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CREDIT EXPERIENCE AND LAND CLASS

by

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In this paper I will confine my remarks to the credit experience of the Farm Credit Administration in Spokane. From this organization is available a great body of experience. The Federal Land Bank of Spokane has probably made a more detailed analysis of their experience than any other credit institution in the United States. This interest in their experience is understandable. While the Federal Land Bank of Spokane is in excellent condition at the present time:

It is entirely owned by farmers ---
The United States Government capital has been completely repaid ---
All operating expenses, dividends on members' stock, and reserves are being met from current earnings ---
Reserves, capital, and earned surplus are equal to about 30 percent of outstanding loans ---

Nevertheless, for a number of years the Spokane Bank was in distress. In 1923 the Spokane Commission was formed by the other 11 Federal Land Banks to carry the Spokane Bank through a period of insolvency. This early trouble on the part of the Spokane Bank clearly reflected a large volume of loans made during World War I and the high level of farm prices that prevailed. Of all the loans made from 1917 through 1946, 41 percent were made during the 1917-23 period compared with 22 percent for the United States system as a whole.

However, experience had not been uniformly poor over the four states of Oregon, Washington, Idaho, and Montana, and officers of the bank are determined to avoid earlier mistakes. The Spokane Bank's intensive study of their loan experience began in 1935. In cooperation with the W. P. A. between $50,000 and $60,000 were spent in developing a punch card file for every loan closed. From 1935 through 1940 credit experience was analyzed as it related to a large number of factors. The experience was studied by:

Counties and smaller legal subdivisions ---
Type of farming areas ---
Size of farms ---
Amount loaned per farm ---
Age of borrower ---
Marital status of borrower ---
Previous occupation of borrower ---
Years of farming experience in the areas ---
Year of loan closed ---
Soil type and other factors ---

A fairly strong relationship was found between credit experience and the year the loan was closed. However, some areas had no loan breakdown even on loans closed during the 1917-20 period while other areas had trouble on all loans made regardless of the price level at the time of the loan.

Usually differences in experience could be noted when loans were grouped by soils type. But this was an unsatisfactory classification of loans because of wide differences of experience of loans on the same soils type when other physical and economic factors varied. As the studies progressed it became increasingly evident that loan experience was closely associated with the level of farm income, in a particular area. In short, whenever variations in loan experience were found associated with differences in an economic or physical factor it was quite clear that those differences were very materially affecting income:--at least indirectly we are sorting on the level of farm income.

By 1941 we were so convinced of this fact that we started a program of developing net income area surveys. In these studies, maps were prepared using a procedure which, for practical purposes, was identical with those developed by the State College of Washington in full-time farming areas. In part-time farming areas the net income area maps reflect income from off-the-farm sources.

To date net income area maps have been completed for 40 counties of the four states:

13 counties in cooperation with the State College of Washington
27 counties independently

---

11 counties in the dairy-poultry-vegetable area of western Washington
6 counties in the wheat summer fallow and pea-wheat area of eastern Washington
1 county in the cut-over area of northeast Washington
2 counties in the dairy-general crop area of Boise Valley
6 counties in the dairy-general crop area of the Twin Falls section
7 counties in the dairy-general crop area of the upper Snake in Idaho
7 counties in the dryland-wheat area of northeast Montana

Loans have been made to approximately 25,000 farmers in these 40 counties by the Federal Land Bank and the Land Bank Commissioner for a total of nearly $90,000,000.

In the analysis of this experience three primary time periods have been used:

Loans closed 1917-1932
Loans closed 1932-1935
Loans closed 1936-1946

During the 1917 to 1932 period:

Appraisals largely reflected market prices as judged by the appraiser ---
Loans were limited to 50 percent of the value of the land, 20 percent of the value of buildings---
By December 31, 1946, these loans had from 14 to 29 years to season ---
During this period 13,883 loans were made for $45,000,000 ---

(Exluded from this group were loans later supplemented by additional Land Bank or Commissioner funds.) You will note (see Table 1) that a statistically significant number of 1917-32 loans are represented by each of the five net income areas:

Net Income Areas	Number of loans	Million dollars
1	440	2.7
2	1,723	8.7
3	6,222	19.5
4	3,503	8.7
5	1,995	4.9

Table 1. Experience of the Federal Land Bank of Spokane in 40 Counties in Washington, Idaho, and Montana on Loans Made 1917-32, Experience to December 31, 1945.

Net income area	Number of loans	Total appraised value (millions)	Total amount loaned (millions)	Per cent of value loaned	Per cent of number: Paid	Per cent of number: Acquired	Losses per $1,000 loaned
	Number	Dollars	Dollars	Per cent	Per cent	Percent	Dollars
1	440	7.5	2.7	36	79	3	+1
2	1,723	23.7	8.7	37	75	6	2
3	6,222	55.5	19.5	35	66	13	29
4	3,503	25.0	8.7	35	55	23	91
5	1,995	14.3	4.9	35	36	48	278

You will also note that approximately the same percentage of the appraised value was loaned in each net income area. Thus, in a sense, the 1917-32 loans of the Federal Land Bank represents an enormously, big experiment. Using the market prices as set by the farmers themselves, the Spokane Bank loaned the same percentage of market value at the same rate of interest and for the same term of loan. It is almost as if the Spokane Bank had said:

> To the 440 farmers in Net Income Area 1 we will loan 36 per cent of the appraised values of your farm and see if you can carry a 34½ year amortization schedule.
>
> To the 1723 farmers in Net Income Area 2 we will loan 37 per cent of the appraised valued of your farm and see if you can carry a 34½ year amortization schedule.
>
> And almost exactly the same percentage to the farmers in Net Income Areas 3, 4, and 5.

A very high proportion of loans in Net Income Areas 1 and 2 (79 and 75 per cent) were paid in full prior to maturity. A much smaller but significant proportion (36 per cent) in Area 5 was paid prior to maturity. By definition, Area 5 is a submarginal area. How then could 36 per cent of the loans be paid in full prior to maturity? The answer lies in two directions.

First, loans in Area 5 were much smaller than in the more productive net income areas. Because of the relatively smaller annual installments on loans in Area 5, it was sometimes possible to reduce standards of living or to obtain funds from off-the-farm sources sufficient to repay the loans.

Second, and much more important was payment in full from outside capital. Farmers in Net Income Area 5 are subsidized from a great variety of sources; but by far the most important source of subsidy is the flow of capital into areas from urban areas and from the more productive farming areas. An uninformed buyer bringing capital from the outside into Area 5 in many instances repays the loan even though in time his capital accumulation there will be dissipated.

More significant is the percentage of loans which failed, and the properties acquired by the Land Bank through foreclosure of voluntary deed. In Net Income Area 1 three per cent of the loans were foreclosed. These were in the nature of accidents. For example, in the Twin Falls Area two foreclosures occurred in Net Income Area 1. One was a 40 acre orchard where the farmer used morning glory as a cover crop. The orchard failed and the Spokane Bank had a 40 acre morning glory farm. In another instance the Federal Land Bank of Spokane had a $6500 investment. When this property went to foreclosure sale a third party bid $13,000. Obviously, if the borrower had been at all reasonable a foreclosure sale was unnecessary.

The 6 percent acquirements in Area 2 are somewhat more than accidental and begin to represent some distress.

In Area 3 the 13 percent acquirement rate begins to represent a serious situation. Even a cooperative credit organization cannot avoid any foreclosures. To do so would necessitate loans in such conservatively small amounts as to inadequately serve the credit needs of farmers. However, a foreclosure rate where one out of six or seven farmers lose their farms, we will all agree, is far too large.

In Area 4, 23 percent of all the 1917-32 loans were foreclosed. This is a ruinous record both for the creditor and the farmer.

In Area 5 nearly half of the farmers were unable to carry the debt placed on their land. This rate of loan breakdown was nearly disastrous for the Land Bank and, of course, represented an intolerable situation for the borrowers.

It is also significant that practically all of the acquirements in Areas 1 and 2 resulted from foreclosures. In Areas 4 and 5, on the other hand, a very large percentage of acquirements were from voluntary deed.

Losses in Table 1 represents the difference between the investment at time of sale and sales price. Investment at the time of sale includes matured unpaid interest at time of acquirement, and any direct operating charges, such as payment of taxes, water charges, insurance, and upkeep of buildings less any rental income. Not included in the investment is the interest paid by the borrower or a prorata share of operating expenses.

A small net gain resulted from liquidation of properties in Area 1 even though these properties were largely acquired during the depression and were sold on the average within six months.

Properties acquired in Area 2 were sold at almost exactly the investment in these properties.

Losses from sale of properties acquired in Area 3 amounted to $29 per $1,000 loaned.

Losses from properties acquired in Area 4 amounted to $91 per $1,000 loaned. This loss rate considerably exceeds that which a farm cooperative credit agency can be expected to bear.

Losses in Area 5 were very nearly disastrous and amounted to $278 per $1,000 loaned. These losses in Areas 4 and 5 resulted even though the properties were sold after a considerable amount of recovery in agriculture had occurred.

These data strikingly point to the fact that the Federal Land Bank of Spokane very greatly over-loaned in Areas 4 and 5. This is in no sense a criticism of the officers and directors of the Spokane Bank because as was pointed out earlier, the proportion of average market value loan in each of the net income areas was almost identical. In other words, the debt-carrying capacity of farms in the poorer areas in relationship to the purchase price of the farms as established by farmers themselves is very much lower in the poorer areas than in the better areas.

A remarkable degree of consistency in the loan experience in relation to each of the five net income areas has been found in the various sections in the four states of the Spokane district. I, personally, have continued to be surprised, indeed amazed, at this remarkable consistency.

County by county within Washington, Idaho, and Montana, as the net income area maps have been completed and the Federal Land Bank loans subsequently located with reference to the maps, loan experience for the same net income area has been so remarkably similar that it has been nearly possible to anticipate the results.

The low debt-carrying capacity in relation to market prices of farms in the poorer areas is illustrated by data in Table 2. These data were compiled by the State College of Washington from survey records taken in the 1935-39 period. Data for Land Classes 2, 3, 4, and 5 represent the summary of 125 dairy farm records in 1939. Data for Land Class 1 has been interpolated from other studies. Cost of living data have been estimated from the 1936 farm Consumer Purchases Studies of the Bureau of Home Economics. In Land Class 1 when family farm earnings averaged $3,000 and the cost of living was estimated at $1,400 then $1,600 was available for capital accumulation. This was progressively lower in each poorer land class to where in Land Class 5 $69 as an average was available for capital accumulation. The farmers' estimate of the average invested capital varied from $30,000 in Area 1 to $6,935 in Area 5.

With $1,600 net available for capital accumulation it would be possible to accumulate the $30,000 average invested capital in Area 1 in 18.8 years. However, in Area 2 a period of 23.2 years would have been required; in Area 3, 27.9 years; in Area 4, 59.4 years; and in Area 5, 100.0 years.

Table 2. Estimated Family Earnings, Cost of Living, Total Investment, and Justified Investment by Economic Land Use Class (Net Income Area) Washington, 1935-39

Item	Economic land use class 1	2	3	4	5
Family earnings	$3,000	$1,740	$1,197	$644	$469
Cost of living	1,400	1,000	700	500	400
Available for capital accumulation	$1,600	$ 740	$ 497	$144	$ 69
Farmer's estimate of capital invested (sale value)	$30,000	$17,163	$13,876	$8,572	$6,935
Justified value assuming Land Class 2 is correctly valued	37,120	17,168	11,530	3,341	1,601
Amount of four percent - 34 year loans that could be serviced	29,600	13,700	9,200	2,700	1,300
Ratio of loan to capital	99	80	66	31	19
Years to accumulate capital if interest earned equals interest paid	18.8	23.2	27.9	39.5	100.0

Assuming 23.2 years as a reasonable period for the net income available for capital accumulation to equal the purchase price then a price of $37,120 instead of $30,000 in Area 1 might have been justified. However, in Area 4 with $144 available for capital accumulation a price of only $3,341 would have been justified, compared with $8,572 actually invested by the farmer according to their estimates. In Land Class 5 a value of $1,601 could have been justified compared with actual invested capital of $6,935.

The annual payment on a $1,000 four percent loan to be amortized in 34 years is $54. Accordingly, with $1,600 available for capital accumulation or debt service, in Area 1, a $29,600 loan could be carried. This represents 99 percent of the farmers' estimate of invested capital. Similarly, from the net available for capital accumulation a 80 percent debt could have been carried in Land Class 2; a 66 percent debt in Land Class 3; a 31 percent debt in Land Class 4; and a 19 percent debt in Land Class 5.

The limited debt-carrying capacity in relationship to value is an important fact and can hardly be overemphasized. However, more is needed. What is the debt-carrying capacity as related to market value for each of the five net income areas? The Federal Land Bank has attempted to answer this question by analyzing its experience within each net income area by five percent intervals of the ratio of loan to appraised value. As might be expected a very high degree of correlation was found between loan experience and the ratio of loan to appraised value However, while in each net income area the rate of loan failure was progressively larger as the ratio of loan to appraised value increased, the absolute level of loan breakdown between the net income areas was vastly different. As a rough rule of the thumb, about the same loan failure occurred with the following loan ratio groups:

Net Income Areas	Ratio of loan to appraised value
1	more than 50 percent
2	35 to 44 percent
3	25 to 34 percent
4	15 to 24 percent
5	less than 15 percent

Assuming as a goal a debt that could be carried by about 13 out of 14 borrowers and assuming that losses of $50 a $1,000 loaned can be borne by a farmer's credit cooperative without jeopardizing reserves or stock dividends, the critical ratios were identified (see Table 3). When the 1917-32 loans were divided by loan ratio groups it was clear that in Area 1 sufficient amounts had never been loaned by the Land Bank to indicate the maximum debt-carrying capacity in Area 1.

In Area 2 it was fairly clear that about 50 percent of the average 1917-32 market value of farms was all that could be loaned if loan break-down was to be kept below seven percent and losses below $50 a $1,000 loaned. This critical ratio was about 34 percent for Area 3, 27 percent for Area 4, and 20 percent for Area 5.

Table 3. Comparative Loan Ratios Resulting in Approximately Equal Debt Loads in 32 Counties 1917-32, and 1942-44, Spokane District

	Net income area				
	1	2	3	4	5
Index of appraisal value of cultivated land per cultivated acre					
1917-32	142	133	115	95	90
1942-44	102	91	60	47	41
	Per cent	Per cent	Per cent	Per cent	Per cent
Percent decrease	28	32	48	50	54
Average loan ratio above which acquirements exceeded eight percent and losses five per cent on 1917-32 loans	-- 50	50	34	27	20
Approximate comparable loan ratios at 1942-44 appraisal levels	+ 75	73	65	54	44

These loan ratios related to 1917-32 appraised values which largely reflected average market value during that period. How translate these ratios to present appraised normal agricultural values? This was done by constructing an index of the level of appraised values for each net income area. Accordingly with a 32 percent decrease in Area 2 in the index of appraised values from 1917-1932 to 1942-1944 a 73 percent loan based on the 1942-1944 values would result in about the same debt load as a 50 percent loan based on the 1917-1932 values.

On the other hand, with a 54 percent decrease in the index of appraised values in Area 5, a 44 percent loan during 1942-1944 would represent the same debt load as a 20 percent loan during the 1917-1932 period. In other words, assuming that history were to be repeated and that losses were to be kept below $50 per $1,000 loaned, it would seem that approximately the same loan experience within net income areas could be achieved by a:

75 percent loan in Area 1
73 percent loan in Area 2
65 percent loan in Area 3
54 percent loan in Area 4
44 percent loan in Area 5

This approach has sufficiently sharpened the conclusions to be drawn from the net income area studies to enable the Federal Land Bank of Spokane to reexamine its current lending program by local areas. A series of local schools have been held in which secretary-treasurers and directors of National Farm Loan Association Groups, together with local appraisers and Land Bank officers have participated. The bank's officers have been sufficiently enthusiastic about the results from the first series of meetings that it is now planned to hold similar schools in all parts of the four states.

Less comprehensive but significant studies of production credit loan experience have been made by the Production Credit Corporation of Spokane. While the allotment of time for this paper will not permit recording the results of these studies it is perhaps sufficient to quote the final concluding statement of the corporation officers:

"From evidence accumulated in the analysis of both Federal Land Bank and Production Credit Association loan experience, it would appear that there is a tremendous difference in debt-carrying capacity of farms in each of the five net income areas.

This conclusion in no sense passes judgment as to the honesty, integrity, or ability of the people in those areas, but merely recognizes that there is a great difference in the income producing potentialities of the areas."

"This study well indicates that other factors than 'the man and collateral' have to enter into credit decisions. Repayment capacity is still a principal factor and is often beyond the control of the individual."