,000 dollars*	*Per cent*	*1,000 dollars*	*1,000 dollars*	*Per cent*
Federal land banks	12.17647	1,152,364	12.10783	1,146,433	5,931	0.52
Jointstock land banks	8.94752	657,828	7.04770	667,314	−9,486	−1.42
Insurance companies	23.60598	2,235,138	22.85683	2,164,205	70,933	3.28
Total		4,045,330		3,977,952	67,378	1.69

METHODS USED IN ESTIMATING TOTAL FARM-MORTGAGE DEBT AS OF JANUARY 1, 1925 AND 1928

The estimates of total farm-mortgage debt for January 1, 1925 and 1928, using the 1925 census as a base, were made principally from data received from farmers, bankers, and county recorders. The farmers' reports were used in estimating the debt on farms under the same ownership from 1925 to 1928, and reports from bankers and county recorders in one-fourth of the agricultural counties were used in estimating the debt in 1928 on farms transferred between the years 1925 and 1928.

Data from farmers were obtained by means of questionnaires sent to all farm owners, except part owners, in 85 counties in 47 States. The counties were selected for representative type of production and geographic location, a number being selected so that they might represent areas in each of two or more adjoining States. The data used were taken from 22,352 replies representing farms that had changed neither ownership nor tenure during the period 1925–1928. These schedules reported value of farm December 31, 1924, and amount of mortgage debt December 31, 1924 and 1927, the holder of the mortgage on December 31, 1927, and the interest rate on each loan. Although all data represent status as of December 31, 1924 and 1927, the dates January 1, 1925 and 1928, are used to maintain comparability with census usage and with practice in previous debt estimates.

Values as of census date as given on returned schedules but reported three and one-half years later were checked with values for the same farms reported to the census. This comparison for over 6,000 owner farms from 11 counties showed only 1 per cent difference from the census values for the same farms. Accuracy of reports on tenant-operated farms was supported by comparison with census returns for owner farms in the same areas, and with 38,800 unpublished reports of debt on tenant farms obtained by the Bureau of the Census.

The following ratios were computed for each type of tenure and for each State for both 1925 and 1928, first using for each State only those counties which lay within that State's borders: (1) Percentage of all farms mortgaged; (2) percentage of reported debt, to December 31, 1924, value of mortgaged farms; and (3) percentage of reported debt to value of all farms including those not mortgaged.

Similar ratios were computed for 25 States on the basis of data which included reports from adjoining or neighboring counties of contiguous States. In those instances in which the results of these second groupings gave ratios more closely reflective of the situation for the State, as indicated by comparison with census ratios for owner-operated farms, they were used in the subsequent computations.

The data obtained from farmers' reports were aligned with the results of the 1925 census by use of a correction factor, found by dividing the ratio of debt to value of all full-owner farms by a similar ratio computed from census data for the same State or geographic division.

This correction factor derived from data on full-owner farms was applied to ratios of debt to value obtained in the sample for other tenures on the assumption that whatever bias appeared in the returns from owners was also true of reports for farms of other tenure in the same State or geographic division. This factor was used on the sample data save in those instances in which the sample permitted use of the data in a proportion, thus making the correction directly on an individual State basis. In computing all geographic-division figures the various State figures were weighted by the value of land in the State and the sum of the products was divided by the sum of the value of land in the geographic division to obtain the weighted geographic-division figure.

The debt on farms fully owned by their operators in 1925 was taken as reported in the 1925 census. The value of the owned part of part-owner farms was computed on the assumption that the owned value was proportionate to the owned acreage. The debt on part-owner farms was computed by multiplying the computed value of the owned part of such farms by the ratio of debt to value of all full-owner farms and multiplying this result by the percentage of mortgages among part-owner farms divided by the percentage of full-owner farms mortgaged. These percentages were derived from census data.

Debt on tenant-operated farms for 1925 was estimated by use of the equation $\frac{a}{b}=\frac{A}{X}$ in which

a = the ratio of debt to value of all full-owner farms reporting on schedules (1925).

b = the ratio of debt to value of all tenant farms reporting on schedules (1925).

A = the ratio of debt to value of all full-owner farms as per the 1925 census.

X = the computed ratio of debt to value of all tenant-operated land in any given State or division.

The resulting ratio, represented in the equation by X, was applied to the value of all tenant-operated land including that of the rented part of part-owner farms.

Computation of debt for full-owner farms in 1928 was made by States, save the New England States, and by individual States for tenant farms in the East and West North Central States.

Debt on owner farms in New England States in 1928 was found by distributing the computed debt of the geographic division among the respective States on the basis of the percentage which the full-owner debt of each State had of the total debt on full-owner farms of the geographic division as shown by the 1925 census.

All debt on manager farms was first computed on the basis of weighted ratios representing the following five groups, subsequent allocation to each division being made on the basis of relative value of land of that tenure: (1) New England (data from New England plus New York counties); (2) Middle Atlantic; (3) South Atlantic, East South Central, West South Central; (4) East North Central and West North Central; (5) Mountain and Pacific. The estimates for the last four groups were made on the basis of the second groupings of counties.

Debt computations for tenant-operated farms in States other than the North Central group were made first on the basis of geographic divisions. Debt computations for manager farms in all States were made from the ratios found for the five geographic divisions or combinations of geographic divisions as described above, the ratio being applied to the value of tenant-operated land or manager-operated land in the division to obtain the geographic-division debt. In the case of both tenants and managers the final allocation of the geographic total was made for each State by means of the following equation:

$$\frac{\frac{a}{b}c}{\Sigma\left[\left(\frac{a}{b}c\right)+\left(\frac{a'}{b'}c'\right)+\frac{a''}{b''}c''\cdots\right]}d=e$$

in which

a = debt on full-owner farms in a given State in 1925.
b = value of full-owner farms in the same State in 1925.
c = value of all tenant (or manager) land in the same State in 1925.
d = estimated debt for all tenant (or manager) land in the geographic division in 1925.
e = estimated debt on tenant (or manager) land in State in 1925.
a' b' c', a'', b'', c'' = corresponding debt and values in other States of the same geographic division.
Σ = sum of all States in the geographic division.

The debt for 1928 was found by applying ratio relatives as percentages of the debt already found for the particular State or division and tenure as of 1925. These ratio relatives were computed by dividing the ratio of 1928 debt to the 1925 value of all farms by the ratio of 1925 debt to the 1925 value of all farms and checked by the relative for the geographic division, the trend of debt for other tenures in the same area, and changes in outstanding loans in the State as reported by the known sources of the Federal land banks, the joint-stock land banks, and national banks. The resulting relative or percentage of the 1925 ratio was applied to the amount of debt already found for 1925 to compute the debt for 1928.

Relatives for individual States were used for both owner and tenant farms, save for Wyoming, Nevada, and the New England States; for individual States for tenant farms, save for New England, the Middle Atlantic, and South Atlantic divisions, in which cases the relative for the geographic division was used as having greater probable accuracy. The relative for Maryland was used for the District of Columbia.

For 1928, relatives for manager farms were used as computed from the weighted ratios of the five divisional groups cited above.

Debt in 1928 on farms changing ownership from 1925 to 1928 was computed from reports of 642 bankers and recorders in agricultural counties distributed over the United States. These bankers and recorders reported for their counties their estimates of: (*a*) The percentage of farms changing hands during the period; (*b*) the percentage of these transferred farms that were mortgaged at the beginning and the percentage that were mortgaged at the end of the 3-year period; and (*c*) the ratio of debt to value of these mortgaged farms as of the two above dates. The difference between the products of these three percentages ($a \times b \times c$) and ($a \times b' \times c'$) for each geographic division as of respective dates represented the estimated increase or decrease in debt on transferred farms expressed as a percentage of the 1925 value of all land and buildings in such geographic divisions. The amounts represented by the resulting increases in seven geographic divisions and decreases in the other two were distributed among the States on the basis of 1925 full-owner debt and among the five types of tenure on the basis of their respective percentages of the total geographic divisional debt estimated for 1925.[4]

PRINCIPAL FEATURES AND CHANGES IN FARM-MORTGAGE INDEBTEDNESS SINCE 1910

GEOGRAPHICAL DIFFERENCES

The geographical distribution of the volume of farm-mortgage debt has maintained a general similarity since 1910. As a whole, this distribution indicates a general correspondence with the value of farms in the various sections of the country and, consequently, shows a bulk of such credit in the upper Mississippi Valley. Of the total debt in 1928, over 63 per cent is found in the 12 North Central States, the West North Central division having a farm-mortgage debt of $4,056,000,000, or 42.8 per cent of the total, and the East North Central, $1,950,000,000, or 20.6 per cent of the total. Next in importance in volume of debt is the West South Central division with 9.5 per cent of the total, and the Pacific States with 7.3 per cent; other areas have about 5 per cent or less. Although the relative importance of most of the areas has remained about the same through two decades, the Middle Atlantic and New England divisions had only about one-half the proportionate amount of the total debt in 1928 that they held in 1910, and the Mountain and Pacific States had substantial

[4] Other discussions on method appear in appropriate sections.

increases in their proportions of the total from 1910 to 1920. (Fig. 2 and Table 3.)

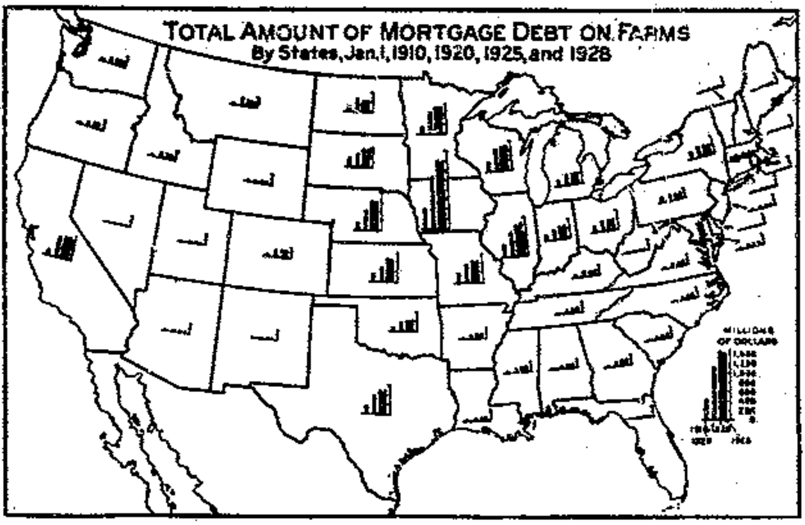

FIGURE 2.—The principal volume of farm-mortgage debt is found in States of the Mississippi Valley and north of the Ohio River, with substantial amounts in California and Texas. The East North Central division had 20.6 per cent of the total in 1928, the West North Central 42.8 per cent, and Iowa alone had 14.8 per cent of the total mortgage debt of the country. The South and the Mountain States have the smallest parts of the total. A general correspondence between debt and land value is apparent

TABLE 3.—*Percentage distribution of total mortgage debt in the United States, by States and geographic divisions, 1910–1928*

State and geographic division	Percentage of debt in each State and geographic division to total debt in the United States			
	1910	1920	1925	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*
Maine	0.40	0.27	0.28	0.27
New Hampshire	.18	.11	.08	.08
Vermont	.48	.37	.30	.30
Massachusetts	.69	.43	.34	.33
Rhode Island	.06	.03	.03	.02
Connecticut	.48	.33	.29	.29
New England	2.29	1.54	1.32	1.29
New York	4.64	2.85	2.42	2.32
New Jersey	.96	.50	.45	.43
Pennsylvania	2.88	1.70	1.28	1.23
Middle Atlantic	8.48	5.05	4.15	3.98
Ohio	3.41	2.68	2.29	2.34
Indiana	3.35	2.63	2.82	2.93
Illinois	8.04	6.40	6.95	7.24
Michigan	3.31	2.74	2.44	2.49
Wisconsin	5.63	5.80	5.39	5.60
East North Central	23.94	20.25	19.89	20.60
Minnesota	4.40	5.80	5.92	5.90
Iowa	18.00	13.99	15.22	14.81
Missouri	6.10	4.91	4.80	4.72
North Dakota	3.06	3.41	2.42	2.43
South Dakota	2.67	3.55	3.97	3.92
Nebraska	4.87	5.30	6.60	6.33
Kansas	4.93	3.76	5.15	4.73
West North Central	39.03	40.72	44.06	42.84
Delaware	.20	.12	.09	.10
Maryland	.89	.63	.54	.58
District of Columbia	.008	.004	.003	.003
Virginia	.72	.78	.85	.92
West Virginia	.25	.20	.20	.21
North Carolina	.57	.72	.84	.96
South Carolina	.62	.65	.74	.82
Georgia	.87	1.07	1.17	1.30
Florida	.13	.25	.27	.30
South Atlantic	4.25	4.42	4.70	5.19
Kentucky	1.22	1.32	1.01	1.10
Tennessee	.81	1.06	.92	1.02
Alabama	.75	.71	.71	.73
Mississippi	.94	.96	1.17	1.18
East South Central	3.72	4.07	3.81	4.03
Arkansas	.67	.98	1.04	1.09
Louisiana	.57	.53	.62	.65

TABLE 3.—*Percentage distribution of total mortgage debt in the United States, by States and geographic divisions, 1910–1928*—Continued

State and geographic division	Percentage of debt in each State and geographic division to total debt in the United States			
	1910	1920	1925	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*
Oklahoma	2.34	2.40	2.34	2.42
Texas	5.19	5.05	5.19	5.36
West South Central	8.77	8.96	9.19	9.52
Montana	.59	1.97	1.25	1.11
Idaho	.73	1.47	1.15	1.06
Wyoming	.24	.42	.46	.43
Colorado	1.26	1.76	1.64	1.52
New Mexico	.14	.30	.31	.28
Arizona	.15	.41	.31	.31
Utah	0.22	0.45	0.42	0.38
Nevada	.10	.15	.16	.15
Mountain	3.43	6.93	5.70	5.24
Washington	1.36	1.49	1.30	1.27
Oregon	1.05	1.16	1.13	1.17
California	3.68	5.41	4.73	4.87
Pacific	6.09	8.06	7.16	7.31
United States	100.00	100.00	100.00	100.00

The largest relative increase in mortgage debt for the 3-year period ended January 1, 1928, was one of 12 per cent in the South Atlantic States. Debt in the East South Central division increased 7 per cent and in the Pacific division 3 per cent. Four geographic divisions showed declines in amount of farm-mortgage credit. Of these reductions the Mountain States had 7 per cent below 1925, the Middle Atlantic States 3 per cent, the West North Central 2 per cent, and New England 1 per cent. These decreases in debt contrast with the steady rise in the same areas during previous years. In general, the significant differences in the debt changes among geographic divisions consisted of increases in the Southern and East North Central States, whereas the western areas, save the Pacific division, had declines. (Table 1.)

MORTGAGE DEBT ON OWNER-OPERATED FARMS

The question of fixed indebtedness is of primary significance to farm owners who operate the land they own. Mainly because of the dominance of owner-operated land, farms operated by their owners have the most important part of all farm-mortgage debt. The debt on all owner farms in 1928 was $5,560,017,000, or 58.7 per cent of the total; debt on all tenant-operated land amounted to $3,644,009,000, or 38.5 per cent, and debt on farms operated by managers was only $264,500,000, or 2.8 per cent. (Table 4.) The greater interest of owner-operators becomes more apparent when the debt on tenant and manager farms owned by active farmers is considered. When these items are included, the active farmer is found to have approximately three-fourths of all land-secured debt.

TABLE 4.—*Estimated farm-mortgage debt in the United States, by tenure, 1920, 1925, and 1928* [1]

Year	Total farm-mortgage debt	Owner-operated farms		Tenant-operated farms		Manager-operated farms	
		Amount	Percentage of total	Amount	Percentage of total	Amount	Percentage of total
	1,000 dollars	*1,000 dollars*		*1,000 dollars*		*1,000 dollars*	
1920	7,857,700	5,314,150	67.7	2,185,480	27.8	350,070	4.5
1925	9,360,620	5,504,437	58.8	3,612,193	38.6	243,900	2.6
1928	9,468,526	5,560,017	58.7	3,644,009	38.5	264,500	2.8

[1] See also text p. 10 for differences in method of computation.

For the country as a whole, the increase in fixed debt between 1925 and 1928 occurred on farms of all forms of tenure, debt on owner-operated farms increasing about 1 per cent and on tenant-operated farms about 0.8 per cent. Within some individual geographic divisions, however, the indebtedness on one form of tenure increased whereas the debt on other tenure forms decreased. Largest increases of debt on farms operated by owners occurred in the South Central division; farms operated by tenants had their greatest rate of debt increase in the South Atlantic and Pacific States. (Table 5.) These estimates for 1928 assumed no change from 1925 in the relative importance of tenure classifications.

TABLE 5.—*Farm-mortgage debt in the United States, according to tenure of farm, by geographic divisions and States, January 1, 1925 and 1928*

State and geographic division	Total mortgage debt		Debt on owner-operated farms		Debt on tenant-operated farms		Debt on manager-operated farms	
	1925	1928	1925	1928	1925	1928	1925	1928
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Maine	26,007	25,252	25,207	24,323	743	806	147	123
New Hampshire	7,732	7,780	7,357	7,393	296	321	79	66
Vermont	28,001	28,322	24,933	25,050	2,834	3,077	234	195
Massachusetts	32,207	31,262	29,595	28,696	1,538	1,670	1,074	896
Rhode Island	2,435	2,455	2,082	2,092	273	296	80	67
Connecticut	27,276	27,424	24,656	24,761	1,895	2,057	725	605
New England	123,748	122,494	113,830	112,315	7,579	8,227	2,339	1,952
New York	226,776	219,812	177,110	171,302	41,153	40,388	8,513	8,122
New Jersey	41,741	40,370	33,116	31,945	7,167	7,034	1,458	1,301
Pennsylvania	120,281	116,432	91,551	88,323	25,564	25,088	3,166	3,021
Middle Atlantic	388,798	376,614	301,777	291,570	73,884	72,510	13,137	12,534
Ohio	214,409	222,101	152,979	151,821	54,146	63,053	7,284	7,227
Indiana	264,485	277,269	148,383	152,664	109,175	117,734	6,925	6,871
Illinois	650,353	685,365	293,047	312,372	338,839	354,672	18,467	18,321
Michigan	228,089	235,399	169,263	174,783	50,670	52,524	8,156	8,092
Wisconsin	504,553	529,992	414,010	428,636	80,078	90,974	10,465	10,382
East North Central	1,861,887	1,950,126	1,177,682	1,220,276	632,908	678,957	51,297	50,893
Minnesota	553,784	558,458	326,561	334,925	222,930	219,472	4,293	4,061
Iowa	1,424,352	1,402,178	765,475	764,415	642,254	622,035	16,623	15,728
Missouri	449,022	447,351	268,564	272,753	174,867	169,308	5,591	5,290
North Dakota	226,714	230,250	134,326	136,570	89,996	91,417	2,392	2,263
South Dakota	372,004	370,946	177,858	175,541	190,695	192,140	3,451	3,265
Nebraska	617,930	599,418	320,628	303,437	291,263	290,267	6,039	5,714
Kansas	482,596	447,586	206,512	191,357	271,762	252,140	4,322	4,089
West North Central	4,126,402	4,056,187	2,199,924	2,178,998	1,883,767	1,836,779	42,711	40,410
Delaware	8,695	9,469	4,356	4,283	3,754	4,469	585	717
Maryland	50,422	54,960	30,141	30,656	15,085	17,959	5,196	6,365
District of Columbia	304	354	82	83	30	38	192	235
Virginia	79,709	87,117	59,114	62,439	15,974	19,017	4,621	5,661
West Virginia	18,570	20,155	14,582	15,377	3,105	3,696	883	1,082
North Carolina	78,606	90,866	47,427	53,699	29,821	35,503	1,358	1,664
South Carolina	68,735	77,214	34,416	36,286	32,287	38,439	2,032	2,489
Georgia	109,060	123,305	53,826	57,299	48,189	57,374	7,045	8,632
Florida	25,508	28,436	18,606	20,041	1,747	2,080	5,155	6,315
South Atlantic	439,609	491,896	262,550	280,163	149,992	178,573	27,067	33,160
Kentucky	94,549	103,798	71,006	79,583	22,828	23,378	715	837
Tennessee	85,857	96,711	59,274	69,382	25,863	26,486	720	843
Alabama	66,410	69,488	36,365	38,571	29,030	29,729	1,015	1,188
Mississippi	109,562	111,500	52,107	52,189	54,234	55,539	3,221	3,772
East South Central	356,378	381,497	218,752	239,725	131,955	135,132	5,671	6,640

TABLE 5.—*Farm-mortgage debt in the United States, according to tenure of farm, by geographic divisions and States, January 1, 1925 and 1928*—Continued

State and geographic division	Total mortgage debt		Debt on owner-operated farms		Debt on tenant-operated farms		Debt on manager-operated farms	
	1925	1928	1925	1928	1925	1928	1925	1928
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Arkansas	97,800	103,464	51,728	56,982	43,004	42,887	3,079	3,595
Louisiana	57,910	61,760	33,062	36,337	21,080	21,023	3,768	4,400
Oklahoma	218,963	228,513	99,366	108,835	117,207	116,888	2,390	2,796
Texas	485,587	507,515	231,530	251,811	240,316	239,662	13,741	16,042
West South Central	860,260	901,252	415,684	453,965	421,607	420,460	22,978	26,827
Montana	116,616	104,862	69,654	60,588	44,678	41,652	2,284	2,622
Idaho	107,355	100,033	67,479	62,517	38,296	35,702	1,580	1,814
Wyoming	43,364	40,922	25,016	23,518	16,954	15,805	1,394	1,599
Colorado	153,727	144,464	82,209	77,078	68,214	63,594	3,304	3,792
New Mexico	28,784	26,900	16,754	15,283	10,651	9,929	1,379	1,583
Arizona	29,545	29,006	16,396	16,175	10,491	9,781	2,658	3,050
Utah	39,152	36,367	31,086	28,785	7,779	7,252	287	330
Nevada	15,244	13,997	11,371	10,067	2,393	2,231	1,480	1,699
Mountain	533,787	496,551	319,965	294,116	199,456	185,946	14,366	16,489
Washington	121,371	120,523	91,912	88,609	25,207	28,925	4,252	4,989
Oregon	105,503	110,875	82,036	83,856	19,988	22,937	3,479	4,082
California	442,868	460,511	320,325	318,424	65,850	75,563	56,693	66,524
Pacific	669,742	691,909	494,273	488,889	111,045	127,425	64,424	75,595
United States	9,360,620	9,468,526	5,504,437	5,560,017	3,612,193	3,644,009	243,990	264,500

INCREASES IN DEBT FREQUENCY ON TENANT FARMS

A comparison of changes in debt frequency on land of different tenure classification shows that the increase in number of tenant farms mortgaged between 1925 and 1928 was more pronounced than that of owner farms, the percentage of owner farms with debt having risen from 34 per cent to 34.7 per cent as compared with a rise from 32.5 per cent to 34.8 per cent for tenant farms. The same tendency for tenant-operated farms to increase the percentage mortgaged more rapidly than owner farms is shown in a comparison of mortgages contracted and mortgages paid off by the two tenures for the period 1925 to 1928. Owners clearing their farms of debt were 3.7 per cent of the total owner farmers reporting; tenant farms cleared of debt were only 3.1 per cent of the total of such farms reporting. Meanwhile, new farms mortgaged by owner operators were 4.1 per cent of all owner farms reporting, and tenant-operated farms mortgaged for the first time in the period amounted to 4.7 per cent of the total.

MORTGAGES ON TENANT FARMS

A comparison of individual mortgages as affected by the form of tenure of the land reveals the tenant-operated farm as having larger average indebtedness than does the owner-operated farm, although the ratio to value is lower. (Table 6.) Manager-operated farms, in turn, have still larger amounts of debt per farm, when mortgaged, than do farms of other tenures. This fact, due mainly to the relative size of farms in these groups, is significant in comparing the credit cost for loans of various sizes, and in explaining why some lending agencies have a large proportion of their loans on tenant farms, and what the consequences are to agencies that confine their loans to farms operated by their owners.

TABLE 6.—*Average size of farm-mortgage loans outstanding,*[1] *loans obtained and loans paid,*[2] *by tenure and geographic divisions*

Geographic division and tenure	Average farm-mortgage loan outstanding, Jan. 1, 1928	Average farm-mortgage loan— Obtained 1925 to 1928	Average farm-mortgage loan— Paid 1925 to 1928
	Dollars	*Dollars*	*Dollars*
New England	1,680	1,876	1,242
Owners	1,643	1,757	1,235
Tenants	2,742	3,520	1,500
Middle Atlantic	3,414	2,252	1,848
Owners	2,191	2,064	1,820
Tenants	3,995	3,400	2,017
East North Central	5,722	4,377	2,153
Owners	4,402	3,067	1,784
Tenants	8,208	5,385	3,070
West North Central	8,070	5,457	3,895
Owners	6,254	4,851	2,813
Tenants	10,689	6,139	4,559
South Atlantic	3,895	4,342	2,574
Owners	3,149	4,410	2,613
Tenants	4,262	4,211	2,278
East South Central	3,784	2,918	897
Owners	3,062	2,194	876
Tenants	4,722	4,458	967
West South Central	4,061	3,893	2,782
Owners	3,001	3,529	1,874
Tenants	5,054	8,254	3,720
Mountain	4,403	3,618	2,775
Owners	3,660	3,050	2,348
Tenants	6,078	4,414	3,533
Pacific	6,423	8,541	4,781
Owners	4,943	5,363	2,450
Tenants	11,919	17,782	14,655
United States:			
All tenures	5,205	4,487	2,695
Owners	3,919	3,552	2,061
Tenants	7,780	5,884	4,404
Managers	13,576	15,581	10,875

[1] Jan. 1, 1928. [2] 1925–1928.

SIZE OF MORTGAGES PAID OFF COMPARED WITH THOSE OBTAINED

Mortgages reported paid off during 1925–1928 were consistently smaller than were new mortgages incurred on other farms in the same divisions. (Table 6.) A total of 786 farms cleared of debt had mortgages averaging 25.7 per cent of the 1925 value of the farms, whereas 954 new mortgages averaged 28.8 per cent of the 1925 value of the farms. This tendency toward larger new mortgages appeared in all divisions. In the South Central division the size of new mortgages was smaller, although the number incurred was definitely greater than for the mortgages paid off.

Taken as a whole, the mortgage on many farms has been a definite burden during the last decade since prices have fallen while indebtedness has remained. In addition to rising land values before 1920 and the funding of other debt since that time, an important factor has been the increase due to the cost of existing debt.

Whenever the debt-to-value ratio of a farm mortgage exceeds the yield-cost ratio, the debt thereafter tends to increase in size and the ratio of debt to value tends to increase further, because the net income from the land each year is less than the interest payment required and, to that extent, represents an encroachment on the capital investment of the farm. It is probable that the number of farms that have added to their debt from this cause has been considerable.

MOVEMENT TOWARD LOWER DEBT LEVELS

The declines in farm-mortgage debt in certain States and divisions from 1920 to 1925 and from 1925 to 1928, indicate that, notwithstanding the increase in the total debt of the country, an underlying movement toward reduction was operating even before 1925. This movement appeared first in the Mountain States following the sharp recession in land values after 1920. Extensive foreclosures and reversion of title prior to 1925 contributed to the decline in debt shown by a number of States and to the slackened rate of increase elsewhere.

During the five years 1920–1925, two geographic divisions and 10 States registered reductions in their total mortgage debt on farms. The more important of these occurred in Montana, North Dakota, Idaho, and Arizona, where widespread repossession by former owners and actual reductions in the number of farms were supplemented by smaller lending operations of important agencies.

Three years later declines had appeared in four of the nine geographic divisions and in 19 States. Thus, by 1928 the downward changes in the farm-mortgage debt of western areas had acquired a definite trend. The Mountain division and each of the constituent States showed declines. The West North Central division as a whole, and five of its seven States, indicated less debt on the land. Meanwhile, in the older section of the country slightly less encumbrance was indicated in each of the Middle Atlantic States and in two New England States. (Table 1.)

The marked change which became definitely apparent by 1925 doubtless had some relation to the expiration of many mortgages made in 1919 and 1920 for terms of five years or less. Much of this indebtedness originally contracted for production purposes was not liquidated within the prescribed term and had been transferred to the mortgage form. Large numbers of mortgages were held by individuals and commercial banks, the latter the largest holders of this class of securities in 1920. (Table 8.)

Nearly all the outstanding loans were for short terms of years. Of the loans held by banks in 1923, 52 per cent were for terms of one year or less, 20 per cent for terms of two to four years, and 27 per cent for five years. At the same date more than 82 per cent of the mortgages held by insurance companies had terms of five years or less. The termination of these periods was often followed by reductions in the amount granted on the renewal. (Table 33.)

COURSE OF THE MORTGAGE MOVEMENT

A consideration of the part played by lending institutions in relation to farm-mortgage-debt changes from 1910 to 1928 discloses the character of the fore part of a major mortgage movement in which the principal volume of indebtedness arises and the process by which the debt is first accumulated, then transferred, and then reduced.

Out of a period of generally rising commodity prices increased activity in land transfers develops. The steadily mounting scale of sale prices overshadows the significance of current income and causes its purchasing power to be neglected. Greater demands for funds, occasioned by higher prices accompanied by a tendency to expand investment in livestock and equipment, induce borrowers to apply for larger loans. Lenders grant these loans on the assumption of continued higher prices. Sellers of farms are willing to take large proportions of the selling price in first or second mortgage, and buyers welcome the opportunity to acquire land with small down payments (*11*).

The local banks that stand closest to the farmer are the first of the institutions to encounter the demand for larger credits of all kinds. Likewise, as the most convenient financial agency for facilitating land transfers, the local banks frequently extend liberal credits on farm mortgages that run from one to five years. Of all financial agencies serving farmers, the local banks are most sensitive in reflecting changes in farmers' finances. The amount of mortgages held by banks rose moderately from 1914 to 1918, with a marked rise during the next two and one-half years.

When the upward trend of prices is reversed, the activity in land sales declines and purchase-money mortgages become infrequent. Many former owners and others who hold mortgages seek to transfer a part or all of their holdings to banks or agencies specializing in long-term loans. Some of this class of mortgage debt begins to disappear through foreclosure or surrender of title because of failure of buyers to make payments. Commercial banks seek to strengthen their position on unpaid balances due them by encouraging farmer borrowers to fund their short-term loans in land mortgages. Other accounts and funds for current working capital are likely to be included in the new loan. This often involves the use of second mortgages.

The general result is that for a period the mortgage holdings of the banks continue in considerable amount after their short-term loans to farmers have begun a marked decline. But as the volume of land-secured credit becomes a restriction on the bank's principal business of short-term lending, many of the land mortgages are shifted to other agencies that specialize in farm loans. The short term of most of these loans makes early refinancing necessary, and the transfer process may be hastened by the sale of the mortgage before the expiration of the term.

With the steady transfer of mortgages from the original holders to insurance companies, land banks, and other agencies, the total volume of their holdings continues to rise long after the holdings of individuals and banks have begun to decline. Finally when the refunding operations are largely completed and many of the loans made on high valuations become out of proportion to current prices, many mortgages are renewed for smaller amounts. Meanwhile as the price level falls and the purchasing power of money increases, new loans are made for smaller amounts. Other loans are renewed on condition that substantial payments are made with the result that the total volume of mortgages held by the long-term agencies declines. With this down turn in the volume of holdings of the special mortgage agencies the first phase of the mortgage movement comes to a close. In the movement here considered the development of volume continued for a decade following the close of the World War, the peak of farm-mortgage debt for the country apparently having been reached eight years after the price peak of 1920.

SOURCES OF FARM-MORTGAGE FUNDS

RELATIVE IMPORTANCE OF LENDING AGENCIES

The distribution of farm mortgages held by lending agencies undergoes continual change in proportions varying largely with the stage of activity in contracting new mortgages. During periods of active land transfers such as 1918 to 1920 the proportion of mortgages held by individuals and commercial banks rises as former owners take back mortgages on payment and banks use resources in facilitating transfers. During recent years the general tendency has been a shifting of loans from former owners, other individuals, and commercial banks, to insurance companies, Federal land banks, joint-stock land banks, and other agencies that specialize in long-term investments. This transfer was especially marked during the early post-

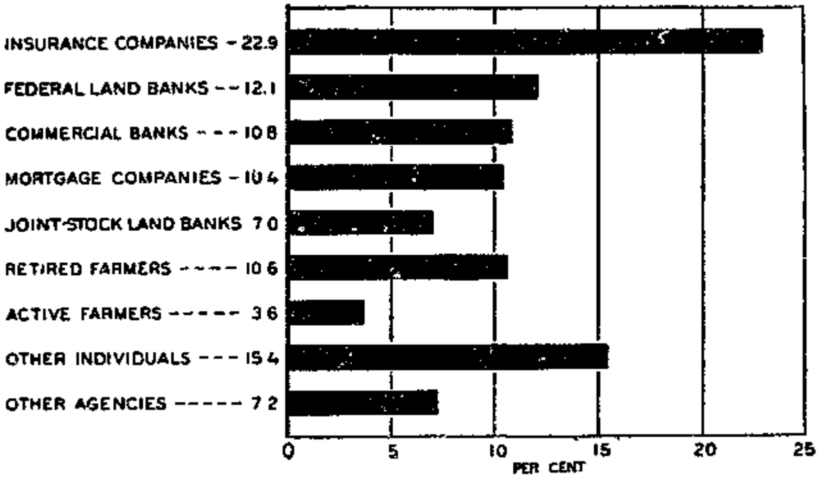

FIGURE 3.—FARM MORTGAGES HELD, BY CLASS OF LENDERS, JAN. 1, 1928

Since 1922, life-insurance companies have been the principal source of farm-mortgage loans in the United States. In 1928 they held nearly 23 per cent of the total of such loans. The Federal land banks were second in importance among institutions with 12.1 per cent, commercial banks third with 10.8 per cent, while mortgage companies had 10.4 per cent and joint-stock land banks 7 per cent. A total of 29.6 per cent of farm mortgages was held by individuals.

war years, when extensive refunding of short-term loans was adding materially to the volume of farm mortgages. (Fig. 3.)

The distribution of loans among nine principal classes of lending agencies as reported for January 1, 1928, indicates that life-insurance companies led all other sources of farm-mortgage funds with 22.9 per cent of all outstanding farm mortgages, or approximately $2,164,000,000. (Table 7.) The 12 Federal land banks were next in importance among the centralized major institutions, with 12.1 per cent or $1,146,000,000, and the joint-stock land banks, the other mortgage branch of the Federal system, had 7 per cent, or $667,000,000. Holdings of commercial banks were nearly equal to those of the Federal land banks, with an indicated percentage of 10.8 of the total, or $1,020,000,000. This represents a material decline since December 31, 1920, when the mortgage holdings of banks were estimated at $1,447,500,000 (*28*). Mortgage companies have a relative importance similar to commercial banks with 10.4 per cent of the total.

It is possible that the percentages indicated for mortgage companies and banks are too high since a large part of the mortgages negotiated by these agencies are sold later, although the companies or banks may continue to act as agents in making collections of interest and principal. In some instances, therefore, farmers might not be certain as to the holder of the mortgage at a given time.

TABLE 7.—*Farm mortgages held by nine principal classes of lending agencies in the United States, January 1, 1928*

Lending agencies	Percentage held	Amount held	Lending agencies	Percentage held	Amount held
	Per cent	*Million dollars*		*Per cent*	*Million dollars*
Federal land banks	12.1	1,146	Active farmers	3.6	339
Joint-stock land banks	7.0	667	Other individuals	15.4	1,453
Commercial banks	10.8	1,020	Other agencies	7.2	685
Mortgage companies	10.4	988			
Insurance companies	22.9	2,164	Total	100.0	9,468
Retired farmers	10.6	1,006			

Among individuals holding farm loans the retired farmer was named as holder of approximately 10.6 per cent of all mortgages, active farmers 3.6 per cent, and other individuals 15.4 per cent. "Other individuals," in many cases includes merchants, for example, who are often mortgage holders, especially in the South.

The percentages of mortgages held by the various lending agencies as reported by the owners of mortgaged farms provide a test of the approximate accuracy of the distribution among holders in 1928, as well as of the estimates of the total indebtedness. The result of applying the reported percentages (Table 7) to the total estimated debt for January 1, 1928, $9,468,526,000, and comparing the result with actual holdings of known sources gives a percentage of error of 0.52 per cent for the Federal land banks; 1.42 per cent for the joint-stock land banks, and 3.28 per cent for all life-insurance companies, or a total error of 1.69 per cent for the three agencies holding 42 per cent of the farm mortgages of the country. (Table 2.) The larger difference shown for insurance companies may be due to a difference in the proportion of assets in the form of mortgages held by nonreporting companies, as compared with the 52 companies having 92 per cent of the assets of all legal-reserve companies, on which the estimated total has been computed. (Table 45.)

TREND OF PRINCIPAL LENDERS' HOLDINGS

During the decade 1920 to 1930 important changes occurred in the relative importance of the principal lenders on farm mortgages.

The decreasing percentage of commercial bank holdings from 18.4 to 10.8 during the period 1920 to 1928, and the increase during that time, from 16.7 per cent to 42 per cent, of long-term loans held by three specializing agencies is indicative of the general movement. (Table 8.) Life-insurance companies assumed the leading position soon after 1921 (*5, 1923*). Insurance loans followed a steadily rising curve after 1920, with successively smaller annual increases after 1924 until a peak was reached at the close of 1927 and a downward turn appeared in 1928 and 1929. The relative position of loans by insurance companies had risen from 12.4 per cent of the total in 1920 to 22.9 per cent of the total in 1928. (Fig. 4.)

TABLE 8.—*Percentages of farm-mortgage debt in the United States held by principal lending agencies, January 1, 1920, 1925, and 1928*

Lending agency	1920	1925	1928
	Per cent	*Per cent*	*Per cent*
Life-insurance companies	12.4	20.7	22.9
Federal land banks	3.6	9.9	12.1
Joint-stock land banks	.7	4.8	7.0
Commercial banks	[1] 18.4		10.8
National banks only	2.1	2.7	3.4

[1] Dec. 31.

Loans of the joint-stock land banks also rose steadily from 1922 to a peak at the beginning of 1928; the rate of increase slackened during

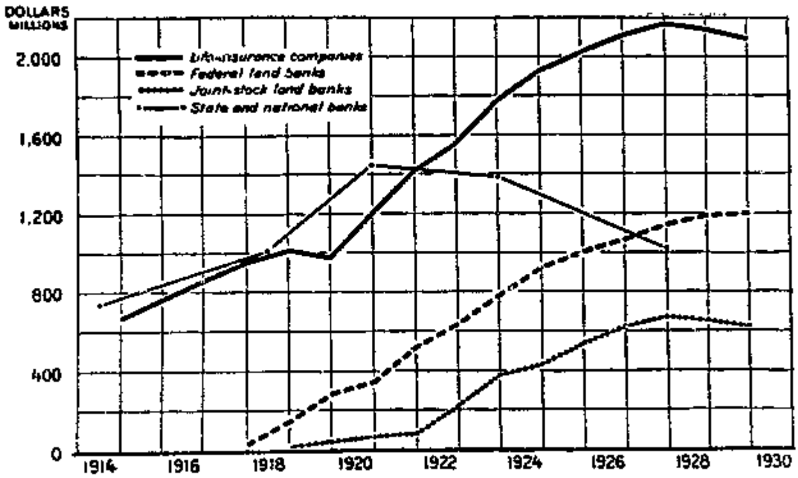

FIGURE 4.—TREND OF FARM-MORTGAGE HOLDINGS OF PRINCIPAL LENDING AGENCIES, 1914-1929

The volume of farm-mortgage loans held by all lenders moved steadily upward until the depression following 1920. Extensive refunding of mortgages held by commercial banks began a decline in their holdings but contributed to the continued rise of loans held by life-insurance companies and the Federal and joint-stock land banks. The loans of insurance companies and the joint-stock land banks reached a peak in 1928; the loans of the Federal land banks continued slightly upward until the middle of 1929.

1927 and turned downward during 1928 and 1929. The decline in joint-stock loans after the close of 1927 may have been in part a reflection of the difficulties confronting certain of those banks, involving extensive foreclosures by many and the receivership of three institutions. The reversal of the upward trend, however, coincides with the similar change in insurance loans.

State and national banks began a reduction of their land-secured loans as a part of the readjustment process following 1920. Because of extensive funding of customers' short-term loans into mortgages, and the subsequent but delayed transfer of loans to other agencies, the peak of mortgages held by banks in many sections of the country, and probably for the country as a whole, was not reached until sometime after the first of 1921, the date of which the highest total of available data appears. By the first of 1924 the total volume of mortgages held by the banks had become less, and thereafter the decline became more pronounced. (Table 13.)

Farm-mortgage holdings of the various classes of commercial banks show the same declining tendency, with the exception of national banks. In this class, country national-bank holdings, which until 1927 were nine-tenths of the mortgages in all national banks, increased abruptly from 1921 to 1923 but have since remained nearly constant at the maximum level reached in 1925 (*23*). (Table 9.) The fact that the Federal and joint-stock land banks were largely out of the market in 1920–21 brought a heavier demand upon the commercial banks during that period.

TABLE 9.—*Real estate loans of national banks, secured by farm lands*

Geographic division and class of bank	1921	1922	1923	1924	1925	1926	1927	1928	1929
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New England	1,678	2,065	12,130	3,083	4,326	3,863	5,281	5,877	5,399
Country	1,676	2,065	2,165	3,083	3,884	3,743	4,622	4,958	5,397
City	2	----------	9,965	----------	442	120	659	919	2
Middle Atlantic	6,111	7,599	9,208	11,953	14,568	17,563	20,207	21,266	24,560
Country	5,655	7,592	9,083	11,835	14,252	17,525	20,168	21,169	24,522
City	456	7	125	118	316	38	39	97	38
East North Central	36,974	42,118	45,550	48,221	51,070	54,382	52,454	56,295	56,289
Country	36,430	41,304	44,441	47,201	50,106	53,381	51,660	55,095	55,527
City	544	814	1,109	1,020	964	1,001	794	1,200	762
West North Central	46,635	63,179	74,472	74,028	76,433	69,945	61,479	61,235	48,717
Country	39,911	56,727	63,999	65,857	66,648	61,952	54,813	54,826	44,225
City	6,724	6,452	10,473	8,171	9,785	7,993	6,666	6,409	4,492
South Atlantic	13,830	16,819	19,719	20,631	23,519	23,091	23,029	25,260	22,146
Country	13,247	16,265	19,167	20,136	23,099	22,489	22,348	24,245	21,470
City	583	554	552	495	420	602	681	1,015	676
East South Central	8,435	10,856	10,226	12,588	14,201	15,099	16,741	17,813	17,973
Country	8,078	9,904	9,836	12,277	13,591	14,769	15,973	17,290	16,566
City	357	952	390	311	610	330	768	523	1,407
West South Central	15,651	26,079	30,847	30,282	31,177	29,014	30,155	29,000	24,228
Country	13,673	22,513	25,391	25,532	26,529	25,522	25,776	25,271	20,897
City	1,978	3,566	5,456	4,750	4,648	3,492	4,379	3,729	3,331
Mountain	17,040	22,304	23,005	21,266	18,598	16,379	15,539	12,949	11,236
Country	15,725	20,519	20,288	18,266	15,719	13,772	13,472	11,244	9,677
City	1,315	1,785	2,717	3,000	2,879	2,607	2,067	1,705	1,559
Pacific	15,298	18,068	21,459	23,100	21,980	22,734	80,068	95,430	88,717
Country	13,690	15,104	15,571	16,910	18,292	18,743	18,018	16,996	15,415
City	1,608	2,964	5,888	6,190	3,688	3,991	62,050	78,434	73,302
United States	161,652	209,087	246,616	245,152	255,872	252,070	304,953	325,125	299,264
Country	148,085	191,993	210,241	221,097	232,120	231,896	226,850	231,094	213,696
City	13,567	17,094	36,375	24,055	23,752	20,174	78,103	94,031	85,568

Compiled from reports of the Comptroller of the Currency. (*23*.)

Farm mortgages reported for city national banks rose sharply during 1927–28. Principally because a large group of banks in the Pacific area was transferred from a State to a national basis, the total holdings of national banks rose from 2.7 per cent of the total mortgage debt in 1925 to 3.4 per cent in 1928.

All banks having membership in the Federal reserve system reduced their farm-mortgage holdings steadily from $489,000,000 in 1926, when first reported, to $387,000,000 in 1930 (*26*), most of the reduction occurring among State banks. Bank failures probably have been secondary to a policy of reducing long-term real estate loans as a cause of this decline. The amendments to the national bank act liberalizing the privileges of national banks in loaning on real estate have induced many new loans of that class and have aided in sustaining the volume of farm loans by national banks as compared with the marked decline for others.

Only the Federal land banks showed a continuous rise in the volume of farm mortgages held after 1928. An extensive network of over 4,600 national farm-loan associations offering favorable interest rates and a long term on the amortization basis, enabled the Federal land banks to expand their outstanding loans in every year until 1929. During that year their loans also began to decline. Because of the long-term amortization plan of land-bank credit, loans of this class have not become due on account of expiration of term, hence the question of renewal has not arisen. Foreclosure has been a more important factor. Partly on this account the total number of outstanding loans of the joint stock land banks was smaller in 1929 than in 1928. (Table 12.)

Taken as a whole this pronounced shift of farm mortgages from local agencies dependent upon local funds to large centralized institutions drawing their resources from a wide area must be adjudged as a definite improvement toward stabilizing the conditions under which the farmer obtains approximately three-fourths of his credit.[5]

VARIATIONS IN LENDERS' HOLDINGS AMONG GEOGRAPHIC DIVISIONS

A marked variation occurs in the proportion of total loans held by each of the lending agencies among various sections. Although insurance companies, the largest lenders, in 1928 had nearly 23 per cent of the total loans for the country as a whole, these loans were concentrated in the four geographic divisions centering on the Mississippi Valley, where they hold from 19 per cent of the total loans in the East North Central to 32 per cent of the total in the West North Central, the most heavily indebted division. This indicates the large part played by insurance loans in the area of greatest farm-credit demand. (Table 10.)

[5] An illustration of the process of shifting mortgages among various holders is shown for a local area by Table 41. (*15*.)

TABLE 10.—*Percentage distribution of holdings of principal lending agencies, by geographic divisions, January 1, 1928*

Geographic division	Total farm mortgage debt 1928	Holdings of principal lending agencies								
		Federal land banks	Joint-stock land banks	Commercial banks	Mortgage companies	Insurance companies	Retired farmers	Active farmers	Other individual	Other agencies
	1,000 dollars	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	122,494	16.6	------	37.7	------	(1)	7.6	4.2	24.8	9.1
Middle Atlantic	376,614	11.[illegible]	6.0	10.5	0.5	0.1	19.3	9.8	34.8	7.3
East North Central	1,056,126	8.2	7.7	14.0	5.8	19.4	14.1	5.2	17.2	8.4
West North Central	4,056,187	7.0	5.4	8.2	15.1	32.8	11.8	3.1	13.3	5.8
South Atlantic	491,836	21.7	16.4	10.7	1.5	12.5	4.4	2.0	23.8	7.0
East South Central	331,497	34.5	7.3	11.1	2.8	28.0	3.9	2.6	7.4	2.4
West South Central	901,252	23.7	11.3	4.1	14.9	25.0	4.1	1.3	7.6	8.0
Mountain	496,551	21.8	4.7	16.7	14.9	5.6	7.0	3.0	19.8	7.0
Pacific	691,909	11.4	6.2	28.1	5.3	7.7	9.1	8.1	16.2	13.9
United States	9,468,526	12.1	7.0	10.8	10.4	22.9	10.6	3.6	15.4	7.2

[1] Less than 0.05 per cent.

The farm-mortgage loans of commercial banks are more evenly distributed than are those of other institutions that lend on farm real estate security. Reports from farmers indicate that farm mortgages held by commercial banks averaged 10.8 per cent of all such loans for the country as a whole in 1928. This average had two outstanding variations—38 per cent of the total of New England mortgages, and over 28 per cent of the farm mortgages in the Pacific States.[6] Loans from this source have their smallest proportion of total debt in the West South Central and in the West North Central divisions. Both of these important centers of demand for agricultural credit have found an increasing accommodation among the more specialized sources of mortgage credit.

Mortgage companies, with 10.4 per cent of the total loans of the country, show proportions in excess of this figure in the West North Central, the West South Central, and the Mountain divisions where the proportion is approximately 15 per cent of the total mortgage indebtedness of each of those divisions.

Retired farmers are reported as holders of mortgages to the extent of 10.6 per cent of the total. In the Middle Atlantic, East North Central, and West North Central divisions, however, the proportion of holdings reported for this source are respectively 19, 14, and 12 per cent, thus indicating the concentration of credit in those areas in which land values have reached highest levels and in which transfers have been more numerous.

Mortgage loans held by active farmers show concentrations similar to those held by retired farmers but have a much lower average—3.6 per cent of the total in the country. The rather uniform ratio of 2 or 3 to 1, which the mortgage holdings of retired farmers bear to the loans held by active farmers, is observable in all areas.

Loans from other individuals, averaging 15.4 per cent for the country as a whole, show the larger percentages of 34.8 per cent in the

[6] The distribution of percentages, covering mortgage debt held by commercial banks, mortgage companies, and individuals, is based upon reports from farmers in selected counties and is therefore subject to more variation than is the distribution for insurance companies and the Federal and joint-stock land banks based upon more complete data. The percentages for the former group of sources are to be considered as preliminary indicators of relative importance of the respective lending agencies.

Middle Atlantic, 24.8 in New England, and 23.8 in the South Atlantic divisions. These loans reflect three principal sources—loans from professional men living in towns adjacent to farming territory, loans from merchants or other dealers who have taken mortgages often as a means of funding short-time credit extended at an earlier date, and mortgages held by former owners.

The distribution of loans made by the Federal and joint-stock land banks indicates that these agencies have responded to the demand for credit in areas hitherto not emphasized by the leading mortgage agencies. The concentration of loans from commercial banks in the Northeast and in the Pacific States reflects the abundance of funds which banks in those territories have had available for long-term loans. (Tables 11 and 12.)

Thus in 1928 more than one-third of New England's farm-mortgage credit was supplied by individuals, and an equal amount by banks. The Middle Atlantic States had two-thirds of its mortgage credit from individuals, and the East North Central States had more than one-third from this source. All three northeastern divisions had from 16 to 17 per cent of their loans from the Federal and joint-stock land banks. The West North Central division drew over 32 per cent of its long-term credit from insurance companies, 15 per cent from mortgage companies, more than 25 per cent from individuals, but only 12 per cent from the Federal and joint-stock land banks. The South Atlantic division, however, received 38 per cent of its loans from the land banks; the East South Central division had the largest proportion with 42 per cent of its total from this source, and 28 per cent from insurance companies; and the West South Central division had 35 per cent from the land banks, and 25 per cent from insurance companies. In the Pacific division, as in New England, the greater part of the loans were made by commercial banks and individuals.

TABLE 11.—*Number and amount of Federal land-bank loans, outstanding December 31, 1926, 1927, 1928, and 1929, by States and geographic divisions*

State and geographic division	Loans				Amount			
	1926	1927	1928	1929	1926	1927	1928	1929
	Number [1]	*Number* [1]	*Number* [2]	*Number* [2]	*1,000 dollars* [1]	*1,000 dollars* [1]	*1,000 dollars* [2]	*1,000 dollars* [2]
Maine	2,509	2,732	2,771	2,798	6,579	6,746	6,664	6,593
New Hampshire	497	526	527	504	999	1,069	1,083	1,014
Vermont	1,195	1,386	1,397	1,368	3,366	3,938	3,877	3,707
Massachusetts	1,371	1,457	1,482	1,527	3,639	3,983	4,040	4,153
Rhode Island	114	129	152	169	362	423	461	518
Connecticut	1,262	1,319	1,360	1,421	3,949	4,134	4,216	4,331
New England	7,008	7,549	7,689	7,787	18,894	20,293	20,341	20,316
New York	6,459	7,442	7,904	8,099	20,749	24,061	24,851	25,048
New Jersey	1,106	1,302	1,358	1,427	4,146	4,856	4,987	5,208
Pennsylvania	5,650	6,113	6,715	6,967	14,300	15,187	16,399	16,696
Middle Atlantic	13.215	14,857	15,977	16,493	39,195	44,104	46,237	46,952
Ohio	5,765	6,378	6,936	7,202	21,741	23,883	25,832	26,247
Indiana	11,501	12,828	13,977	14,471	39,572	43,471	46,811	47,554
Illinois	5,901	6,993	8,179	8,805	29,052	38,051	47,624	52,497
Michigan	9,008	9,758	10,087	10,199	23,016	24,988	25,389	25,311
Wisconsin	7,223	7,411	7,351	7,287	28,227	28,819	28,268	27,584
East North Central	39,398	43,368	46,530	47,964	141,608	159,212	173,924	179,193

[1] Data from the Federal Farm Loan Board.
[2] Data from annual reports of the Federal Farm Loan Board (*25*).

TABLE 11.—*Number and amount of Federal land-bank loans, outstanding December 31, 1926, 1927, 1928, and 1929, by States and geographic divisions*—Continued

State and Geographic Division	Loans				Amount			
	1926	1927	1928	1929	1926	1927	1928	1929
	Number	*Number*	*Number*	*Number*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Minnesota	8,405	8,581	8,563	8,526	36,727	37,903	37,622	36,953
Iowa	7,730	8,807	9,636	10,098	59,809	69,732	77,345	80,433
Missouri	8,710	9,222	9,573	9,619	26,961	29,102	30,759	30,954
North Dakota	9,672	9,667	9,281	9,137	36,561	36,328	34,289	33,064
South Dakota	5,595	6,131	6,337	6,452	27,292	29,870	30,844	30,795
Nebraska	8,070	8,709	9,085	9,092	41,965	45,834	48,292	47,728
Kansas	8,637	8,980	8,911	8,675	34,222	34,935	34,462	32,920
West North Central	56,819	60,097	61,386	61,599	263,627	283,704	293,613	292,847
Delaware	118	128	137	138	376	385	424	416
Maryland	996	1,013	1,032	1,068	3,727	3,745	3,947	4,037
Virginia	11,352	11,664	11,889	11,895	28,207	28,472	28,642	28,283
West Virginia	3,729	4,100	4,488	4,547	6,971	7,624	8,102	8,112
North Carolina	10,078	10,246	10,231	10,205	18,734	18,711	18,321	17,866
South Carolina	6,198	6,422	6,223	5,964	16,678	16,817	15,873	14,719
Georgia	10,397	11,148	11,265	11,151	23,458	24,405	23,971	23,143
Florida	3,291	3,626	3,787	3,764	5,859	6,655	6,793	6,611
South Atlantic	46,159	48,347	49,052	48,732	104,010	106,814	106,073	103,187
Kentucky	8,289	8,882	9,219	9,245	24,164	25,241	25,561	25,189
Tennessee	9,992	10,729	11,219	11,393	23,281	24,213	24,864	24,703
Alabama	19,904	22,197	22,649	22,957	34,321	38,037	38,321	38,314
Mississippi	22,234	23,296	23,367	23,665	42,211	44,056	43,089	42,500
East South Central	60,419	65,104	66,454	67,260	123,977	131,547	131,835	130,706
Arkansas	13,890	14,471	14,811	14,732	22,731	23,836	24,214	23,829
Louisiana	12,233	12,803	12,803	12,812	28,719	29,656	29,221	28,547
Oklahoma	7,134	7,371	7,683	7,856	18,675	19,931	20,660	20,885
Texas	46,780	52,014	54,813	56,387	126,630	139,869	146,805	150,782
West South Central	80,037	86,659	90,110	91,787	196,755	213,292	220,900	224,043
Montana	6,986	7,052	7,149	7,055	20,312	20,708	21,231	21,038
Idaho	6,680	6,772	6,860	6,897	22,491	22,682	22,768	22,683
Wyoming	2,344	2,355	2,336	2,298	7,181	7,168	7,022	6,812
Colorado	8,301	8,643	8,771	8,863	23,871	24,986	25,206	25,209
New Mexico	4,948	5,003	4,985	4,961	9,903	[illegible],192	10,102	9,924
Arizona	1,375	1,456	1,483	1,487	5,520	5,742	5,720	5,701
Utah	4,811	5,060	5,139	5,222	14,295	14,697	14,670	14,700
Nevada	255	349	388	404	1,278	2,333	2,739	2,872
Mountain	35,600	36,690	37,109	37,187	104,851	108,508	109,468	108,945
Washington	11,564	11,871	12,151	12,116	30,590	30,984	31,565	31,317
Oregon	6,265	6,286	6,278	6,169	20,069	20,016	19,737	19,208
California	6,811	7,458	7,789	7,881	25,066	27,959	29,130	29,051
Pacific	24,640	25,615	26,218	26,166	75,725	78,959	80,432	79,576
United States	363,295	388,286	400,525	404,975	1,068,042	1,146,433 [1]	1,182,813	1,185,765

[1] This amount exceeds the total reported in the twelfth annual report of the Farm Loan Board (*25, Rpt. 12, p. 20*) by $1,449,252.48 for which segregation by States is not available. Of this amount $479,752.48 consisted of purchase money, first and second mortgages for the Federal Land Bank of Springfield, and $969,500 of loans in suspense for the Federal Land Bank of St. Paul.

TABLE 12.—*Number and amount of joint-stock land bank loans, outstanding December 31, 1926, 1927, 1928, and 1929, by geographic divisions and States*

State and geographic division	Loans				Amount			
	1926[1]	1927[1]	1928[2]	1929[2]	1926[1]	1927[1]	1928[2]	1929[2]
	Number	*Number*	*Number*	*Number*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New York	1,780	2,400	2,662	2,734	9,708	[3] 11,380	11,962	[illegible],944
New Jersey	406	455	461	448	2,091	2,291	2,267	2,192
Pennsylvania	1,981	2,371	2,601	2,605	8,092	9,017	9,484	9,194
Middle Atlantic	4,167	5,226	5,724	5,787	19,891	22,688	23,713	23,330
Ohio	5,751	6,263	6,584	6,559	27,461	28,266	28,553	27,590
Indiana	6,028	7,044	7,428	7,602	34,854	36,234	36,991	36,[illegible]22
Illinois	8,672	8,703	8,830	8,844	68,550	73,153	71,763	70,996
Michigan	1,593	2,035	2,151	2,159	7,446	9,069	9,228	8,990
Wisconsin	969	925	832	767	4,676	4,340	3,758	3,307
East North Central	23,[illegible]13	24,970	[illegible]5,825	25,931	142,987	151,062	150,293	147,405
Minnesota	4,204	3,993	3,665	3,253	34,667	32,128	28,443	23,911
Iowa	8,187	8,357	8,258	8,044	90,772	90,061	91,258	86,912
Missouri	3,778	3,789	3,388	3,187	27,324	24,965	21,494	19,473
North Dakota	772	746	734	722	4,298	4,103	3,959	3,810
South Dakota	1,673	1,530	1,407	1,289	13,370	11,939	10,570	9,533
Nebraska	2,976	3,270	3,316	3,277	29,209	30,854	26,444	25,824
Kansas	3,834	3,939	3,438	3,150	23,696	22,631	19,672	17,368
West North Central	25,424	25,624	24,206	22,922	223,336	216,731	201,840	186,831
Maryland	534	689	752	758	3,032	4,199	4,400	4,247
Virginia	2,022	2,310	2,424	2,376	9,084	10,073	10,279	9,759
West Virginia	1,947	1,999	1,938	1,872	5,345	5,339	5,044	4,678
North Carolina	9,895	11,62[illegible]	12,595	12,615	33,648	38,016	39,512	38,264
South Carolina	2,434	2,792	2,814	2,641	13,320	14,211	13,964	12,402
Georgia	1,364	1,648	1,781	1,775	7,166	8,573	9,157	8,721
South Atlantic	18,196	21,104	22,304	22,037	71,595	80,411	82,356	78,071
Kentucky	2,084	2,148	2,142	2,115	11,165	11,701	11,342	10,896
Tennessee	732	764	793	784	2,993	3,037	3,046	2,978
Alabama	782	947	1,015	1,002	5,244	5,928	6,124	5,876
Mississippi	356	490	500	501	6,889	7,199	7,239	7,083
East South Central	3,954	4,349	4,450	4,402	26,291	27,865	27,751	26,833
Arkansas	1,367	1,622	1,646	1,644	12,217	13,505	13,409	13,101
Louisiana	63	65	64	61	1,133	1,176	1,160	1,133
Oklahoma	937	1,133	1,054	997	4,840	5,348	4,906	4,558
Texas	9,983	11,834	12,255	11,983	71,747	82,235	83,387	80,170
West South Central	12,350	14,654	15,019	14,685	89,937	102,264	102,862	98,962
Montana	319	287	275	262	1,840	1,687	1,604	1,526
Idaho	746	879	953	1,020	3,329	3,787	3,933	4,021
Wyoming	654	677	660	640	4,589	4,599	4,316	4,073
Colorado	1,124	1,375	1,425	1,392	7,494	9,027	9,247	8,819
Arizona	365	431	493	494	2,465	2,911	3,281	3,132
Utah	163	165	169	166	713	685	671	635
Nevada	29	30	32	30	524	623	645	634
Mountain	3,400	3,844	4,007	4,004	20,954	23,319	23,676	22,840
Washington	200	210	213	206	2,015	2,044	1,994	1,854
Oregon	1,017	1,118	1,135	1,151	11,137	11,924	11,893	11,668
California	2,052	2,424	2,598	2,606	24,367	29,006	30,138	29,186
Pacific	3,269	3,752	3,946	3,963	[4] 37,583	42,974	44,025	42,708
United States	93,780	103,523	105,481	103,731	[4] 632,574	[5] 667,314	656,516	626,980

[1] Data from Federal Farm Loan Board.
[2] 1928 and 1929 from annual reports of Federal Farm Loan Board.
[3] This amount includes $76,298.58, part of which was in New Jersey. A segregation by States is not available. The number of loans represented by this amount also is not available.
[4] Includes 7 loans in the amount of $64,567.57 outstanding in Oregon and Washington for which a segregation between the two States is not available. These totals differ from those shown by the Federal Farm Loan Board (*25, Rpt. 12, p. 31*) by $98,310.28 for which a segregation by States is not available.
[5] This differs from the total reported by the Federal Farm Loan Board (*25 Rpt. 12, p. 31.*) as follows: It includes $2,631,141.78 of payments on principal for the Kansas City Joint-Stock Land Bank which has been deducted in compiling the figures of that bank for the annual report. A segregation by States of these figures is not available.

SECTIONAL DIFFERENCES IN LOAN HOLDINGS SINCE 1914

The course of loans by insurance companies and land banks from pre-war years to 1924 followed a generally upward trend in most of the geographic divisions similar to the movement for the country as a whole. Significant sectional differences emphasize two features—the continued demand for capital in the west central and Pacific divisions up to recent years, and the centering of insurance-loan peaks for the three eastern divisions in 1922 and 1923 and for the Mountain division in 1924. (Table 13.)

TABLE 13.—*Farm mortgage loans held by principal lending agencies in geographic divisions, December 31, 1914 and 1916–1929*

Geographic division	Lending agency	1914	1916	1917	1918[1]	1919
		1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New England	Insurance companies	108	79	35	34	34
	Federal land banks					
	Joint-stock land banks					
	State and national banks	84,900			96,300	
	National banks (country)					
Middle Atlantic	Insurance companies	370	489	390	317	137
	Federal land banks					
	Joint-stock land banks					
	State and national banks	30,900			58,787	
	National banks (country)					
East North Central	Insurance companies	120,475	141,250	147,689	152,283	145,322
	Federal land banks					
	Joint-stock land banks					
	State and national banks	220,000			252,707	
	National banks (country)					
West North Central	Insurance companies	412,356	526,118	603,243	631,252	618,783
	Federal land banks					
	Joint-stock land banks					
	State and national banks	216,400			296,538	
	National banks (country)					
South Atlantic	Insurance companies	21,559	31,993	31,236	32,275	39,228
	Federal land banks					
	Joint-stock land banks					
	State and national banks	40,800			53,129	
	National banks (country)					
East South Central	Insurance companies	20,104	31,827	36,282	41,272	39,112
	Federal land banks					
	Joint-stock land banks					
	State and national banks	33,600			52,023	
	National banks (country)					
West South Central	Insurance companies	67,592	90,229	98,911	115,719	96,568
	Federal land banks					
	Joint-stock land banks					
	State and national banks	27,900			34,503	
	National banks (country)					
Mountain	Insurance companies	12,130	16,657	15,551	20,067	13,545
	Federal land banks					
	Joint-stock land banks					
	State and national banks	19,800			27,621	
	National banks (country)					
Pacific	Insurance companies	12,621	19,079	18,447	20,888	18,213
	Federal land banks					
	Joint-stock land banks					
	State and national banks	65,200			138,951	
	National banks (country)					
United States	Insurance companies	667,315	857,721	951,784	1,014,107	970,942
	Federal land banks					
	Joint-stock land banks					
	State and national banks	739,500			1,010,559	
	National banks (country)					

[1] Date of State and national bank data for 1918 as of June 30.

TABLE 13.—*Farm mortgage loans held by principal lending agencies in geographic divisions, December 31, 1914 and 1916–1929*—Continued

Geographic division	Lending agency	1920	1921	1922	1923	1924
		1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New England	Insurance companies	30	32	66	57	56
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	93,686	----	----	111,918	----
	National banks (country)	----	1,676	2,065	2,465	3,083
Middle Atlantic	Insurance companies	133	476	503	862	509
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	34,148	----	----	37,510	----
	National banks (country)	----	5,655	7,592	9,063	11,835
East North Central	Insurance companies	168,894	198,065	222,041	269,042	309,986
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	335,095	----	----	315,131	----
	National banks (country)	----	36,430	41,304	44,441	47,201
West North Central	Insurance companies	767,126	877,736	940,027	1,090,859	1,179,992
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	531,212	----	----	403,514	----
	National banks (country)	----	39,911	56,727	63,999	65,857
South Atlantic	Insurance companies	51,005	67,467	70,907	72,335	71,102
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	94,048	----	----	79,856	----
	National banks (country)	----	13,247	16,265	19,167	20,136
East South Central	Insurance companies	53,715	69,347	76,092	89,470	96,318
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	101,060	----	----	77,591	----
	National banks (country)	----	8,078	9,904	9,836	12,277
West South Central	Insurance companies	131,121	168,274	185,481	200,147	206,145
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	73,251	----	----	82,306	----
	National banks (country)	----	13,673	22,513	25,391	25,532
Mountain	Insurance companies	19,010	21,565	25,063	27,462	28,320
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	55,936	----	----	52,408	----
	National banks (country)	----	15,725	20,519	20,288	18,266
Pacific	Insurance companies	19,940	23,678	29,883	34,771	40,456
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	114,321	----	----	227,872	----
	National banks (country)	----	13,690	15,104	15,571	16,910
United States	Insurance companies	1,200,974	1,426,660	1,550,003	1,785,005	1,934,884
	Federal land banks	----	----	----	----	----
	Joint-stock land banks	----	----	----	----	----
	State and national banks	1,447,483	----	----	1,388,106	----
	National banks (country)	----	148,085	191,993	210,241	221,097

Geographic division	Lending agency	1925	1926	1927 [3]	1928	1929
		1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New England	Insurance companies	45	46	43	41	----
	Federal land banks	----	18,804	20,293	20,341	20,316
	Joint-stock land banks	----	----	----	----	----
	State and national banks	----	----	46,209	----	----
	National banks (country)	3,884	3,743	4,622	4,951	----
Middle Atlantic	Insurance companies	467	412	359	291	----
	Federal land banks	----	39,195	44,104	46,237	46,952
	Joint-stock land banks	----	19,891	22,688	23,713	23,330
	State and national banks	----	----	39,331	----	----
	National banks (country)	14,252	17,525	20,168	21,169	----
East North Central	Insurance companies	339,100	366,981	378,833	378,035	----
	Federal land banks	----	141,608	159,212	173,924	179,193
	Joint-stock land banks	----	142,987	151,062	150,293	147,405
	State and national banks	----	----	272,794	----	----
	National banks (country)	50,106	53,381	51,660	55,095	----
West North Central	Insurance companies	1,231,346	1,281,056	1,310,571	1,284,226	----
	Federal land banks	----	263,627	283,704	293,613	292,847
	Joint-stock land banks	----	223,336	216,731	201,840	186,831
	State and national banks	----	----	252,131	----	----
	National banks (country)	66,648	61,952	54,813	54,826	----

[3] Holdings of banks, including all commercial banks. Estimates are based upon sample reports of borrowers and therefore merit less confidence than figures on bank loans for other years, when data were based upon reports from the source.

TABLE 13.—*Farm mortgage loans held by principal lending agencies in geographic divisions, December 31, 1914 and 1916–1929*—Continued

Geographic division	Lending agency	1925	1926	1927	1928	1929
		1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
South Atlantic	Insurance companies	67,026	65,730	61,667	58,841	
	Federal land banks		104,010	106,814	105,073	103,187
	Joint-stock land banks		71,595	80,411	82,356	78,071
	State and national banks			52,700		
	National banks (country)	23,099	22,489	22,348	24,245	
East South Central	Insurance companies	102,600	106,931	106,873	103,800	
	Federal land banks		123,977	131,547	131,835	130,706
	Joint-stock land banks		28,291	27,885	27,751	26,833
	State and national banks			42,286		
	National banks (country)	13,591	14,769	15,973	17,290	
West South Central	Insurance companies	210,407	219,183	225,134	222,838	
	Federal land banks		196,755	213,292	220,900	224,043
	Joint-stock land banks		89,937	102,264	102,862	98,962
	State and national banks			37,152		
	National banks (country)	26,529	25,622	25,776	25,271	
Mountain	Insurance companies	26,958	26,430	27,614	27,861	
	Federal land banks		104,851	108,508	109,458	108,945
	Joint-stock land banks		20,954	23,319	23,676	22,840
	State and national banks			[1]82,876		
	National banks (country)	15,719	13,772	13,472	11,244	
Pacific	Insurance companies	44,265	48,425	53,102	54,516	
	Federal land banks		75,725	76,959	80,432	79,576
	Joint-stock land banks		37,583	42,974	44,025	42,706
	State and national banks			194,840		
	National banks (country)	18,292	18,743	18,018	16,996	
United States	Insurance companies	2,022,222	2,115,203	2,164,206	2,130,458	2,100,429
	Federal land banks		1,068,642	1,146,433	1,182,813	1,185,765
	Joint-stock land banks		632,574	667,314	656,516	626,980
	State and national banks			1,020,319		
	National banks (country)	232,120	231,896	226,850	231,094	

[1] Preliminary. This figure is probably too high.

Mortgage loans by State and national banks were of larger volume at the close of 1920 than at the end of 1923 in five divisions and for the country as a whole, but in the North Atlantic, West South Central, and Pacific divisions holdings of the banks were greater in 1923 than in 1920. The increase of loans in these divisions reflected strong bank resources, though in the West South Central and Pacific divisions expanding agriculture also brought about increased demand for farm credit.

The relative increase in farm-mortgage loans by insurance companies during the 15 years 1914 to 1928 was greatest in the East South Central States where their holdings grew to five times the amount outstanding in 1914. During this period insurance-company loans in the Pacific division mounted to more than four times the volume outstanding in 1914, trebled in the two North Central divisions, South Atlantic, and West South Central divisions, and more than doubled in the Mountain States. The Middle Atlantic States had about the same amount of insurance loans in 1927 as in 1914 but had less at the close of 1928, and the New England States were using only two-fifths as much capital from this source in 1928 as in 1914.

The West Central States, both northern and southern, drew their greatest amount of mortgage funds from insurance companies in 1927. Loans in the West North Central division first amounted to $1,000,000,000 in 1923, reaching $1,310,000,000 four years later for a total of 59 per cent of all farm mortgages held by those agencies. The East North Central and the Pacific divisions received the most nearly continuous increase in loans from insurance companies during the 14 years following 1914, the first-named division having $378,000,000 and the Pacific $55,000,000 in 1928. (Table 14.)

Table 14.—*Estimated farm-mortgage loans of all life insurance companies in the United States by geographic divisions, December 31, 1914–1929*

Year	United States	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1914	667,316	108	370	120,475	412,356	21,559	20,104	67,592	12,130	12,621
1916	857,731	79	489	141,250	526,118	31,993	31,827	90,229	16,657	19,079
1917	951,784	35	390	147,689	603,243	31,236	36,282	98,911	15,551	18,447
1918	1,014,107	34	317	152,283	631,252	32,275	41,272	115,719	20,067	20,888
1919	970,942	34	137	145,322	618,783	39,228	39,112	96,568	13,545	18,213
1920	1,200,974	30	133	168,894	757,126	51,005	53,715	131,121	19,010	19,940
1921	1,426,660	32	476	198,065	877,736	67,467	69,347	168,274	21,565	23,678
1922	1,550,003	66	503	222,041	940,027	70,907	76,092	185,481	25,003	29,883
1923	1,785,005	57	862	269,042	1,090,859	72,335	89,470	200,147	27,462	34,771
1924	1,934,884	56	509	309,966	1,179,992	71,102	96,318	206,145	28,320	40,456
1925	2,022,222	45	467	339,110	1,231,346	67,026	102,600	210,407	26,956	44,265
1926	2,116,203	46	412	366,981	1,281,056	65,739	106,931	219,183	26,430	48,425
1927	2,164,206	43	359	378,833	1,310,571	61,677	106,873	225,134	27,614	53,102
1928	2,130,458	41	291	378,035	1,284,226	58,841	103,809	222,838	27,861	54,516
1929	2,100,429	35	268	379,984	1,261,589	56,680	100,314	217,888	27,604	55,066
1930	2,054,466									

Loans of the Federal land banks declined only in the South Atlantic division in 1928, but showed reductions in all but the Middle Atlantic, East North Central and West South Central divisions in 1929. The loans of joint-stock land banks declined in the East North Central, East South Central, and West North Central divisions in 1928, and in all divisions in 1929. Summarized by States, the amount of the Federal land-bank loans declined in four States in 1927, in 15 States in 1928, and in 29 States in 1929. (Table 11.) In general, for all areas where insurance loans have reached a peak and then declined, the volume of loans held by the joint-stock land banks and Federal land banks have continued to increase for some time afterward. In a similar manner the Federal land-bank loans have continued to grow in volume after the joint-stock land bank loans have begun to decrease.

Aside from differences in lending policy as applied to given areas, two general causes explain these divergent tendencies—the degree of freedom in the use of funds for making new loans and difference in maturity dates of loans already made. The usual short term of insurance loans brings to maturity approximately 15 to 20 per cent of outstanding loans each year. At these due dates complete payment may be received or a renewal of the loan may be granted under the same or different terms.

In brief, the funds may be distributed anew in such proportions as the lenders may desire. Insurance companies have many outlets for their funds; farm mortgages formed only 12 per cent of their total admitted assets in 1928, hence these agencies are free to invest wherever opportunity is most attractive and to shift their proportions of investments materially within a few years. On the other hand, the joint stock and the Federal land banks loan only for long terms and can use funds only for farm loans or for purchase of bonds which usually gives lower returns than do mortgage loans. The large number of local associations of farmers acting as feeders to the Federal land banks also tends to sustain the volume of loans from that source.

LOANS BY INSURANCE COMPANIES AS INDICATORS OF FARM-MORTGAGE TRENDS

Mortgage loans by life-insurance companies are one of the most sensitive indicators of the flow of capital to or from agricultural areas. A wide system of local representatives has extended loan operations into all sections in a volume much above that from any other source. Supplied by a continuous stream of funds from the receipt of premiums, the insurance companies have at all times a large amount of capital available for investment in any one of several outlets. A flexible system of rates permits ready adjustment to money-market

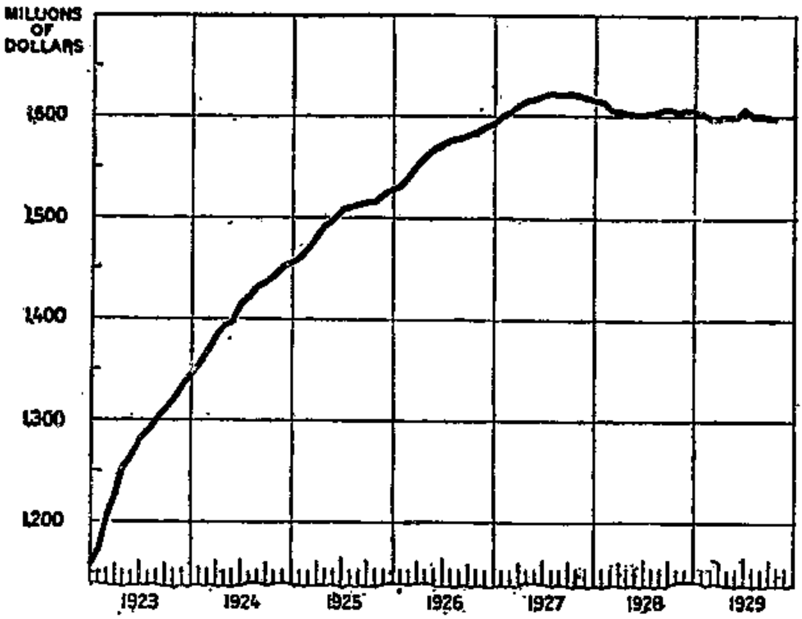

FIGURE 5.—FARM MORTGAGES OUTSTANDING: 40 LIFE-INSURANCE COMPANIES, BY MONTHS, 1923 TO 1929

Monthly reports on the volume of outstanding farm mortgages held by 40 life-insurance companies indicate a steady rise at a decreasing rate from 1923 to 1927. Since 1927 the volume of such holdings has shown a tendency to decline. (*31, p. 45.*)

changes or to new calculations of risk. Moreover, the average term of the loans is short, the great majority being made for five years, so that approximately from 15 to 20 per cent of the total falls due each year, to be reinvested. The policy of companies as to renewals and making new investments is soon reflected in the total outstanding investments in farm mortgages. (Figs. 5 and 6.)

DIFFERENCES IN SIZE OF LOANS

Noticeable differences appear in the average size of loans among the various geographic divisions, tenure groups, and sources of funds. Loans of all classes reported in 1928 averaged $5,200 for the country as a whole. Loans were largest in the West North Central States with an average of more than $8,000; the Pacific and East North

Central divisions came next with averages of \$6,400 and \$5,700, respectively; while loans were smallest in New England with an average of \$1,680. (Table 15.) These averages, as well as those hereafter given for other classifications of tenure and source, are generally larger than the average for all farms because farmers responding to questionnaires usually have farms larger than average size and, hence, usually have larger mortgages. Although the comparisons made here with regard to size of loans are not in absolute

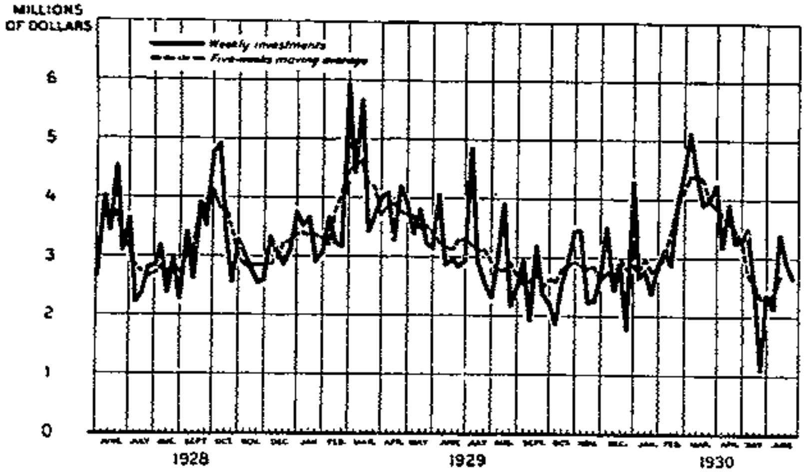

FIGURE 6.—WEEKLY INVESTMENTS IN FARM-MORTGAGE LOANS

Weekly investments in farm mortgage loans made by 25 leading life-insurance companies have shown lower peaks and lower averages than for corresponding earlier periods (2).

amounts, it is believed that they fairly represent relative differences in size among the various groups of lending agencies.

TABLE 15.—*Average size of outstanding mortgage loans held by principal lending agencies, by tenure and geographic divisions, January 1, 1928.*[1]

Geographic division and tenure	Average total holdings	Average holdings of principal lending agencies								
		Federal land banks	Joint stock land banks	Commercial banks	Mortgage companies	Insurance companies	Retired farmers	Active farmers	Other individuals	Other agencies
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
New England	1,680	2,825	--------	1,623	--------	850	1,612	1,318	1,520	1,710
Owners	1,643	2,800	--------	1,599	--------	850	1,605	1,218	1,501	1,557
Tenants	2,742	1,500	--------	2,044	--------	--------	2,000	3,200	2,480	11,400
Middle Atlantic	2,414	3,072	3,555	1,936	3,167	3,640	2,332	1,950	2,366	2,878
Owners	2,191	2,735	2,757	1,786	2,250	1,800	2,184	1,912	2,261	1,826
Tenants	3,995	5,031	8,940	2,769	5,000	11,000	3,807	2,875	3,211	5,508
East North Central	5,722	5,300	8,054	4,736	6,348	9,806	5,108	4,149	5,052	3,171
Owners	4,462	3,837	6,773	4,102	4,246	7,363	5,110	3,076	4,418	2,487
Tenants	8,208	8,648	9,502	6,416	9,292	11,703	5,189	7,530	7,041	4,965
West North Central	8,079	5,764	10,422	5,480	8,208	12,566	7,974	5,890	6,931	4,607
Owners	6,254	5,160	10,076	4,050	5,962	9,589	7,092	3,773	5,813	3,687
Tenants	10,089	7,291	10,807	7,211	10,106	14,612	9,182	8,879	8,200	5,650
South Atlantic	3,895	2,970	5,030	4,381	3,589	5,450	3,365	2,100	3,879	5,076
Owners	3,149	2,920	4,015	4,629	1,680	4,017	2,158	1,628	2,895	3,740
Tenants	4,262	3,088	6,223	3,903	5,975	6,423	4,655	2,900	3,717	3,753

[1] Based on 8,942 loans reported by farm owners, 1928.

TABLE 15.—*Average size of outstanding mortgage loans held by principal lending agencies, by tenure and geographic divisions, January 1, 1928*—Continued

Geographic division and tenure	Average total holdings	Average holdings of principal lending agencies								
		Federal land banks	Joint stock land banks	Commercial banks	Mortgage companies	Insurance companies	Retired farmers	Active farmers	Other individuals	Other agencies
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
East South Central	3,784	3,650	5,619	4,681	2,907	6,158	2,053	2,222	2,231	2,206
Owners	3,062	3,068	2,175	5,581	1,460	4,756	2,015	2,607	1,724	1,238
Tenants	4,722	4,361	9,062	3,500	5,600	7,518	2,180	875	2,700	5,350
West South Central	4,051	3,147	7,627	3,646	4,750	7,278	4,032	2,900	3,614	3,045
Owners	3,001	2,454	7,544	3,212	3,102	7,141	2,722	1,917	2,135	2,645
Tenants	5,054	4,495	7,275	4,081	5,797	7,383	6,827	4,375	4,661	3,356
Mountain	4,403	4,267	7,026	5,019	4,614	7,007	4,142	2,732	3,505	3,793
Owners	3,660	3,868	6,038	4,444	3,060	5,629	3,507	2,425	2,906	2,841
Tenants	6,078	5,770	8,464	6,822	6,348	8,492	4,968	3,470	4,962	5,900
Pacific	6,423	4,549	12,645	8,224	5,396	10,646	4,744	3,541	4,486	9,060
Owners	4,943	4,078	8,218	5,728	4,619	7,659	4,460	3,217	3,328	7,834
Tenants	11,919	6,891	17,643	19,157	8,900	12,934	5,875	7,800	10,505	11,081
United States:										
All tenures	5,205	4,193	8,025	4,584	6,258	10,446	4,741	3,276	4,001	4,309
Owners	3,919	3,650	6,683	3,637	4,413	7,812	4,042	2,506	3,105	3,554
Tenants	7,780	5,701	9,203	7,305	8,206	12,451	6,584	6,341	6,192	5,204
Managers	13,576	7,175	18,611	14,912	7,311	18,611	8,778	6,300	13,557	17,060

When classified by tenure, farms operated by their owners show much smaller average size of loans than do farms operated by tenants or managers. The average mortgage reported on full-owner farms was about $3,900; on tenant-operated farms, $7,800; and on manager farms, more than $13,000. These averages reflect principally differences in the value of the respective classes of farms. The sum of $3,919 reported as the average of individual mortgages secured by land operated by full owners is somewhat below the $4,004 reported by the census of 1925 as the average total indebtedness per farm on full-owner farms. The difference is due in part to a slight decline in the average debt on owner-operated farms during this period and in part to the fact that the average of $3,919 is an average of individual loans including second or other mortgages, whereas the sum of $4,004 represents the average total indebtedness per mortgaged farm. As a whole, the average size of loans for owner, tenant, and manager farms is inverse to the total morgage indebtedness of these classes.

Marked variation appears in the size of loans made by the different lenders. Loans from insurance companies averaged largest with $10,400 each, and loans from the joint-stock land banks were next, with approximately $8,000. (Fig. 7 and Table 15.) Mortgage companies held loans averaging over $6,200, commercial-bank mortgages averaged nearly $4,600, and Federal land-bank loans averaged nearly $4,200. Among individual holders, largest loans were from retired farmers whose mortgages averaged $4,700, whereas loans from active farmers were smallest of all with an average of $3,276. Loans held by individuals represent sums more commonly within the range of available funds held by that group. The larger size of loans held by retired farmers, in many cases, reflects purchase-money mortgages received upon sale of farms. Loans held by active farmers include fewer of this type, and their size as well as their small number seem to indicate limited advances in this form.

Table 15 shows that this relative size of loans held by the various lending agencies also tends to hold true for each of the forms of tenure and in the several geographic divisions. Since the loans of the Federal system are all made on the amortization basis, the average of loans outstanding as reported here will be somewhat less than the average size of the same loans when first made. A decided preference for the larger loans is apparent from the size of holdings of the insurance companies, joint-stock land banks, and farm-mortgage companies. The legal limitations on amount and tenure requirements for the Federal land banks are partly responsible for the smaller size of mortgages held by those institutions.

Restriction of Federal land-bank loans to farms operated by their owners partly accounts for the small size of loans made by those institutions. Since the relative size of the average outstanding loan of the Federal land banks has been about $4,200 as compared with $8,000 for joint-stock land banks, and $10,400 for insurance companies, the handling cost per dollar loaned is affected proportionately.

That larger loans would result if the Federal land banks were permitted to accomodate larger borrowers was indicated by the increase in the size of the average loan made after the amendment of 1923, which raised the maximum loan permitted from $10,000 to $25,000. During the six years of operation under the smaller loan limit, 1917 to 1922, loans averaged $2,943, and during the six years following the amendment, 1924 to 1929, loans averaged $3,525, notwithstanding the lower price levels then prevailing.

PROPORTIONS OF LENDERS' HOLDINGS ON OWNER AND TENANT FARMS

A distribution of mortgages by tenure of the land forming the security shows important differences between holdings of the various classes of lending agencies.[7] (Table 16.) In comparison with an average of 58.7 per cent of mortgage debt on owner-operated farms in 1928 and 41.3 per cent on tenant and manager operated land (see Table 4), mortgage companies and insurance companies have over half of their total loans on lands not occupied by the owners. Joint-stock land banks have the next largest proportion of loans on tenant-operated farms, with a total of 44 per cent for tenant and manager farms together. Commercial banks have approximately one-third, or 33 per cent, of their loans on tenant and manager farms, and the Federal land banks had about 30 per cent on land of these tenures. Among the individual lenders, each of the three classes appears to hold about the same proportion of loans on tenant and manager farms, and 64 to 69 per cent on owner-operated farms.

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[7] The method of computing proportions of lenders' holdings secured by owner farms and by others was as follows: The percentage of the total amount of debt reported as secured by mortgage on full-owner farms in each geographic division was calculated for each of nine principal lending agencies. Similar percentages were calculated for tenant and manager operated farms The percentages found were applied to the total estimated farm-mortgage debt of each corresponding type of tenure in each geographic division. The result represented the total amount of mortgage holdings of each lending agency which was secured by land of each tenure form, in each geographic division. The loans of each agency on farms of all tenure groups within each geographic division were added to obtain the total loans held in that division by such lending agency. With the total holdings of each agency in each geographic division taken as 100, the debt secured by farms of each form of tenure was expressed as a percentage of the total in that division. The percentage of the total mortgage debt of the country represented by debt on farms of each principal tenure form was computed as follows: The farm-mortgage holdings for each tenure in all geographic divisions were added, and the resulting sum was divided by the total mortgage debt of the division as estimated for 1928.

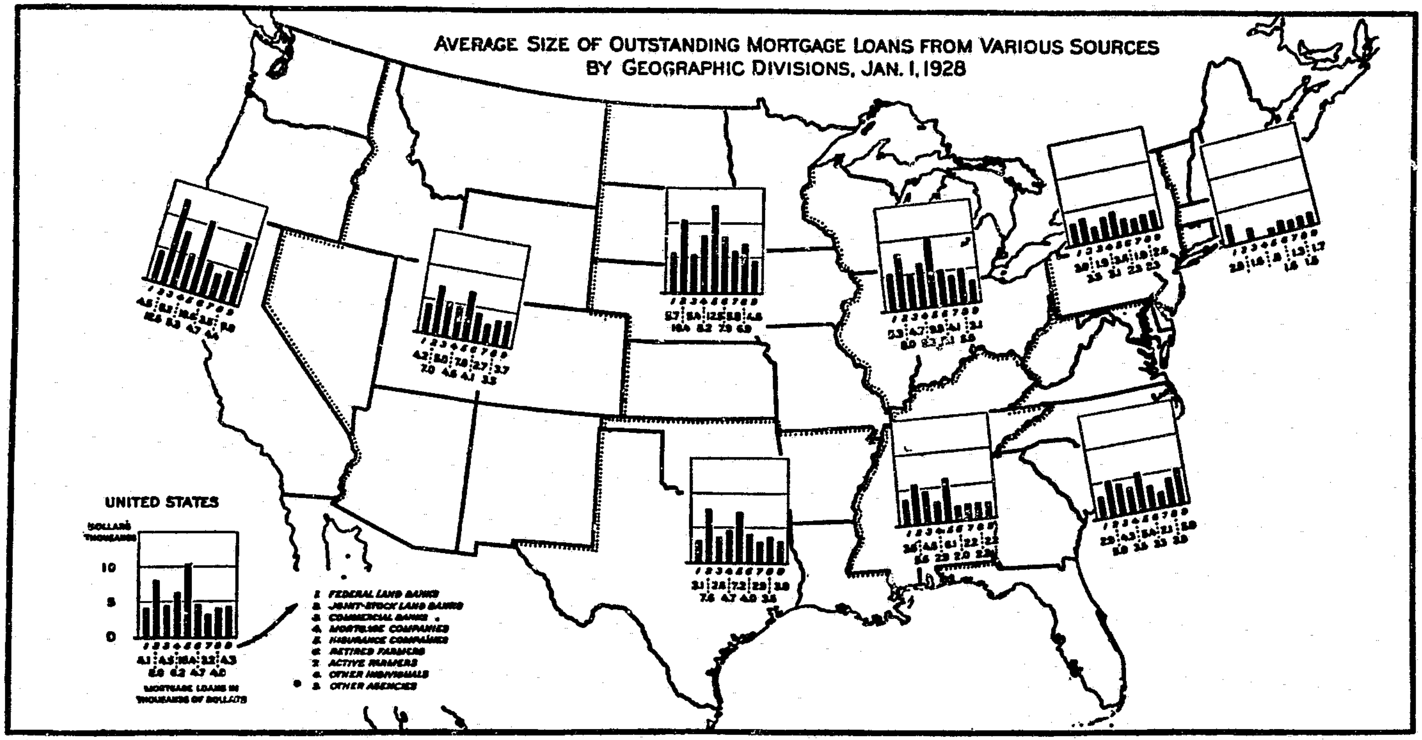

FIGURE 7.—A comparison of average size of loans held by lending agencies shows the insurance companies and joint-stock land banks to have much larger loans than others, though loans from banks are nearly as large in the Pacific division. Loans from all agencies average large in the North Central divisions and small in the North Atlantic

TABLE 16.—*Distribution of farm-mortgage holdings of principal lending agencies by tenure of land mortgaged, in geographic divisions, 1928*

Geographic division and tenure	Total: Debt	Total: Per cent of debt on farms of each tenure	Holdings of principal agencies: Federal land banks	Joint stock land banks	Commercial banks	Mortgage companies	Insurance companies	Retired farmers	Active farmers	Other individuals	Other agencies
	1,000 dollars	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	122,494	100.0	100.0	------	100.0	------	100.0	100.0	100.0	100.0	100.0
Owners	112,315	91.7	98.1	------	92.4	------	100.0	95.9	78.2	92.3	81.6
Tenants and managers	10,179	8.3	1.9	------	7.6	------	------	4.1	21.8	7.7	18.4
Middle Atlantic	376,614	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	291,570	77.4	76.3	60.5	75.5	46.1	33.7	82.9	93.2	81.3	48.8
Tenants and managers	85,044	22.6	23.7	39.5	24.5	53.9	66.3	17.1	6.8	18.7	51.2
East North Central	1,950,126	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	1,220,276	62.6	60.6	56.0	73.7	49.5	44.5	77.4	66.7	74.9	66.7
Tenants and managers	729,850	37.4	39.4	44.0	26.3	50.5	55.5	22.6	33.3	25.1	33.3
West North Central	4,056,187	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	2,178,998	53.7	75.6	64.6	53.3	46.7	43.0	64.0	51.7	56.7	55.4
Tenants and managers	1,877,189	46.3	24.4	35.4	46.7	53.3	57.0	36.0	48.3	43.3	44.6
South Atlantic	491,896	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	280,163	57.0	66.3	37.7	70.6	23.9	33.4	41.1	30.6	61.6	58.6
Tenants and managers	211,733	43.0	33.7	62.3	29.4	76.1	66.6	58.9	39.4	38.4	41.4
East South Central	381,497	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	239,725	62.8	63.4	32.4	80.7	50.6	55.2	79.2	95.1	54.1	60.1
Tenants and managers	141,772	37.2	36.6	67.6	19.3	49.4	44.8	20.8	4.0	45.9	39.9
West South Central	901,252	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	453,965	50.4	63.6	48.8	56.3	35.5	54.7	58.4	51.6	43.9	50.2
Tenants and managers	447,287	49.6	36.4	51.2	43.7	64.5	45.3	41.6	48.4	56.1	49.8
Mountain	496,551	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	294,116	59.2	71.7	52.0	65.1	40.3	42.2	49.9	63.2	62.8	51.7
Tenants and managers	202,435	40.8	28.3	48.0	34.9	59.7	57.8	50.1	36.8	37.2	48.3
Pacific	691,909	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	488,889	70.7	83.5	53.1	66.5	74.3	51.5	85.9	88.6	70.7	74.4
Tenants and managers	203,020	29.3	16.5	46.9	33.5	25.7	48.5	14.1	11.4	29.3	25.6
United States	9,468,526	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Owners	5,560,017	58.7	70.2	56.2	67.1	45.1	44.7	69.2	65.8	64.4	59.9
Tenants	3,644,009	38.5	28.0	40.2	29.6	52.5	53.0	28.9	32.8	31.9	35.2
Managers	264,500	2.8	1.8	3.6	3.3	2.4	2.3	1.9	1.4	3.7	4.9

This varying distribution of mortgage holdings by tenure has its principal significance in its relation to loaning policies of the different agencies and the differences as a loan market which the respective tenures offer. In general, the insurance companies, mortgage companies, and the joint-stock land banks have made loans of larger amounts, whereby in a single transaction a considerable sum can be invested with practically no extra cost or inconvenience. This partly accounts for the dominance of loans from these agencies on the larger properties represented by manager farms in all divisions and by tenant-operated farms in all divisions except those in the South. Even in the Southern States the relatively small acreages operated by individual tenants often are parts of larger tracts which are owned by one individual and which may provide the security base for large and more economical loans. (See tabulation on p. 100.)

The case of the Federal land banks calls for particular consideration in view of the requirement of the Federal farm loan act that "no such loan shall be made to any person who is not at the time, or shortly to become, engaged in the cultivation of the farm mortgaged" (*24, sec. 12*).[8] Despite the smaller size of loans which this provision makes necessary for the Federal banks, the loans on owner farms equal only 70 per cent of the total.

There remains 28 per cent of the loans of Federal land banks secured by lands operated by tenants, as classified by the census. But the great part of this sum is probably secured by land that was operated by owners when the loans were made but has since become tenant-operated land. The tenure classification of farms as used here was that existing January 1, 1925. Inasmuch as only those farms which had changed neither ownership nor tenure from 1925 to 1928 were used in this analysis, it appears that within the space of eight years (1917 to 1925) 28 per cent of the funds loaned by this agency to owner operators became secured by tenant-operated lands, and about 2 per cent by manager farms. This raises the question as to the value of personal and tenure requirements as a provision of long-term loans. The continued change of ownership and tenure has an important cumulative effect over a period of years.

PERCENTAGE OF FARMS MORTGAGED

The volume of fixed debt on farms at any given time may be said to be the result of the two ratios—percentage of farms mortgaged, and the proportion of the farm value covered by the debt. Of these two factors, the percentage of farms mortgaged has been much the more stable. It has shown a uniform rate of increase over a long period. The owner-operated farms reported as mortgaged in the country as a whole have ranged from 27.8 per cent in 1890 to 37.2 per cent in 1920. After a slight decline reported by the census of 1925 (*20*), farms reporting in 1928 indicated a continuation of the rising trend which had been in progress since 1890. (Fig. 8.) This slow but rather constant increase in the number of mortgaged farms amounting to 10 per cent of all owner farms over a span of 38 years, including the period of active land movement between 1910 and 1920,

[8] This provision of the act is supplemented by the following ruling: "An actual farmer is one who conducts the farm and directs its entire operation, cultivating it with his own hands or by means of hired labor. An owner must be responsible in every way, financially and otherwise, for the cultivation of the land, to borrow from a Federal land bank under the Act" (*24, sec. 45*).

suggests that the number of farms under mortgage is not likely to undergo any considerable change within a short period.

The relatively small proportion of 27.8 per cent of owner farms reporting debt in 1890 reflected in part the ownership of farms that had been acquired by homestead rather than by purchase. The low percentage of mortgage also reflected a prevailing low price of farm land and the consequent small amount of capital required for land purchase. It is probable, however, that even the percentage then reported was a material increase over the number of farms with mortgage in the preceding years, inasmuch as that period had witnessed a great influx of funds loaned on mortgage of mid-western agricultural lands. During the two decades following 1890 the percentage of farms mortgaged rose to 30 in 1900 and 33.2 in 1910, both figures showing some relationship to the rising prices of the period. The greater sums involved in the purchase of farm lands

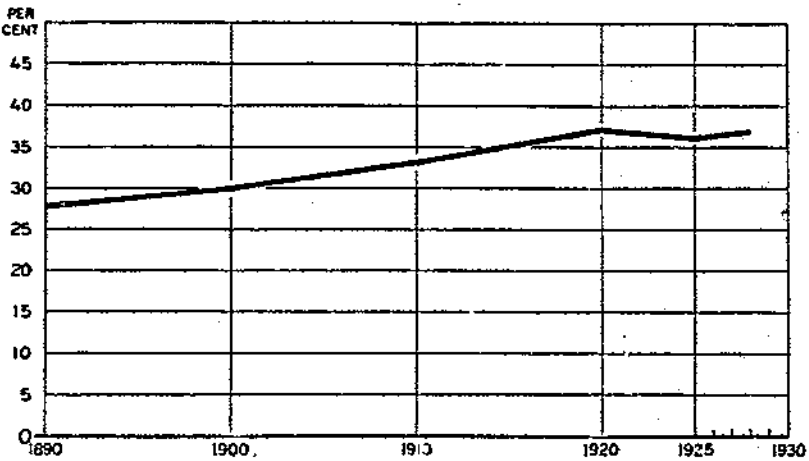

FIGURE 8.—PERCENTAGE OF OWNER FARMS MORTGAGED

The percentage of owner-operated farms with mortgage debt has followed a steady upward trend since 1890. In 1890 the percentage of farms mortgaged was 27.8; in 1920 the corresponding figure was 37.2. Recent data indicate the continuation of the rise at slightly more than the long-term rate of about 0.25 per cent a year.

resulted in a growing recourse to mortgage credit as a means of settlement.

During the years 1910 to 1920, when land prices were rising rapidly and many sales of land occurred, the percentage of farms mortgaged increased from 33.2 per cent to 37.2 per cent, approximately at the same rate as in each of the two previous decades, although the total amount of mortgage debt more than doubled. Again, during the five years, 1920 to 1925, a period of depression in agriculture when the debt increased nearly one-fifth over 1920, the percentage of mortgaged farms remained almost constant, the census of 1925 showing 36.1 per cent of owner farms encumbered.[9] This slight decline reflects in part the cancellation of many mortgages in western areas caused by reversion of farms to former owners.

[9] The lower percentage for 1925 may have been due in part to the form in which this question was asked by the 1925 census schedules. Whereas the 1920 census carried one inquiry as to the existence of debt and another asking the amount of debt, the 1925 census asked only the amount. Enumerators sometimes are able to obtain information as to the first but not the second item. In 1920 this class of reports constituted 0.61 per cent of all farms. The 1925 census did not give the number not reporting on debt.

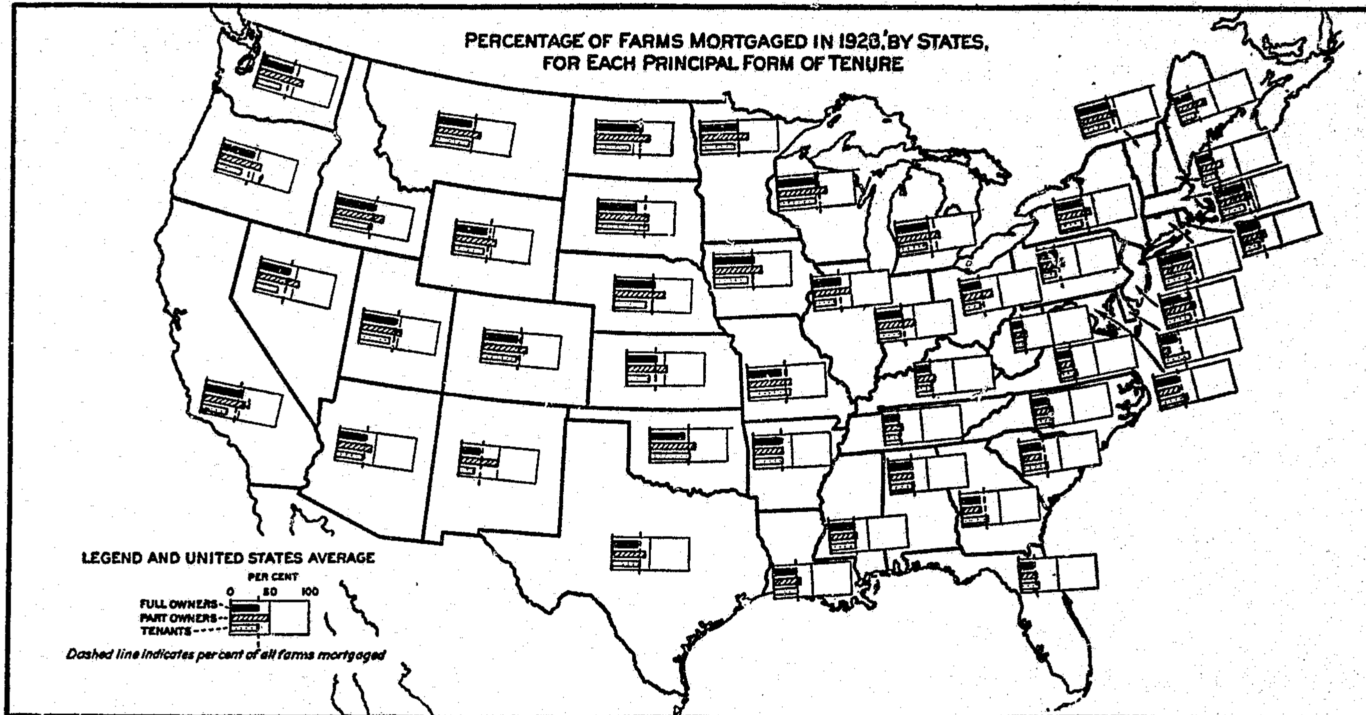

FIGURE 9.—The percentage of farms mortgaged is highest in the North Central States and lowest in the Southeastern. For the country as a whole and in most of the States, owner-operated farms are mortgaged in more cases than are tenant-operated farms, while part-owner farms in 1925 reported indebtedness on the land in 42 per cent more cases than for full-owner operated farms. In a number of Southern States tenant-operated farms are more frequently under mortgage than are farms operated by their owners

During the period 1925 to 1928 the percentage of all farms having mortgage, inclusive of all tenures, increased from 34.8 to 36. (Fig. 9 and Table 17.) Increases occurred for all forms of tenure and for all geographic divisions save the Mountain division and New England. Although most of the divisions had individual States in which declines were indicated, the dominant tendency was toward an increase in the use of farms as security for loans.

TABLE 17.—*Frequency of mortgage debt on all farms in the United States, and on farms operated by full owners, part owners, and tenants, by States and geographic divisions, January 1, 1925, and 1928*

State and geographic division	All farms [1]		Full owner-operated farms		Part owner-operated farms		Tenant-operated farms	
	1925	1928	1925 [2]	1928	1925 [2]	1928	1925	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Maine	24.6	23.9	24.6	23.8	39.9	38.6	20.2	20.4
New Hampshire	23.3	21.8	23.5	21.9	33.3	31.0	19.3	19.5
Vermont	42.7	43.0	43.4	43.8	49.8	50.2	35.7	36.0
Massachusetts	38.8	38.4	39.4	39.0	46.1	45.6	32.4	32.7
Rhode Island	27.6	27.8	28.7	28.9	33.5	33.8	23.6	23.8
Connecticut	42.2	42.6	42.9	43.3	47.9	48.3	35.3	35.6
New England	33.2	32.8	33.5	33.6	44.5	44.3	27.4	27.6
New York	37.5	37.2	38.2	37.6	45.7	45.1	30.5	31.0
New Jersey	39.8	38.8	41.1	39.6	44.5	43.1	32.8	33.2
Pennsylvania	22.8	24.2	23.5	25.1	29.3	31.4	18.8	19.1
Middle Atlantic	30.7	31.1	31.4	31.8	40.3	40.5	25.1	25.5
Ohio	24.8	26.4	25.2	26.4	37.3	39.6	19.8	22.7
Indiana	34.6	35.4	33.9	34.8	48.7	50.6	30.1	30.3
Illinois	34.9	35.3	32.6	36.4	44.0	49.7	33.8	29.1
Michigan	43.3	43.5	42.4	43.0	53.9	55.3	40.2	37.7
Wisconsin	53.8	54.3	55.3	54.5	63.4	63.1	41.6	49.0
East North Central	37.5	38.3	38.2	39.2	47.8	50.1	31.4	34.0
Minnesota	47.6	48.5	46.2	47.4	60.2	61.6	44.8	44.6
Iowa	50.1	50.5	53.7	53.1	63.3	62.4	43.1	44.7
Missouri	46.3	48.7	42.0	43.8	53.6	55.7	50.6	54.3
North Dakota	57.8	58.8	59.2	60.7	69.1	70.7	46.4	46.2
South Dakota	63.1	61.4	54.6	50.5	71.5	66.0	63.9	66.6
Nebraska	48.1	50.3	52.0	52.2	65.8	65.8	38.3	42.7
Kansas	39.1	37.8	41.0	38.2	56.7	52.6	28.8	30.1
West North Central	48.4	49.2	47.3	47.0	61.9	61.2	43.5	45.6
Delaware	28.3	27.8	27.3	24.2	12.8	11.8	30.7	34.4
Maryland	31.7	32.9	30.0	30.5	28.9	29.8	33.7	37.8
District of Columbia	31.7	32.9	21.6	50.5	42.9	20.8	24.3	27.3
Virginia	19.6	20.1	18.7	18.5	20.8	21.0	21.0	23.7
West Virginia	12.5	15.0	12.0	14.7	14.7	18.4	13.5	15.4
North Carolina	20.1	22.5	18.8	20.8	22.2	25.1	21.1	23.9
South Carolina	28.2	31.0	26.1	27.5	24.5	26.2	29.3	32.9
Georgia	29.6	31.5	27.2	26.2	27.2	26.7	30.6	34.3
Florida	20.4	20.7	19.3	19.2	22.7	23.0	21.7	24.5
South Atlantic	23.4	25.2	20.6	21.4	22.4	23.5	23.2	26.1
Kentucky	19.3	20.5	19.2	20.3	24.0	25.6	18.2	19.6
Tennessee	20.0	21.1	20.1	21.0	24.3	25.6	19.0	20.5
Alabama	28.9	30.5	29.8	30.6	30.2	31.3	28.2	30.3
Mississippi	31.9	33.7	33.0	33.9	34.8	36.0	31.2	33.5
East South Central	25.0	26.4	23.7	24.7	26.6	27.7	22.4	24.1
Arkansas	33.7	36.7	32.5	34.9	35.4	38.0	34.3	37.8
Louisiana	28.2	30.8	27.0	29.3	32.8	35.6	28.5	31.4
Oklahoma	47.9	50.7	45.0	45.3	58.1	58.5	47.5	52.3
Texas	34.2	36.8	32.5	33.8	42.4	44.1	34.3	37.8
West South Central	36.0	38.7	33.9	35.5	45.2	46.7	35.8	39.4

[1] Includes manager-operated farms.
[2] Derived from census reports of 1925 (20).

TABLE 17.—*Frequency of mortgage debt on all farms in the United States, and on farms operated by full owners, part owners, and tenants, by States and geographic divisions, January 1, 1925, and 1928*—Continued

State and geographic division	All farms		Full owner-operated farms		Part owner-operated farms		Tenant-operated farms	
	1925	1928	1925	1928	1925	1928	1925	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Montana	53.0	49.0	49.3	44.8	64.9	58.9	48.0	46.5
Idaho	53.5	52.2	52.1	50.6	67.0	65.0	50.7	49.2
Wyoming	47.7	45.6	43.8	41.6	57.9	55.0	42.6	41.3
Colorado	51.4	48.4	49.3	45.7	64.1	59.3	48.0	46.5
New Mexico	25.6	27.6	22.5	24.6	45.1	49.3	21.9	21.2
Arizona	39.1	36.1	38.0	34.2	51.0	45.9	37.0	35.8
Utah	43.9	45.0	42.6	43.9	51.8	53.3	41.5	40.2
Nevada	33.6	36.3	32.9	35.9	45.3	49.4	32.0	31.0
Mountain	46.6	45.0	43.4	41.8	60.3	57.3	42.2	41.0
Washington	43.3	42.8	43.8	42.7	60.3	58.9	32.1	33.7
Oregon	43.4	44.2	44.1	44.5	56.0	56.7	32.3	34.0
California	44.0	46.5	45.6	47.8	53.0	55.5	33.6	35.3
Pacific	43.7	45.0	44.9	45.8	56.2	56.8	32.9	34.6
United States	34.8	36.0	34.0	34.7	48.1	48.5	32.5	34.8

DEBT DIFFERENCES BETWEEN FORMS OF TENURE

The percentage of owner-operated farms mortgaged changed only slightly during the years 1925 to 1928, but frequency of mortgage on tenant and manager operated farms showed a pronounced rise from 32.5 to 34.8 per cent—approximately equal to that on full-owner farms. In most of the principal divisions the percentage of mortgaged tenant farms remained below that for owner farms. This was especially marked in the North Atlantic and Pacific divisions. The South Atlantic and West South Central divisions reported larger percentages of the tenant farms mortgaged than of full-owner farms and the East South Central and Mountain divisions had nearly equal proportions.

The greater average size and value of tenant and manager operated farms have made them a more ready security basis for commanding credit on favorable terms. Full-owner farms averaged 127 acres in 1925, tenant farms comprised 108 acres, and manager farms 1,059 acres. (Table 46.) Manager farms reported debt for nearly one-half of all such farms reported. Although this class of properties often have some land-secured debt, especially if operated for commercial purposes rather than as a country residence only, the amount of the mortgage usually constitutes a lower percentage of the value of the farm.

A classification of tenant and manager operated farms on the basis of type of ownership indicates that farms owned by active farmers operating elsewhere are much more often encumbered than are tenant and manager farms owned by nonfarming classes. Of 5,719 tenant and manager farms that reported in 1928 on the existence of mortgage debt, 45.9 per cent of those owned by active farmers were mortgaged as compared with 35.9 per cent of such farms owned by nonfarmers. (Table 18.) In the North Central States these proportions averaged 58 and 40 per cent, respectively. The less frequent debt on land owned by nonfarmers is doubtless due in part to the fact that owners not operating their own farms more often have incomes from sources other than agriculture, hence are less often in need of borrowing on the security of farm lands.

TABLE 18.—*Percentage of tenant-operated farms*[1] *reporting mortgage debt, by type of ownership*

Geographic division	Tenant farms reporting		Tenant farms reporting mortgage in 1928	
	Owned by active farmers	Owned by non-farmers	Owned by active farmers	Owned by non-farmers
	Number	*Number*	*Per cent*	*Per cent*
New England	25	82	16.0	28.2
Middle Atlantic	87	295	36.8	23.7
East North Central	159	574	60.4	30.6
West North Central	334	1,280	56.3	43.7
South Atlantic	339	469	33.3	22.4
East South Central	232	206	34.9	19.9
West South Central	255	413	51.4	45.8
Mountain	123	316	54.5	44.9
Pacific	118	352	46.6	30.1
United States	1,672	4,047	45.9	35.9

[1] Includes manager farms.

Part-owner farms, which constitute nearly one-third of all farm land operated by farm owners, carry mortgages on the owned land in a much higher percentage of cases than do farms operated by either full owners or tenants Part owners are farmers who operate some land which they own, together with additional land which they rent. Over 48 per cent of all farms of this class reported mortgages in 1925 as compared with 34 per cent of full-owner farms. (Table 17.) The more frequent use of mortgage credit by this class of farms probably is explained by greater need for capital occasioned by the operation of the additional land that the part-owner rents from others. This acreage of rented land in part-owner farms is approximately equal to the area owned. Provision for the stock, equipment, and current expense necessary for the entire farm thus induces borrowing on the owned acreage in a higher percentage of instances than on fully owned farms.

CHANGE IN DEBT FREQUENCY ON FARMS HAVING THE SAME OWNERSHIP

Most of the increase in the number of farms mortgaged between 1925 and 1928 occurred on farms having the same ownership throughout the period. Only a slight net increase was reported for those farms that had been transferred to new owners. New mortgages were reported as most frequent in the West South Central division, where 2 per cent of all the farms had them and were least important in New England, where farms with new mortgages were less than 1 per cent of all farms. In all other divisions the rate of incurring debt ranged from about 1 to 1.5 per cent or an average of slightly less than 0.5 per cent per year for the 3-year period. (Table 19.)

TABLE 19.—*Annual rates at which nonmortgaged farms became mortgaged, and mortgaged farms were cleared of debt, 1925–1928*

Geographic division	Change, of all farms: Nonmortgaged farms incurring mortgage	Change, of all farms: Mortgaged farms cleared of debt	Change, of all farms: Increase or decrease in farms mortgaged	Change, of all farms mortgaged: Nonmortgaged farms incurring mortgage	Change, of all farms mortgaged: Mortgaged farms cleared of debt	Change, of all farms mortgaged: Increase or decrease in farms mortgaged
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	0.86	1.00	−.14	2.62	3.04	−0.42
Middle Atlantic	1.15	.97	.18	3.70	3.12	.58
East North Central	1.32	.89	.43	3.45	2.32	1.12
West North Central	1.22	.95	.27	2.48	1.93	.55
South Atlantic	1.54	1.12	.42	5.92	4.30	1.62
East South Central	1.38	.98	.40	5.23	3.71	1.52
West South Central	2.04	1.14	.90	5.27	2.94	2.33
Mountain	1.29	1.38	−.09	2.86	3.06	−.20
Pacific	1.59	1.23	.36	3.53	2.73	.80
United States	1.45	1.03	.42	4.04	2.86	1.18

When expressed as a percentage of farms mortgaged, the number of new mortgages incurred on farms not previously encumbered amounted to more than 4 per cent of the total farms bearing mortgage. Expressed in these terms, the variation among the geographic divisions was greater; the new farms mortgaged ranged from about 2.5 per cent of all mortgaged farms in the West North Central to nearly 6 per cent in the South Atlantic division.

FREQUENCY OF DEBT ON TRANSFERRED FARMS

Reports on farms transferred to other owners between 1925 and 1928 indicate that on the average such farms had mortgages in about three-fourths of all cases, or almost exactly twice the frequency of debt on all farms. The number of farms reported as being mortgaged before transfer was nearly as large as the number with debt after transfer, that is, 72.4 per cent as compared with 75.1 per cent. (Table 20.) Pressure of debt doubtless has been an important influence in bringing about transfers of indebted farms, and financing of transfers frequently includes use of a mortgage on land acquired.

TABLE 20.—*Annual rates of increase or decrease in number of transferred farms which were mortgaged,*[1] *1925 and 1928*

Geographic division	Percentage of transferred farms 1925–1928 having mortgage debt: 1925 before transfer	Percentage of transferred farms 1925–1928 having mortgage debt: 1928 after transfer	Percentage of transferred farms 1925–1928 having mortgage debt: Increase or decrease from 1925 to 1928	Farms reported to have changed hands: Total	Farms reported to have changed hands: 3-year average increase or decrease in transferred farms
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	67.8	67.8	0	7.8	0
Middle Atlantic	64.9	65.9	1.0	8.9	.02
East North Central	73.8	78.4	4.6	9.1	.14
West North Central	84.3	83.0	−1.3	9.8	−.04
South Atlantic	64.8	69.9	5.1	14.0	.24
East South Central	65.7	68.2	2.5	11.8	.10
West South Central	76.7	80.1	3.4	12.7	.14
Mountain	76.7	76.4	−.3	16.3	−.02
Pacific	78.8	79.7	.9	9.2	.03
United States	72.4	75.1	2.7	11.1	.10

[1] United States figures weighted by number of farms.

The uniformity among these reports of debt frequency among farms changing hands is striking evidence of the important part that mortgage credit has in the purchase and sale of farm real estate. Among the geographic divisions, this percentage of farms mortgaged after transfer varied from 66 to 83 per cent, tending toward larger proportions in the areas of high land value. High as these figures are, they still remain less than the frequency of morgtage on farms transferred during the land boom. Of 927 land sales in Iowa in 1919, 90 per cent involved mortgages (*10*).

METHOD USED IN COMPUTING PERCENTAGE OF FARMS MORTGAGED

The frequency of mortgage debt on farms operated by full owners and part owners in 1925 in each State and geographic division was found directly from the 1925 census by subtracting the mortgaged part-owner farms from total owner-operated farms mortgaged and computing separate percentages for the two classes. The sample reports for other tenures in 1925 and for all tenures in 1928 were aligned with the 1925 census reports by use of a correction factor computed as follows: The percentage of all full-owner farms reporting mortgage for 1925 on the returned schedules as shown by the county groupings used for each State was divided by the percentage of all full-owner farms reported as mortgaged in the 1925 census report for the same State.

In the absence of data for Connecticut, a weighted group frequency was obtained for the other five New England States. A correction factor obtained by use of 1925 census data for the five States, was applied to the 1928 sample data weighted for the same five States to get a corrected figure for the five States for which sample data were available. The percentage figure of New England for 1928 was then found by use of the following equation:

$$\frac{a}{a^1}=\frac{b}{x},$$

in which

a = percentage of full-owner farms mortgaged in five States, census, 1925.

a^1 = the percentage of full-owner farms mortgaged in six New England States, census, 1925.

b = percentage of full-owner farms mortgaged in five States, sample, 1928.

x = computed percentage of farms mortgaged in New England, 1928.

Frequency figures for owner farms in Vermont, Rhode Island, and Connecticut in 1928 were found by the equation

$$\frac{C}{c}=\frac{D}{x},$$

in which

C = percentage of full-owner farms mortgaged in New England, census, 1925.

c = percentage of full-owner farms mortgaged in the State, census, 1925.

D = computed percentage of full-owner farms mortgaged in New England in 1928.

x = computed percentage of full-owner farms mortgaged in the State in 1928.

The percentage of tenant farms mortgaged in each State of the East and West North Central divisions was computed for 1925 and 1928 by dividing the average frequency for each State as reported on the schedules for 1925 and 1928 by the correction factor referred to above.

Frequency ratios for all owners for 1928 in all States save Vermont, Rhode Island, Connecticut, Montana, and Nevada were found by applying the correction factor, found above, to the State ratios as shown by the schedules for 1928. In Montana and Nevada the frequency of mortgage on full-owner farms was computed by assuming that the 1928 ratio for these States had the same relation to their 1925 ratios as did the geographic-division ratios for the corresponding years. The geographic-division ratio was found by dividing the geographic sample by the correction factor for the same area. Full owners and part owners were treated by the same method.

For tenants other than those in the North Central States, the frequency ratio as shown by the used groupings of schedules in the sample for each State was divided by the State correction factor, and the result multiplied by the number of farms in that State. The sum of the products was divided by the total number of farms of that tenure in the geographic division, thus obtaining a weighted frequency ratio for the geographic division. By using this ratio in the second term of a proportion, the frequency of mortgage tenant and manager operated farms for each State was found by the following equation:

$$\frac{F}{f}=\frac{T}{X}$$

in which

F = full-owner geographic frequency of mortgage, census 1925.
f = full-owner State frequency of mortgage, census 1925.
T = tenant (manager) geographic frequency of mortgage 1925 (1928) (computed).
X = tenant (manager) frequency of mortgage for State 1925 (1928).

Frequency ratios for manager farms were grouped into five main groups as described elsewhere. (See methods of estimate, p. 12.) The 1925 sample for the geographic division treated with the correction factor for the same division was weighted with the number of manager farms in the division, and a corrected frequency was found for each of the five main groups. This corrected and combined frequency was used for each geographic division included in the group in finding the percentage of manager farms mortgaged in each State.

The equation used is as follows:

$$\frac{F}{f}=\frac{M}{X}$$

in which

F = 1925 full-owner census group frequency.
f = 1925 full-owner census State frequency.
M = 1925 group manager frequency.
X = 1925 State manager frequency.

The frequencies for 1928 were computed in the same way.

Frequency of debt for 1928 was adjusted for data on transferred farms as follows: The number of farms transferred in each geographic division from 1925 to 1928, estimated as a percentage of all farms, was multiplied first by the percentages estimated as mortgaged in 1925 and in 1928. The difference between these two products was used as representing the increase or decrease in percentage of all transferred farms mortgaged in the geographic division concerned. This increase or decrease, a small fractional difference in most cases, was added to, or subtracted from, the frequency of each State computed for 1928 as described above, to obtain a final frequency of farms mortgaged as of January 1, 1928.

RATIO OF DEBT TO VALUE OF FARMS

The percentage that fixed debt bears to the value of farms is both the most significant feature of mortgage debt and the most variable. Tending to rise when land values fall and to fall when land values rise, this ratio of debt to value of farms has followed an irregular but generally upward course, both for individual farms and for agriculture as a whole. During the period 1920 to 1928 both factors of land values and farm-mortgage debt were tending to increase the debt to value ratio and consequently tending to reduce the owner's equity. Of these two factors the change in land values was the more important. The index of land values, which in 1920 had risen to 170 from a 1912–1914 base of 100, by 1925 had declined to 127, and in 1928 stood at 117. During the same period the total mortgage debt had increased 20 per cent over that of 1920.

RATIO OF MORTGAGE INDEBTEDNESS TO VALUE OF ALL FARMS 1910 TO 1928

Just as the ratio of debt to value of a given farm measures the encumbrance and equity of a particular property so the relation of total debt and total value of all the farms may be taken to indicate the burden of debt upon the agriculture of the State or area as a whole. The ratio of debt to value of all agricultural land and buildings for the country rose from 9.5 in 1910 to 11.8 in 1920, to 18.9 in 1925, to 21 in 1928. (Table 21.) The slight increase in the ratio of 2.3 between 1910 and 1920 despite an increase in the debt of 136 per cent was mainly due to the nearly equal rise in land values. A reverse in the trend of land values in 1920 amounting to a 30 per cent decrease in the value of land, by 1928,[10] and a simultaneous increase of 20 per cent in debt nearly doubled the debt ratio by 1928. Further evidence that the rise in the ratio of debt to value during that period was due mostly to changes in the value of land is seen in the fact that the most marked changes appeared where land values underwent the greatest downward revision. During the three years prior to 1928 increases occurred in seven of the nine geographic divisions, but New England and the Middle Atlantic States showed slight declines.

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[10] Computed from Department Circular 60 (*20*, p. *9*).

TABLE 21.—*Ratio of mortgage debt to value of all farms in the United States, by States and geographic divisions, January 1, 1910, 1920, 1925, and 1928*

State and geographic division	Ratio of debt to value of all farms			
	1910	1920	1925	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*
Maine	8.3	10.2	13.2	12.8
New Hampshire	8.8	9.6	8.9	8.9
Vermont	14.1	18.2	20.4	21.0
Massachusetts	11.8	13.8	12.6	12.4
Rhode Island	7.9	8.9	8.7	8.4
Connecticut	11.6	13.6	13.5	13.4
New England	10.6	13.2	13.7	13.5
New York	13.0	15.7	16.6	16.8
New Jersey	14.6	15.8	15.9	15.0
Pennsylvania	9.2	10.0	10.3	10.2
Middle Atlantic	11.5	13.2	13.9	13.9
Ohio	6.8	7.9	11.0	13.1
Indiana	7.0	7.8	15.6	19.9
Illinois	7.6	8.4	15.5	19.5
Michigan	12.2	15.0	17.8	19.5
Wisconsin	16.1	20.8	28.6	30.2
East North Central	9.0	10.7	16.9	20.4
Minnesota	11.6	13.8	23.1	26.5
Iowa	13.2	14.6	28.7	32.9
Missouri	11.8	12.6	22.4	26.1
North Dakota	12.3	18.0	22.2	24.8
South Dakota	8.8	11.3	25.9	30.9
Nebraska	8.9	11.2	24.5	25.0
Kansas	9.4	10.4	22.0	20.7
West North Central	11.2	13.1	25.0	27.5
Delaware	12.2	13.9	14.6	16.0
Maryland	12.2	12.7	14.8	17.0
District of Columbia	3.5	6.1	6.3	7.8
Virginia	4.5	6.0	9.0	11.0
West Virginia	3.1	3.9	5.2	6.2
North Carolina	4.2	5.3	8.5	10.5
South Carolina	6.2	6.3	15.0	21.2
Georgia	6.0	7.4	18.6	23.9
Florida	3.7	7.0	5.3	5.8
South Atlantic	5.7	6.7	10.7	13.2
Kentucky	6.4	8.0	11.2	13.2
Tennessee	5.6	8.1	11.3	13.7
Alabama	8.6	10.2	16.0	17.8
Mississippi	9.4	9.8	23.6	26.9
East South Central	7.1	8.7	14.4	16.6
Arkansas	7.2	10.2	18.1	20.8
Louisiana	8.0	8.7	17.8	20.3
Oklahoma	10.5	13.8	20.9	22.5
Texas	9.3	10.7	15.9	17.5
West South Central	9.3	11.2	17.3	19.1
Montana	7.8	20.0	25.6	24.3
Idaho	9.9	19.8	28.8	28.4
Wyoming	8.0	14.0	25.1	24.9
Colorado	10.2	16.0	25.9	27.4
New Mexico	4.3	10.7	16.5	15.4
Arizona	10.3	18.4	20.5	20.0
Utah	6.1	14.6	20.4	19.4
Nevada	8.4	17.9	22.4	21.2
Mountain	8.6	17.2	24.6	24.2
Washington	7.9	12.7	16.7	17.0
Oregon	7.7	13.5	17.1	18.7
California	8.4	13.8	14.0	14.9
Pacific	8.2	13.6	14.9	15.7
United States	9.5	11.8	18.9	21.0

In the New England and Middle Atlantic States the ratio of debt to value of all land has remained nearly constant having been 10.6 in New England in 1910 and slightly more than 13 per cent in 1920, 1925, and 1928. During the same period the corresponding ratio for the Middle Atlantic States rose from 11.5 to 13.9. Land values in these divisions rose less than those elsewhere in the years prior to 1920, hence the subsequent decline has been more moderate and has been accompanied by some reduction in mortgage debt.

The most significant changes in the ratio of debt to value of all land appear in the North Central States, where the ratio of the eastern division rose from 9 in 1910 to 10.7 in 1920, to 16.9 in 1925, and to 20.4 in 1928, more than doubling the ratios in 18 years. The western division increased from 11.2 in 1910 to 27.5 in 1928. The South Atlantic States increased their ratio from 5.7 in 1910 to 13.2 in 1928, and the ratio for the East South Central States rose from 7.1 in 1910 to 16.6 in 1928. In all these divisions the rising debt ratios since 1920 were the combined result of severe declines in land values and substantial increases in the mortgage debt. In general these divisions comprise much of the territory in which the Federal land banks and joint-stock land banks have expanded their loan operations.

Three western divisions showed much less change. In the West South Central division the ratio of debt to value of all land rose from 9.3 in 1910, to 11.2 in 1920, to 17.3 in 1925, and to 19.1 in 1928. Here the rise since 1920 was less marked, despite steady increases in debt, on account of the well-sustained value of land in Texas and in Oklahoma. The sharp rise in the debt ratio in the Mountain States from 8.6 to 17.2 during the development of that region between 1910 and 1920 was followed by a moderate rise to 24.6 in 1925, and a slight decline to 24.2 in 1928, largely the result of substantial reduction in indebtedness incident to foreclosure and reversion of title. The debt ratio for the Pacific Coast States rose from 8.2 to 13.6 in the 10 years before 1920. Thereafter it displayed an even rise to 14.9 in 1925 to 15.7 in 1928, the increase in indebtedness having been nearly offset by the well-sustained land values in those States.

RATIO OF DEBT TO VALUE OF MORTGAGED FARMS

A greater variation from one date to another appears in the ratios of debt to value of the farms that are mortgaged than for farm land as a whole.

The ratio of debt to value of mortgaged full-owner farms which in 1890 was 35.5 became 27.3 in 1910, and 29.1 at the peak of land values in 1920. The marked decline in land values after 1920 accompanied by the increase in mortgage debt had the net result of raising the debt ratio of mortgaged farms to 41.9 in 1925, with a further rise to 46 in 1928. (Fig. 10 and Table 22.)

TABLE 22.—*Ratio of debt to value of full-owner operated farms, 1925* [1] *and 1928*

Geographic division	Ratio of debt to value		Geographic division	Ratio of debt to value	
	1925	1928		1925	1928
	Per cent	*Per cent*		*Per cent*	*Per cent*
New England	40.1	40.7	West South Central	37.4	41.3
Middle Atlantic	41.1	41.3	Mountain	43.2	42.1
East North Central	44.2	52.6	Pacific	34.9	35.2
West North Central	44.9	49.3			
South Atlantic	37.1	44.0	United States	41.9	46.0
East South Central	41.9	48.6			

[1] Census.

The rise of the average of debt ratios to a point approaching 50 per cent of the value of the land had grave significance for many farmers who had loans to renew. A general policy of limiting farm mortgages to amounts representing about one-half of the value of the farm had long been in effect among important lenders on farm real estate. This situation resulted in wide differences in the opportunity for refinancing.

It would appear that the falling land values and the rising debt of recent years did not affect the ratio of debt to value of all tenures in equal degree, although the upward trend was common to all. Full-owner farms, which had a higher debt ratio in 1925 than had tenant farms, maintained a higher ratio in 1928. When farms under mortgage in both 1925 and 1928 are considered separately, it is found that both the tenant-operated and the manager-operated farms in this group increased their debt burden more rapidly than did the farms operated by their owners. For example, the debt on the same owner farms decreased by 1.5 per cent of their 1925 value. Meanwhile the tenant-operated farms in debt on both dates increased their debt ratios 1.2 per cent of their 1925 value and debt on manager farms

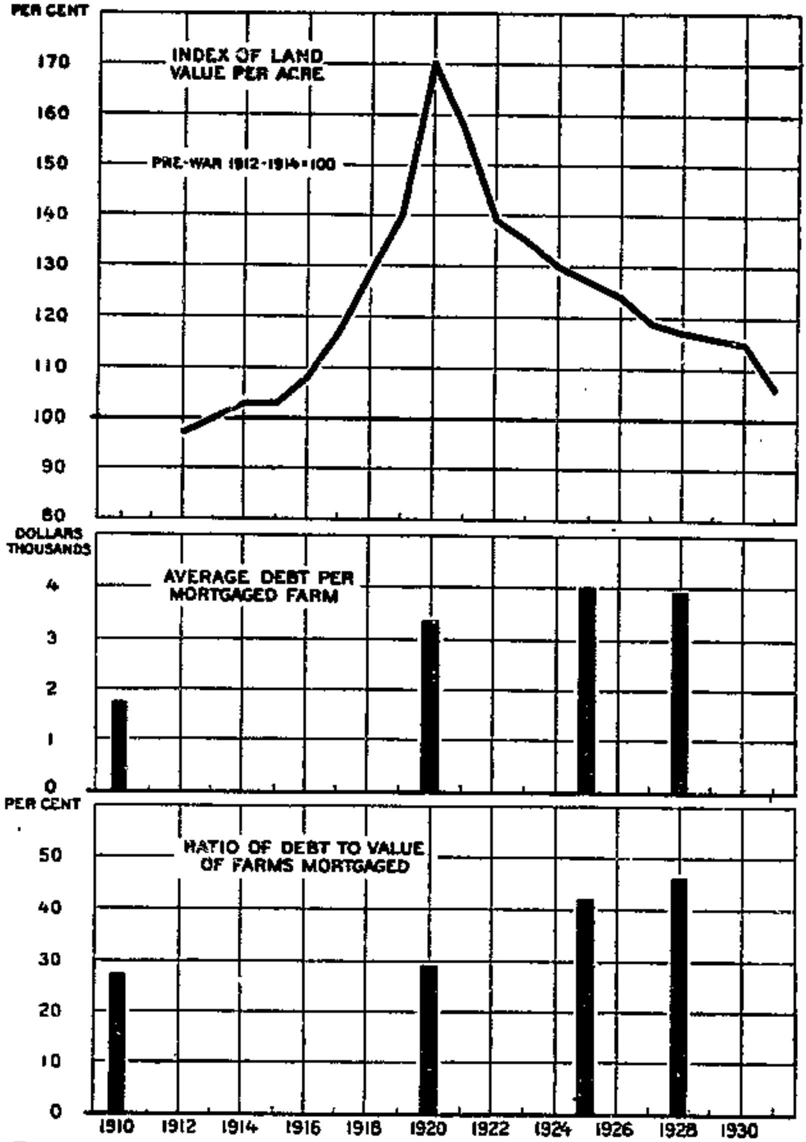

FIGURE 10.—INDEX OF LAND VALUE PER ACRE, AVERAGE DEBT PER MORTGAGED FARM, AND RATIO OF DEBT TO VALUE OF FARMS MORTGAGED

The index of land value per acre, with 1912-1914 as a base of 100, rose to 170 in 1920 and fell to 117 in 1928. The average indebtedness per farm during this period increased so that the ratio of debt to value of full-owner farms mortgaged rose from 27.3 in 1910 to 29.1 in 1920, to 41.9 in 1925, and to 46 in 1928. After 1920 the steady fall in land prices combined with continued increase in indebtedness in most States, resulted in a ratio of debt to value which approached the usual loaning limit of many important lending agencies.

reporting in this class increased 2.3 per cent of value. Of farms reporting debt in 1925 and 1928, full-owner farms had debt ratios averaging 41.6 in 1925, tenant farms had an average ratio of 37.5 per cent, and manager farms had a ratio of 31.4. Thus tenant and manager farms, having had a lower debt in 1925, were able to obtain additional loans with less difficulty.

These comparisons indicate that the increase in the amount of mortgage credit during the period 1925 to 1928 was due more to the number of farms mortgaged than to the increase in debt per farm. Lenders accustomed to regard 50 per cent of value as the loan ratio limit might be expected to give more attention to the size of the owner's equity during a period when the land-value index was declining from 127 to 117. The net result of this situation was therefore a restrictive policy on loans representing high debt ratios.

The ratio of debt to value of tenant-operated farms in 1925 and 1928 appears to have been not greatly different from that on owner farms. In 1925 the debt ratio for tenant farms averaged 38.2 as compared with 41.9 for full owners, or about 10 per cent less. Lower ratios on tenant farms appeared in seven of the nine geographic divisions as well as for the country as a whole, while the South Atlantic and East South Central divisions had debt ratios on tenant farms of 38.4 and 44.2, respectively, the corresponding figures for owner farms being 37.1 and 41.9. (Table 23.)

TABLE 23.—*Ratio of debt to value of mortgaged farms, 1925, by tenure and States*

State and geographic division	Ratio of debt to value on mortgaged farms: Owner-operated farms	Ratio of debt to value on mortgaged farms: Tenant-operated farms
	Per cent	*Per cent*
Maine	41.3	32.3
New Hampshire	39.5	30.9
Vermont	46.4	36.3
Massachusetts	37.2	29.1
Rhode Island	38.0	29.8
Connecticut	37.6	29.4
New England	40.1	31.4
New York	41.6	35.6
New Jersey	38.9	33.3
Pennsylvania	41.1	35.2
Middle Atlantic	41.1	35.2
Ohio	43.8	38.4
Indiana	39.8	38.5
Illinois	40.8	42.0
Michigan	42.5	41.1
Wisconsin	49.0	43.0
East North Central	44.2	37.5
Minnesota	43.6	51.6
Iowa	49.2	45.2
Missouri	44.6	56.4
North Dakota	41.1	46.1
South Dakota	42.7	33.1
Nebraska	42.2	30.8
Kansas	39.0	33.0
West North Central	44.9	43.6
Delaware	43.8	45.3
Maryland	42.4	43.9
District of Columbia	34.7	35.9
Virginia	35.1	36.3
West Virginia	35.9	37.2
North Carolina	36.4	37.7
South Carolina	40.6	42.0
Georgia	41.8	43.3
Florida	25.8	26.7
South Atlantic	37.1	38.4
Kentucky	43.3	45.7
Tennessee	41.0	43.2
Alabama	41.9	44.2
Mississippi	41.2	43.5
East South Central	41.9	44.2
Arkansas	40.1	36.5
Louisiana	42.9	39.0
Oklahoma	39.7	36.1
Texas	35.8	32.1
West South Central	37.4	34.0
Montana	44.7	38.7
Idaho	45.0	39.0
Wyoming	44.2	38.3
Colorado	42.6	36.9
New Mexico	37.1	32.1
Arizona	36.7	31.8
Utah	44.2	38.3
Nevada	45.2	30.1
Mountain	43.2	37.4
Washington	37.2	24.9
Oregon	37.7	25.3
California	33.8	22.7
Pacific	34.9	23.4
United States	41.9	38.2

The debt status of tenant farms owned by active farmers is less favorable than for other tenant farms or for farms operated by their owners. This is indicated by debt frequency and by debt ratios. The Census of 1925 reported full-owner farms mortgaged in 34 per cent of the cases, as compared with 32.5 per cent for all tenant-operated farms when computed on a comparable basis. (Table 17.) Reports in this study showed that tenant farms owned by active farmers were mortgaged in 45.9 per cent of the cases, while other tenant farms had only 35.9 per cent mortgaged. (Table 18.) Full-owner farms reported in the census of 1925 had average debt ratios of 41.9, farmer-owned tenant farms reporting in this study averaged 45.3, and the debt ratio on other tenant farms was 32.9. (Tables 23 and 24.) This may indicate in part a greater disposition of active farmers to go into debt for additional land, and in part lower receipts from rented farms than from owner operated farms.

TABLE 24.—*Ratio of debt to value of tenant-operated farms, by type of ownership, 1925 and 1928*

Geographic division	Owned by active farmers		Owned by nonfarmers	
	1925	1928	1925	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*
New England	43.3	55.7	28.3	31.5
Middle Atlantic	38.3	32.7	35.6	37.0
East North Central	35.3	34.5	36.8	38.1
West North Central	50.6	49.0	41.5	39.7
South Atlantic	37.1	37.4	33.2	37.1
East South Central	43.9	38.7	39.4	38.1
West South Central	35.3	28.0	33.3	35.0
Mountain	32.7	28.9	38.1	35.9
Pacific	55.9	49.2	7.8	22.1
United States	45.3	41.6	32.9	35.2

The generally heavier debt on tenant farms owned by active farmers is evident from 1928 data as well as from 1925 reports. Of a total of more than 5,700 tenant and manager farms reporting in 1928, tenant farms owned by active farmers had mortgages in 1925 in 41.6 per cent of all cases, whereas in 1928, 45.9 per cent were mortgaged. Other tenant farms which reported 35.6 per cent mortgaged in 1925 had about the same per cent, 35.9, in 1928. This greater frequency of debt occurred in all sections but was most strikingly illustrated in the East North Central and West North Central States where farmer-owned tenant farms were mortgaged in 60.4 and 56.3 per cent of all cases reporting, while other tenant farms had a debt frequency of only 36.6 and 43.7 per cent, respectively. (Table 18.)

The net result of this greater frequency and higher ratio of debt to value of farmer-owned land rented to others indicates that of all farms rented to others by the farmer approximately one-quarter of the value is covered by debt, and that other tenant farms carry mortgages equal to only one-sixth of the farm value, that is 23.9 and 16.2 per cent, respectively. It may therefore be concluded also that active farmers owe approximately 75 per cent of all farm-mortgage debt and that other owners owe about 25 per cent of the total.

FREQUENCY DISTRIBUTION OF RATIOS OF DEBT TO VALUE OF MORTGAGED FARMS IN 1925 AND 1928

During the time that the average ratio of debt to value of mortgaged farms was rising above 40 per cent, many mortgages constituted higher proportions of the value of the farms. Large numbers of loans made during the war period or in the years following came to represent high percentages of the existing values of the farms. Many of these were subsequently renewed to include delinquent interest or other debt; in other cases, second mortgages given as security to other lenders contributed to the increasing group of farms with indebtedness equal to the greater part of the value of the farm. (Fig. 11.)

A classification of mortgaged farms according to their ratios of debt to value indicates that a considerable part of all such farms had a high percentage of debt in 1925 and 1928. (Table 25.) Figure 11 illustrates the wide range that such ratios have among the mortgaged farms for each geographic division and in the United States as a whole. A generally larger percentage of farms with high ratios appeared for 1928 than for 1925, mainly because of continued decline in land value in all divisions save New England and increased indebtedness on farms in most of the other divisions. By reason of closer proximity of the reporting date, approximately six months from the time to which the report referred, the report for 1928 was more nearly a fair cross-sectional representation of farm-mortgage-debt ratios than was the distribution shown for 1925.[11]

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[11] The debt on each farm reporting mortgage in 1925 or 1928 was first converted to a percentage of the value of the mortgaged land in the corresponding year. The resulting ratios were then grouped into 21 classes, 20 representing class intervals of 5 per cent and 1 group composed of those farms with indebtedness over 100 per cent of the value of the farm. Separate ratios and distributions were made for each year, 1925 and 1928.

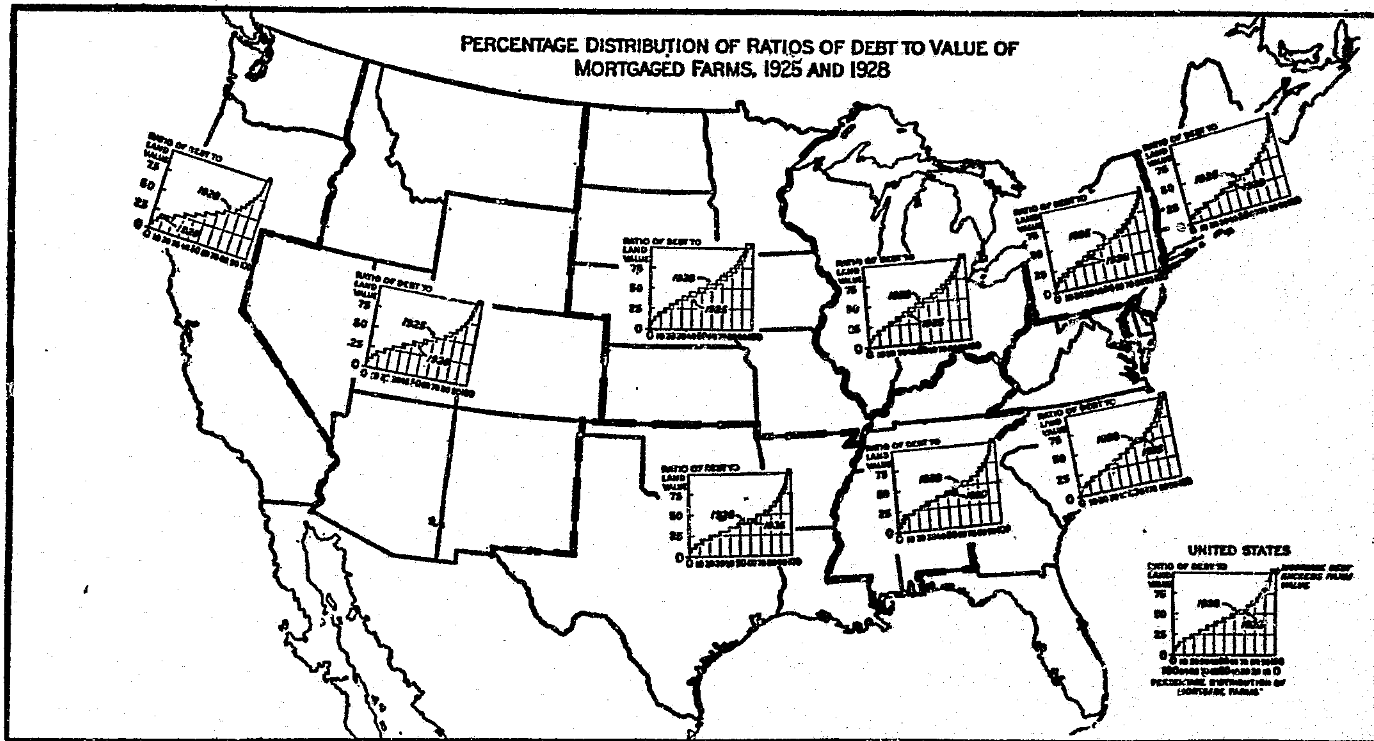

FIGURE 11.—In 1928 over 35 per cent of mortgaged farms had indebtedness amounting to more than half of the value of the land as declared by the owner. Over 12 per cent of the mortgaged farms had debt amounting to 75 per cent of the value of the land, and over 4 per cent of the farms had debt in excess of the full value of the land. The largest number of high ratios was found in the West North Central States, the lowest was in New England

TABLE 25.—*Percentage distribution of ratios of debt to value of farms reporting mortgage debt, January 1, 1925 and 1928,*[1] *by geographic divisions*

Geographic division	1928 ratio groups: Percentage of 1928 debt to 1928 value of farms mortgaged																				
	0 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45	46 to 50	51 to 55	56 to 60	61 to 65	66 to 70	71 to 75	76 to 80	81 to 85	86 to 90	91 to 95	96 to 100	Over 100
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	3.0	7.0	9.2	11.1	7.2	9.3	9.7	10.4	4.7	7.0	3.2	5.4	2.4	3.8	1.5	1.4	0.7	0.6	0.4	0.7	1.3
Middle Atlantic	1.7	4.3	7.9	6.6	7.4	7.4	7.8	9.7	7.5	8.8	5.8	4.5	4.4	3.4	3.0	2.9	2.1	.9	.7	.6	2.6
East North Central	1.3	3.2	4.4	5.4	6.3	6.8	6.3	6.8	7.2	7.2	8.2	6.3	4.4	5.2	3.2	3.5	3.0	2.4	1.4	1.3	6.2
West North Central	1.2	2.2	3.9	5.7	6.0	5.5	5.9	8.4	8.3	8.1	9.2	4.4	5.2	4.6	4.0	3.2	2.3	2.2	1.3	1.1	7.3
South Atlantic	1.8	5.2	5.6	9.0	8.6	7.2	7.3	6.8	5.9	5.5	9.2	3.0	5.6	3.5	2.4	2.1	1.9	1.7	.9	.9	5.9
East South Central	2.4	3.7	2.6	7.3	8.2	7.4	7.9	8.6	8.6	7.9	10.3	5.5	5.1	2.1	3.5	1.1	1.4	1.2	.6	.3	4.3
West South Central	1.4	5.7	6.3	8.3	8.7	8.7	9.0	10.1	7.9	7.8	6.0	3.2	4.2	2.5	2.1	1.6	1.7	.7	.6	.2	3.3
Mountain	1.0	3.9	3.6	6.6	7.5	10.6	9.9	11.0	8.6	8.7	5.7	3.7	3.9	3.1	2.4	2.0	1.5	1.2	.9	.2	4.0
Pacific	1.9	2.2	3.8	12.9	9.5	9.8	9.4	8.6	8.3	9.0	4.8	4.0	3.0	2.5	2.4	1.8	1.3	.9	.4	.2	3.3
United States	1.7	3.9	5.2	7.1	7.4	7.4	7.9	8.4	8.2	7.1	8.5	3.5	5.2	3.1	3.2	2.4	2.1	1.3	1.0	1.0	4.4

Geographic division	1925 ratio groups: Percentage of 1925 debt to 1925 value of farms mortgaged																				
	0 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45	46 to 50	51 to 55	56 to 60	61 to 65	66 to 70	71 to 75	76 to 80	81 to 85	86 to 90	91 to 95	96 to 100	Over 100
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	2.2	5.8	8.4	12.[illegible]	6.8	9.7	7.5	10.9	6.8	6.6	3.7	5.1	2.9	3.3	2.5	2.5	0.5	0.4	0.4	0.8	0.7
Middle Atlantic	1.3	2.8	5.1	5.7	9.9	6.6	6.6	10.8	5.8	11.4	3.4	6.6	4.7	4.5	2.9	3.7	2.4	2.2	.9	1.8	.9
East North Central	1.1	3.7	5.6	6.3	6.9	7.7	7.2	7.7	8.8	10.2	4.1	6.0	3.3	4.8	4.1	2.8	1.0	1.7	1.3	2.0	3.7
West North Central	1.6	3.0	4.4	5.7	6.6	5.2	9.2	5.5	8.6	11.0	4.5	6.3	5.1	3.9	3.3	2.8	2.3	1.1	1.1	3.3	2.5
South Atlantic	1.6	6.0	6.5	7.8	7.5	7.0	8.1	8.7	4.8	10.8	3.6	6.8	3.0	4.2	2.6	2.2	1.6	1.7	.9	2.6	2.0
East South Central	1.2	1.5	2.5	10.2	6.8	5.9	11.8	11.5	8.1	11.1	2.8	7.1	2.2	3.4	3.4	1.9	2.2	1.5	.3	.9	3.7
West South Central	1.5	3.9	6.5	9.0	8.9	10.0	9.0	12.5	6.2	10.7	2.3	4.5	3.2	2.9	2.9	2.4	.6	.6	.3	1.8	.3
Mountain	.5	2.7	4.5	6.9	7.5	8.7	9.8	10.6	7.8	11.8	3.8	6.5	3.4	3.8	2.0	1.9	1.2	.7	.3	2.3	3.3
Pacific	1.2	4.4	6.1	8.4	9.0	10.6	9.3	9.5	7.6	10.6	2.7	4.6	2.0	3.8	2.3	2.2	2.9	.7	.7	2.2	1.2
United States	1.3	3.8	5.6	7.5	7.7	7.8	8.5	9.6	7.4	10.5	3.6	5.9	3.5	4.0	3.0	2.6	1.4	1.2	.8	2.2	2.1

1 Based on reports of 22,352 farms reporting in 1928.

The range of debt ratios in 1925 for the country as a whole showed that approximately 30 per cent of the mortgaged farms reporting in 1928 had indebtedness of more than one-half of the value of the farms mortgaged, more than 10 per cent with mortgages above three-fourths of the value of the farm, while 2.1 per cent had debts greater than the total value of the farms. Farms on which the mortgages were foreclosed or which changed hands otherwise because of pressure of debt during the three years 1925 to 1928 are not included in this distribution. This absence of the full number of heavily indebted farms is suggested by the fact that the average ratio of debt to value of the reporting farms was less than that reported by the census on all owner farms as of the same date.

Despite the exclusion of many cases of high debt ratios, all the geographic divisions showed a considerable proportion of farms with debts ranging up toward the full value of the farm or above, though the proportion of high ratios varied considerably from one division to another. New England had the smallest percentage of high debt ratios, only 23 per cent being above half the value of the farm, and 5 per cent above three-fourths of the value. The West North Central had 36 per cent of its mortgaged farms with debt in excess of half the value of the land, 13 per cent above three-fourths, and 2.5 per cent above full value. (Table 26.)

TABLE 26.—*Cumulative percentages of mortgaged farms having ratios of debt to value over 50 per cent*

Geographic division	Over 100 per cent	Over 95 per cent	Over 90 per cent	Over 85 per cent	Over 80 per cent	Over 75 per cent	Over 70 per cent	Over 65 per cent	Over 60 per cent	Over 55 per cent	Over 50 per cent
JANUARY 1, 1928											
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
New England	1.3	2.0	2.4	3.0	3.7	5.1	6.6	10.4	12.8	18.2	21.4
Middle Atlantic	2.6	3.2	3.9	4.8	6.9	9.8	12.8	16.2	20.6	25.1	30.0
East North Central	6.2	7.5	8.9	11.3	14.3	17.8	21.0	26.2	30.6	36.9	45.1
West North Central	7.3	8.4	9.7	11.9	14.2	17.4	21.4	26.0	31.2	35.6	44.8
South Atlantic	5.9	6.8	7.7	9.4	11.3	13.4	15.8	19.3	24.9	27.9	37.1
East South Central	4.3	4.6	5.2	6.4	7.8	8.9	12.4	14.5	19.6	25.1	35.4
West South Central	3.3	3.5	4.1	4.8	6.5	8.1	10.2	12.7	16.9	20.1	26.1
Mountain	4.0	4.2	5.1	6.3	7.8	9.8	12.2	15.3	19.2	22.9	28.6
Pacific	3.3	3.5	3.9	4.8	6.1	7.9	10.3	12.8	15.8	19.8	24.6
United States	4.4	5.4	6.4	7.7	9.8	12.2	15.4	18.5	23.7	27.2	35.7
JANUARY 1, 1925											
New England	0.7	1.5	1.9	2.3	2.8	5.3	7.8	11.1	14.0	19.1	22.8
Middle Atlantic	.9	2.7	3.6	5.8	8.2	11.9	14.8	19.3	24.0	30.6	34.0
East North Central	3.7	5.7	7.0	8.7	9.7	12.5	16.6	21.4	24.7	30.7	34.8
West North Central	2.5	5.8	6.9	8.0	10.3	13.1	16.4	20.3	25.4	31.7	36.2
South Atlantic	2.0	4.6	5.5	7.2	8.3	11.0	13.6	17.8	20.8	27.6	31.2
East South Central	3.7	4.6	4.9	6.4	6.6	10.5	13.0	17.3	19.5	28.6	29.4
West South Central	.3	2.1	2.4	3.0	3.6	6.0	8.9	11.8	15.0	19.5	21.8
Mountain	3.3	5.6	5.9	6.6	7.8	9.7	11.7	15.5	18.9	25.4	29.2
Pacific	1.2	3.4	4.1	4.8	7.7	9.9	12.2	16.0	18.0	22.6	25.5
United States	2.1	4.3	5.1	6.3	7.7	10.3	13.3	17.3	20.8	26.7	30.3

Mortgaged farms for 1928 showed a definitely larger number with high debt ratios than for 1925 notwithstanding the factors tending to produce opposite results. The lower land values and greater debt of this period left many farms with impending foreclosure. In New

England alone the spread of ratios of debt to value was similar to that of 1925. (Table 25.)

The North Central divisions again showed much the heaviest indebtedness with reference to the values of the farms mortgaged, as well as in absolute amount. Forty-five per cent of the mortgaged farms of the West North Central States had ratios over half the farm value, 17 per cent had debts over three-fourths of the value, and 7.3 per cent carried mortgages greater than the value as declared by the owner of the farm. The East North Central States showed a similar distribution.

The Middle Atlantic States were in better condition with 31 per cent above one-half the value, 10 per cent above three-fourths of the value, and 2.6 per cent above full value of the farms mortgaged. The Mountain States in 1928 had only 29 per cent of the mortgaged farms with debt over half the value of the farms mortgaged, 10 per cent over three-fourths, and 4 per cent above full value of the farms.

The East South Central States in 1928 reported 35 per cent of their mortgaged farms with debt ratios over one-half of the farm value, and the West South Central States had only 26 per cent of their mortgaged farms in that class. The Pacific division had fewer high debt ratios than any other save New England, having had 25 per cent of the mortgaged farms with debt over half the farm value, 8 per cent over three-fourths of the value, and 3 per cent above full value.

Distributions of mortgaged farms on the basis of the ratio of their indebtedness to their value present some similarity among the several geographic divisions both for 1928 and 1925. (Table 26.) In 1928 in all divisions save New England 25 to 45 per cent of the mortgaged farms had debts above half of the value, from 8 to 18 per cent had mortgages over 75 per cent of value, and from 3 to 7 per cent reported indebtedness equal to or in excess of the value of the farm.

If more farms had high debt ratios in 1928 than in 1925, it would appear that throughout this period a considerable number of farmers were at the edge of insolvency—defaulting on debt, abandoning their farms to creditors, or continuing for a time with indebtedness greater than the value of the land.

RELATION OF HIGH DEBT RATIOS TO FORECLOSURES

The existence of a considerable percentage of mortgages in amounts approaching the value of the security or actually in excess of the farm value commonly gives rise to problems for both borrowers and lenders. Inability to meet payments on interest, principal, or taxes may endanger the farmer's equity or the lender's principal or both. It is not surprising, therefore, that the number of farms with debt ratios near the full value of the property should show a significant correspondence to the number of farms undergoing foreclosure.

For this comparison the percentage of farms foreclosed on was divided by the percentage of full-owner farms reporting mortgage in the 1925 census. The result showed a general similarity between high-debt ratios and foreclosures in most divisions, and in some the figures are almost identical. In the country as a whole 4.9 per cent of all mortgaged farms were foreclosed in 1928, (*29, p. 44*) and 4.4 per cent of all farms were reported as having debt equal to, or greater than, the value of the farm. Unpaid interest and taxes on other farms might readily make the total number of farms with no equity equal the number of foreclosures. (Table 27.)

TABLE 27.—*Relation between high debt to value ratios and foreclosures*

Geographic division	Foreclosure as percentage of all farms 1928 [1]	Farms mortgaged as percentage of all farms, 1928	Foreclosure as percentage of all farms, mortgaged	Distribution of debt ratios above 50 per cent of land value as percentage of all farms mortgaged					
				Over 100 per cent	Over 90 per cent	Over 80 per cent	Over 70 per cent	Over 60 per cent	Over 50 per cent
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
United States	1.76	36.0	4.9	4.4	6.4	9.8	15.4	22.7	35.7
New England	.77	32.8	2.3	1.3	2.4	3.7	6.6	12.8	21.4
Middle Atlantic	.84	31.1	2.7	2.6	3.9	6.9	12.6	20.6	30.9
East North Central	1.65	38.3	4.3	6.2	8.9	14.3	21.0	30.6	45.1
West North Central	2.73	49.2	5.5	7.3	9.7	14.2	21.4	31.2	44.8
South Atlantic	1.64	26.0	6.3	5.9	7.7	11.3	14.4	24.9	37.1
East South Central	1.40	26.4	5.5	4.3	5.2	7.8	12.4	19.6	35.4
West South Central	1.44	38.7	3.7	3.3	4.1	6.5	10.2	16.9	26.1
Mountain	2.74	45.1	6.1	4.0	5.1	7.8	12.2	19.2	28.6
Pacific	1.57	45.0	3.5	3.3	3.9	6.1	10.3	15.6	24.6

[1] U. S. Dept. Agr. Circular 101 (*30, p. 45*).

Among geographic divisions foreclosures ranged from 2.3 per cent of the mortgaged farms in New England to 6.3 per cent in the South Atlantic division, as compared with farms having debts over 100 per cent of value ranging from 1.3 per cent in New England to 7.3 per cent in the West North Central division.

In most of the divisions the percentage of farms reporting debt equal to, or in excess of, value was less than the percentage of foreclosures. Higher interest rates, less regular income in some regions, and accumulated taxes in many others were other factors tending to bring about foreclosures before the debt had reached full value of the property. In the Mountain division, where the foreclosure rate in 1928 was approximately 6 per cent of all farms mortgaged as compared with 4 per cent of such farms having debt equal to value, the average foreclosure evidently occurred after the indebtedness reached an average of about 85 per cent of the value of the farm.

A similar comparison for the East South Central States indicates that in that area foreclosures occurred on the average where the principal of the mortgage reached about 90 per cent of the farm value. The higher rates of interest in these areas would hasten delinquency and the covering of equities. The fact that the Mountain States had already shown a shrinkage in mortgage debt between 1920 and 1925 suggests that the loans on lands in that division were more responsive to land-value changes, a result partly attributable to unsuccessful irrigation projects. Further decline would occur before foreclosure could be completed. Meanwhile cost of proceedings, accumulated interest and taxes, and frequently, deterioriation of the property, might readily consume any equity in the farm or even result in a loss.

In the North Central States, farms on which the mortgages were foreclosed were not so numerous as were the farms with debt over their full value. The East and West North Central divisions had, respectively, 6.2 and 7.3 per cent of mortgaged farms with debt above their value, whereas the foreclosures among mortgaged farms were only 4.3 and 5.5 per cent. This situation suggests that in areas in which the debtor has a reasonably good chance of caring for his debt, there has been a growing reluctance of creditors to take over mortgaged farms. To some extent this may be true of the country as a whole.' The number of foreclosures per year, however, was about equal during the period under consideration, being 17.4 and 17.6 per 1,000 farms in 1926 and 1928, respectively, while 1927 showed 18.2 per cent.

RATIO OF NEW MORTGAGE DEBT TO VALUE OF FARMS WITH SAME OWNERS

New mortgages incurred between 1925 and 1928 on farms not previously indebted represented relatively low proportions of the value. The average debt ratio for all farms of this class reporting was slightly less than 30 per cent, and the geographic divisions had ratios ranging from about 23 per cent for the South Central States to about 38 per cent in the North Atlantic. (Table 28.) Although some ratios were higher, these reports indicate that the average original mortgage obtained during recent years by the farmer who already owned his farm was less than a third of the value of the farm. The high debt ratios frequently found are thus seen to be the result of gradual additions to the original mortgages, a consequence of lowered values of farms mortgaged when prices were higher, or an accompaniment of land transfers.

TABLE 28.—*Comparison of average ratios of debt to value of transferred farms before and after transfer, and of farms not previously mortgaged*

[Average 1925-1928]

Geographic division	Average ratio of debt to value of transferred farms before transfer	Average ratio of debt to value of transferred farms after transfer	Average ratio of debt to value of new mortgages on farms not previously mortgaged	Geographic division	Average ratio of debt to value of transferred farms before transfer	Average ratio of debt to value of transferred farms after transfer	Average ratio of debt to value of new mortgages on farms not previously mortgaged
	Per cent	*Per cent*	*Per cent*		*Per cent*	*Per cent*	*Per cent*
New England	45.4	48.8	35.7	West South Central	57.1	59.7	23.2
Middle Atlantic	49.8	54.4	37.7	Mountain	60.6	59.0	28.5
East North Central	60.5	73.0	29.7	Pacific	54.2	57.4	28.5
West North Central	67.3	70.0	34.0				
South Atlantic	62.2	71.7	32.4	United States [1]	59.2	65.0	29.6
East South Central	53.7	58.9	22.7				

[1] Weighted by all farms.

HEAVY INDEBTEDNESS ON TRANSFERRED FARMS

By contrast, farms that were transferred to new owners during the period 1925 to 1928 carried indebtedness averaging about two-thirds of the value of the property. An average of all reports covering this class of farms showed that the ratio of debt to value was over 59 per cent before transfer and 65 per cent afterwards. (Table 28.) Even allowing for the indebtedness involved in forced sales, this suggests that the presence of debt on a farm may be an incentive for owners to dispose of land and for prospective buyers to purchase. Purchasers of land rather commonly have available only a part of the consideration, whether in periods of high or low prices. A farm already mortgaged, therefore, represents a smaller equity involved for both buyer and seller and may be a convenient basis of trade.

RELATION OF FIXED DEBT TO LAND INCOME

Although only 36 per cent of farms were reported by the census as mortgaged in 1925 and the total fixed debt on farms in 1925 constituted but 18.9 per cent of the value of all land and buildings, the consequence to the income of agriculture is more than that indicated by this proportion. The average rate paid on this debt in 1928 was nearly 6 per cent, whereas net cash rents in six North Central States, the area having two-thirds of all mortgage debt, were only 3.5 [12] per cent of the farm value and the average rate earned on operators' net capital investment in the United States from 1923 to 1929 was 3.2 per cent (*17*). If other areas yielded net returns equal to the rate of return of this principal agricultural region, it would appear that the cost of carrying each hundred dollars of debt consumed the income of more than $170 of farm value. In other words, approximately one-third of the net return from all farm land and buildings in the United States in 1925 was required to meet the fixed obligations represented by the mortgage debt on farms.

METHOD OF COMPUTING RATIO OF DEBT TO VALUE OF FARMS

The ratio of debt to value of full-owner farms for 1925 was obtained for each State directly from the census of that year. To obtain corresponding ratios for 1928, the 1925 debt frequency or percentage of full-owner farms mortgaged was first divided into the 1928 frequency to obtain a correction factor. This correction factor was divided into the number of full-owner farms mortgaged in 1925 to compute the number mortgaged in 1928. This computed number of farms mortgaged was in turn divided into the estimated total mortgage debt of full-owner farms in 1928 to obtain a computed average debt per mortgaged farm in 1928. The average value per mortgaged farm in 1928, computed by applying to the average value of such farms in 1925 the land-value index relative 1928/1925, was then divided into the average debt per farm to obtain the average ratio of debt to value in 1928 on full-owner farms of the same ownership in 1925 and 1928. To this ratio was added or subtracted the fraction of increase or decrease in ratio of debt to value on account of farms transferred between 1925 and 1928, obtained as follows: The percentage of all farms transferred during the 3-year period as reported by bankers and recorders was multiplied by the percentage of such transferred farms which were mortgaged to obtain the percentage which transferred mortgaged farms were of all farms. This latter figure was divided by the percentage of all farms with mortgage in 1928 and the result multiplied by the percentage increase or decrease in ratio of debt to value on mortgaged farms transferred. This difference, expressed in terms of 1925 land values amounting to 0.7 for the country, was divided by the 1928/1925 land value-index relative to obtain its expression in terms of 1928 values.

The ratio of debt to value of mortgaged full-owner farms as reported in the 1925 census was divided by the corresponding ratio derived from the sample for the same year to obtain a correction factor to be used for tenures other than owners for 1925 and 1928.

The ratio of debt to value of mortgaged tenant-operated farms in 1925 as shown by the used groupings was corrected by the factor obtained above to get a final figure for 1925 for geographic divisions

[12] This figure is the result of applying the ratio of net to gross rent ratios in Iowa to a simple average of the gross rent ratios of Missouri, Minnesota, Illinois, Indiana, Ohio, and Iowa (*29, pp. 27, 29*).

and for the separate States in the East and West North Central divisions. All other State figures were obtained by the proportion

$$\frac{a}{b}=\frac{a^1}{x}$$

in which

a = the 1925 census division ratio for owners,
b = 1925 State ratio for owners,
a^1 = corrected division ratio for tenants,
x = computed State ratio for tenants.

The 1928 data covering ratio of debt to value of tenant farms were first treated by the same process as for 1925. To the resulting figures were added or subtracted the percentages of increase or decrease in ratio of debt to value due to transfer as in the case of owner-operated farms.

A slight error occurs in this and other computations because of an inability to allow for differences in sample data for 1925 but reported in 1928, which may be caused by foreclosures and other changes tending to make reports unrepresentative of 1925 conditions. To overcome this difficulty, separate data would be required showing the debt position of foreclosed mortgaged farms.

INTEREST RATES AND THEIR RELATION TO FARM-MORTGAGE FINANCING

INTEREST RATES ON LOANS OUTSTANDING IN 1928

The weighted average interest rate reported by farmers on farm mortgage loans outstanding January 1, 1928, was 5.8 per cent, which compares with 6.1 per cent shown by the census of 1920, and 7.1 per cent by that of 1890. (Table 29.) The rate of 5.8 per cent for 1928 probably is lower than the actual average for all farms. Farmers replying to special inquiries generally represent farms above average size and value and therefore more advantageous financing arrangements. No such possible difference will occur in the loans by the Federal land banks, however, since these institutions have uniform rates for all loans made at a given time. Other interest rates reported here, though perhaps slightly lower than complete data would show, are probably representative of relative differences between various sources and divisions.

TABLE 29.—*Interest charged by principal lending agencies on farm mortgage loans outstanding, January 1, 1928, by geographic divisions* [1]

Geographic divisions	Principal lending agency									All sources [2]	Average rate of all owner-operated farms, 1920 [3]
	Federal land banks	Joint-stock land banks	Commercial banks	Mortgage companies	Insurance companies	Retired farmers	Active farmers	Other individuals	Other agencies		
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
New England	5.4	6.0	5.9	------	6.0	5.8	5.7	6.0	5.8	5.8	5.7
Middle Atlantic	5.5	6.0	6.0	5.2	6.2	5.5	5.5	5.6	5.8	5.7	5.4
East North Central	5.5	5.9	6.1	5.6	5.3	5.4	5.8	5.6	6.2	5.6	5.6
West North Central	5.4	5.8	6.2	5.7	5.3	5.4	5.8	5.6	5.7	5.5	5.8
South Atlantic	5.6	5.9	7.2	6.3	6.7	6.7	7.1	7.0	6.8	6.0	6.4
East South Central	5.6	5.9	6.6	6.2	5.7	7.0	5.9	6.5	6.2	5.9	6.4
West South Central	5.4	6.0	7.7	6.9	6.7	7.0	7.7	7.9	5.7	6.6	7.2
Mountain	5.6	6.0	7.6	7.3	6.8	6.7	7.5	7.4	7.1	6.7	7.3
Pacific	5.6	6.0	6.9	6.4	6.1	6.4	6.4	6.5	6.6	6.5	6.6
United States	5.5	5.9	6.7	6.1	5.5	5.8	6.1	6.2	6.2	5.8	6.1

[1] Reports from farmers. [2] Weighted by geographic divisions. [3] Census, 1920 (*19*).

Both the general trend toward lower interest rates of all kinds and the progress of improved farm-mortgage financing have been forces working toward lower costs of farm real estate loans by 1928. It is therefore probable that some decline has occurred since 1920. Since the rates represent outstanding loans, they reflect differences prevailing in the several geographic divisions at the time the loans were made rather than the current rate in 1928.

Among geographic divisions the West North Central States had the lowest rate, 5.5 per cent, and the East North Central group was next with 5.6 per cent. The highest average rate, 6.7 per cent, was reported from the Mountain division, and the West South Central and South Atlantic States each reported 6.6 per cent.

INTEREST RATES OF VARIOUS LENDING AGENCIES

Among the various sources of loans the lowest average rates for the country as a whole were reported on loans by the Federal land banks and insurance companies, each being 5.5 per cent. Joint-stock land banks were next lowest of the institutional lenders with 5.9 per cent, the mortgage companies' rates averaged 6.1 per cent, and the commercial banks averaged 6.7 per cent. Rates on loans from individuals held to rates of 6.1 and 6.2 per cent, and loans from retired farmers carried rates of 5.8 per cent. These rates for principal lenders, though generally comparable, are not entirely so because of different distributions of lenders' loans among areas of unequal credit cost and risk. (Table 10.) For example, mortgage companies have a concentration of loans in Southern States where rates usually are higher than the national average; insurance companies have most of their loans in the North Central area; and commercial banks are important in the East.

The various agencies showed a tendency to maintain their relative rate positions throughout the several geographic divisions, with some important exceptions. Of the nine sources the Federal and joint stock land-banks showed the least variation from their national average, a natural consequence of their legal limitations of 6 per cent for rates charged and the confinement of loans to first mortgages. Insurance loans on the other hand ranged from 5.3 per cent in the North Central to 6.8 per cent in the Mountain States. Mortgage companies' loan rates averaged only 5.2 per cent in the Middle Atlantic States, and 5.7 per cent in the West North Central, but were 7.3 per cent in the Mountain division. Commercial banks were highest in rates of all lending institutions in nearly all divisions, ranging from 5.9 per cent in New England to an average of 7.7 per cent in the West South Central States. Rates on loans from individuals showed a general correspondence to the rates of commercial banks in the same areas.

DISTRIBUTION OF FARM-MORTGAGE DEBT BY RATE OF INTEREST

Approximately 30 per cent of all loans reported in 1928 had been made at an interest rate of 6 per cent; 28, at 5 per cent; 18, at 5.5 per cent; 9, at 7 per cent; and 6, at 8 per cent. (Table 30.) Six per cent was also the most frequent rate given in seven of the nine geographic divisions. In the West North Central division, however, the most frequent rate given was 5 per cent, and in the West South Central States 7 per cent was most common, although the loans at 6 and 8 per cent were nearly as numerous. A wide distribution of rates appeared in the Mountain States, where 27 per cent of the loans carried 6 per cent, and the rates of 5.5, 7, and 8 per cent were represented by the respective percentages of 20, 16, and 20. Likewise in the Pacific States approximately 35 per cent of all loans were reported made at 6 per cent, and the same percentage at 7 per cent.

TABLE 30.—*Percentage distribution of mortgage debt on reporting farms, by rate of interest, for geographic divisions and the United States in 1928, compared with debt on full-owner farms, in 1920*

Geographic division	Mortgage loans reported		Distribution of debt according to interest rate						
	Number	Amount	Less than 4 per cent	4 per cent	Between 4 and 5 per cent	5 per cent	Between 5 and 5½ per cent	5½ per cent	Between 5½ and 6 per cent
		1,000 dolls.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
All reporting farms:									
New England	668	1,123	0.05	0.91	0.41	15.46	0.32	11.78	-------
Middle Atlantic	802	1,935	.31	1.47	.20	21.25	1.82	15.58	-------
East North Central	1,242	7,009	-------	.68	-------	32.87	3.32	19.77	0.81
West North Central	1,875	15,123	-------	.27	.11	42.26	4.44	20.64	.47
South Atlantic	665	2,699	-------	.44	-------	1.57	.63	13.70	.13
East South Central	321	1,211	-------	-------	.13	10.29	2.25	32.90	1.57
West South Central	658	2,642	.03	.05	-------	15.87	.29	9.26	.10
Mountain	826	3,600	-------	-------	-------	5.43	.75	19.88	.21
Pacific	1,170	7,393	-------	.28	-------	2.11	.97	11.17	.22
United States	8,227	42,735	.02	.36	.07	28.37	2.92	18.46	.47
Census 1920—full-owner farms, United States	-------	-------	.34	1.83	1.16	19.07	.90	12.29	.94

Geographic division	Distribution of debt according to interest rate									
	6 per cent	Between 6 and 6½ per cent	6½ per cent	Between 6½ and 7 per cent	7 per cent	Between 7 and 8 per cent	8 per cent	Between 8 and 10 per cent	10 per cent	More than 10 per cent
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
All reporting farms:										
New England	64.27	-------	1.35	-------	3.94	0.06	1.15	-------	-------	0.30
Middle Atlantic	58.41	-------	-------	-------	.68	-------	.21	-------	0.07	-------
East North Central	33.31	0.24	2.15	-------	6.41	.05	.35	0.02	.01	.01
West North Central	22.96	.02	2.30	0.03	3.69	.39	2.04	.24	.14	-------
South Atlantic	46.46	-------	.45	-------	10.17	-------	21.25	-------	5.20	-------
East South Central	41.47	-------	.87	-------	1.20	-------	8.65	.05	.59	-------
West South Central	22.54	-------	2.03	.19	24.30	2.66	20.62	.49	1.56	.01
Mountain	26.95	-------	1.98	-------	16.40	1.70	19.62	2.12	4.96	-------
Pacific	35.11	.07	8.44	-------	34.86	1.56	5.00	.11	.10	-------
United States	30.06	.06	2.42	.03	9.28	.63	5.78	.28	.77	.02
Census 1920—full-owner farms, United States	39.13	.39	2.75	.25	9.24	.89	8.51	.73	1.50	.05

A comparison of the distributions of rates on loans reported in 1928 with those given in the 1920 census provides further evidence of a shift to lower levels. Loans at 6 per cent were dominant at both dates, but the percentage of the total at that rate had declined from 39 to 30 per cent. Loans reported above 7 per cent were less in amount than in 1920, and loans at 7 per cent were practically unchanged. The proportion of loans reported in 1928 at 5.5 per cent was 18 per cent as compared with 12, and loans at 5 per cent made up 28 per cent of the total, as compared with 19 per cent on the earlier date. Even allowing for possible bias due to a disproportionate amount of better-than-average loans reported for 1928, it would appear that rates on farm mortgages outstanding in 1928 were more favorable to the borrower than in 1920.

Aside from the rate of 5.5 per cent, which accounted for 18 per cent of the total loans reported, rates of fractional amounts are relatively infrequent, 75 per cent of all mortgages being reported as bearing interest rates of even percentages.

This infrequency of mortgage-interest rates of other than full or half per cent quotations has practical significance for the farmer in selecting favorable times at which to obtain a mortgage. For example, this fact tells him that small changes in short-time money-market rates are not likely to be reflected in the mortgage rate. In most cases such changes are temporary. Since a rise in bond yields equal to 0.5 per cent usually continues for a period of six months or longer before it is reflected in farm-mortgage rates, the farmer may safely assume that new rates quoted to borrowers will not follow a rise in short-time rates in a short period of time, and that unless the short-term rates continue to rise, or if they soon decline, quoted mortgage rates may not change their original position. After quoted mortgage rates have once risen, however, the downward changes may be expected to occur only after a similar time lag.

ADDITIONAL CREDIT COST IN LAND PRICES

Even when the rates of interest and commission on the mortgage are high, these charges may not represent the full cost of the credit used if the mortgage has been given or assumed in part or full payment for the land. The price of land bought with the aid of mortgages representing a high or full percentage of the value of the land may require special caution because of the higher price incident to the liberal credit features.

In cases in which the selling price is higher than the price at which the land would sell for cash, the additional cost should be distributed over the term of the loan and added to the interest and commission in determining the total charge for the credit obtained. As in the case of merchant and dealer credit where this system has its fullest consequences, the cost of such credit may be considerably above the current rate of interest. Although a part of the charge may represent loss in handling the credit account, the purchaser who meets his obligation incurs the full expense. If the total credit-cost rate is greater than the rate of income, such purchase-money mortgages may be the first step toward later difficulty.

RELATION OF MONEY RATES TO FARM-MORTGAGE FINANCING SINCE 1917: THE LAG IN MORTGAGE RATES

The course of money rates since 1917, the first year of operation under the Federal farm loan act, has been characterized by four significant rises at intervals of three to six years, 1917, 1919 to 1920, 1922 to 1923, 1928 to 1930. A comparison of the relation of mortgage rates with short-term rates and bond yields during this time shows that mortgage rates on new loans from leading agencies lagged behind changes in rates on short-term loans and bond yields.

In 1920 to 1921 and again in 1928 to 1930 the rates quoted by the Federal land banks lagged approximately a year behind the changes in short-term rates and bond yields (7). (Fig. 12). The rates quoted to farmers began to rise about 12 months after the rise of bond yields and continued to rise for a somewhat shorter period than did the yield on bonds. The legal limit of 6 per cent on loans by the land banks prevents the rates of those institutions from going above that point, whereas the quotations of insurance companies and other private lending agencies follow the market. Hence in 1921 when the rate quoted by the Federal land banks had reached its legal limit of 6 per cent, insurance companies were loaning at about 6.5 per cent.

Likewise on the decline, quoted rates have continued high after bond yields have descended to lower levels. In 1922 the quoted rates of the Federal land banks were not lowered until nearly two years after the yield of their bonds had declined. This exceptionally long delay was due to the fact that because the Federal farm loan act forbids loans at rates higher than 6 per cent, the quoted rates from that source could not rise as high as market conditions would have required. Consequently, some time was required for the market rate to decline to the level of 6 per cent, from which point the decline could begin to be reflected in the rates quoted by the land banks. The loaning rate of insurance companies, as shown in Figure 12, indicates the trend of the unrestricted market. (*5, 1922, p. 159.*) The average quoted rate of 6.46 per cent on loans from that source for 1921 declined 0.5 per cent to an average of 6 per cent for loans made in 1922, the point from which land-bank quotations were lowered, and to less than 5.5 per cent in 1923, thus paralleling the decline in rates quoted by the land banks.

The usual lag of long-term interest rates behind short-term rate changes was again shown following 1928. Although short-term interest rates began to rise early in 1928, rates on farm mortgages continued favorable for a year afterward. The Federal land banks did not begin to raise their quotations until the fore part of 1929, and the increase in rates quoted by most insurance companies did not occur until July of that year. The 6 per cent loan-rate limit of the Federal land banks again effectively narrowed the range within which the loaning operations of those institutions were practicable.

Referring to this difficulty the Secretary of the Treasury (*12, p. 64*) stated the situation as follows:

> General conditions in the money market that affected the sale of all classes of securities, including obligations of the Government, naturally had their influence on farm loan bonds. The Federal land banks were faced with the choice of undertaking to issue long-term bonds in volume at high rates of interest in a situation that appeared to be temporary, or endeavoring to take care of their requirements by the issuance of bonds in minimum amounts supplemented by the utilization of repayments and installment payments on loans, and such temporary financing as seemed to be desirable and necessary. The banks chose the latter course, which appeared to be the wiser until the bond situation clears and improves. Federal land banks in the first part of the fiscal year issued bonds at 4¼ per cent and in the latter half at 4½ per cent. Banks issuing 4½ per cent bonds increased their lending rate from 5 or 5¼ per cent to 5½ per cent.
>
> Somewhat similar conditions confronted joint-stock land banks, which for the most part have been marking time, as far as undertaking to sell bonds is concerned, until they are able to dispose of their securities at satisfactory rates. Some joint-stock land banks issued bonds during the year at 4½ and 5 per cent and the lending rate in these cases was 5½ or 6 per cent, according to the rate borne by the bonds.

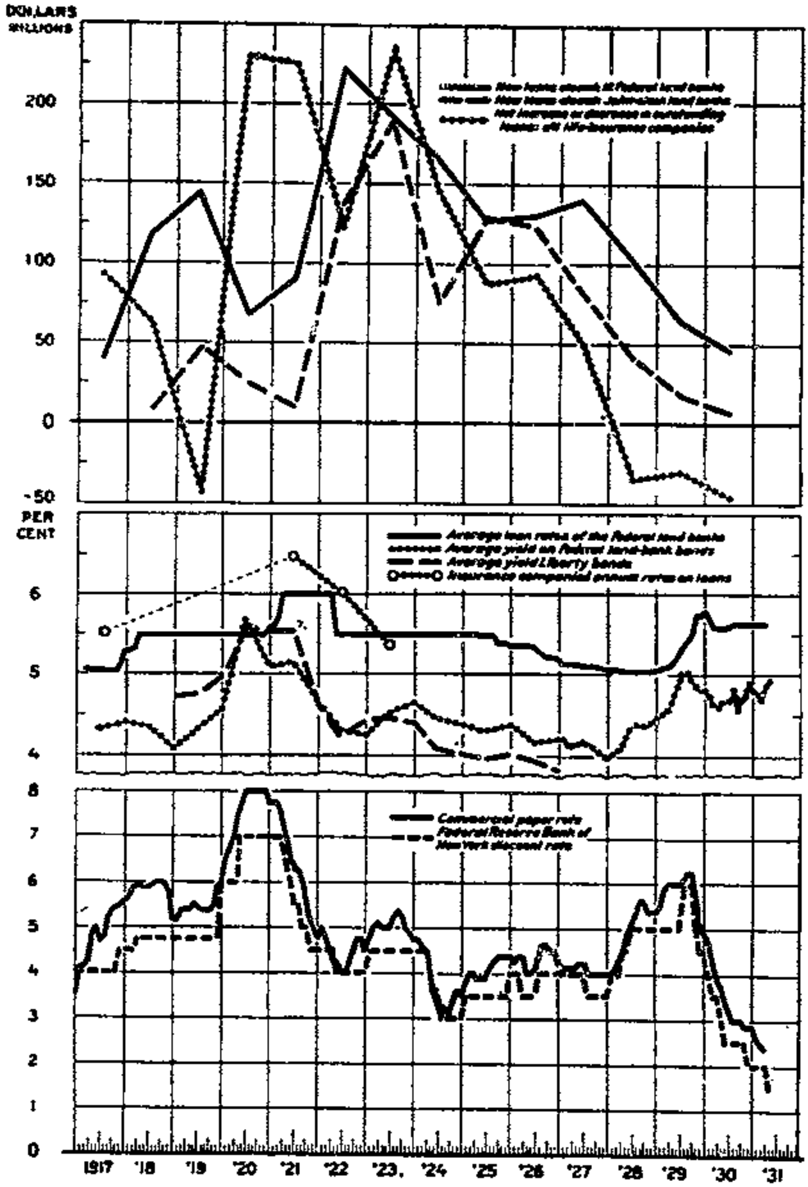

FIGURE 12.—SHORT-TERM INTEREST RATES, BOND YIELDS, FARM-MORTGAGE RATES, AND VOLUME OF LOANS

The close relation of commercial-paper rates and discount rates at the Federal Reserve Bank of New York from 1917 to 1930 is apparent. Yields on Federal land-bank bonds and Liberty bonds conformed to the general course of short-term rates though with less variation, while rates quoted on farm mortgages by the Federal land banks and insurance companies lagged behind from 12 to 18 months following 1920 and 1928. The changes in annual volume of loans made by these agencies was partly in response to the money-market conditions. (The low volume of loans of the Federal and joint-stock land banks during 1920 and 1921 was due largely to suspension of operations pending litigation.)

After the break in the stock market in the fall of 1929 and after short-term rates had begun to decline, bond yields were much slower to change and quoted rates on farm mortgages continued at high levels. Wise credit management requires that a farmer recognize the existence of this lag in farm-mortgage interest rates in arranging his finances.

EFFECT OF MONEY-MARKET CONDITIONS ON SUPPLY OF MORTGAGE FUNDS

Periodic shortages of funds incident to high rates may affect farm-mortgage financing in various ways. Commercial banks or other local sources may send funds to loan on the call market which usually offers specially attractive rates at such times. If the security markets are active, individuals may use their surplus funds to buy

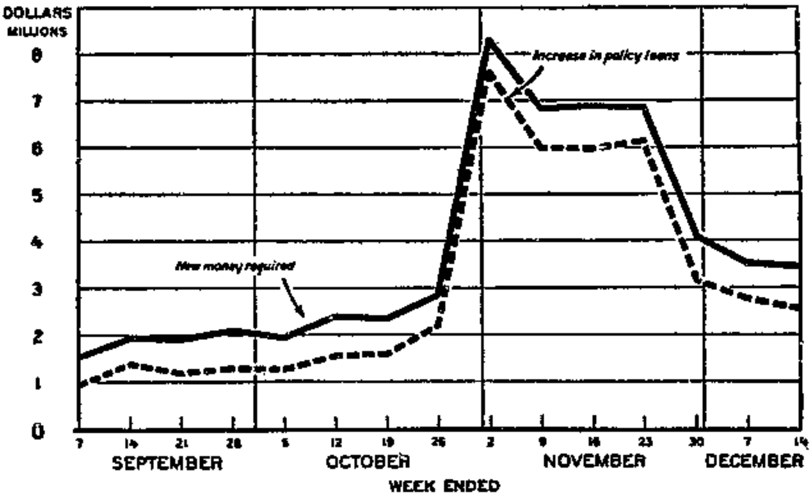

FIGURE 13.—TOTAL NEW MONEY REQUIRED FOR POLICY LOANS AND INCREASE IN OUTSTANDING POLICY LOANS OF 13 COMPANIES SEPTEMBER 2 TO DECEMBER 14, 1929

The competition that farmers meet in obtaining mortgage loans during a period of money stringency is indicated by the great increase in the volume of loans to policyholders in life insurance companies during the break in the stock market in October and November, 1929. The usual uniform stream of funds available for investment by these important lending institutions was partly diverted to meet the prior claims of many policyholders. These 13 companies have in force approximately 22½ per cent of the total ordinary insurance in force in the United States

stocks. Agencies dependent upon sales of bonds for loanable funds, such as the Federal and joint-stock land banks, and the State loan systems, may be unable to sell their issues at practicable rates, or may be so restrained by legal limitations of the loaning rate that they are kept out of the farm-loan market. Such funds as may become available through receipt of loan payments may be used more profitably to purchase bonds previously issued, but whose current price offers favorable opportunities to reduce the bank's outstanding interest-bearing bonds. Insurance companies have the same alternative of buying greater proportions of bonds at low prices. In addition, they may be faced with the necessity of making large advances to their policyholders to tide over emergencies such as occasions when the stock market breaks and added sums are needed to maintain margins (*4*). This item amounted to a substantial demand on the funds of life insurance companies during the fall months of 1929. (Fig. 13.)

Reference to Figure 12 discloses several instances during the last decade when the supply of mortgage funds was affected in one or more of the ways indicated. Farm-mortgage investments by insurance companies fell very low in 1919 when large quantities of Government bonds were being offered. Again, in 1922, following the high yield of Liberty bonds and the selling of great amounts of these securities held by individuals, the farm-mortgage investments of insurance companies declined. In 1923, however, following a period of low bond yields, farm mortgages were greatly emphasized as investments despite heavy competition from the land banks. In 1924 when rates and bond yields remained high, the volume of insurance loans again slackened, as was true of loans by the joint-stock land banks. (Table 31.)

TABLE 31.—*Number and amount of loans closed, by years 1918 to December, 1929, by the Federal and joint-stock land banks*

Year	Federal land-bank loans		Joint-stock land-bank loans		Total loans	
	Number	Amount	Number	Amount	Number	Amount
		1,000 dollars		*1,000 dollars*		*1,000 dollars*
1918	49,808	118,130		[1] 7,381		125,511
1919	45,436	144,987		[1] 47,306		192,293
1920	17,997	66,985		[1] 23,272		90,257
1921	27,153	91,030	881	9,335	28,034	100,365
1922	74,055	224,301	15,916	138,685	89,971	362,986
1923	60,100	192,083	27,433	189,748	87,533	381,831
1924	47,227	165,510	11,390	74,587	58,617	240,097
1925	39,905	127,355	19,699	131,431	59,604	258,786
1926	36,893	131,318	19,928	123,026	56,821	254,344
1927	39,268	140,384	14,088	82,328	53,356	222,712
1928	26,988	102,236	7,299	40,572	34,287	142,808
1929	17,132	64,252	3,107	18,186	20,239	82,438

[1] Loans for 1918, 1919, and 1920, represent differences in amounts outstanding at end of successive years.

Thus it is apparent that a farmer who needs a loan must expect to meet with competition from other demands for which funds of lenders may be used. So far as possible he should avoid the necessity of long-time financing during short-term money crises or at such other times when alternative demands make his problem more difficult.

NEED FOR FARMERS' ATTENTION TO FINANCIAL MARKETS

Farmers who have mortgage financing in prospect may well take warning from rises in short-term money rates and bond yields as an indication of higher rates likely to follow on mortgages made six months or a year later, and frequently of a reduction in the available supply of funds for mortgage purposes. The shorter the term of the mortgage loan the more frequently will this precaution have to be taken. In loans of very short terms, refinancing at favorable rates may require a material shortening of the original term and consequently a greater interest cost per annum for the term actually used. Long-term loans with repayment privileges reduce the frequency of the problem and afford more opportunity for choosing a favorable time in which to arrange for the loan to be carried.

A farmer should recognize the fact that his financing operations are a part of the finances of the whole country and may even be affected by the finances of other countries. He may be favorably or adversely affected by developments in the general business community which show their results in the money centers. Consequently he must acquaint himself with the current position and trends of the money market, he must learn what the prevailing interest rates are on standard classes of paper and on farm mortgages and must observe the direction in which they are moving.

Unfortunately such information has not always been readily available to the farmer, nor has it always been sought. Many farmers who have grain or livestock to sell are accustomed to watch those markets closely. But if a mortgage is to be taken out or renewed, they may give little or no attention to the condition of the money market far enough in advance of the time the loan has to be made to profit by the information. An indication of the need of using such information is the greater volume of farm mortgages that were made when rates were high, especially in 1920 to 1921 and 1923 to 1924, thus placing the average rate of the financing of agriculture on a level above the average market rate. (Fig. 12.)

TENDENCY TOWARD HEAVIER BORROWING DURING HIGH-RATE PERIODS

An important proportion of farm mortgages originate from borrowings from local banks or other short-term loans. Typically these are short-term loans for various purposes, but frequently they arise out of the transfer of real estate or loans for other purposes which have been met by loans secured by real estate. An average of 11.3 per cent of all loans made by the Federal land banks to 1929 had been obtained for the purpose of paying other than mortgage debts, and 65.9 per cent were used to pay mortgages. In turn, many of the mortgages taken over also represent an earlier funding of accounts. The local bank holds a close relation to the farmer, and its business includes the rendering of such loan accommodations as its resources will permit. The bank's services thus tend to give rise to a stream of obligations, most of which are repaid by the proceeds of the borrower's operations, but a part of which, are paid from the proceeds of mortgages funding the original debt.

When credit cost and demand are moderate, financing tends to remain in the local community. Whenever interest rates rise materially in the central money markets, money from correspondents and even funds of individuals tend to flow to such centers rather than to continue available as loans or deposits to local banks for meeting the demands of customers. As the bank's resources become inadequate for meeting current requirements it encourages farmer borrowers on older accounts to liquidate obligations to the bank by taking out a mortgage with some other agency, usually one specializing in that type of loan. Other prospective borrowers of the bank obtain directly by mortgage funds which, under usual rate and supply conditions, they would have obtained from the bank. Thus a rise in short-term money rates tends to be followed some time later by a rise in the demand for farm-mortgage loans.

Meanwhile the higher short-term rates become reflected in higher long-term rates. Agencies that obtain their funds for mortgage loans through bond issues find that they must compete with higher short-term rates prevailing. Agencies that receive streams of funds from current contributions, such as life insurance companies, are able to employ such funds at higher rates of return than they have been getting from farm mortgages. The agencies using bond issues as a source of funds can continue operations for some time by using the proceeds of earlier issues. Eventually, however, if they are to continue loaning they must issue bonds that bear higher rates, and the rate to the borrower must be raised to a level that will permit payment of the new bond rate plus operating costs.

Other agencies also continue loaning at the old rates for some time while applications in process are being acted upon and while other investments are becoming of more attractive yield. When these higher rates become generally available and competition will permit, mortgage rates are increased and local representatives are notified to negotiate new loans on the higher basis after a certain date.

The net result of these proceedings, incident to a rise in short-term interest rates, is a simultaneous lag in rates and volume of mortgage financing which tends to produce a dominance of farm mortgages bearing rates higher than the average prevailing over a period of years, and above the rates that would be carried by loans obtained in uniform amount through the same length of time. Although such mortgages may bear, on long-term loans, rates below those on the local indebtedness they have replaced, the mortgage rate may still be above average.

There seems to be no such compensating movement when rates are low. During periods of low rates the money supply, in rural areas, is likely to be adequate, barring local misfortune, so that local agencies can meet most of the farmers' current demands by means of short-term loans. Hence there is not the forced funding which characterizes high-rate periods. Refunding of the mortgage offers a partial escape from this situation, but if the new loan is to have a short term of years, the renewal cost may equal the saving in interest. For many farmers the best means of avoiding such difficulties is to take out a long-term loan when the conditions of interest rates and fund supply are favorable.

FARMERS' ALTERNATIVE METHODS OF FINANCING

During periods of high money rates, as at other times, a farmer does not have the financing alternatives of larger industrial business, which may sell its short-term notes in the market or raise capital by sale of stock to the public and thus acquire needed capital without borrowing at high rates. Sales of stock may even be used to redeem at low prices bonds previously issued (*1*). Usually the farmer can not employ short-term borrowing for all of his needs until more favorable long-term rates return. Local banks that usually constitute his principal source of short-term credit, are often unable to loan the amounts needed. Mortgages that fall due in such years are often too large to be carried even temporarily by local agencies. It is not practicable to sell an interest in his farm by issuing stock and yet retain control over the whole as a corporation may do. Usually he can not dispose of a part of the farm without impairing the effectiveness of the remainder as a working unit. If he has need of additional capital he must borrow on his own security and contract to pay the rate of interest current at the time.

The great part of the farmers' financing thus tends to take the form of mortgage on real estate. In the past, the proportion has been approximately 75 per cent mortgage and 25 per cent short-term loans. The share of fixed obligations has become larger in recent years as mortgages have increased and total short-term loans in the agricultural districts have greatly declined.

In contrast, the credit of industrial business during high-rate periods has been conducted mainly on a short-term basis. A larger amount of property in the form of goods in process or assets that can be readily converted into cash facilitates the more prompt retirement of such obligations than is possible from the annual production of agriculture. In 1925, manufacturing corporations had only one-third of their borrowings in the form of mortgages and bonds, while two-thirds were notes and accounts.

Figure 14 indicates the relative volume of farm-mortgage financing at different interest-rate levels from 1920 to 1929, in comparison with the varying proportions of the financing of domestic corporations supplied by different methods during the same period. The annual volume of farm-mortgage loans reached its peak in a period of high interest rates—1923 to 1924—so that the bulk of loans made at that time carried on through their terms at the higher rates which then prevailed.

During the same years domestic corporations followed a general policy of issuing bonds when interest rates were low and of selling stock and short-term notes when rates were high. Long-term fixed obligations or bonds averaged only 35 per cent of their total financing, preferred stock 5 to 15 per cent, short-term notes less than 10 per cent, and common stock in the company the remainder (*1*). The benefit from greater variety of financing alternatives possessed by the industrial concern, partly because of size, corporate form, and financial facilities, is evident. Under existing facilities the farmer's nearest approach to equally advantageous financing is by means of a long-term mortgage taken out when money conditions are advantageous.

MANAGEMENT OF FARM-MORTGAGE CREDIT

LONG-RUN ASPECTS OF FARM MORTGAGES: IMPORTANCE OF LOAN TERM

Problems of farm-mortgage finance are both of immediate and of long-term nature. The short-term considerations are concerned with the availability of funds for loans wanted at a given time and the negotiation of favorable interest rates and other terms on such a basis as will probably permit desirable handling of the loan during the several years following.

The long-term aspect requires consideration of consequences that are likely to follow during a considerable period of years as a result of the existence of the mortgage in relation to the production and earnings of the farm, and to changes in the price level. The problems arising out of this second aspect neither fully appear nor can be dealt with in a short period of time, save as they can be foreseen and avoided.

The problem is, therefore, one of prevention rather than correction. A mortgage of such nature that the farm income will not meet current interest cost or the amount of which reflects a large proportion of the purchase price of a farm bought during a period of extremely high price level, is likely to have long-term consequences of operation at a loss and the possible sacrifice of the property.

TERM OF AVERAGE FARM-MORTGAGE DEBT

The necessity of facing the long-term consequences of mortgage debt is evident from a consideration of the continuous term of the individual farmer's occupancy. Typically the farm owner does not

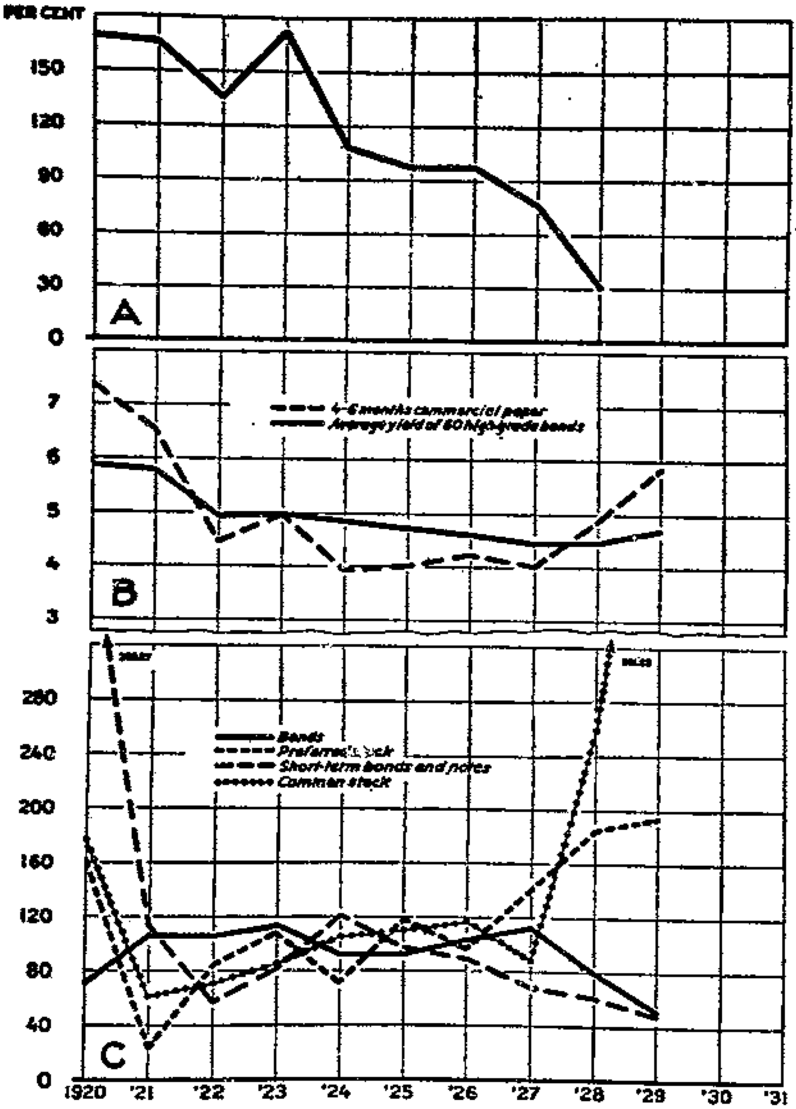

FIGURE 14.—COMPARISON OF FARM-MORTGAGE FINANCING WITH CORPORATE DOMESTIC FINANCING IN RELATION TO INTEREST RATES AND BOND YIELDS

A, Farm-mortgage financing index annual amount of new mortgages by insurance companies Federal land banks and joint-stock land banks, 1920–1928=100 (1920-21 insurance companies only); B, interest rates and bond yields; C, corporate domestic financing index of percentages of total amount by types of financing 1923–1925=100.

There is a tendency for more mortgages to be taken during years of high interest rates than during years of low interest rates due in part to funding of other loans necessitated by the pressure on banks and individuals at such times. This policy contrasts with the financing methods of corporations (C) which use short-term borrowing, or sell stock to the public when interest rates are high and issue bonds to take up their high-cost credit when interest rates are low.

change farms and does not pay off any mortgage that may exist. The debt when once acquired continues on the farm as an extended or renewed loan. The necessity of looking to the future in mortgaging is more apparent when the average term of mortgage loans is compared with the much longer period of years during which the mortgaged farmer remains in debt.

The reports of farmers regarding the presence or absence of debt on their farms at different dates provides a basis for computing rates of acquiring and paying off mortgages. (Table 32.) The rate of incurring mortgage taken in connection with the total percentage of farms having such debt indicates an average period of about 25 years that such farms would remain under debt if their mortgages had been incurred at the same rate as that during the years 1925 to 1928. The rate at which farms are cleared of debt, however, is a more accurate indicator of the length of time that the average farm is likely to remain under mortgage. The practice of renewal rather than repayment has long been the rule rather than the exception with the farm mortgage. Applying this annual rate for 1925 to 1928 to the total percentage of indebted farms in 1928 discloses an indication that the average mortgaged farm will remain in debt for about 35 years, varying from 23 to 50, among the geographic divisions. An average of the two rates, which would allow for some fluctuations in both rates, indicates that under the conditions prevailing during recent years the average mortgaged farm will carry indebtedness for at least 30 years. By coincidence this period is nearly as long as the standard term of the amortization loans made by the Federal land banks and the joint-stock land banks, and other loan plans whereby annual payments of about 1 per cent of the principal retires the debt during a term of about 33 or 34 years.

TABLE 32.—*Average number of years mortgaged farms remain under mortgage, computed on basis of rate at which new mortgages were incurred, and rate at which mortgaged farms were cleared of debt, 1925–1928*

Geographic division	On basis of rate at which new mortgages were made			On basis of rate mortgages were paid off		Average term of debt [4]
	Rate at which farms become mortgaged [1]	Percentage of all farms having mortgage debt [1]	Average period farms remain mortgaged [2]	Rate at which mortgaged farms were cleared of debt [1]	Average period farms remain mortgaged [3]	
1	2	3	4	5	6	7
	Per cent	*Per cent*	*Years*	*Per cent*	*Years*	*Years*
New England	0.86	32.8	38.1	1.00	32.8	35.4
Middle Atlantic	1.15	31.1	27.0	.97	32.1	29.6
East North Central	1.32	38.3	29.0	.89	43.0	36.0
West North Central	1.22	49.2	40.3	.99	49.7	45.0
South Atlantic	1.54	26.0	16.9	1.12	23.2	20.0
East South Central	1.38	26.4	19.1	.98	26.9	23.0
West South Central	2.04	38.7	18.9	1.14	33.9	26.4
Mountain	1.29	45.1	35.0	1.40	32.2	33.6
Pacific	1.59	45.0	28.3	1.23	36.6	32.4
United States	1.45	36.0	24.7	1.03	34.6	29.6

[1] Average 1925-1928 expressed as per cent of all farms.
[2] Column 3÷column 2.
[3] Column 6÷column 5.
[4] Average of columns 4 and 6.

If the reports on this item for the period 1925 to 1928 are typical of mortgage practice, the results indicate that most farmers would save inconvenience and expense by taking out mortgages that have terms much longer than are now covered by most loans. This will not apply, of course, to those cases in which the owner will need the funds for only a short term and is able to care for the loan at the end of its term. In most instances, however, farmers who contract for mortgages with 5-year terms should realize that before the debt is paid they will probably have to make at least four or five renewals, with a greater or smaller number of renewals if the term is less or more than five years.

The desirability of longer terms is further indicated by the practical difficulty of paying off a loan of the average size within a short period of years. If the average net worth of full-owner farmers in 1925 is taken as approximately $6,700, and the number of years as a farm operator is taken as 20, the average annual rate of accumulation during the 20 years prior to 1925 was $338. This assumes that all of the owner's wealth was acquired during his years as a farm owner or tenant although as a matter of fact owners as of 1920 averaged over two years as wage earners before becoming owners and may be expected to have accummulated some money when they began to farm for themselves. Furthermore, this figure makes no allowance for capital received by inheritance.

If the average mortgage on full-owner farms in 1925 is apportioned to the size of the average of such farms, it is found to be $3,059. If the whole of the $338 average annual gain were applied to the reduction of this average debt, it would require nine years to pay off the debt, a period much longer than the terms of most mortgages. As a matter of fact, it is usually not possible to apply all gains to reduction of debt. A portion of the annual accumulation often takes the form of improvements; often the earnings are used to expand the farm business or to add equipment for more efficient farm operation.

TERM OF FARM-MORTGAGE LOANS

The long-term persistence of indebtedness on a farm when it is once mortgaged contrasts with the relatively short terms of the great majority of mortgages; long-term loans are the exception and not the rule.

A distribution of loans by length of term as reported by leading agencies for 1924 indicated that 17.5 per cent of the outstanding loans had a term of 1 year; 11.7 per cent, 2 to 4 years; 46.5 per cent, 5 years; 9.6 per cent, 10 years; and 13.2 per cent had terms of more than 30 years. Mortgage companies had 75 per cent of their loans on 5-year terms and insurance companies 65 per cent. The fact that commercial banks had 52 per cent of their farm mortgage loans on terms of one year suggests the frequent renewals that many farmers have to arrange. (Table 33.)

TABLE 33.—*Length of term of farm-mortgage loans: Percentage distribution of holdings of principal lending agencies* [1]

Agency	Average term	Percentage of loans for—					
		1 year	2 to 4 years	5 years	10 years	11 to 30 years	Over 30 years
	Years	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Insurance companies	5.6	4.4	13.3	64.8	14.6	2.5	0.4
Federal land banks	33.0						100.0
Joint-stock land banks	33.0						100.0
Commercial banks	2.6	52.1	19.9	26.7	.7	.6	
Mortgage companies	6.2	.3	2.8	74.5	20.6	1.8	
Other sources [2]	4.7	20.1	13.5	53.6	11.1	1.7	
All agencies	8.5	17.5	11.7	46.5	9.6	1.5	13.2

[1] Data as of Jan. 1, 1924.
[2] Computed from reports of other than land-bank sources.

REFINANCING AS A FARMER'S PROBLEM

Aside from the long-term amortization loans principally made up of the loans of the Federal and joint-stock land banks, other loans on farm mortgage average less than five years in term. (Table 33.) This means that each year approximately a billion and a half dollars of farm-mortgage loans must be renewed or otherwise refinanced. New financing seldom has amounted to more than one-fifth of the total farm-loan operations in a given year.

The necessity of the remaining large annual volume of refinancing is predetermined by the fixing of the due date in the original loan contract. Consequently the new loan contract must be undertaken under whatever conditions prevail at that time, even though a shortage of funds or a period of high interest rates may be encountered. Meanwhile, the farmer must meet the competition from a total of $6,000,000,000 to $10,000,000,000 in new bond and stock issues offered annually to the public. In other words, the regular recurrence of the necessity of readjusting old debt gives the farmer a disadvantage in the management of his finances. The privilege of prepayment is not included in many loan contracts though it may often prove a valuable provision.

Refinancing of existing loans thus raises a problem for both borrower and lender. Neither may be able to foresee what money-market conditions will be three or five years hence. Although lending agencies have an alternative use for funds when rates are high, a farmer does not have alternative methods of financing. His best recourse will usually be the avoidance of the danger by observing the movement of short-term rates.

HEAVY LOANS AN OBSTACLE TO BEST FINANCING

Improvement in the type of loan obtained by farmers is retarded by the large number of cases which have debt ratios in excess of the loaning limits of agencies offering long-term amortized loans. Data indicate that mortgages assumed on transferred farms average nearly two-thirds of the value of the farm, and that the same farms have had approximately that amount of debt before being transferred.

The extent to which existing indebtedness has become a barrier to improved financing is indicated by the fact that in a single year one of the Federal land banks had applications for over $10,000,000 in loans, but because of inadequate security in most cases made actual loans of only about $3,500,000 (*8*). This experience is probably typical of the demand for loans made upon many lending agencies.

Although an agency may be willing to loan the greater part of the amount applied for, the problem of caring for the additional debt, which can not be included in the first mortgage, and the frequent difficulty of obtaining second mortgages often combine to prevent the farmer from obtaining even a part of the debt refunded as desired. Moreover, if the borrower has other indebtedness in excess of what may be loaned on his land, this fact often is taken to indicate an undue interest burden, which may lead to difficulty even with a first-mortgage loan.

RELATION OF AMOUNT OF LOAN TO POSITION OF PRICE LEVEL

In a farmer's management of his mortgage credit the current position of the price level is important. Neglect of this item may have far more serious results than indifference to other phases already mentioned. He may give successful care to the source, interest rate, term, and method of repayment, yet if the current price level is not considered when the amount of the mortgage is determined, the advantage of all other precautions may be lost, and even foreclosure may occur.

The discussion of the average duration of the period of encumbrance has indicated that whether the term of the mortgage is long or short, the average debt itself continues in some form for 25 to 35 years or longer. The farmer who contemplates placing a mortgage on a farm that he wishes to keep or to pass on to his heirs, therefore, must view the loan obligation as it is likely to develop over the following two or three decades. In so far as possible, the amount of the loan as well as all of its conditions should be such that payments can be made or the mortgage renewed and the property held regardless of changes likely to occur in the level of general prices.

During the period of high prices, 1918 to 1921, prices of land followed the general upward trend though at a somewhat lower level. Many borrowers and lenders erroneously assumed that the higher price level then current would continue high permanently or at least for a long time. In an investigation made in 1919 Lloyd (*11, p. 363*) reported:

> Generally speaking bankers and farmers were optimistic that the price of land would be maintained or would advance. They believe that present prices of farm products will continue for a few years.

Farm mortgages incurred at that time were generally made with reference to current land values and so represented amounts substantially larger than usual.

This tendency for the size of new loans to conform to the current value of the land is illustrated by the average amount of the loans obtained by farmers from the Federal land banks and joint-stock land banks during each year of operation for those institutions. Figure 15 shows the index of the average size of loans plotted on the same scale as the index of land values. After a lag of one year during 1917 the size of loans by the Federal land banks rose rapidly following the upward course of land values to the peak in 1920 and then down to

1922.[13] The sharply downward trend continued for a year after 1922, similar to the lag on the rise, and then followed a more gradual decline close to that of land values. These loans were all made under the standard loaning provisions of the land banks, which limit loans to 50 per cent of the value of land and 20 per cent of the value of improvements, hence they did not include purchase-money mortgages, arising out of transfers, which frequently represent higher proportions of the land value.

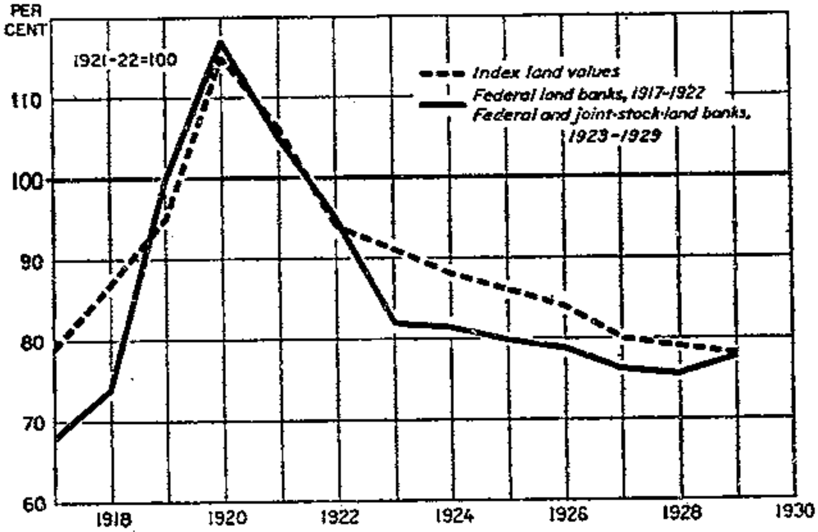

FIGURE 15.—INDEX NUMBERS OF AVERAGE SIZE OF LAND-BANK LOANS AND OF LAND VALUES

The influence of the price level on the amount of money borrowed is indicated by the close relationship between the index of average size of land-bank loans and the index of land values from 1917 to 1929.

The same tendency for the loan to reflect the current price level is shown by the average size of mortgages made by the Minnesota Rural Credit Commission; the amount of the loan steadily declined from an average of $5,344 for the first year of operation, 1923–24, to an average of $3,893, in 1928–29. In Nebraska, the average size of mortgages filed conformed closely to land-value trends although including second mortgages and purchase-money mortgages incident to land sales. The size of second mortgages revealed the same tendency, as shown by column 3 in Table 34.

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[13] Note on Figure 15 and Table 34: An amendment to the Federal farm loan act in 1923 extending the Federal land bank's loan limit from $10,000 to $25,000 resulted in interactions in size of loans from Federal and joint-stock land banks thereafter. Because of that fact the trend of loan size thereafter is shown in Figure 15 by an average of the size of loans from the two sources. Data for number and amount of loans made by the joint-stock land banks are not available for years earlier than 1921. The two series were, therefore, linked together for 1922 and carried on with the relative difference shown for that year.

TABLE 34.—*Average size of loans made by four representative agencies, and in Nebraska, by years, 1912 to 1930*

Year	Average mortgage loans					Index of land values
	Federal land banks	Joint-stock land banks	Jewish Agricultural Society	Loans filed in Nebraska	Minnesota Rural Credits Commission	
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*
1912			625			97.0
1913			570			100.0
1914			564			103.0
1915			455			103.0
1916			571			108.0
1917	2,154		546			117.0
1918	2,372		565			129.0
1919	3,191		699			140.0
1920	3,722		916	7,128		170.0
1921	3,352	10,596	768	5,708		157.0
1922	3,029	8,714	710	5,167		139.0
1923	3,196	6,917	727	5,437		135.0
1924	3,505	6,648	623	5,740	5,344	130.0
1925	3,191	6,672	618	5,675	4,777	127.0
1926	3,559	6,174	632	5,667	3,834	124.0
1927	3,575	5,844	647	5,200	3,832	119.0
1928	3,788	5,557	616	5,167	4,263	117.0
1929	3,751	5,833	509	5,045	3,993	116.0
1930	3,816	5,957	481			115.0

It is clear that in the past the amount of debt incurred has been closely related to the value of the land then current. What relation does this have to later developments? An example is found in the situation that developed during the 10 years following the World War when many mortgages outstanding were so large that farmers could not meet the payments, and lenders could neither continue to carry the loans nor renew them for the original amount. The result has been the loss of many farms which the owners wished to keep, and the acquisition of much land by lending agencies which they did not want, a condition distressing to both borrower and lender and one that probably would have been avoided had such consequences been foreseen when the mortgages were made.

The general disregard of price-level changes not only results in a marked increase in mortgage debt during the period when prices are at their peak, but also in further additions to the debt burden for a number of years thereafter. Despite the steady price decline following 1920 and large reductions from foreclosure and reversion, the mortgage debt of the country was nearly 20 per cent larger in 1928 than in 1920. Apart from the increases due to funding short-term loans into mortgages, heavy indebtedness itself often becomes a cause of added debt, for whenever the debt ratio exceeds the cost-yield ratio, the excess carrying charge becomes a further encroachment on the farm capital.

THE AFTERMATH OF PRICE DECLINES

The consequences of price declines are partly indicated by foreclosures, bankruptcies, and bank failures. (Fig. 16.) The course of these misfortunes in relation to the wholesale price index since 1890 shows that low points in the price curve were reached in 1896 and 1921. The low point of 1896 was the culmination of a long period of

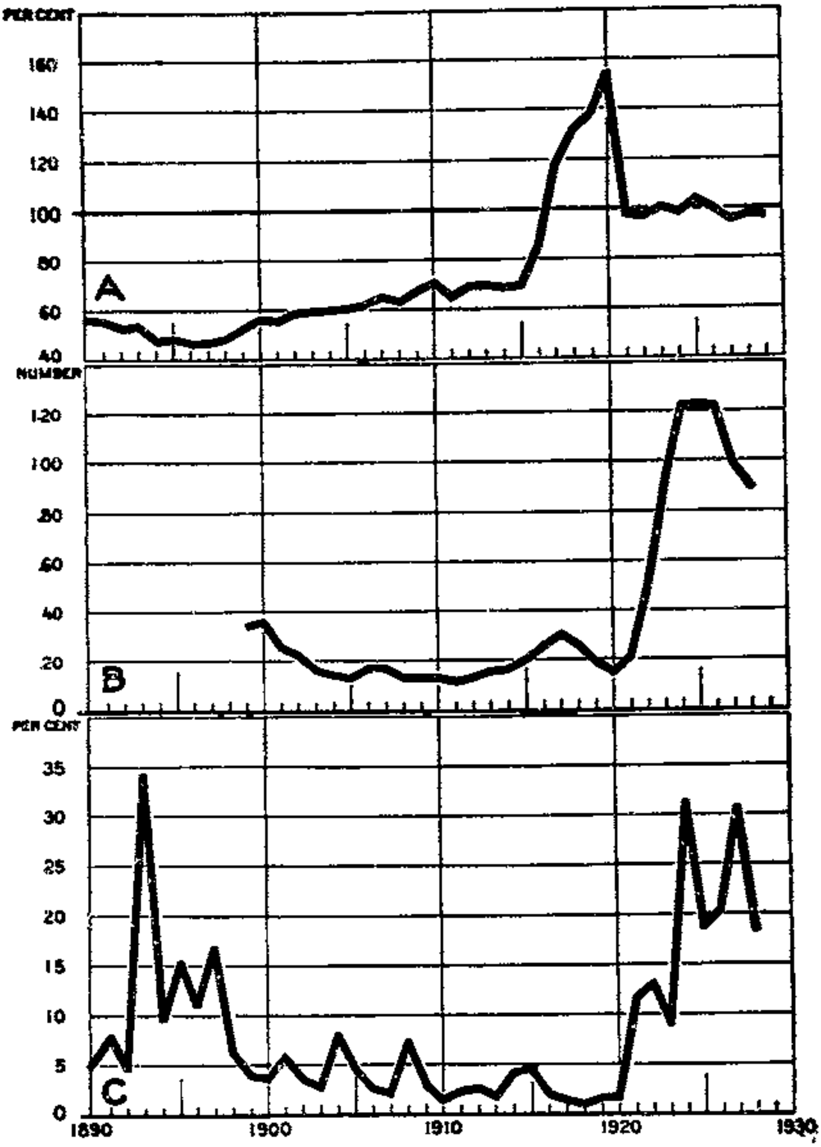

FIGURE 16.—PRICE CHANGES, FARM BANKRUPTCIES, AND BANK FAILURES, IN THE UNITED STATES

A, Index numbers of wholesale prices, 1926=100; B, farm bankruptcies per 1,000 farms; C, bank failures per 1,000 banks in operation. The danger of incurring heavy obligations during periods of high prices is shown by the greatly increased number of bankruptcies among farmers and of bank failures which have followed each such price peak. The largest percentage of farm bankruptcies during the last 30 years occurred in 1900 and in 1925—four years after the low price years of 1896 and 1921.

falling prices, and 1921 marked the collapse of the inflated war prices which had reached a peak in 1920.

Each of these main periods of low prices was accompanied or followed by an increase in the number of bankruptcies among farmers, foreclosure of farms for debt, and bank failures, mostly in farming areas. Foreclosures and forced sales of farms appear to have been greatest in the years of lowest prices or in the next years following, whereas bankruptcies among farmers were most numerous four years after the low point in prices. Following the World War this bankruptcy peak occurred in 1925, while the number in 1900 was larger than in 1899, the first year for which such data are available. Failure to meet payments usually results in rather prompt foreclosure action by the holder of the mortgage, whereas in the typical case of bankruptcy, several years of unsuccessful effort may elapse before the farmer takes this course of action. Bank failures also have had notable increases during price declines, although the number per year has varied greatly. After 1921 such failures reached high proportions in 1924, 1927, and 1930. (Table 35.)

TABLE 35.—*Number of failures of State, private, and national banks in the United States, and bankruptcies among farmers 1910–1930 by years ended June 30*

Year	Bank failures [1]			Bankruptcies [2] among farmers	Year	Bank failures [1]			Bankruptcies [2] among farmers
	All banks	State and private banks	National banks			All banks	State and private banks	National banks	
	Number	*Number*	*Number*	*Number*		*Number*	*Number*	*Number*	*Number*
1910	34	28	6	849	1921	358	330	28	1,363
1911	58	55	3	679	1922	396	363	33	3,236
1912	63	55	8	837	1923	274	237	37	5,940
1913	45	40	5	942	1924	915	777	138	7,772
1914	115	96	19	1,045	1925	542	440	102	7,872
1915	126	110	16	1,246	1926	573	496	77	7,769
1916	56	41	15	1,658	1927	831	689	142	6,290
1917	41	35	6	1,906	1928	484	413	71	5,679
1918	28	25	3	1,632	1929	549	482	69	4,939
1919	45	43	2	1,207	1930	640	558	82	4,464
1920	49	44	5	997					

[1] From annual reports of the Comptroller of the Currency (*23*).
[2] From annual reports of the Attorney General.

PRICE CHANGES SINCE 1800

The wide variations of which the general price level is capable are seen most clearly by reference to a chart showing these changes since 1800. (Fig. 17.) If the prices of 1910 to 1914 are taken as 100 it will be seen that three times during the last century and a quarter the price level has risen to nearly 200 or over (*22*). Each of these occasions was a war period—the war of 1812, the Civil War, and the World War. The future course of prices can not be determined, nor can it be known whether any future event will again raise prices to the high levels occasionally reached heretofore. It is important to observe, however, that the character of these high price periods in the past has been distinctly different and that whenever high levels have been reached, prices have declined greatly within the years immediately following. The inevitable consequence in each case has been that obligations incurred at the high price levels have caused much difficulty in repayment later.

DANGER FROM MORTGAGES ARISING OUT OF PURCHASE OF LAND

Although all monetary obligations incurred during periods of high prices are open to the objection that they may have to be paid with dollars of greater purchasing power, the danger is especially great when the debt represents a large proportion of the value of the property. In the case of first mortgages obtained from special mortgage agencies, the usual rules restricting loans to a conservative proportion of the farm value provide some protection to the farmer against the danger of the debt ratio becoming too high. If the debt is restricted to approximately half the value of the farm, a decline of one-half in prices would still leave the sale value as great as the debt and the farmer could continue in possession of his farm as long as he could renew the loan and meet interest payments.

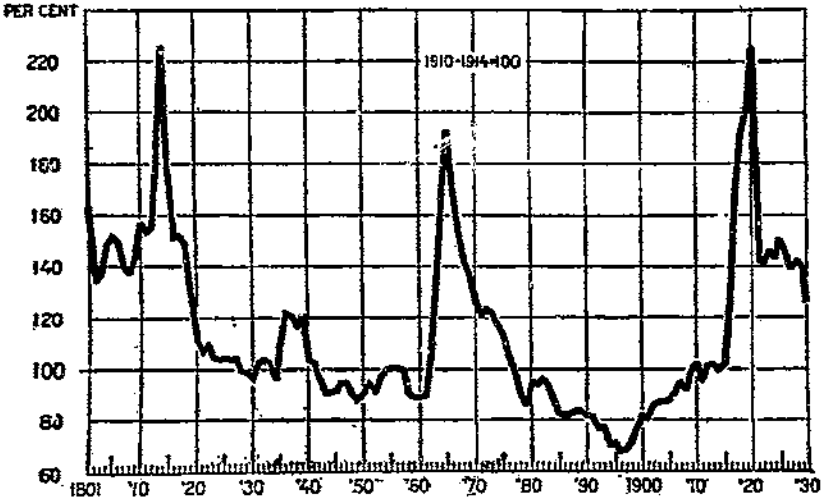

FIGURE 17.—INDEX NUMBERS OF WHOLESALE PRICES, 1801 TO 1929

Three times since 1800 prices have risen to very high levels—in 1814, 1865, and 1920. After each of these peaks prices have fallen sharply and then more gradually for a period of years. Debt incurred during these periods of high prices has been repayable under the difficulty of using dollars of greater purchasing power and product returns of less debt-paying power.

In the case of mortgages given in purchasing farms, however, often involving a second as well as a first mortgage the danger is much greater. Such indebtedness usually averages two-thirds of the value of the farm and often constitutes even higher proportions. Therefore early in the decline in prices the land value is equaled by the debt. With farm returns often yielding less than the interest rate, a debt of two-thirds or three-fourths of the value of the land may consume the entire return from the land.

Although periods of extremely high prices occupy only a few years as compared with the longer intervening periods of gradual change transactions conducted on high price levels are relatively more numerous because of greater activity in land transfers and other dealings resulting in the use of credit. Debts contracted under these conditions may cause much difficulty in later years when they must be paid with dollars of greater purchasing power.

RELATION OF CROP VALUE, PRICE LEVEL, AND DEBT-CARRYING CAPACITY

A comparison of the course of the price level since 1866 with the per-acre value of 10 leading crops [14] shows a general relationship throughout the period. When the index of average mortgage debt per acre for all full-owner land is plotted on the same chart, a close correspondence between debt and prices is shown from 1890 to 1920. After 1920 the debt burden continued to even higher levels while the dollar value of crop returns fell off sharply. Figure 18 indicates the wide disparity that occurred between obligations and the means with which to meet them as a result of debt incurred at high price levels.

How then may the farmer judge as to the safe limits for mortgages given? How may the lender on mortgage security assure the safe return of his funds without taking the property? Answers to these questions depend primarily upon two considerations—the amount of

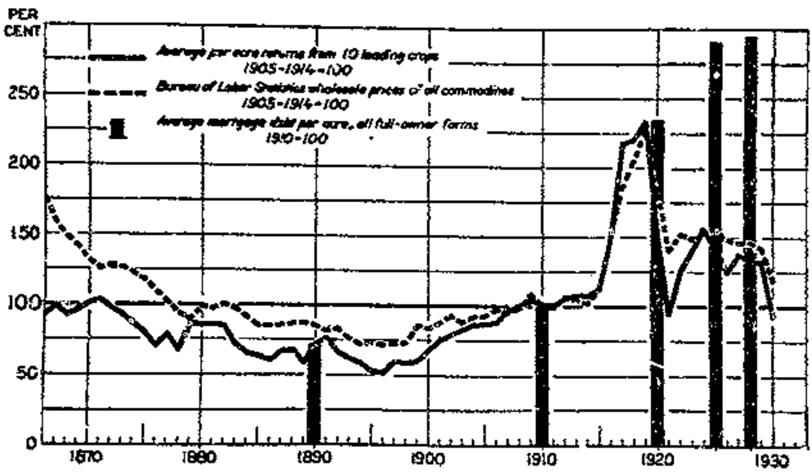

FIGURE 18.—RETURNS PER ACRE OF 10 LEADING CROPS, PRICE LEVEL, AND AVERAGE DEBT PER ACRE, 1866–1930

The value of returns from the 10 leading crops has shown a fairly close relation to the general price level from 1866 to 1930. The amount of indebtedness per acre of owner-operated farms also showed a close relation to the general price level from 1890 to 1920. Thereafter the debt increased while prices fell. The result was an increased burden and the means of carrying it reduced nearly one-half.

net income per acre from the land and how it will be influenced by changes in price level. It is assumed that the farmer's only means of caring for the debt is the annual net income from the land; this may be either the net cash rent or the net returns from crops over a period of several years. In either case the changes in the price level will affect in equal measure the income that is available for carrying indebtedness. But if the borrower has other resources, he may be able to retain his farm.

First, attention must be given to possible changes in the price level that may occur during the next 25 to 35 years. On the basis of 1913 prices as 100, the wholesale-price index in 1890 was at 80, in 1920 at 226, and in 1929 it had declined to 147. The land-value index, which was 100 in 1912–1914, had been about 90 in 1910. It rose to 170 in

[14] Corn, wheat, oats, barley, rye, buckwheat, potatoes, all hay, tobacco, and cotton, which comprise nearly 90 per cent of the area in all field crops, the average value of which closely approximates the value per acre of the aggregate of all crops.

1920 and declined to 116 in 1929. These occasional variations in price level, and hence in the debt-paying power of land income, suggest that mortgages incurred during high prices require the greatest caution. Although the interest on a loan as large as $60 per acre at 6 per cent may be met with a per-acre return of $6, the interest bill of $3.60 can not be met if the price level has fallen one-half so that the return from the land has a value of only $3. The sale price of the land may be greater or less than the amount of the loan, but the limiting factor for the farm owner is the current debt-paying power of the land return.

The selling price at the time the loan is made is not a safe guide as to ability to repay the loan many years later. Hence the farmer who wishes to keep his farm must consider its net annual income in relation to the loan. Incomes expressed in dollars also reflect the price level prevailing at the same time. It is, therefore, necessary to reduce incomes to a common basis by dividing them by a price index of purchasing power to get a figure that represents the net income of the land uninfluenced by price level. With the amount of the land return thus expressed in terms of purchasing power the amount of debt that the return will support may be found by dividing the return by the mortgage rate of interest. The result will be the maximum amount of money which will be possible of repayment with prices equal to, or above the price-index base, and provided that all the income is applied to carrying the indebtedness.

This problem may be illustrated first by use of assumed cash-rent returns for a period when the price level is steadily rising. Table 36, shows the value of given net rents or returns per acre at different stages of price level, and the corresponding amount of indebtedness that could be carried if all the rent were applied to that purpose. The capitalization rate used is 5.5 per cent. The amount of debt that could be carried will be greater or less than that indicated according as the interest rate is less or more than 5.5 per cent. This amount may be found for any rate by dividing the converted land return by the rate actually in effect.

TABLE 36.—*Amount of mortgage debt per acre at 5.5 per cent which may be carried by net land income per acre, at various price levels*

Income and supportable debt per acre when the price level is—											
100		60		80		120		140		200	
Income	Supportable debt	Income	Supportable debt	Income	Supportable debt	Income	Supportable debt	Income	Supportable debt	Income	Supportable debt
Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
3	55	1.80	33	2.40	44	3.60	65	4.20	76	6	110
4	73	2.40	44	3.20	58	4.80	87	6.60	102	8	146
5	91	3.00	55	4.00	73	6.00	109	7.00	127	10	182
6	109	3.60	65	4.80	87	7.20	131	8.40	153	12	218
7	127	4.20	76	5.60	102	8.40	153	9.80	178	14	254

The use of actual data as in Table 37 demonstrates further the allowances necessary in arriving at the debt-carrying capacity of a given farm under various changes in price level that may occur during a period for which the average mortgaged farm is encumbered. In the case cited, a gross rent of $8.19 in 1920 was equivalent to a net of $6.24. The general price level was then at 226. With the price level of 200 the net rent would carry a debt of $100 at 5.5 per cent. With rent reflecting prices at the 1913 level, however, it would be sufficient to carry the interest on a debt of only $50 per acre.

TABLE 37.—*Debt-carrying capacity of land income in Iowa at various price levels for selected areas, stated years from 1900 to 1920*

Year	Gross rent per acre [1]	Net rent per acre [2]	Index of wholesale prices, 1913=100 [3]	Net rent corrected for price change, 1913=100	Amount of mortgage debt at 5.5 per cent which may be carried by net land income at price level of—			
					100 (1913)	80 (1900)	150 (1916–1925)	200 (1919)
	Dollars	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1900	3.29	2.87	80.5	3.56	65	52	98	130
1905	3.57	2.99	86.2	3.47	63	50	95	126
1910	4.22	3.51	100.9	3.48	63	50	95	126
1913	4.60	3.55	100.0	3.55	65	52	98	130
1920	8.19	6.24	226.2	2.76	50	40	75	100

[1] U. S. Dept. Agr. Bulletin 1224 (*6*).
[2] Gross rent less taxes and depreciation. Depreciation computed at 3 per cent of value of land and buildings. Taxes computed from State auditor's reports.
[3] Bureau of Labor Statistics (*28*).

Other price indexes may be used instead of the Bureau of Labor Statistics index used here, the farm-price index being the best for the years for which it is available. The general results are similar in showing the occasional wide variations in debt-carrying capacity caused by changes in price level.

CROP PAYMENTS AS MEANS OF AVOIDING DIFFICULTIES FROM PRICE-LEVEL CHANGES

The large proportion of the value of the land represented by the average mortgage given on land transfers in addition to the greater number of such sales, is thus seen as the potential cause of much ultimate difficulty. The normal course of the life of every rural community gives rise to a considerable annual sale and purchase of farms in which retirement of some farmers and the commencement of farming by others is a principal cause. The quickened activity of land sales during high prices makes it especially desirable that farmers beginning at that time shall not be so handicapped by fixed debt that they will subsequently fail or be compelled to farm at a loss.

One way of meeting this problem of retiring debt under falling prices is by providing that the mortgage shall be paid by means of a share of the annual crop from the land, or by the money equivalent of such share, rather than in term of dollars of changeable purchasing power. This is done by considering the farm as worth a given multiple of its own income.

The risk to the seller then becomes no greater than in the case of share renting for a period of years, and the buyer has an incentive to produce good crops since both receive a fixed share of the returns rather than a fixed amount. Payments for arable pasture and other tillable land not planted to money crops can be calculated on the basis of the return from crop acres. Payments on nontillable land might be determined from a ratio of its acre returns to returns from crop acres. This method, occasionally used in western areas, could have prevented many foreclosures and much distress on land that burdened its owners in the decade following 1920. Such a plan is probably most practicable for transactions between individuals, the kind of dealings which predominate in periods of high prices.

Difficulties involved in such transfer procedure would require careful protection of the interests of buyer and seller. In general, these problems are of the same nature as the annual problems connected with share-rented farms. The requirement of some down payment and the designation of a trustee would increase the probability of faithful execution of contracts.

POLICY OF LENDING AGENCIES WITH REGARD TO LOAN RATIOS

Maintenance of a margin of approximately 50 per cent of the selling value of the land has been either from law or custom a more or less established feature with many farm-mortgage lenders for a considerable time. The Federal land banks and joint-stock land banks, from the beginning of the operation of the system, have been permitted to offer as security for bond issues only those mortgages that represent an amount not in excess of 50 per cent of the value of the land, and 20 per cent of the insured value of the improvements.

This policy, adhered to generally before the World War, has not been essentially altered since. A summary of the loan practice of principal investment concerns in leading agricultural States indicated that the maximum proportion of current market value that the owners of farm lands obtained by first mortgages thereon in 1929 averaged approximately 43 to 44 per cent (*3*). Of 38 life-insurance companies that loan on farms, 26 reported a loan limit at 50 per cent; 3, at 45 per cent; 4, at 40 per cent; and 4, at various ranges of 30 to 50 per cent; and only 1 at 50 to 60 per cent.

Although most agencies appear to be continuing the loan limit of 50 per cent on new loans, some modifications are occurring. In the Southwest, for example, some companies that formerly had a 40 per cent limit, more recently have been reported as loaning at 50 per cent. On the other hand, some companies that formerly included buildings in the appraised value have since applied the ratio to land only. More important in increasing the ratio of mortgage to value have been the liberal credit policies on sales of foreclosed land whereby, with only a small payment down, a mortgage is taken back for a large percentage of the sale price. Some of this modification of policy is due to a recognition of the arbitrary nature of a fixed 50 per cent loaning limit under all conditions of changing price levels.

The attitude of lenders toward the proportion of debt in land sales has a bearing on the outstanding volume of mortgage debt. Land sales made with small initial payments have the effect of raising the mortgage debt ratio to a high percentage of value of the particular farm. But where foreclosure has occurred on account of large mortgages, resale of the land may be made on terms that result in placing an equal amount of debt on the land. The fact that transferred farms in 1925 to 1928 had approximately the same ratio of debt before as after transfer suggests that no great change in debt is likely to occur as a result of sale of land during periods of low activity in sales.

RELATION OF LOAN RATIOS TO TERM OF LOANS

The question of maintaining the loaning ratio does not become a problem on loans outstanding unless the term expires and the mortgage becomes due. The regular payment of interest and required installments on principal generally suffices to keep the loan in good standing. If the term expires and renewal is desired, consideration must be given to the value of land at that time, in fixing the leaning rate. The Federal system and the principal State systems have not had to renew many loans, because of the long term generally used and the fact that payments in amount sufficient to retire the debt during this term are required by the loan contract.

RECENT CHANGES IN TERM AND PAYMENT METHODS

Insurance companies and other agencies whose loans usually run for periods of 5 to 10 years or less have been facing the problem of reloaning at higher ratios or of reducing the amount granted. Of 40 life-insurance companies reporting in 1929 on the term of their loans, 13 loaned only for periods of 5 years, 14 loaned for periods of 5 to 9 years, 3 for periods of 5 to 7 years, 2 for 7 years, 2 for 3 to 10 years, and 4 at varying terms of 1 to 20 years (*13*). It is evident that no material change has occurred during recent years in the length of term offered by these sources.

In contrast, the Federal and joint-stock land-bank loans are all of the amortization character. They typically run for 33 to 35 years, and only occasionally for shorter periods; small fractions of the principal are payable annually or semiannually, but none of the loans are due as a whole. Any changes in volume of outstanding mortgage credit from these sources, therefore, aside from those due to the amortization payments, foreclosures, or replacements by other mortgages must be confined to new loans.

Most loans of other agencies are also of short duration. The amount of amortization loans thus continues to be largely confined to the loans of the Federal system, plus the loans by the State systems. A few insurance companies offer loans on the amortization plan, but the total volume still appears to be relatively unimportant.

Since 1928 a more extended use has been made of the plan requiring one or more annual payments in gradual reduction of the principal. Payment under this plan, sometimes known as a "curtail," does not undertake complete amortization but only a reduction of the principal, often amounting to several hundred dollars per year. The Middle West and the Southwest have made the most extensive use of this modification of the straight-term loan.

CONCLUSIONS AND SUMMARY

Land and buildings form about three-fourths of the farmers' assets and a corresponding proportion of farm credit is represented by mortgages on real estate. Increases in farm-mortgage debt, accumulated during the period of active land sales at high prices ended in 1920, were continued in the following years by extensive funding of short-term credit into mortgages.

Increase of indebtedness while prices were declining has brought out numerous problems in farm-mortgage financing. The long-term nature of most land-secured debts which average 30 years or more makes the usual arrangement for short term with frequent renewal a costly practice. Determination of a satisfactory basis for long-term loans in view of possible price changes probably has been the most serious question confronting the user of mortgage credit. Advantageous timing of farmers' borrowing with respect to money-market changes is necessary. These demands require that farmers be supplied with current information that will enable them to manage their credit effectively.

In general the problems in farm-mortgage financing consist of adapting financial facilities and practice to the effective establishment and operation of economic farm units. Whenever the security offered is adequate, there should be a dependable supply of credit available at a cost consistent with the risk involved. The term should be sufficiently long to accomplish the purpose of the loan or to allow convenient replacement and the method of payment should be that best adapted to the borrower's probable means. Agriculture has been slower in developing the means of achieving these ends than have some other lines of enterprise. Much of the improvement required awaits more attention by farmers.

Events since 1910 have not materially changed the geographical distribution of the country's volume of farm-mortgage credit. In 1928 over 60 per cent of farm-mortgage debt was in the North Central States and less than 20 per cent was in the Southern States.

Farmers who own the land they operate have a greater interest in farm-mortgage problems than do farmers of other tenures. Partly on account of larger aggregate acreage and partly because of greater dependence upon the land as a basis of loans, owner-operated farms in 1928 had nearly 59 per cent of all farm-mortgage debt, as compared with 38 per cent for tenant-operated farms and less than 3 per cent for manager farms. Tenant and manager farms being of larger average size have greater debt per farm. Despite these proportions, the debt on tenant farms tended to increase relatively more rapidly between 1925 and 1928 than debt on owner-operated land where heavier loans were an obstacle to further borrowing.

Despite the continued rise in the total amount of farm mortgages up to 1928, a movement toward reduction set in soon after 1920. Beginning in the Western States and gradually moving eastward, sharp declines in land values and in other prices were followed by fewer land sales, and smaller loans and renewals, while widespread foreclosure and repossession of title on defaulted contracts were strong forces working toward a lower outstanding debt.

The down turn in mortgage volume in 1928 brought to a close the long upward movement covering three decades. The long period of rising prices and increasing mortgage credit before 1920 was followed by eight years of further increase despite price declines. This period witnessed a notable accumulation of mortgages by insurance companies and the Federal and joint-stock land banks. Finally, after the break in prices, the debt held by commercial banks and individuals was transferred to other lenders as the movement entered upon its final phase—a reduction of the general volume of farm-mortgage debt of the country.

The relative importance of sources of farm-mortgage credit during the last decade has shown a decline in the part played by individuals and commercial banks, and a pronounced rise in the importance of lending institutions specializing on long-term loans. In the course of eight years, 1920 to 1928, the proportion of all mortgage credit supplied by commercial banks declined from 18.4 to 10.8 per cent. Meanwhile the proportion held by life-insurance companies rose from 12.4 to 22.9 per cent, and the combined loans of the Federal and joint-stock land banks increased from 4.3 to 19.1 per cent. This shift has carried gains for the improvement of agricultural finance. Commercial banks have liberated a considerable amount for current loans, borrowers have been financed for longer terms and at lower rates, and much credit of a capital nature has been given a more appropriate basis in capital security.

Marked variation appears in the proportions of lenders' holdings among different regions. In the North Atlantic States and on the Pacific coast the greater part of farm-mortgage credit is provided by individuals and commercial banks. Insurance companies have concentrated their farm loans in the four geographic divisions centering on the Mississippi Valley where higher land values and heavier credit demands have permitted larger individual loans. The Federal and joint-stock land banks have distributed their loans widely but have made the heaviest advances in the South. Mortgage companies have centered their activity in the Western and Mountain divisions. Loans by individuals tend to approximate 30 per cent of the total in most divisions, save in the North Atlantic, where they assume a dominant proportion, and in the south central divisions, where they are but half the national average.

Since 1914 the outstanding sectional difference in demand for mortgage credit has been the continued demand for credit in the Western States. Other significant differences are reflected in the relative position of lenders. Mortgage credit from banks, though declining in the country as a whole, has had an increasing part in the northeast and Pacific regions. Meanwhile, insurance loans have declined in the North Atlantic States while steady expansion has occurred in the Middle West. The new facilities provided by the Federal farm loan system have spread over a wide area but have tended to serve less favorable territory, with especial expansion in the South.

Changes in the trend of total volume of mortgage credit extended by principal institutions appear to have been preceded one or two years by changes in volume of loans by life-insurance companies. The comparatively short term of loans from these sources brings a substantial proportion of the total to maturity and redistribution each year, thus making them early indicators of mortgage movements.

Individual mortgage loans on owner farms average nearly $4,000. Among lending agencies insurance-company loans are largest, the average reported being over $10,000. The average loan held by joint-stock land banks was next in size, about $8,000. Loans by Federal land banks average approximately one-half the size of those from the joint-stock land banks. Restrictions of the Federal land banks to loans on owner-operated farms keeps these lenders from participating in the financing of tenant-operated and manager-operated farms which average larger in size and require larger loans. Among mortgages held by individuals, active farmers have the smallest amount and the smallest average size of loans, representing approximately one-third the size of insurance loans. Loans are largest in the North Central States mainly as a result of higher land values in that region. Partly for this reason insurance companies have concentrated their farm-mortgage business in those States.

The percentage of mortgaged owner-farms increased steadily from less than 28 in 1890 to more than 37 in 1920. Extensive foreclosures and repossession of titles following 1920 probably contributed to the lower percentage of mortgaged farms reported by the census of 1925. Farmers' reports received since that census, indicate a continuation of the increase in the number of farms having mortgage incumbrance.

Farms operated by their owners more generally have mortgages than do other farms, save part-owner farms which have such debt in 48 per cent of cases as compared with 34 per cent for full-owner farms. Greater capital requirements in proportion to the land owned account for most of these relatively higher debt frequencies.

Comparison of debt frequency on tenant-operated farms owned by farmers and those owned by others indicates that farmers are much more often in debt for such land and for larger proportions of value, than are nonfarmers. A greater tendency to acquire additional land and a relative lack of funds among farmers probably account for this unfavorable comparison.

Most of the increase in the number of mortgaged farms between 1925 and 1928 occurred on farms owned by the same persons at both dates. Farms that were transferred during that period had mortgage debt in nearly three-fourths of all cases before transfer, and the net increase in debt frequency incident to change of ownership was negligible. These facts suggest that, in addition to transfers necessitated by debt distress, voluntary transfers may be facilitated by the existence of a mortgage on the land because of the smaller consideration represented by the equity.

The ratio of mortgage debt to the value of farms has tended to rise since 1910. High land prices and increased land transfers during the years prior to 1921 more than doubled the 1920 debt above the debt of 1910. The further increase from refunding operations after 1920 and the great decline in land prices left a debt in 1928 equal to 21 per cent of the value of all farms as compared with a debt ratio of only 9.5 in 1910. The smallest change in debt ratios among geographic divisions was the narrow variation within a range of 10 and 14, in the North Atlantic States, where both land values and debt had been least affected by events from 1915 to 1920. The greatest change appeared in the Mountain States where expanding developments before 1920 and sharp recession afterward brought the debt ratio from 8.6 in 1910 to 24.2 of the value of all farms in 1928.

When confined to mortgaged farms the increase in the ratio of debt to value since 1910 was only slightly less marked, having risen from 27.3 in 1910 to 46 in 1928 for full owner-operated farms as a whole. The lower debt ratios and larger equities on tenant-operated farms in 1925 partly accounts for the greater increase in debt per farm which such farms reported in 1928.

Among tenant-operated farms notably greater indebtedness was found on those owned by farmers operating other farms. The fact that such farms are mortgaged in more instances and for larger proportions of value indicates that farmers have been more willing to incur indebtedness in purchasing land than have others. In the aggregate active farmers have approximately three-fourths of the debt on farm real estate.

A distribution of individual mortgaged farms on the basis of ratios of debt to value in 1928 showed a concentration of more than 60 per cent of loans with debt ranging from 15 to 55 per cent of the farm value. More than 35 per cent of the mortgaged farms were reported by their owners as having debt amounting to more than half of the farm value, 12 per cent were more than three-fourths of the value, and more than 4 per cent were greater than the farm value. In the North Central and South Atlantic divisions the loans in excess of farm value ranged from 6 to 7 per cent.

A relatively close correspondence appears between the percentage of farms with debt in excess of value and the percentage of farms foreclosed during the same year. In most divisions, foreclosure appears to have taken place somewhat before the debt and the farm value reached equal amounts. In the higher-priced land of the North Central States, the reverse seems to have been true. Allowance for unpaid interest, taxes, costs, and delay of foreclosure have operated to hasten the taking of title, whereas reluctance to assume operating responsibilities and hope of gradual debt liquidation have tended to leave farms in the hands of their owners.

Great differences appear in the proportions of debt on newly mortgaged farms and on the mortgaged farms that are transferred. Farms not previously encumbered reported mortgages averaging only 30 per cent of their value as contrasted with debt ratios of 59 to 65 per cent on farms that had transferred title during the same period. The smaller equities of encumbered lands result in smaller consideration requirements which facilitate sale or trade.

Additional significance in the proportion of farm-mortgage debt to the value of farms appears in the fact that the average interest rate borne is commonly higher than the average rate of return received. Although such debt in 1925 was less than one-fifth of all land value, the interest payments approximated one-third of all land returns computed on the basis of net rent.

Interest rates on farm mortgages reported in 1928 averaged somewhat lower than those given in the 1920 census. The lowest average was 5.5 per cent in the West North Central division, and the Mountain division was highest with 6.7 per cent. A similar range appeared among the rates of various lending agencies, Federal land banks and insurance companies averaging 5.5 per cent while commercial banks averaged 6.7 per cent. These relative rate positions of different lenders tend to appear throughout the various divisions. The fact that the great majority of loans have been made at even percentage rates has practical significance in indicating the probable course of the mortgage-loan market.

Changes in interest rates quoted on farm mortgages appear to lag six months or a year behind changes in short-term rates and bond yields, both on rises and declines. Farmers having such financing in prospect should watch the course of the short-term money markets for indications of the probable course of rates on new farm mortgages.

Occasional marked rises in money rates on the central markets present periodic problems in supply and cost of farm-mortgage credit. Legal limitations on the rates chargeable on the Federal and joint-stock land banks have prevented their entering the market at such times, and more profitable uses for funds have drawn off other capital.

In so far as the farmer relies upon local sources of funds for mortgage credit there is likely to be a need for mortgage financing at times when conditions are least favorable, when refunding must be done to take care of short-term debt, and when interest rates and terms prevent advantageous arrangements. Because of this set of conditions the heaviest amounts of borrowing occur at periods of highest rates. Inasmuch as the farmer's alternatives of financing are limited, he should watch the money markets carefully for indications that may have significance to him.

The importance that mortgage credit holds in the farm business warrants more care in its management than is often given it. This applies both to questions of favorable rates and other terms and to problems likely to arise during the course of many years. Renewal rather than repayment is the dominant practice in farm-mortgage finance. Within the period of 25 to 35 years that the average mortgaged farm remains mortgaged the farmer with the commonest form of mortgage must face the problems of refinancing from five to seven times. Experience has indicated, moreover, that total annual increments in the farmer's wealth have been much below the amount necessary to retire the average mortgage in the average term of years. Since the average term of debt is approximately the same as the term of loans which may be amortized by an annual payment of 1 per cent of the principal, that is, 30 to 35 years, most farmers would do well to consider this type of loan when arranging initial farm financing.

Under present conditions a farmer's principal mortgage problems grow out of the recurrent necessity of readjusting old debt. He encounters competition with new financing in other lines and in greater amount. A farmer frequently has a heavy loan already on the farm, so that a first-mortgage loan can not be favorably obtained to cover the debt.

No problem in farm-mortgage finance is more serious than that of changes in price level. Since 1920 great numbers of farmers have lost property because obligations incurred at high prices have had to be repaid with dollars of much greater purchasing power than in war time. Failure to recognize the temporary character of the prices prevailing for land and products at that time has been a leading cause of financial difficulty since. In general, lending agencies tended to make loans proportionate to land value then current; as a result they have since acquired much land that they have not wanted, and farmers have sustained heavy losses in equities.

Three times since 1800 prices have risen to extreme heights for a short term of years and have declined to near former levels. Each of these instances has been followed by general business distress, indicated by bank failures, bankruptcies, and foreclosures. The long term of farm debt requires that the farmer have in mind such possibilities when contracting farm-mortgage encumbrance. Some protection is afforded by the loan limitations imposed by most lenders on first mortgages. In the case of land-purchase mortgages, however, the buyer must exercise his own discretion. The maximum amount of debt that can be incurred with safety can be computed approximately from net returns with allowance for existing price levels and potential changes. A system of crop payments for land purchased in periods of high prices could obviate much difficulty growing out of such periods.

The policy of lending agencies in maintaining loan limits of approximately 50 per cent of the value of land has not changed substantially from pre-war years. As long as this policy is followed arbitrarily, it will continue to be inadequate protection against severe price recessions. The continued nature of farm-mortgage debt requires that farmers guard against such dangers by limiting their borrowings in periods of high prices and not be guided by the amount lenders are willing to advance.

APPENDIX

TABLE 38.—*Number and amount of farm loans closed and outstanding, made by the Jewish Agricultural Society (Inc.), by years, 1900–1930*

Year	Loans closed				Loans outstanding	
	Number	Amount		Index of average amount 1921–22=100	Number	Amount
		Total	Average			
		Dollars	*Dollars*	*Per cent*		*Dollars*
1900	25	9,125	365	49	23	7,503
1901	65	29,015	446	60	87	36,821
1902	65	33,407	514	70	150	67,508
1903	106	44,006	415	56	224	99,161
1904	125	52,150	417	56	316	130,969
1905	134	56,547	422	57	386	162,960
1906	151	63,836	423	57	481	208,099
1907	204	114,812	563	76	578	282,494
1908	263	160,039	609	82	710	399,194
1909	239	129,443	542	73	816	478,655
1910	281	178,562	635	86	963	571,103
1911	320	237,576	742	100	1,069	686,657
1912	356	222,433	625	85	1,186	797,503
1913	358	203,991	570	77	1,342	902,649
1914	331	186,734	564	76	1,480	978,197
1915	358	162,897	455	62	1,628	960,830
1916	320	182,599	571	77	1,713	977,424
1917	387	211,268	546	74	1,761	995,085
1918	315	177,848	565	76	1,641	942,268
1919	364	254,376	699	95	1,503	933,564
1920	403	369,070	916	124	1,468	1,064,179
1921	407	312,772	768	104	1,470	1,144,159
1922	448	318,176	710	96	1,512	1,228,818
1923	318	231,145	727	98	1,457	1,192,017
1924	401	249,983	623	84	1,440	1,190,234
1925	436	269,662	618	84	1,418	1,190,067
1926	431	272,416	632	86	1,409	1,206,694
1927	532	344,369	647	88	1,465	1,299,426
1928	441	271,730	616	83	1,467	1,340,476
1929	417	249,808	599	81	1,471	1,346,027
1930	463	222,501	481	----------	1,520	1,377,750

TABLE 39.—*Estimated total farm-mortgage debt: 1920*

State and geographic division	Estimated total farm-mortgage debt, 1920	Estimated debt of—		
		Owners [1]	Managers	Tenants
	Dollars	*Dollars*	*Dollars*	*Dollars*
Maine	20,890,000	19,650,000	920,000	320,000
New Hampshire	8,600,000	7,470,000	930,000	200,000
Vermont	29,040,000	25,330,000	1,920,000	1,790,000
Massachusetts	34,180,000	26,070,000	7,300,000	810,000
Rhode Island	2,350,000	1,760,000	450,000	160,000
Connecticut	25,800,000	20,420,000	4,530,000	850,000
New England	120,860,000	100,690,000	16,050,000	4,120,000
New York	224,060,000	167,860,000	21,810,000	34,400,000
New Jersey	39,500,000	27,910,000	5,090,000	6,500,000
Pennsylvania	133,080,000	97,140,000	11,480,000	24,460,000
Middle Atlantic	396,640,000	292,900,000	38,380,000	65,360,000
Ohio	210,760,000	148,490,000	8,260,000	54,010,000
Indiana	206,600,000	142,240,000	6,180,000	58,180,000
Illinois	502,850,000	291,080,000	17,550,000	194,220,000
Michigan	215,740,000	176,000,000	8,360,000	31,380,000
Wisconsin	455,470,000	389,560,000	12,590,000	53,320,000
East North Central	1,591,420,000	1,147,370,000	52,940,000	391,110,000
Minnesota	455,540,000	323,870,000	7,420,000	124,250,000
Iowa	1,098,970,000	639,440,000	20,070,000	439,460,000
Missouri	385,790,000	280,210,000	10,020,000	95,560,000
North Dakota	267,780,000	198,620,000	6,700,000	62,460,000
South Dakota	278,880,000	183,420,000	4,760,000	90,700,000
Nebraska	416,860,000	253,820,000	8,090,000	154,950,000
Kansas	295,870,000	187,990,000	6,300,000	101,580,000
West North Central	3,199,690,000	2,067,370,000	63,360,000	1,068,960,000
Delaware	8,990,000	4,720,000	500,000	3,770,000
Maryland	49,230,000	30,250,000	4,730,000	14,250,000
District of Columbia	340,000	110,000	150,000	80,000
Virginia	61,600,000	46,910,000	3,940,000	10,750,000
West Virginia	15,960,000	12,940,000	930,000	2,090,000
North Carolina	56,580,000	36,550,000	1,350,000	18,680,000
South Carolina	51,220,000	28,370,000	1,380,000	21,470,000
Georgia	83,840,000	41,700,000	3,940,000	38,200,000
Florida	19,710,000	14,210,000	3,950,000	1,550,000
South Atlantic	347,470,000	215,760,000	20,870,000	110,840,000
Kentucky	104,100,000	76,610,000	2,260,000	25,230,000
Tennessee	83,130,000	56,980,000	1,450,000	24,700,000
Alabama	55,450,000	32,500,000	1,590,000	21,360,000
Mississippi	77,420,000	33,290,000	3,540,000	40,590,000
East South Central	320,100,000	199,380,000	8,840,000	111,880,000
Arkansas	76,870,000	45,040,000	2,800,000	29,030,000
Louisiana	41,250,000	24,170,000	4,050,000	13,030,000
Oklahoma	188,890,000	112,300,000	4,000,000	72,590,000
Texas	396,670,000	226,450,000	23,960,000	146,260,000
West South Central	703,680,000	407,960,000	34,810,000	260,910,000
Montana	154,940,000	127,260,000	10,240,000	17,440,000
Idaho	115,350,000	89,220,000	5,940,000	20,190,000
Wyoming	32,970,000	24,920,000	4,360,000	3,690,000
Colorado	138,400,000	97,610,000	6,990,000	33,800,000
New Mexico	23,670,000	18,280,000	2,560,000	2,830,000
Arizona	31,790,000	20,060,000	5,850,000	5,880,000
Utah	35,550,000	30,620,000	1,440,000	3,490,000
Nevada	11,880,000	7,950,000	3,050,000	880,000
Mountain	544,550,000	415,920,000	40,430,000	88,200,000
Washington	116,740,000	92,070,000	6,800,000	17,870,000
Oregon	91,090,000	73,810,000	5,620,000	11,660,000
California	425,460,000	300,920,000	69,970,000	54,570,000
Pacific	633,290,000	466,800,000	82,390,000	84,100,000
United States	7,857,700,000	5,314,150,000	358,070,000	2,185,480,000

[1] The mortgage debt on fully owned farms, as shown by the census, amounted to 13.[illegible] per cent of the value of all fully owned farms (including those not mortgaged). This ratio (or the corresponding ratio for each State) was used in estimating the debt on farms operated by part owners and managers. The mortgage debt on tenant farms, according to special reports received from the owners of such farms in selected counties, was 9.2 per cent of the value of all tenant farms covered by these reports.

TABLE 40.—*Farm-mortgage debt in the United States according to tenure of farms, by States and geographic divisions, January 1, 1910*

State and geographic division	Estimated total farm-mortgage debt Jan. 1, 1910	Estimated farm mortgage debt of—		
		Owners [1]	Tenants	Managers
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Maine	13,210	12,480	270	460
New Hampshire	5,870	5,210	180	430
Vermont	15,850	13,360	1,260	1,220
Massachusetts	22,890	17,560	740	4,590
Rhode Island	2,210	1,570	180	460
Connecticut	16,086	12,980	660	2,446
New England	76,110	63,160	3,290	9,660
New York	154,190	110,540	30,800	12,850
New Jersey	31,720	21,300	5,940	4,480
Pennsylvania	95,620	67,780	21,270	6,570
Middle Atlantic	281,530	199,620	58,010	23,900
Ohio	113,320	79,440	30,100	3,780
Indiana	111,280	77,780	30,340	3,160
Illinois	266,780	156,010	104,510	6,260
Michigan	109,970	89,850	17,030	3,090
Wisconsin	193,600	160,380	28,960	4,260
East North Central	794,950	563,460	210,940	20,550
Minnesota	146,160	105,990	37,680	2,490
Iowa	431,500	263,980	161,070	6,450
Missouri	202,650	147,640	49,950	5,060
North Dakota	101,450	77,110	22,250	2,090
South Dakota	88,700	58,600	28,810	1,290
Nebraska	161,850	90,830	68,320	2,700
Kansas	163,770	106,510	53,900	3,360
West North Central	1,296,060	850,660	421,960	23,440
Delaware	6,500	3,320	2,960	220
Maryland	29,580	17,150	9,170	3,260
District of Columbia	290	60	140	90
Virginia	24,000	17,680	5,090	1,230
West Virginia	8,210	6,440	1,480	290
North Carolina	18,960	12,210	6,190	560
South Carolina	20,530	12,250	7,540	740
Georgia	28,800	13,300	14,520	980
Florida	4,380	3,120	680	580
South Atlantic	141,250	85,530	47,770	7,950
Kentucky	40,510	27,960	11,530	1,020
Tennessee	26,850	15,790	10,540	520
Alabama	24,880	13,220	11,110	550
Mississippi	31,320	16,050	14,070	1,200
East South Central	123,560	73,020	47,250	3,290
Arkansas	22,200	10,970	10,580	650
Louisiana	19,090	10,920	5,690	2,480
Oklahoma	77,680	38,360	38,440	880
Texas	172,240	95,370	61,960	14,910
West South Central	291,210	155,620	116,670	18,920
Montana	19,620	12,710	5,060	1,850
Idaho	24,270	16,940	6,090	1,240
Wyoming	7,820	5,250	1,160	1,410
Colorado	41,800	23,450	15,590	2,760
New Mexico	4,810	3,010	990	810
Arizona	4,880	2,980	1,360	540
Utah	7,170	5,570	1,220	380
Nevada	3,340	1,640	620	1,080
Mountain	113,710	71,550	32,090	10,070
Washington	45,040	34,740	7,820	2,480
Oregon	34,950	25,930	6,630	2,390
California	122,080	74,510	25,280	22,290
Pacific	202,070	135,180	39,730	27,160
United States	3,320,470	2,197,800	977,730	144,940

[1] Includes all part-owner farms.

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TABLE 41.—*Farm mortgages outstanding in 15 Iowa townships, classified according to lenders, December 31, 1915–1925* [1]

Year	Former owners	Private investors	Insurance companies	Banks	Farm-mortgage companies	Land banks	Miscellaneous	Tota
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1915	1,503	1,809	1,390	1,254	160		61	6,177
1916	1,568	1,998	1,754	1,297	171		74	6,862
1917	1,657	2,205	2,151	1,494	206		89	7,602
1918	2,254	2,269	2,278	1,485	211	95	98	8,690
1919	2,996	2,324	2,380	1,402	228	233	104	9,667
1920	5,249	3,025	2,702	1,851	312	273	130	13,542
1921	5,130	3,285	3,099	2,239	308	283	148	14,542
1922	4,670	3,276	3,360	2,176	293	558	121	14,454
1923	4,026	3,190	3,947	2,311	359	702	120	14,655
1924	3,509	3,146	4,261	2,358	404	760	106	14,544
1925	2,870	3,047	4,389	2,154	409	910	105	13,884

[1] Iowa State College Econ. Series Rept. No. 6 (*15*).

TABLE 42.—*Discount rates of the Federal Reserve Bank of New York, 1917–1931* [1]

Year	January	February	March	April	May	June	July	August	September	October	November	December
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1917	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.50
1918	4.50	4.50	4.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
1919	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
1920	6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
1921	7.00	7.00	7.00	7.00	6.50	6.00	5.50	5.50	5.00	5.00	4.50	4.50
1922	4.50	4.50	4.50	4.50	4.50	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1923	4.00	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
1924	4.50	4.50	4.50	4.50	4.00	3.50	3.50	3.00	3.00	3.00	3.00	3.00
1925	3.00	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
1926	4.00	4.00	4.00	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.00	4.00
1927	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.50	3.50	3.50	3.50	3.50
1928	3.50	4.00	4.00	4.00	4.50	4.50	5.00	5.00	5.00	5.00	5.00	5.00
1929	5.00	5.00	5.00	5.00	5.00	5.00	5.00	6.00	6.00	6.00	5.00	4.50
1930	4.50	4.00	3.50	3.50	3.00	2.50	2.50	2.50	2.50	2.50	2.50	2.00
1931	2.00	2.00	2.00	2.00	1.50							

[1] Compiled from Federal Reserve Board report (*26*).

TABLE 43.—*Average rates on prime commercial paper in New York, 1917–1931* [1]

Year	January	February	March	April	May	June	July	August	September	October	November	December
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1917	3.55	4.09	4.13	4.28	4.83	5.00	4.68	4.81	5.19	5.38	5.44	5.50
1918	5.58	5.69	5.88	5.90	5.88	5.88	5.88	5.94	6.00	6.00	5.97	5.78
1919	5.19	5.19	5.38	5.38	5.38	5.53	5.42	5.38	5.38	5.38	5.50	5.88
1920	6.00	6.50	6.75	7.00	7.50	7.75	8.00	8.00	8.00	8.00	8.00	8.00
1921	7.75	7.75	7.75	7.50	7.00	6.50	6.25	6.25	6.00	5.75	5.25	5.00
1922	4.75	5.00	4.75	4.50	4.25	4.25	4.00	4.00	4.25	4.50	4.75	4.75
1923	4.50	4.75	5.00	5.12	5.00	5.00	5.00	5.25	5.38	5.25	5.00	4.88
1924	4.75	4.75	4.62	4.50	4.38	3.62	3.38	3.12	3.25	3.12	3.37	3.62
1925	3.50	3.75	4.00	4.00	3.88	3.88	3.88	4.12	4.25	4.38	4.38	4.38
1926	4.38	4.25	4.38	4.38	4.00	4.00	4.12	4.38	4.62	4.62	4.50	4.50
1927	4.25	4.12	4.12	4.12	4.12	4.25	4.25	4.00	4.00	4.00	4.00	4.00
1928	4.00	4.00	4.12	4.37	4.50	4.88	5.12	5.37	5.63	5.50	5.38	5.38
1929	5.37	5.50	5.88	6.00	6.00	6.00	6.00	6.12	6.25	6.25	5.75	5.00
1930	4.88	4.75	4.25	3.88	3.75	3.50	3.25	3.00	3.00	3.00	2.88	2.88
1931	2.88	2.63	2.50	2.38								

[1] Data for 1917 to 1919 from Harvard Review of Economic Statistics; data for 1920 to 1931 from Federal Reserve Board report (*26*).

TABLE 44.—*Farm mortgage loans reported by life insurance companies, in the United States, by geographic divisions, 1914–1930*[1]

Year	Reporting companies	Assets of reporting companies in percentage of admitted assets of all legal reserve companies	Farm-mortgage loans of reporting companies in— United States	New England States	Middle Atlantic States	East North Central States
	Number	*Per cent*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1914	126	96.95	646,932	105	359	116,801
1916	52	93.59	828,071	76	472	136,433
1917	150	95.96	923,040	34	378	143,229
1918	150	94.06	954,071	33	298	143,268
1919	39	88.40	858,313	30	121	128,465
1920	47	90.36	1,065,199	27	120	152,613
1921	52	94.50	1,306,251	29	436	181,367
1922	52	93.80	1,453,902	62	472	208,274
1923	52	93.13	1,662,375	53	803	250,559
1924	52	93.10	1,801,378	52	474	288,597
1925	52	92.90	1,878,643	42	434	315,033
1926	52	91.80	1,941,756	42	378	336,889
1927	52	91.60	1,962,412	39	329	347,011
1928	52	92.00	1,960,022	38	268	347,792
1929	52	91.90	1,930,373	33	246	349,205
1930	52	91.80	1,886,000			

Year	Farm-mortgage loans of reporting companies in— West North Central States	South Atlantic States	East South Central States	West South Central States	Mountain States	Pacific States
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1914	399,779	20,901	19,491	65,530	11,750	12,236
1916	506,177	30,902	30,742	87,152	16,089	18,428
1917	535,025	30,293	35,186	95,924	15,081	17,890
1918	593,882	30,364	38,829	108,868	18,879	19,651
1919	547,004	34,678	34,575	85,366	11,974	16,100
1920	684,139	46,088	48,537	118,481	17,177	18,018
1921	803,655	61,773	63,494	154,072	19,745	21,680
1922	881,745	63,511	71,374	173,981	23,453	28,030
1923	1,015,917	67,366	83,323	186,397	25,575	32,382
1924	1,098,573	66,196	91,534	191,921	26,366	37,665
1925	1,143,920	62,267	95,315	195,468	25,042	41,122
1926	1,176,009	60,348	98,163	201,210	24,263	44,454
1927	1,200,483	56,496	97,896	206,223	25,294	48,641
1928	1,181,488	54,134	95,504	205,011	25,632	50,155
1929	1,159,400	52,089	92,189	200,239	25,368	51,525
1930						

[1] From annual reports of the Association of Life Insurance Presidents (*5*).

TABLE 45.—*Average number of acres in farms, by tenure and geographic divisions* [1]

Geographic division and tenure	Average area per farm	Geographic division and tenure	Average area per farm
	Acres		*Acres*
New England:		East South Central:	
Full-owners	96	Full-owners	101
Tenants	105	Tenants	41
Part-owners	134	Part-owners	79
Managers	236	Managers	533
Middle Atlantic:		West South Central:	
Full-owners	89	Full-owners	199
Tenants	107	Tenants	92
Part-owners	133	Part-owners	440
Managers	204	Managers	3,923
East North Central:		Mountain:	
Full-owners	91	Full-owners	299
Tenants	130	Tenants	369
Part-owners	140	Part-owners	1,360
Managers	250	Managers	5,829
West North Central:		Pacific:	
Full-owners	172	Full-owners	116
Tenants	211	Tenants	259
Part-owners	381	Part-owners	695
Managers	628	Managers	724
South Atlantic:		United States:	
Full-owners	98	Full-owners	127
Tenants	54	Tenants	108
Part-owners	75	Part-owners	355
Managers	572	Managers	1,059

[1] Computed from 1925 census (*20*).

The value of farm implements sold by manufacturers in the United States, 1899 to 1928, was as follows:

Year	Million dollars	Year	Million dollars
1899	85	1923	312
1904	89	1924	278
1909	121	1925	341
1914	132	1926	365
1920	471	1927	392
1921	([15])	1928	399
1922	223		

[15] No record.

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