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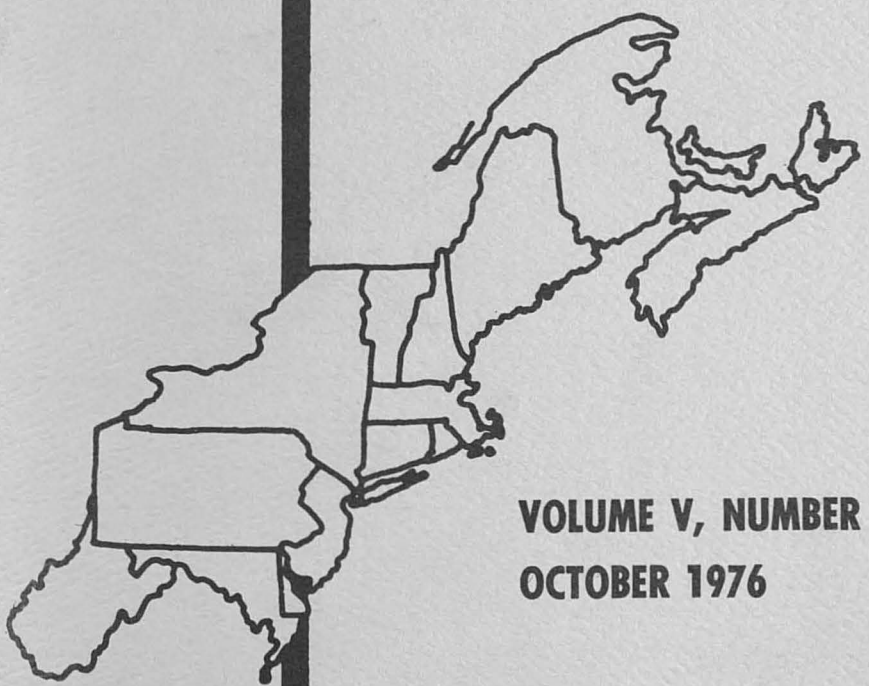

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DEPENDENCE ON CREDIT BY RURAL RETAIL FIRMS COMPARED TO URBAN FIRMS

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Retail firms in rural small towns survive because of the basic goods and services they provide to the residents in and within driving distance of the town. Yet, many small town firms have been forced to close due to migration of people to larger cities. The economic problems associated with the migration have caused federal and state governments to be deeply concerned. The remaining small retail firms do provide a foundation upon which to stimulate rural economic development and thus they are important to the nation's economy. They provide income and employment; they pay local property taxes, and they provide the personal interest of a small entrepreneur in the development of his community, a characteristic rarely found in the larger urban centers [6].

One basic need of the small firm is believed to be credit which is the subject of this paper.[1/] Many studies concerned with the needs of small firms recognize the importance of credit to their operations [2, p. 135-181], [3, p. 25-65], [4, p. 1-104], [8, p. 3-15].[2/] The general purpose of this study was to determine if a relationship exists between the population size of central places and the extent to which credit is provided and/or utilized by retail firms located in them.[3/]

1/ Based upon research with supporting funds authorized by the Rural Development Act of 1972. Approved by the Director of the West Virginia Agricultural Experiment Station as Scientific Paper Article No. 1445.

2/ The various studies recognize that availability of credit is only one of the financial problems; managerial experience and reluctance to use credit are others.

3/ Central place will cover all calssifications of population concentration; e.. g., stringtown; clusters of dwellings; hamlet; village; town; and cities.

The number of central places in West Virginia with a reported population is approximately 1,875. Of this number 226 are municipalities and only 15 have a population greater than 10,000 persons [9]. Because West Virginia is one of the most rural states, and because economic development is an important state-wide program activity, the study is of particular significance to rural economic development.

Procedure

Representative trade areas were selected as typical of those with low, medium and high economic development indices. For this study the indices for selected indicators used were: income per capita, percent of families with income less than $3,000, index of economic development, percent rural population, and bank deposits per capita. The data for the indicators were developed by the U. S. Department of Agriculture in a 1960 trade area study [1]. The indicators were ranked individually from the highest to the lowest for each of the 500 trading areas. West Virginia trade areas falling in the high 50, and middle 50 and the bottom 50 were analyzed to determine which one was most typical for the top, middle and bottom groups of 50. The trade areas ranked most often in each of the three groupings were considered most typical. As it turned out, the method identified an area of high urbanization and income compared with an area of lower urbanization and income, and a median area between the two.[4/]

As shown below central places were classified into five population size-types for analyzing the differences between the retail firms.

Size-Type	Population Range
I	Less than 400
II	400 - 1,199
III	1,200 - 2,499
IV	2,500 - 9,999
V	10,000 - larger

Because information from secondary sources on retail firms by size of central place was almost non-existent, the needed information was obtained through personal interviews. Since it was not possible to

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[4/] The Steubenville, Ohio/Weirton and Wheeling trading area represented greatest urbanization and income. The Pikeville/Kentucky and Logan and Mingo County/West Virginia trading area represented the lower income and urbanization. Preston and Roane counties were selected to be representative of the median group. Preston and Roane Counties are not in the same trade area but similarity of the indicators justified combining them.

obtain accurate estimates of the parameters needed to determine the proper sample size, a stratified random sample of firms was drawn as representative of six counties. The sampling plan required 105 completed interviews for each size-type of central place, or a total of 525 schedules. Actually, 616 firms were contacted and 571 usable schedules completed.

The selection process for finding counties typical for three levels of economic development also yielded three geographical areas with different combinations of economic activity. In the Steubenville, Ohio/Weirton and Wheeling trade area economic development progressed at a greater rate than the other areas. Incomes were higher, urbanization was more prevalent, and manufacturing more dominant. In Preston and Roane counties, agriculture was much more important in a mixed set of economic activities, and in the Pikeville, Kentucky/ Logan and Mingo County trade area, incomes were low. It was very rural and the development indicators were lowest of the three study areas. Mining was the most important economic activity. These conclusions were confirmed by comparing for employment in manufacturing, agriculture, and mining industries. Thus, three of the State's important industry areas were represented in the study.

For convenience the three typical situations henceforth will be identified as industrial counties, agricultural counties, and mining counties. The agricultural counties were not dependent on agriculture as the major income source, but agriculture was distinctly more important than in the other counties.

Rurality of the three typical situations chosen for the sample population was clearly demonstrated with assistance of U. S. Census data [7, p. 3-15]. In the industrial area 8.6 percent of the retail firms were located in the smaller central places, in the agricultural area the comparable figure was 67 percent, and in the mining area it was 68 percent. These rural retail business firms handled 3.2 percent of the total 1967 sales in the industrial area, 25 percent in the agricultural area and 49 percent in the mining area.

Sampling Method

Because the total number of central places for all size-types varied greatly between the three sample areas - industrial 17, agricultural 69, and mining 149 - the number of retail firms interviewed in a randomly selected central place also varied [9, p. 2-24]. A requirement of the sampling method was to obtain about the same number of interviews from each size-type. Thus, for any size-type, the number of retail firms contacted was determined by the number of central places multiplied by the estimated number of firms divided by the required number of interviews. For example, the number of central places for which firms were to be contacted ranged from 105 central places in size-type I to two in size-type V.

The information sought from each firm covered the period 1960-74. It covered refusal of credit, self finance, borrowed funds, liabilities and relevant business statistics.

Since influence of rurality was the chief concern, analysis in size-type was the most important criterion for measurement of dependence on credit. Multiple regression analysis proved to be the most useful statistical tool for determining significance of the various factors presumed to be important.

Influence of Size-Type on Use of Credit

The percentage of business firms that had been refused credit in all five size-types was not significantly different. Thus, capital rationing by lenders did not explain why firms in the smaller central places borrowed less often than the firms in the larger central places.

Firms in the smaller central places depended less on credit than the larger ones more often by self financing monthly inventories and even business expansion (Table 1). Wholesale suppliers, followed closely by commercial banks, were the most important sources of credit of credit for all size-types (Table 2). Friends and relatives were used as a source of credit more frequently in the smaller central places than in the larger ones. Equipment suppliers, probably because of the nature of business enterprises, were used infrequently by firms in the smaller central places in contrast to frequent use in the larger ones (Table 2).

Table 1
Business Firms Use of Credit, and Dependency on It for Monthly Inventory Purchases and Business Expansion by Size-Type Over Period 1960-74

Item	Size-Type I	II	III	IV	V
	Percent				
Retail firms sometimes used credit	69	71	84	86	89
Monthly inventory purchases sometimes self financed	72	66	62	42	28
Business expansion costs sometimes self financed	84	85	71	61	59

Table 2
Source of Credit by Size-Type the Over Period 1960-74

Credit Source	Size-Type I	II	III	IV	V
	Percent				
Commercial banks	30	42	72	81	81
Wholesale suppliers	38	53	81	83	86
Friends and relatives	14	7	6	4	2
Small Business Administration[1/]	11	4	2	4	2
Equipment suppliers	0	2	7	8	14
Other sources	4	7	14	20	15

1/ Due to the Buffalo Creek flood in 1973 resulting from the collapse of a dam in Mingo County after heavy rains.

Preliminary examinations of the data indicated thirteen factors which might explain ways in which credit use by rural firms differed from urban firms. They were: class of retail businesses, total assets, 1974 volume of sales, average monthly inventory purchases, average monthly business expenses, total liabilities, mean asset to liability ratio, mean age of business firms, mean number of full-time employees, form of organization, building ownership, credit sales, and industry characteristics.

With an increase in size of central place from small rural to large urban, the classification of business firms changed from those providing the more basic home needs to basic and additional ones.[5/] Also, the asset value of the business firms increased; the 1974 sales individual firms increased; the average monthly inventory purchases increased; the average monthly business expense increased; total liabilities increased; the ratio of assets to liabilities tended to decrease; the age of the firm was younger; the average number of full-time employees increased; individual proprietorships and partnerships tended to be more dominant and corporations more prevalent in size-type

5/ The more basic needs were: general merchandise, food, gasolines stations, and home furnishings; while the less basic were: building materials, auto dealers and service, apparel and accessories, eating and drinking, drug and proprietary, miscellaneous retail, and non-store retail.

V; building ownership decreased; credit was provided to customers less often; and industry characteristics shifted from mining and agriculture to industrial classifications.

Multiple Regression Analysis

Multiple regression equations were used to determine the relationships of thirteen independent variables to two dependent variables.[6/] The dependent variables were: (1) the percent of monthly inventory purchases externally financed and (2) the percent of business expansion externally financed since 1960. These two dependent variables most accurately reflect the firms dependence on credit. Ten of the thirteen factors hypothesized to be related to the extent of external financing were found significant at the .10 or better confidence level.

Percent of monthly inventory purchases externally financed. The initial regression equation showed that all thirteen independent variables explained 30 percent of the variance in percent of monthly inventory purchases that were externally financed. (R =.29922). Five of the independent variables were found to have significant b values at the .01 or higher level. They were: classification of business firms, 1974 sales, total liabilities, ratio of assets to liabilities and county industry characteristics. Two factors were found to be significant at the .05 or better level. They were: average monthly inventory purchases, and number of full-time employees (See Table 3).

The analysis of the extent by which firms externally financed their inventory purchases uncovered several significant relationships. First, all business classifications in small central places tended to externally finance their inventory purchases less often than those in large central places. Second, as the volume of sales and inventory purchases increased with size of central place, dependence on external financing increased. Third, firms in large central places used credit more frequently, perhaps reflecting more experience with debt. Fourth, the firms higner ratio of assets to liabilities suggests a preference for a more solvent position, or perhaps less need to borrow. Fifth, the industry characteristic of the county in which a firm was located

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6/ The independent variables used were: X_1=business classifications; X_2=total assets; X_3=total 1974 sales; X_4=age of business; X_5=average monthly business expense; X_6=average monthly inventory purchases; X_7=total liabilities; X_8= ratio of assets to liabilities; X_9= number of full-time employees; X_{10}=form of organization; X_{11}=building ownership; X_{12}=credit sales; and X_{13}=county industry characteristics. X_1, X_{10}, X_{11}, X_{12} and X_{13} are classification variables and were entered as dummy variables.

Table 3
Significant Independent Variables as Related to
Externally Financed Inventory Purchases

	Independent Variables	Prob. b=0	b Value
X_1	Business Classification[1/]	.0001	X_{1A} - 8.713
X_3	Total 1974 Sales	.0244	.000024
X_6	Average Monthly Inventory	.0244	.00039
X_7	Total Liabilities	.0001	.0052
X_8	Ratio of Assets to Liabilities	.0040	- .1398
X_9	Number of Full Time Employees	.0126	.1312
X_{13}	County Industry Characteristics[1/]	.0001	X_{13A} 18.995
			X_{13B} 1.830

R^2 = .299

[1/] X_{1A} businesses more characteristic of small (rural) places; X_{1B} business more characteristic of larger (urban) places; X_{13A} industrial classification counties; X_{13B} agricultural classification counties; X_{13C} mining classification counties. X_{1B} and X_{13C} were entered as zero.

influenced the amount of inventory externally financed, with firms in the industrialized counties borrowing substantially more than in the other two types of counties.

The b values for business classification indicated that firms in small central places do not externally finance inventory purchases as great an extent as do firms in the larger places, which also is similarily reflected between the rural and urban counties.

In general, one may conclude that entrepreneurs in small central places borrowed less for inventory purchases related to: the class of business; smaller size of firms as reflected by volume of sales; preference for remaining out of debt as reflected by higher asset to liability ratios, and the industry characteristics of their location.

Percent of business expansion costs externally financed since 1960. Use of credit for business expansion was regressed using the same thirteen variables for the equation with inventory purchases as the dependent variable, and 29 percent of the variance was explained. Five variables were found to be statistically significant at the .01 level. They were: 1974 sales volume, age of business, ratio of assets to liabilities, form of organization and county industry characteristics. One variable, building ownership, was found to be significant at the .10 level (See Table 4).

Six factors partially explained why business firms in small central places externally financed business expansion costs to a less extent than did the firms in large places. First, sales and form of organization indicated that the larger business firms externally financed more often. Second, age of a firm was negatively correlated with use of credit for capital expansion or the older the firm the less dependency on credit. Third, as the ratio of assets to liabilities increased, there was a corresponding decrease in dependency on credit for capital expansion. Fifth, the firms in small central places tended to have a higher degree of ownership of their buildings.

Conclusions

Ten variables were found by regression analysis to be statistically significant in influencing the retail firms' dependence on external financing: (1) the 1974 sales volume of the businesses within the central places, (2) kinds of retail firms, (3) the average monthly inventory purchases of the firms, (4) age of retail firms, (5) ownership of the buildings in which they operated, (6) number of full-time employees, (7) liabilities of the firms, (8) ratio of assets to liabilities, (9) kinds of business organization and (10) industry characteristics of the trade area.

Closer scrutiny of the ten factors shows that firms in large central

Table 4
Variables Found Significant and Their Respective b Values

	Variable	Prob. b=0	b Value
X_3	Total 1974 Sales	.0019	.000013
X_4	Age of Business	.0001	- .40261
X_8	Ratio of Assets to Liabilities	.0056	- .03328
X_{10}	Form of Organization[1/]	.0001	X_{10A} - .47737
			X_{10B} -8.4349
X_{11}	Building Ownership[1/]	.0594	X_{11A} 4.5950
X13	County Industry Characteristics[1/]	.0001	X_{13A} 12.8492
			X_{13B} 11.4891

R^2 = .29035

[1/] X_{10}, X_{11} and X_{13} were dummy variables with: X_{10A} = proprietorships; 10_B = partnerships; 10_C = corporations; 11_A = firm owned buildings; 11_B = building not owned by firm; X_{13A} = industrial counties; X_{13B} = agricultural counties; X13C = mining counties. X10C, X_{11B}, and X_{13C} were entered as zero.

places were more dependent on external financing for inventory purchases and business expansion expenses. As the size of the central places increased (Size-type I to V), and as the county location became more urban the percent of externally financed monthly inventory purchases increased. However, percent of externally financed business expansion decreased. Firms in small central places tended to finance inventory purchases and expansion more from internal sources than did those in larger control places.

The major findings of this study indicated that the generally uncontrollable factors of size, class of business, and age were the major reasons rural firms were less dependent on credit. But, rural firms lack of use of credit, their greater dependence on friends and relatives as sources of credit, and their high ratios of asset to liabilities suggested they preferred to avoid the risks involved with borrowing. Contributing to these tendencies were the attitudinal factors which influenced their value patterns and feelings toward credit. As external factors influence local attitudes they will be reflected in the decisions of rural people toward credit.

Finally, if development of the rural economy is a major goal of national policy, and if the small central place is the focal point for economic development, then more research is needed with regard to business practices in small central places. The conservatism shown in financial matters indicates that a strong aversion to risk might exist and also possibly, a lack of expertise in entrepreneural management. Also, because the firms in small central places were older and had a higher asset ratio relative to debt may have resulted in less need to depend on external financing.

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