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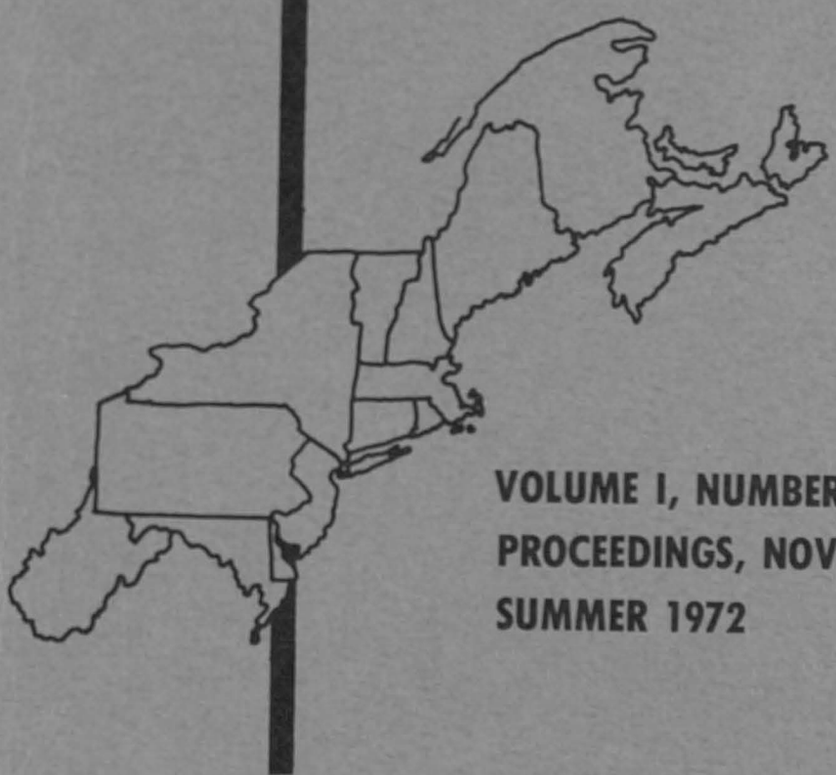

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IMPACT OF FARMERS HOME ADMINISTRATION'S FUTURE POLICIES ON NORTHERN NEW ENGLAND DAIRYMEN

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Individuals working with farmers in the Northern New England States of Maine, New Hampshire and Vermont have claimed that the Farmers Home Administration has increased non-farm loans, while deliberately curtailing new farm loan activities and reducing the service on existing farm loans. If these allegations are true, it is important for the Northern New England agri-business sector to consider the future implications. The objective of this paper is to analyze the impact of future policy alternatives available to the Farmers Home Administration on the region's dairy farms.

The Farmers Home Administration (FHA) was created in 1946 to provide farm loans for individuals with limited resources. The Housing and Urban Development Act of 1968 made it possible for FHA to help low income rural people acquire improved or new housing. It was also empowered to finance sewer, water and recreation facilities for rural communities having less than 5,500 population [6]. 1/ Later, the FHA was permitted to finance limited housing developments in small towns. A program was developed to help low income families organize and carry out self-help home building projects [7]. By 1970, FHA had loans totalling $1.06 billion to build, buy or improve individual homes. At the same time, farm loans totalled $630 million, while rural community facility loans totalled $216 million [8]. These data indicate that for the country as a whole, FHA had more financing directed towards individual home projects than for farm loans.

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1/ Numbers in brackets indicate references listed at the end of the paper.

This paper will utilize balance sheet and operating statement data taken from electronic farm accounting (ELFAC) records on dairy farms located in Maine, New Hampshire and Vermont. Average balance sheets and percentage distribution of sources of credit for these three states will be presented. A multiple regression model utilizing zero-one type variables will be used to test the null hypothesis that there is no significant difference in the net worth levels between dairy farms which utilize FHA loans and those which do not utilize FHA credit. Implications for the future of Northern New England dairy farms will be discussed in terms of the tabular and regression results.

Balance Sheets and Debt Sources

The balance sheet information was taken as of December 31, 1969, while operating statement factors were averages for the calendar year 1969 [5]. There were 237 dairy farm records which were complete enough to be of use; 56 in Maine, 27 were in New Hampshire, and 154 were in Vermont. Asset valuations were provided by the farm owners. For the most part, equipment values were taken from depreciation schedules and consequently they reflect cost less depreciation. All other assets supposedly reflect current market values. On the basis of the author's experience with administering ELFAC in New Hampshire, it appears that reported valuations for land and buildings are actually less than current market price.

Average Balance Sheets. Balance sheets for the three states (Table 1) show that the average total assets for the farms in the three states were $115,264. Vermont had the greatest amount of dollar assets per farm, followed by New Hampshire and Maine, respectively.

The average debt for all the farms studied was $35,492 including both real estate and non-real estate debt. The average real estate debt for all farms was $9,345, or 26 percent of the total debt on 237 farms studied. Non-real estate debt accounted for $26,147, or 74 percent of total debt.

For all farms, the average operator's net worth was $79,686; the equity ratio was 69 percent. The average ELFAC farm in Vermont showed the highest net worth with $90,162. New Hampshire and Maine ranked second and third with $73,682 and $53,776, respectively.

Sources of Credit. The total amount of credit used by the 237 dairy farms was $8,411,554 (see Table 2). The percentage distribution in the lower portion of the table indicates the source of this total debt. Variability among credit sources apparently exists. For the whole region, commercial banks provided about 15 percent of the total debt. However, commercial banks provided 37 percent of the debt in New Hampshire, 16 percent of the debt in Vermont and only 7 percent of the debt in Maine. For the Northern New England region, the FHA supplied about 25 percent of the total credit on the sample dairy farms. In Maine, the FHA provided 45

Table 1.
Average ELFAC Dairy Farm Balance Sheets by State
Northern New England, December 31, 1969

Item	Maine	New Hampshire	Vermont	Three States
		average per farm		
Assets				
Land and Buildings	$56,337	$65,482	$ 70,538	$ 66,606
Equipment	7,353	9,072	17,795	14,334
Supplies	8,694	6,567	6,517	7,037
Livestock	28,133	24,513	26,046	26,364
Accounts Receivable	691	538	1,075	923
Total assets	$101,208	$106,172	$121,971	$115,264
Liabilities				
Real estate debt	$ 19,047	$ 19,555	$ 3,949	$ 9,345
Non-real estate debt	28,385	12,885	27,736	26,147
Total debt	47,432	32,440	31,685	35,492
Withholding taxes due	0	50	124	86
Total liabilities	$ 47,432	$ 32,490	$ 31,809	$ 35,578
Owner(s) net worth	$ 53,776	$ 73,682	$ 90,162	$ 79,686
Total liabilities and net worth	$101,208	$106,172	$121,971	$115,264

percent. In New Hampshire, it provided 23 percent; in Vermont, the FHA provided 14 percent of the total credit. The Farm Credit Service (FLB and PCA) was a significant factor in supplying credit throughout the region. Individuals, dealers and merchants supplied some credit while finance companies and other sources of credit were not as important.

Table 2.
Total Debt and Percentage Distribution on 237 Dairy Farms
Northern New England, December 31, 1969

	Maine	New Hampshire	Vermont	Three States
Total amount of credit:	$2,656,168	$875,867	$4,879,519	$8,411,554
		Percent		
Source:				
FLB	11	10	19	15
PCA	16	9	21	18
Banks	7	37	16	15
FHA	45	23	14	25
Individuals	10	5	17	13
Dealers, Merchants	7	14	3	6
Finance Co.	3	1/	1	2
Other 2/	1	2	9	6
Total	100	100	100	100

1/ Less than .5 percent.
2/ Includes: Insurance co., credit union, employee social security payables, state and federal employee taxes withheld, and unknown lenders.
Source: ELFAC data.

Regression Analysis of Credit Sources

The following multiple linear regression model was used to assess the relationship between various sources of credit and farm net worth:

$$Y = a + \sum_{i=1}^{9} B_i X_i \qquad (A)$$

where: Y = Net Worth

Independent variables:

X_1 = Total owned acres per farm.

X_2 = Number of milk cows

X_3 = Net farm income (receipts less expenses plus change in inventory).

X_4 = Non-farm income received by family members.

X_5 = 1 if major source of credit is commercial bank, 0 if otherwise.

X_6 = 1 if major source of credit is Farmers Home Administration, 0 if otherwise.

X_7 = 1 if major source of credit is private individual, 0 if otherwise.

X_8 = 1 if major sources of credit are other credit sources (merchants, dealers, finance companies, insurance companies, etc.), 0 if otherwise.

X_9 = 1 if major source of credit is Farm Credit Service (FLB and PCA), 0 if otherwise.

Justification of Variables. It was hypothesized that the parameters associated with X_5, X_7, X_8 and X_9 would be positively associated with Y, the amount of net worth. Land owned and cow numbers were shown to be major asset classes in Table 1. By using physical units instead of dollar valuations, the downward bias of real estate valuations was minimized. It is generally accepted that equity can be built more rapidly on farm situations where farm incomes are higher. There is precedence for including total family income in the model [2]. The eight credit sources listed in Table 2 were regrouped into five sources with X_8 being a residual source called "other." To satisfy the rank condition of the regression model, X_6 was assigned a value of zero. This allowed the parameters associated with X_5, X_7, X_8 and X_9 to be interpreted as the impact on net worth when those credit sources were used relative to the FHA. It was hypothesized that the parameters would be positive and significant because FHA policy is to loan only to smaller farms which have less favorable equity positions [4].

Results. The parameters of equation (A) were estimated [3] with the following results:

$$Y = -29\,18.94 + 47.99^{*}X_1 + 1016.13^{*}X_2 - .14X_3 + .54X_4 + 38543.74^{*}X_5 + 24486.86^{*}X_7 + 42846.89^{*}X_8 + 32292.18^{*}X_9$$

The multiple correlation coefficient (r value) was .74. Farms which owned no land and/or had no debt were excluded, resulting in 208 observations with 199 degrees of freedom. The regression coefficients for all variables except net farm income and non-farm income (X_3, X_4) are significant at the .95 level of confidence. The statistically insignificant coefficients to X_3 and X_4 suggest that net farm income and non-farm income earned by all family members are not significant explanatory variables in predicting net

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* Statistically significant at the 0.95 level of confidence.

worth. The negative intercept was not expected but is acceptable if predictions outside the data range are not attempted [9].

Table 3
Results of Multiple Regression Analysis

Variable	Regression Coefficient	t-value
Acres owned	47.99	3.54*
Number of milk cows	1,016.13	7.50*
Net farm income	-0.14	-0.43
Non-farm income	0.54	1.22
Sources of credit:		
Others	42,846.89	4.27*
Commercial banks	38,543.74	4.21*
Farm Credit Service	32,292.18	3.89*
Individuals	24,486.86	2.17*

* Significant at the .95 level of confidence.

The model may be interpreted as follows: if a farm uses a commercial bank as its primary source of credit then the estimated net worth will be $38,544 higher than it would be if FHA were the source of credit. If private individuals are the primary source of credit, then the estimated net worth will be $24,487 higher than it would be if FHA were the primary source of credit. If the Farm Credit Service were the primary source of borrowed money, then the estimated net worth would be $32,292 higher than it would be if FHA were the primary source of credit. Northern New England dairy farmers who use FHA have significantly lower equities than do dairymen who primarily use alternative credit sources. This finding coincides with established policy of the FHA and reaffirms similar findings from other sources [1].

Policy Implications

The above analysis provides a frame of reference with which to asses the impact on Northern New England dairy farms of various future FHA lending policies. Among several policies which the FHA might follow in the region are 1) continue to make farm ownership loans to new borrowers, 2) make no new farm ownership loans but continue to serve the current farm clientele, 3) phase out all farm ownership loans over the next ten years. The following discussion assumes no major changes in the national economic situation and no natural disasters.

Policy 1: Continue New Farm Loans. As indicated in Table 2, the FHA provided nearly half the total dairy farm credit in the State of Maine and 23 and 14 percent of the total credit in New Hampshire and Vermont, respectively. If the FHA continues its present stated policy of making new loans in the Northern New England region, expectations are that FHA would maintain its current percentage share of the total dairy farm debt in the region. Low equity families would continue to have access to farm loans. The regression analysis indicates that FHA would continue to make loans on farms with equity levels significantly lower than farms where alternative credit sources would be utilized.

Policy 2: Make No New Farm Loans. This policy alternative reflects the alleged situation noted at the beginning of this paper. This policy would have FHA expand their non-farm loans while making no new farm ownership loans. Current farm loans would continue to be serviced and current clients would be advanced additional operating and ownership loans as needed. If this became FHA policy in Northern New England, the percentage share of the dairy farm debt currently held by FHA would decline to nothing as the farmer clientele paid off their loans with FHA over a twenty to thirty year period. The regression analysis indicates that if this policy were in effect, families with low equities would be precluded from borrowing initial farm ownership money. The alternative credit sources require significantly higher equity levels at the current time than does FHA. This policy would prevent individual families with limited resources from entering dairy farming in Northern New England and would hasten the movement towards fewer, larger farms.

Policy 3: Phase Out All Farm Loans. This alternative would be the most drastic departure from traditional FHA policy. It is considered to dramatize the importance of FHA in the Northern New England dairy farm sector. This policy would not only stop the FHA from making new farm ownership loans, but would also require closing out all farm loans currently held. For purposes of discussion, it is suggested that this could be accomplished over a ten year period. A number of loans would be paid off consistent with established repayment schedules, while others would probably have to be collected through foreclosure procedures. Alternative credit sources could refinance a portion of the farms. As indicated in Table 2, FHA has over 2 million dollars of farm loans outstanding on the 237 sample ELFAC farms. If these sample farms were to continue in operation after the phase out period, the alternative credit sources mentioned in this study would have to absorb most of this 2 million dollar debt. Assume that the 237 sample dairy farms in the region represent 3.4 percent of the population.[2/] This would indicate FHA has about 62 million dollars in dairy

2/ Unpublished data indicate there were about 6,978 dairy herds in the region during 1969.

farm loans outstanding throughout the region. In the event that FHA phased out its farm loan program over a decade, then other sources of credit would have to provide $62 million of farm loans if the farms in question were to continue in business. Considering the significantly higher equity shown in the regression model, few of the current dairy farms would probably qualify for loans from the alternative credit sources. It would be expected that a significant number of families would be separated from their dairy farm businesses if Policy 3 were adopted.

Summary

The purpose of this paper was to analyze the impact of future policy alternatives open to the FHA and their implications for Northern New England dairy farms. Net worth and related characteristics on 237 dairy farms participating in the ELFAC records program were analyzed. The results indicated that there are differences in the sources of credit used by dairy farms among the States of Maine, New Hampshire and Vermont. In Maine, FHA was the major source of credit with 45 percent of the total. In New Hampshire, commercial banks were the largest source with 37 percent of the total. In Vermont, the Farm Credit Service was the major single source with 40 percent of the total. Regression analysis indicated that when FHA was the major source of credit, the expected farm net worth was significantly lower than if one of the alternative sources were used. Discussion of three future policies which the FHA might follow indicated that this institution is an important supplier of credit on Northern New England dairy farms. If the FHA were to stop making new farm loans or remove itself from the market entirely, then it would be expected that a number of families with low equities would never get into dairy farming and those already in dairy farming might be forced out of business.

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