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THE RELATION OF VARIOUS FACTORS TO FORECLOSURES OF FARM MORTGAGES IN THE NORTHEASTERN UNITED STATES

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THE MATERIAL presented in this paper is based on the loaning operations of the Federal Land Bank of Springfield from organization in 1917 to May 31, 1929. The Federal Land Bank of Springfield is one of the twelve federal land banks authorized to make loans on farm mortgage security as provided for by the Federal Farm Loan Act of 1917. It is authorized to operate in the territory designated as the first Federal Land Bank District, comprising the six New England States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, and the Middle Atlantic States of New York, and New Jersey (figure 1).

From organization in 1917 to May 31, 1929, the Bank made 20,186 loans in the amount of $64,836,200. Of these loans 17,098 or 84.7 per cent were outstanding as of May 31, 1929, 2,413 or 12.0 per cent had been paid in full, while 675 or 3.3 per cent had been foreclosed.

The Federal Land Bank of Springfield is the smallest of the twelve federal land banks. Six of the twelve banks have loans outsranding in excess of 100 millions of dollars. The six remaining banks vary in size from the Springfield Bank which has outstanding approximately 50 millions of dollars in loans to the Spokane Bank which, as of December 31, 1929, had a little over 94 millions of dollars in loans (table 1).

One measure of the financial success of land bank operation is the degree to which the various banks have escaped the necessity of taking over farms through foreclosure. The ratio of real estate owned to net mortgage loans outstanding provides a rough index of the ratio of frozen assets to earning assets and affords at least one measure of the success with which the various federal land banks have been operated. In interpreting the figures for an individual bank or for the system as a whole, it must be kept in mind that these banks started operations in 1917 in a period of agricultural prosperity and, in many areas, of inflation in land values. It was inevitable that a certain number of mistakes should have been made. However, mistakes in making farm loans during

this period were not confined to the federal land banks as many loaning agencies, some with years of experience behind them, could testify. Unfortunately, published figures showing the relation of farm real estate acquired to farm loans outstanding are not available for the majority of private loaning agencies. It may be

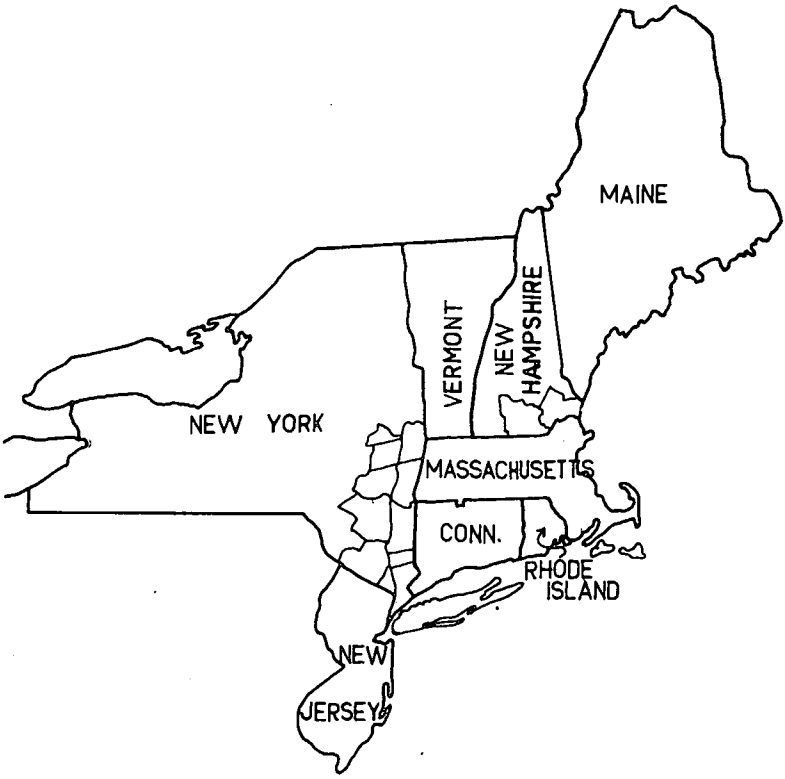

FIGURE 1. FIRST FEDERAL LAND BANK DISTRICT

The continental United States, excluding Alaska, is divided into twelve federal land bank districts, with a federal land bank in each district. The Federal Land Bank of Springfield is authorized to make loans in the First District which comprises the states outlined in the above map.

noted in passing that the ratio of real estate owned to net mortgage loans outstanding for the 48 joint stock land banks (*excluding* the 3 banks in the hands of receivers), as of December 31, 1929, was 2.40 per cent compared with a figure of 1.39 per cent for the twelve federal land banks. Joint stock land banks are private organizations operated for private profit. They are, of course,

subject to the supervision of the Federal Farm Loan Board as are the federal land banks.

COMPARISON OF FEDERAL LAND BANK LOSSES AND LOSSES OF NATIONAL BANKS

While the two forms of business are not strictly comparable, it is interesting to compare the losses of national banks operating

Table 1. Net Mortgage Loans Outstanding and Real Estate Owned as of December 31, 1929, for Each of the Twelve Federal Land Banks

Federal land bank	*Net mortgage loans as of December 31, 1929*	*Real estate owned as of December 31, 1929**	*Per cent which real estate owned is of net mortgage loans*
Omaha	$165,717,281	$582,203	0.35
Houston	150,725,922	70,004	0.05
Louisville	123,642,799	714,954	0.58
St. Paul	123,025,878	3,890,207	3.16
New Orleans	109,655,523	1,492,717	1.36
St. Louis	107,242,914	802,924	0.75
Spokane	94,326,576	4,270,661	4.53
Wichita	88,983,871	848,310	0.95
Baltimore	69,937,488	412,128	0.59
Columbia	62,448,934	2,671,046	4.28
Berkeley	52,264,080	359,348	0.69
Springfield	50,542,650	573,444	1.13
Total	$1,198,513,916	$16,687,946	
Average			1.39

* Carrying value. Real estate is carried on the basis of the unpaid balance of the original loan or the re-appraised value of the farm, whichever is the lower.

Important—Formerly, at least, it was the practice in certain of the federal land bank districts for national farm loan associations to take title to foreclosed properties. To the extent that this has been done in some districts and not in others, the figures in the above table relative to real estate owned are not strictly comparable. In no case, however, does this materially affect the relationships brought out in the above table.

in the First Federal Land Bank District with losses of the Federal Land Bank of Springfield. Most of the national banks in the First District are old well-established organizations and, I suppose, are as conservative as the banks in any section of the United States. However, whether measured by the ratio of losses to total loans outstanding, or by the percentage of gross earnings charged off as losses, the losses of the Federal Land Bank of Springfield have been smaller than the losses of national banks operating in the same territory (tables 2 and 3). Losses of the Federal Land Bank of Springfield were negligible prior to 1925 while losses of na-

tional banks were higher during the period 1921-1924 than during 1925-1928, which is the period covered by the data in tables 2 and 3.

RELATION OF VARIOUS FACTORS TO FORECLOSURES OF FEDERAL LAND BANK LOANS

An analysis has been made of the 20,186 loans made by the Federal Land Bank of Springfield from organization in 1917 to May 31, 1929, with the object of determining the classes of loans

Table 2. Losses of National Banks Operating in the First Federal Land Bank District Compared with Losses of the Federal Land Bank of Springfield, 1925-1928*

Year	*Per cent which losses of national banks were of loans and discounts outstanding at end of year*	*Per cent which losses of the Federal Land Bank were of mortgage loans outstanding at end of year*
1925	0.67	0.10
1926	0.45	0.10
1927	0.59	0.12
1928	0.59	0.17
Average	0.58	0.13

* Net losses on loans and discounts were not available for 1925 and 1926 for national banks. Charge-offs were itemized, but recoveries from all sources were reported as a single figure. The above figures are based on estimates, assuming that recoveries for 1925 and 1926 bear approximately the same relation to gross charge-offs as they did in 1927 and 1928. Data for national banks are from reports of the Comptroller of the Currency. Losses for the Federal Land Bank include actual losses on real estate acquired and sold, prospective losses on farms owned as of the end of each year, and all miscellaneous charge-offs.

Figures for national banks refer only to the banks operating in the First Federal Land Bank District, exclusive of banks in Boston, Albany (except in 1928), Brooklyn, Bronx, Buffalo, and New York City.

in which the percentage of foreclosures has been highest and the classes in which losses have been heaviest. This study was undertaken by the Bank with the hope that an analysis of past loaning operations might prove of some assistance in shaping future loaning policies.[1]

[1] The data presented in this paper are from research investigations undertaken and financed by the Federal Land Bank of Springfield, Massachusetts. The bank, operating as it does in the Northeastern States which is a district where farm mortgage financing has been done almost entirely by local banks and individuals, was in a way a pioneer in this field. The purpose of the Bank's studies was to analyze its loaning experience over the first twelve years of its operations.

It should be understood that the writer alone is responsible for the statements made in this paper and that the opinions expressed and the conclusions reached do not necessarily agree with those of the directors, officers, or members of the Bank's staff.

Table 3. Percentage Distribution of Gross Earnings of National Banks Operating in the Springfield Land Bank District, and of the Federal Land Bank of Springfield, 1925 to 1928*

	1925		1926		1927		1928		*Four-year average*	
	National banks	*Land Bank*	*National banks*	*Land Bank*	*National banks*	*Land Bank*	*National banks*	*Land Bank*	*National banks*	*Land Bank*
Interest charges	37.7	77.0	39.4	75.4	39.6	78.2	40.2	77.9	39.3	77.2
Operating expense	31.9	10.9	31.8	9.9	31.6	11.0	31.0	10.6	31.5	10.7
Net charge-offs	8.9	1.8	5.8	1.7	8.7	2.5	7.8	3.2	7.8	2.2
Net additions to undivided profits	21.5	10.3	23.0	13.0	20.1	8.3	21.0	8.3	21.4	9.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Figures for national banks do *not include* banks in the following cities: Boston, Albany (except in 1928), Brooklyn, Bronx, Buffalo, and New York City.

Interest charges for national banks include interest and discount on borrowed money, and interest on deposits. Interest on farm loan bonds and interest on borrowed money are included for the Federal Land Bank of Springfield.

Net charge-offs for national banks include depreciation on buildings, furniture, and fixtures, etc., in addition to losses on loans and discounts. In order that the figures might be as nearly comparable as possible, the corresponding items were transferred from operating expense to "Net charge-offs" for the Federal Land Bank. In addition to the actual losses on acquired real estate "Net charge-offs" as reported for the Federal Land Bank include prospective losses on farms on hand as of the end of each year. Prospective losses represent the difference between the Federal Land Bank's investment in real estate and the re-appraised value or asking price of the Land Sales Department.

Figures for national banks are for the years ending June 30. For the Federal Land Bank, they are for the years ending May 31.

THE DATA

The data used were confined to those available in the files of the Bank. These were not entirely satisfactory. It was not possible, for example, to determine the class of milk market in which dairy farmers sold milk, that is, whether it was sold to a Grade A or Grade B fluid milk plant, or to a cheese factory or condensery. The market in which milk is sold in the Northeast has an important bearing on returns. Again, soil maps are not available for the major portion of the District and only the most general conclusions could be drawn as to the relation of soil type and foreclosures. It was not possible to make satisfactory analyses of the relation of types of farming and foreclosures, from the data at hand. There is need for further and more detailed studies of the relation of certain of these factors to foreclosures and losses.

MARKETS

In the states of Massachusetts, Rhode Island, Connecticut, and New Jersey, in the counties in New York State along the lower Hudson and on Long Island, and in the southeastern counties of New Hampshire, farmers, for the most part, have access to excellent markets. In 1925 there were approximately 30 persons in cities in this area to every person on a farm.[2] This large city population provides excellent markets for the products of the area, particularly perishable products such as fluid milk, fruit, truck crops and so forth. Changes in habits of consumption and general prosperity in the cities, at least until a comparatively recent date, has doubtless tended to increase the demand for such products. The supply of these products produced locally is insufficient to meet local needs. The development of hard-surfaced roads and motor truck transportation has enabled producers in such areas to greatly reduce transportation costs, and in most cases to eliminate one or more of the usual steps in getting products from the producer to the consumer. They have, in effect, been able to sell their products in a retail market. The advantage which they have had over the producer less favorably situated, who has

[2] See figure 1 for area referred to. Data as to the total estimated population of this area in 1925 were taken from the Statistical Abstract of the Department of Commerce. Figures as to the farm population were taken from the 1925 Census of Agriculture. The term "city population" as used here refers to the difference between the total estimated population in 1925, and the farm population as reported by the Census.

had to sell his products at a farm price representing the price paid by the consumer less high costs of distribution, is difficult to estimate. Such price series as are available indicate that producers in this area have received considerably better prices for their major farm products than have producers in areas less favorably located with respect to markets.[3] Rarely, if ever, are price differentials of this sort fully offset by increased costs of production. I think it may be said that with the exception of the tobacco industry in the Connecticut River Valley, there has been no real agricultural depression in the territory which I have chosen to designate as the major deficit area of the First Federal Land Bank District.[4]

The above statement would seem to be substantiated by the loaning experience of the Federal Land Bank of Springfield. The Bank had made 7,140 loans in this area as of May 31, 1929. Of these loans, 108 or only 1.5 per cent had been foreclosed as of the above date, compared with 4.3 per cent foreclosures among the 13,046 loans made in the balance of the District. Losses have been negligible. It should be stated further that a larger percentage of the loans in the deficit area were made during the period from 1917 to 1922 than was the case for loans made throughout the balance of the District. The smaller percentage of foreclosures in the deficit area is not to be explained, therefore, by the fact that more of the loans in this area were made during recent years. Furthermore, there is no reason to believe that *all* of the

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[3] Statistical Bulletin No. 14, United States Department of Agriculture, January, 1927.

Warren, G. F., and Pearson, F. A.: Farm Economics, No. 64, page 1233, February, 1930. New York State College of Agriculture, Cornell University, Ithaca, New York.

For prices of individual farm products in Connecticut, New Jersey and New York, see the following publications:

1. Economic Digest for Connecticut Agriculture, Connecticut Agricultural College, Storrs, Connecticut.
2. Economic Review of New Jersey Agriculture, New Jersey State College of Agriculture, New Brunswick, New Jersey.
3. Farm Economics, New York State College of Agriculture, Cornell University, Ithaca, New York.

For differences in prices received by farmers for milk sold in the Connecticut and in the New York markets for the period 1922-1926, see Storrs Agricultural Experiment Station bulletin 146, November, 1927, pages 143-145.

For differences in prices received for eggs by producers on Long Island and in upstate New York, see Economic Studies of Poultry Farming in New York, I and II, May, 1927, and October, 1927. New York State College of Agriculture, Cornell, University, Ithaca, New York.

[4] The term "deficit area" is used here in a restricted sense. It refers to any area in which the supply of the major products produced is not sufficient to meet the needs of the area.

22 appraisers who made loans in this territory were keener students of land values than were the 38 appraisers making loans in other parts of the District.[5]

While the importance of markets as a factor affecting farming returns, and indirectly the percentage of foreclosures in the deficit area, is emphasized, there are other important factors which must not be overlooked. There are, within this territory, areas of excellent soils such as in the Connecticut River Valley, which are well adapted to the economical production of intensive cash crops. It should be pointed out on the other hand that there are also areas of rather poor soils on which it is doubtful if a profitable agriculture could be carried on if the location of the farms relative to markets were less favorable.

An additional factor has undoubtetdly had a stabilizing influence on land values in this area, namely, the increasing demand for farms to be used as homes by persons working in cities. This movement has resulted, of course, from the development of hard-surfaced roads and automobile transportation. City workers may buy homes, five, ten, or even fifteen miles from their place of work. Small, well-located properties, which in some cases are not particularly desirable as farms, are often readily saleable as homes for city workers who desire to live in the country. However, the influence of this factor is, in the opinion of the writer, frequently over-emphasized in explaining trends in land values in such states as Massachusetts, Connecticut, Rhode Island, New Jersey, and in the counties in New York along the lower Hudson River. Prices received for the major farm products of these areas have been relatively good, as have farming returns. In most discussions of farming returns, emphasis is placed on the problem of maintaining low cost of production. The fact that a farmer with average costs of production who is in a position to market his products at better than average prices may make a better return than a farmer with lower than average costs of production, but who must sell at lower than average prices, is frequently overlooked. Second class land, advantageously located with respect to markets, may, as a matter of fact, be worth more than first class land at a considerable distance from markets. Distribution costs have been

[5] The number of appraisers referred to above includes only those appraisers who had made 50 or more loans as of May 31, 1929.

high relative to the prices of farm products since the war.[6] Never has the producer located close to large urban centers had so great an advantage over the producer less favorably located, as during the past ten years. In the outlying districts, the producer whose farm is located on a hard-surfaced road near a shipping point has had a corresponding advantage over the producer located on a dirt road far from markets. Such advantages are seldom fully reflected in land values. It is cheaper to buy location than to buy transportation.

ROADS

It is difficult to estimate the full effects on the agriculture of the Northeast of the development of hard-surfaced roads and motor truck transportation. The farmer whose farm is located on a hard-surfaced road has many advantages over the farmer whose farm is located on a dirt road. Milk truck routes tend to follow the hard-surfaced roads. Feed dealers will frequently deliver quantity purchases of feed at little or no additional cost to a farm on a hard-surfaced road, where they will not make delivery if they have to truck over dirt roads. The farmer whose farm is on a hard-surfaced road is frequently able to sell his produce directly to a buyer who will take delivery at the farm. Furthermore, farmers have frequently been able to make profitable changes in their farming practices following the construction of an improved road. Studies which have been made of the seasonal production of market milk, for example, show that the farmer whose farm is on an improved road tends to produce a larger percentage of his total yearly production during the fall and winter months when prices are relatively high, than does the producer whose farm is located on a dirt road, presumably, because he has somewhat less difficulty in hauling feed and milk during the winter months.[7]

As previously pointed out, location relative to markets has never been so important as during the past ten years. A farmer whose farm is five or six miles from market on a hard-surfaced road may actually be closer to market in point of time than a farmer

[6] Warren, G. F., and Pearson, F. A.: Farm Economics No. 64, February, 1930, p. 1417.

[7] For advantages of location on a hard-surfaced road in New York State, see Tennant, J. L.: The Relationship between Roads and Agriculture in New York, Cornell University Agr. Exp. Sta. bull. 479, pp. 31-34, May, 1929.

who is located only one or two miles from market but whose farm is on a dirt road. As Dr. J. L. Tennant points out in his bulletin on the relationship of roads to agriculture in New York, distance to market is no longer measured in terms of miles, but rather is it measured in terms of hours.

Aside from the advantages of location on a hard-surfaced road as affecting income, a farm on a hard-surfaced road is a more desirable place to live than is the farm on a dirt road. The farmer whose farm is on a hard-surfaced road and who owns an automobile is no longer isolated at any season of the year. This is a factor which cannot be overlooked in making mortgage loans. The majority of farmers are no longer willing to live on isolated farms where they are shut in, due to impassable roads, during a large part of the year.

Farmers are coming more and more to appreciate both the economic and social advantages of good roads. For this reason, farms located on hard-surfaced roads are much more readily sold than are farms on dirt roads. The marketability of the farm is an important consideration in making mortgage loans. In last analysis, the average lender on a farm mortgage is interested in the farm primarily from a security standpoint. Assuming equal earnings, a security which is readily marketable is a more desirable security than one which is more difficult to sell, whether the security in question be a share of stock in an industrial corporation or a farm.

The Federal Land Bank of Springfield had made 6,725 loans as of May 31, 1929, on farms which were located on improved roads at the time the loan was made. Of these loans, 130 or 1.9 per cent had been foreclosed as of the above date, compared with 4.0 per cent foreclosures among the 13,396 loans made on farms located on unimproved roads (table 4). Of the loans made in New York State on farms located on improved roads 2.1 per cent had been foreclosed as of May 31, 1929, compared with 5.2 per cent foreclosures among loans made on farms located on unimproved roads.

It should be pointed out that part of the above difference in the percentage of foreclosures among loans made on farms located on improved and on unimproved roads is due to factors other than the type of road. In the Northeast, there is a certain correlation between improved roads and other favorable factors.

This is particularly true in such an area as southern New York State. This is a glaciated area of rough topography. Railroads as well as roads tend to follow the valleys. In this area, the better soils are to be found at the lower elevations. A relatively large percentage of all farms on improved roads in this area are valley farms, which means that they are on the better soil types and in addition are more accessible to shipping points, social centers and so forth. This probably explains to a large degree the fact that there is a greater difference between the percentage of foreclosures

Table 4. Relation of Type of Road and Foreclosures Among Loans Made by the Federal Land Bank of Springfield**

Area, and type of road	*Number of loans made*	*Number fore-closed*	*Per cent fore-closed*
New York State:			
Improved rads*	3,065	63	2.1
Unimprovedo roads	6,078	319	5.2
First District:			
Improved roads*	6,725	130	1.9
Unimproved roads	13,396	542	4.0

* Includes concrete, brick, and macadam roads.

** The above figures refer only to the type of road passing the farm at the time the loan was made. Hard-surfaced roads have since been built past many of the farms reported above as being located on dirt roads. For this reason the actual difference in the percentage of foreclosures among loans made on farms located on improved roads and loans made on farms located on unimproved roads, is greater than the above figures would indicate.

among loans made on farms located on improved and unimproved roads in New York State, than in the District as a whole. It is a significant fact, however, that considering the District as whole, the percentage of foreclosures has been a little over twice as great among loans made on farms located on unimproved roads, as among loans made on farms located on improved roads.

QUALITY OF THE TILLAGE LAND

As previously stated, satisfactory data as to soil type were not available. The appraisers were asked, however, to appraise the land separately from the buildings. While admittedly an unsatisfactory measure, the appraised value per acre of the tillage land affords at least a rough index of soil quality. Such a figure is, of course, open to several objections. Two appraisers might very

well place different values on the same piece of land at a given time. The same appraiser would doubtless have appraised a given property at a lower figure in 1930 than in 1920. The appraised value per acre of the tillage land is affected to some extent by the size of the farm, its location, and even such factors as the kind and condition of the buildings. Any factor which affects the value of the farm as a whole is almost certain to affect the value of all of its component parts, even though the increased value may be due to one or two factors. Even admitting all of the above weaknesses of the appraised value per acre of the tillage land as an index of soil quality, it may still be assumed, I think, that 1,000 farms with tillage land appraised at less than $40 per acre would represent a poorer lot of farms as regards soil type, than would 1,000 farms with tillage land appraised at from $40 to $80 per acre. At least differences in the appraised value per acre of tillage land represent differences which, in the opinion of the appraisers, are of economic significance.

There is a close relationship between the appraised value per acre of the tillage land and foreclosures. Of 841 loans made on farms with tillage land appraised at less than $25 per acre, 43 or 5.1 per cent had been foreclosed as of May 31, 1929, compared with 1.0 per cent foreclosures among the 314 loans made on farms with tillage land appraised at $295 or more per acre (table 5).

BUILDINGS

Buildings are an important consideration in the First Federal Land Bank District. In none of the other eleven land bank districts does the value of the buildings represent so large a percentage of the total value of the farm. The 1925 Census of Agriculture reported the value of the buildings in the First District as equal to 53 per cent of the total value of the land and buildings, while in the United States as a whole, buildings accounted for only 23.7 per cent of the total value of land and buildings.[8]

[8] Any attempt to evaluate land and buildings separately is always unsatisfactory, since farms are sold as units, and not in separate parts. The value of buildings as reported in the Census represents the estimated value of the buildings as reported by the farmer. The value of the land is obtained by deducting the value of the buildings from the value of the farm as a whole, as reported by the farmer. If the farmer had been asked six months after the Census was taken to estimate the value of the land separately, it is doubtful if the figure reported would agree with that derived by the Census. However, since all of the Census figures are on the same basis, they are fairly satisfactory for purposes of comparison as between different areas.

The proportion of the total value of the farm represented by the buildings is, of course, largely dependent on the type of farming practised. In the Northeast, dairying and poultry farming require relatively high investments in buildings. It does not follow that because a relatively high percentage of the total value of a farm is represented by buildings that it is necessarily a poor loan risk. It is true that buildings may be allowed to depreciate but it will be found that this occurs, in general, only in regions where agriculture is unprofitable. Land may also be allowed to depreciate in such regions. Again, it is frequently stated that buildings are destructible while land is not destructible and therefore it is not safe to loan in a region where buildings represent a

Table 5. Relation of the Appraised Value Per Acre of the Tillage Land and Foreclosures Among Loans Made by the Federal Land Bank of Springfield

Appraised value per acre of the tillage land	*Number of loans made*	*Number fore-closed*	*Per cent fore-closed*
Less than $25	841	43	5.1
$25–$54	7,592	352	4.6
$55–$94	5,896	174	3.0
$95–$194	4,523	86	1.9
$195–$294	967	13	1.3
$295–over	314	3	1.0
Total	20,133	671	
Average			3.3

large proportion of the total value of the farm. It may be pointed out that land as well as buildings may be "destroyed" from an economic standpoint. Soil erosion due to water or winds, insect pests such as the boll weevil or corn borer, and weeds such as the Russian thistle or sow thistle may effectively "destroy" land from an economic standpoint. Buildings may be insured against destruction by fire and as long as the type of farming followed is profitable it may be assumed that buildings are likely to be kept in good repair. At least the chances that they will be kept in repair in a good region are as good as the chances that a piece of land in a good farming area will be properly cultivated. In making a long-term loan on a farm property, the important consideration is not as to the percentage of the total value of the farm represented by buildings and the percentage of the value represented

by land. The important consideration is whether the farm as a *unit* is likely, over a series of years, to be able to successfully compete for the labor of the average farmer against other farms and other occupations. If the average farmer can make a living, retire his mortgage, and have enough left over to keep the buildings in repair, the farm may be assumed to be a satisfactory loan risk, whether 20 per cent or 50 per cent of the value of the farm is represented by buildings. True, the outlay for building repairs will be higher in the latter case. However, the outlay for fertilizer is higher in Aroostook County, Maine, than in Orange County, New York, which is in a dairy region, but so long as the returns from potato growing will pay operating expenses including the cost of fertilizer, with enough over to provide a living for the farmer and his family and to permit of retiring the mortgage, a potato farm in Aroostook County, Maine is a good loan risk. On the other hand, we would expect a relatively high expenditure for feed on a dairy farm in Orange County, New York, as compared with a potato farm in Aroostook County, Maine. Such differences do not indicate that a farm in Aroostook County, Maine is necessarily a better loan risk than a farm in Orange County, New York, or *vice versa.* The percentage distribution of fixed capital as between land and buildings is no more important in determining the security value of a given farm than is the percentage distribution of operating expenses between feed and fertilizer in determining farming profits.

The important consideration is whether or not *the farm as a unit* is likely to be able to successfully compete against other farms and against other occupations for the labor of the farmer. In other words, can the average farmer make a living from the farm and retire his indebtness over the life of the loan.

When low values are placed on buildings by appraisers in the Northeast it is due to either one of two reasons: (1) Either the buildings are not adapted to the needs of the farm, or (2) they are in poor repair. A shift in type of farming has been made necessary in some regions due to the loss of the hay market following the advent of the tractor and automobile. Large hay barns which can be converted into dairy barns only at a very considerable expense are, of course, necessarily valued at a low figure in making an appraisal. Where buildings are valued at a low figure because they are in poor repair, it may be assumed, in general, that they

are on the poorer class of farms. It is recognized, of course, that during the past ten years, building costs have been high relative to farming returns, and that even on the better class of farms, returns have not permitted of making heavy outlays on buildings. However, when the loans which the Bank has made are sorted on the basis of the appraised value of the buildings at the time of making the loan, the loans falling in the low-value group are, in general, on the poorer farms. Such farms may very well have been above the margin of profitable production prior to 1920, but during the unfavorable period following, they went below the margin. Where a loan was made on a farm with low-value buildings in the first instance, trouble has frequently developed, since returns, in many cases, have not been sufficient to pay operating expenses, living expenses, and payments on the mortgage, to say nothing of making building repairs.

Of 5,251 loans made by the Federal Land Bank of Springfield from organization in 1917 to May 31, 1929, on farms with buildings originally appraised at less than $3,000, 222 or 4.2 per cent were foreclosed, compared with 2.5 per cent foreclosures among the 2,203 loans made on farms with buildings appraised at $9,000 or more (table 6). There is rather a close relation between the appraised value of the buildings and foreclosures.

RELATION OF THE APPRAISED VALUE PER ACRE OF THE FARM AND FORECLOSURES

The percentage of foreclosures has been much lower among the loans made on farms located in areas with large city populations, than in areas located at a distance from large consuming centers. The percentage of foreclosures has been relatively low among loans made on farms located on improved roads, on farms with high-acre-value tillage land, and on farms with high-value buildings. The appraised value per acre of the farm as a whole furnishes a rough index of the general desirability of the farm from the standpoint of markets, roads, soils, and buildings, at least as it appeared to the appraiser at the time the loan was made.

If we may assume that, in general, the farms appraised at a relatively high value per acre represent the better class of farms, then foreclosures in the First District appear to have come about through loaning money on second rate farms, rather than from loaning too much money on good farms. Of 3,274 loans made

on farms appraised at less than $30 per acre, 200 or 6.1 per cent were foreclosed, compared with 1.3 per cent foreclosures among the 1,418 loans made on farms appraised at $200 or more per

Table 6. Relation of the Appraised Value of the Buildings and Foreclosures Among Loans Made by the Federal Land Bank of Springfield

Appraised value of the buildings	*Number of loans made*	*Number fore-closed*	*Per cent fore-closed*
Less than $3,000....	5,251	222	4.2
$3,000–$4,999.....	6,438	234	3.6
$5,000–$6,999.....	4,189	114	2.7
$7,000–$8,999.....	2,063	47	2.3
$9,000–over.....	2,203	55	2.5
Total.....	20,114	672	
Average.....			3.3

acre. There is a very close inverse relationship between the appraised value per acre of farms on which loans were made and foreclosures (table 7).

Just here I would like to digress for a moment to point out what to me seems to be a significant relationship, or rather I should say lack of relationship, between farming returns and land values. There has been, I believe, too great a tendency to over-rationalize the process by which land values are determined, at

Table 7. Relation of the Appraised Value Per Acre of the Farm and Foreclosures Among Loans Made by the Federal Land Bank of Springfield

Appraised value per acre of the farm	*Number of loans made*	*Number fore-closed*	*Per cent fore-closed*
Less than $30.....	3,274	200	6.1
$30–$59.....	6,884	268	3.9
$60–$99.....	4,770	111	2.3
$100–$199.....	3,781	73	1.9
$200–over.....	1,418	19	1.3
Total.....	20,127	671	
Average.....			3.3

least within restricted areas. We have assumed that land values represent the reduction to a present worth of prospective future incomes, with some adjustment, perhaps, under conditions where

there has been a continued rise or fall in land values over a period of years in which case the element of speculation may enter in. We have assumed that the estimated future incomes referred to, would be largely influenced by past returns, particularly returns during recent years, and that land values roughly represented, therefore, a capitalization of net income after all expenses, including a charge for labor and management of the operator and his family, have been deducted from the receipts.

There is, of course, a rough relationship between land values and net returns from farming, but the relationship is not sufficiently close to provide a safe basis for making long-term loans. Reliable information as to returns over a period of years is usually not available, so that the prospective purchaser of a farm, particularly if he is from outside the region, has little means of arriving at the amount he can afford to pay for a farm on the basis of its probable earnings over a period of years. The price at which a particular farm sells is usually influenced to a great extent by "going" values in the community. This results in a tendency for all farms to sell at a common figure. A certain allowance is made, of course, for the size of the farm, its location relative to improved roads and markets, the suitability and condition of the buildings, the quality of the soil, and so forth. However, without reliable information as to returns over a series of years it is to be expected that frequent errors would be made in estimating the business possibilities of a given farm. Unfavorable factors are not sufficiently discounted. Favorable factors are not sufficiently appreciated. The poorer farms tend to be *over-valued* in relation to the opportunities offered, as compared with the better farms. This is particularly true in the Northeast where wide variations in soil types occur within short distances, and where location relative to hard-surfaced roads and to markets has so important a bearing on farming returns.

A second factor enters in. It is difficult for the majority of persons to realize that there is some land which is valueless for farming purposes under present economic conditions. Even in abandoned farm areas in New York State, land continues to be sold at figures far beyond what it is worth for growing timber, the one use to which it is adapted at the present time.

A striking example of the tendency for inferior land to be overvalued with relation to good land within a given area is pointed

out by Professor G. P. Scoville in his studies of farming returns in one of the fruit producing areas of western New York. Records of farming returns have been taken each year in this area since 1913. There are two soil types in the area studied, one of which is adapted to the production of orchard crops while the other, due principally to poor drainage, is not. The latter soil is dark, appears fertile, and will produce satisfactory crops of grain and hay. However, as Professor Scoville points out, due to the fact that such good returns have been made from the production of fruit on the better soil type, orchards have been set out on the poorer soils. The sales prices and estimated values of the inferior soils have been materially affected by returns on the better soils. While in terms of actual dollars, the land adapted to the production of orchard crops is valued by the owners at a higher figure ($292 per acre as against $182 per acre), it is not valued *enough* higher so that the increased interest charges on the higher valuation offsets the advantages offered by the better land. As a matter of fact, 731 farm business records, covering a period of 13 years (1913-1925), indicate that a farmer could better afford to pay $292 per acre for the average farm on the better soil type rather than take a farm on the poorer soil type as a gift. The above statement is based on the fact that during the period 1913-1925, farms on the better soil type paid operating expenses, including interest on working capital, interest on an average real estate investment of $26,341, and had left $719. Farms on the poorer soil type had left only $532 after operating expenses were paid to say nothing of interest on the investment in real estate.[9]

The same relation is illustrated in a study made by Professor Scoville of returns on hill and valley farms in Chemung County, New York, covering the years 1911 to 1917.[10] The valley farms, which made the higher net returns, were valued at a higher figure, but not enough higher to offset the advantages which they offered. Studies of returns on dairy farms with different markets for milk, made in 1921 by Professor E. G. Misner, show the same general relationship. Farms with access to a Grade A milk market were valued very little higher than farms where the only market was a cheese factory or a condensery although the net returns were

[9] Scoville, G. P., Spencer, Leland, Rasmussen, M. P., Harriott, J. F., and Oskamp, J. The Apple Situation in New York. Cornell Ext. bul. No. 172, September 1928, pages 7 to 12.

[10] Scoville, G. P., Farm Economics No. 28, September, 1925, page 342.

markedly higher on the farms selling fluid milk.[11] Mr. S. W. Warren's studies of returns for the year 1928, in northern Livingston County, New York, show the same general relationship between land values and farming returns.[12] Professors Davis and Hendrickson make the following comment on the relation between land values and returns in the town of Lebanon, New London County, Connecticut for the year 1923.[13]

"Farms in the various soil areas in Lebanon are apparently neither valued nor taxed in accordance with their earning power and desirability as agricultural lands. Valuations per farm are almost alike for both soil areas. This lack of adjustment between the earning power and value of the land on the two soil types is partially responsible for the wide discrepancy in labor incomes in the two soils."

There are, of course, circumstances under which the better farms, as measured by the quality of the markets, roads, soils, and buildings, are over-valued in relation to the poorer farms. A really good farm, for example, may have buildings which are more elaborate than are actually required for the efficient operation of the farm. The increased overhead under such circumstances may reduce the returns to a figure below those of a farm which is poorer as regards soil type, or location, but where buildings are more nearly in keeping with the needs of the farm. Just here it should be stated that if a really good farm is over-valued in relation to a poorer one it is usually due to some such factor as buildings or location. Differences in buildings and differences in location relative to roads, schools, and trading centers are more or less obvious and may command a premium from the average purchaser. Differences in soils are not so apparent, and it is doubtful if in many cases the difference between really good soils and poor soils are fully reflected in land values in cases where they are in close proximity to one another.

As previously pointed out, farm business surveys made by Scoville, Misner, S. W. Warren, and others in New York State, and by Davis and Hendrickson in Connecticut, indicate that there is a distinct tendency for the values of inferior farms to be greater

[11] Misner, E. G., Economic Studies of Dairy Farming in New York, I, II and V, Cornell Univ. Agr. Exp. Sta. buls. 421, 433, and 442.

[12] Warren, S. W., Preliminary Report of a Farm Management Survey of Northern Livingston County. Farm Management Department, Cornell Univ., 1930 (mimeographed).

[13] Davis, I. G. and Hendrickson, C. I., Soil Type as a Factor in Farm Economy, Storrs Agr. Exp. Sta. bul. 139, April, 1926, p. 95.

than the production would suggest, as compared with the values and production of the better class of farms. The loaning experience of the Federal Land Bank of Springfield lends support to this view. If there were a perfect adjustment between farming returns and land values, there should be, roughly at least, as high a percentage of foreclosures among loans made on high-acre-value farms as among loans made on low-acre-value farms. On the other hand if the poorer farms tend to be over-valued in relation to earning power then we should expect to find the highest percentage of foreclosures among loans made on the low-acre-value farms since a loan representing 50 per cent of the probable sale price of such a farm would have less earning power behind it than a loan representing 50 per cent of the probable sale price of a high-acre-value farm. The highest percentage of foreclosures has occurred among the loans made on the low-acre-value-farms, which would indicate a relative over-valuation of the poorer farms. (table 7). The prospective purchaser of a farm should keep this fact in mind. As previously stated, it is cheaper to buy location than to buy transportation. Similarly, it is cheaper to buy fertility in the form of a good soil than to buy it in the form of fertilizer.

It is recognized that the lack of adjustment between land values and farming returns has probably been greater since 1920 than at any previous time within recent years since returns on the poorer farms have decreased to a much greater extent than have land values. However, it is pointed out that Professor Scoville's study of farming returns on hill and valley farms in Chemung County, New York, covered the period 1911-1917, and that this study showed a decided tendency toward over-valuation of hill farms as compared with valley farms on the basis of actual returns. Furthermore, the relation between returns and land values on the two soil types in the town of Newfane, Niagara County, New York, was the same prior to 1920 as subsequent to that date. Earlier studies by Professors G. F. Warren and K. C. Livermore bring out the same relationship.[14]

It must also be recognized that the wide variations in soil types occurring in the Northeast within short distances and the extreme importance of location relative to markets in this area tend to prevent as close an adjustment of earning power to land values as

[14] Warren, G. F., and Livermore, K. C. An Agricultural Survey of the Townships of Ithaca, Dryden, Danby, and Lansing, Tompkins County, New York. Cornell Univ., Agr. Exp. Sta. bul. 295, March, 1911.

would be found in an area where more uniform conditions exist. Furthermore, the relationship pointed out above between earning power and land values does not necessarily apply as between widely separated areas. For example, it does not follow that because land values are, in general, higher in the Middle West than in the Northeast, that the percentage of foreclosures in the latter area are likely to be higher than in the former. Other factors enter in when comparisons are made between widely separated areas. Considering the Middle West alone, however, the heaviest losses on farm mortgage loans have resulted primarily, as in the Northeast, from loaning on low-acre-value farms, rather than from loaning on high-acre-value farms. This statement is based upon conversations which the writer has had from time to time with representatives of various agencies loaning on farm mortgage security in the Middle West. Unfortunately, figures are not available to substantiate the statement.

It was formerly the practice of certain loaning agencies to place an *upper* limit on the amount which they would loan per acre on a given farm. For example they would in no case value a farm at more than $200 per acre, nor would they loan more than $100 per acre on any farm. Such analyses as have been made show that exactly the opposite procedure should have been adopted. If a loaning agency plans to loan fifty per cent of the probable sale price of a farm, rather than place an upper limit on the amount which they will loan per acre on a farm, regardless of what its probable sale price might be, it would be better business to refuse to loan anything on farms which are appraised *below* a certain value per acre. The Federal Land Bank of Springfield would have been dollars ahead today if every application had been rejected where the value of the farm was placed at less than $30 per acre by the appraiser.

EQUITY

The relationship between earning power and land values, pointed out above, has an important bearing on the question of the equity which the applicant for a loan should have in a farm before a loan can be safely granted. On the basis of the figures previously presented, a loan on a farm on the better soil type in the town of Newfane, Niagara County, New York, to a borrower with *no* equity would be a safer loan than a loan of any size, no

matter how small, on the poorer soil type, assuming the living expenses of both borrowers to be the same. Other factors, of course, enter in. A certain equity is necessary in order that the borrower may have something at stake in the business. Obviously, it is not good business for a loaning agency to furnish all the capital. However, it may be said that a loan to a borrower with a relatively small equity in a good farm is a better risk than a loan to a borrower with a relatively high equity in a poor farm. The usual rule-of-thumb requirement is that the borrower should have a fifty per cent equity in the farm. It is the opinion of the writer that if loans were limited to farms with an appraised value per acre (as determined by a competent appraiser) of say 20 per cent above the average value per acre of all farms in the county in which the farm is located, as reported by the Census, that loans could be made up to 70 to 75 per cent of the appraised value of the farm with smaller losses than those which result from following the 50 per cent equity rule and loaning on good, bad, and indifferent properties.

An analysis was made of the relation of equity to foreclosures among 1,214 loans in south-central New York which is the center of the "trouble" area in the First District.[15] The percentage of foreclosures among loans made to persons with an equity of less than 45 per cent in farms with tillage land appraised at $55 or more per acre, was only 3.8 per cent compared with 4.1 per cent foreclosures among the loans made to persons with an equity of 65 per cent or more in farms with tillage land appraised at less than $55 per acre (table 8). While the figures for both groups of farms show that the percentage of foreclosures is markedly lower among loans made to borrowers with relatively high equities, than among loans made to borrowers with relatively low equities, it is equally clear that a loan to a borrower with a relatively low equity in a good farm is a better risk than a loan to a borrower with a relatively high equity in a second rate farm.

FARMING EXPERIENCE OF THE BORROWER

Nothing has been said as yet with regard to the relation of farming experience and foreclosures. Borrowers were classified as experienced or inexperienced farmers. Experienced farmers included both natives and persons of foreign extraction who had experience

[15] See footnote at bottom of table 8.

Table 8. Relation of the Original Borrower's Equity in the Real Estate, the Appraised Value Per Acre of the Tillage Land, and Foreclosures, 1,214 Loans Made by the Federal Land Bank of Springfield in South-Central New York*

Borrower's equity in the real estate	*Appraised value per acre of the tillage land*					
	Less than $55			*$55 and over*		
	Number of loans	*Number foreclosed*	*Per cent foreclosed*	*Number of loans*	*Number foreclosed*	*Per cent foreclosed*
Less than 45	228	33	14.5	80	3	3.8
45–64	531	51	9.6	255	11	4.3
65–over	97	4	4.1	23		
Total	856	88		358	14	
Average			10.3			3.9

* Note that the figures in the above table are based on the Bank's loaning operations in south-central New York which is the area in which the per centage of foreclosures has been highest. Only 6.0 per cent of all the loans made by the Bank were in south-central New York, while 15.1 per cent of all foreclosures were in this area. The percentage of foreclosures shown in the above table is not, therefore, to be taken as representative of the Bank's operations. Of all the loans made by the Bank, only 3.3 per cent had been foreclosed as of May 31, 1929.

in farming in the Northeast. Inexperienced farmers included persons from other parts of the United States, and persons from cities in the Northeast, whether native or foreign. Of 4,105 loans made to inexperienced farmers, 201 or 4.9 per cent had been foreclosed as of May 31, 1929, compared with 3.0 per cent foreclosures among the 15,819 loans made to experienced farmers.

A very considerable part of the higher foreclosure rate among the inexperienced operators is explained by the fact that a large percentage of such persons were on the poorer farms. A combination of an inexperienced operator, a poor farm, and general economic conditions such as we have had since 1920, could be expected to result in but one thing, namely, failure. The percentage of foreclosures among loans made to inexperienced operators on good farms has not been undûly high (table 9). There is a sufficient margin to permit of making a few mistakes on a really good farm. No such margin exists on a poor farm.

It must not be overlooked, of course, that there may have been a higher percentage of failures among inexperienced operators on the better farms than the figures presented would indicate. On the better farms there is a good chance that the second mortgagee or some other interested party will take over the farm if the original borrower fails, in which case, of course, the farm would never actually come into the hands of the Bank even though the original borrower lost his equity in the farm.

SUMMARY

The loaning experience of the Federal Land Bank of Springfield brings to light some interesting facts. Probably at no time has the producer located near large city markets had a greater advantage over the producer less favorably situated, than during the past ten years. The costs of distribution have been high, and the producer who has been able to escape the major part of such costs has secured enough more for his product to spell, in many cases, the difference between success and failure. The percentage of failures since 1920, as measured by foreclosures of federal land bank loans, has been less than one-half as great in the major deficit area of the First Federal Land Bank District, as in the balance of the District. Much of the advantage which producers in this area have enjoyed has been due to the development of hard-surfaced roads permitting them to truck products long distances at relatively

Table 9. Relation of the Appraised Value Per Acre of the Tillage Land, The Appraised Value of the House, the Type of Road, the Farming Experience of the Original Borrower and Foreclosures Among Loans Made by the Federal Land Bank of Springfield**

Type of road, and farming experience of borrower	*Appraised value per acre of the tillage land*			
	Less than $55		*$55 and over*	
	Appraised value of the house		*Appraised value of the house*	
	Less than $2,500	*$2,500–over*	*Less than $2,500*	*$2,500–over*
	Per cent foreclosures	*Per cent foreclosures*	*Per cent foreclosures*	*Per cent foreclosures*
Unimproved road:				
Inexperienced borrowers*	8.3	7.8	4.6	2.1
Experienced borrowers	5.2	2.9	3.2	2.1
Improved road:				
Inexperienced borrowers*	4.4	2.0	2.8	2.5
Experienced borrowers	2.5	0.8	1.8	1.5

* Includes all westerners and southerners as well as inexperienced easterners and foreigners. Since the westerners and southerners gained their farming experience outside the District they were classified as inexperienced.

** The above table is based on 19,924 loans made by the Federal Land Bank of Springfield from organization in 1917 to May 31, 1929. In none of the above classes is there less than 100 loans.

low costs. The development of hard-surfaced roads has had a most important bearing on agriculture in all parts of the District. It is significant that the percentage of foreclosures among loans made on farms located on improved roads is less than one-half the percentage of foreclosures among loans made on farms located on dirt roads.

If we may assume that the appraised value per acre of the farms on which loans were made provides a rough index of their quality, then the percentage of foreclosures among loans made on the really good farms has been low. Foreclosures have resulted from loaning on poor farms rather than from loaning too much on good farms.

It is to be remembered, of course, that conditions as they have existed since 1920 have greatly increased the range of farm incomes on differenent classes of farms. Farmers on the really good farms in the Northeast have made as good returns, or nearly as good returns, as before the war. Returns on the poorer farms have been much lower than before the war. Farms on which a reasonable loan would have been safe during the period from 1900 to 1920 are no longer good security for a loan of any sort. These farms were never really comparable with the best farms, but they did yield a living for the operator and his family with enough more to permit the retirement of a reasonable indebtedness prior to 1920. It must be taken into consideration that farms which might have been classed as "fair" prior to 1920, would be classed as "poor" since that date.

The lack of adjustment between land values, at least nominal values, and returns has been greater since 1920 than ever before. This has meant that in general, there has been a great deal more earning power behind loans made on high-acre-value farms than among loans made on low-acre-value farms, which in turn has resulted in a relatively low percentage of foreclosures on the former class of farms. Loans on the really good, well-located farms in the Northeast, have been first class investments.

In making farm loans, the farming experience of the borrower and his equity in the farm are important considerations, but they are secondary to the question of whether or not the mortgaged farm provides an opportunity for the average farmer to make a living and retire his indebtedness over the period of the loan. Due to the lack of adjustment between earning power and land values,

loans on high-acre-value farms have been far better loan risks than have loans on low-acre-value farms. For the same reason, it is safer to loan to a borrower with a relatively small equity in the average high-acre-value farm, than to a borrower with a relatively high equity in the average low-acre-value farm, assuming, of course, that the appraised value per acre of the farms in question closely approximates the probable market value at the time the loans are made. Again, a long-term loan made to an inexperienced borrower on a really good farm is a better risk than a loan made to an experienced borrower on a second class farm.