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THE CHARACTERISTICS AND SIGNIFICANCE OF THE NON-INSTITUTIONAL CREDIT MARKET IN RURAL ECUADOR

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FOREWORD

The Agricultural Finance Center of the Ohio State University, through a contract with the United States Agency for International Development, is conducting a world-wide research project on "An Analysis of Programs for the Development and Improvement of Agricultural Credit Institutions and Services." This project is designed to develop principles and guidelines useful to AID and developing countries in the establishment and operation of permanent and effective institutions and systems for providing agricultural credit in developing countries.

In recent years, considerable effort has been devoted to the expansion and improvement of agricultural credit systems in underdeveloped countries. Some of these efforts have met with success while others have not. Perhaps, underlying those which have not been successful is the lack of information concerning the complete credit system. In Latin America and in other regions of the underdeveloped world most available information pertaining to agricultural finance relates almost exclusively to the institutional sector of the rural credit system. This report, therefore, is concerned with the identification and characterization of the non-institutional credit market, and specifically of the lenders and borrowers in that market in rural Ecuador.

The author wishes to express gratitude to Messrs. Herbert J. Roth and S. Thomas Stickley who along with the author constituted the Ecuadorian research team of the Agricultural Finance Center, to Dr. R. A. Bailey, Director of the Center, for providing constructive

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CHAPTER I

INTRODUCTION

Throughout the world, the disparities in levels of living are continually widening. Recent income estimates show that inhabitants of highly developed countries enjoy per capita incomes which are ten to twenty-five times larger than those of the underdeveloped nations. Nearly half the world's population lives in countries with average per capita incomes under $100 per year.[1] Aggravating and accentuating these disparities are the inequalities that exist within the countries. In Latin America for example, it is estimated that two per cent of the people own more than half the wealth and land, leaving the majority ill-clothed, ill-fed, ill-housed, ill-educated, and in ill health.[2]

Agriculture is important in the development process. The need for food and the inefficiencies in agriculture production require that over half the world's population and a majority of its resources be employed in agriculture. The need to produce more food and to produce it more efficiently is of utmost importance if underdeveloped countries are to advance their levels of living.

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[1]John W. Mellor, The Economics of Agricultural Development (Ithaca, New York: Cornell University Press), p. 3.

[2]Mervin G. Smith, Agricultural Economic Development in the World, (unpublished monograph, Columbus, Ohio State University), III, p. 2.

Agricultural output is generally accepted to be a function of certain inputs. Maximum production or output is obtained only when inputs are combined in an optimum manner. Often scarcities of some inputs relative to other inputs prohibit maximum utilization of the existing resources. Capital is an input which is both necessary and scarce in the production mix.[3] In fact in the view of many development economists, capital provides the answer to the unrelenting question of low productivity and underdevelopment.[4]

Capital is produced goods and services saved from present consumption and used by or combined with the human agent in further production. The masses in the rural sectors of underdeveloped countries are, however, caught up in the "vicious cycle of poverty", and are unable to create capital. They are unable to save because their real incomes are low. Their low real incomes are due to their low productivities which are due to their lack of capital investments which, in turn, are due to their inability to forego consumption and to save.

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[3]See Ragnar Nurkse, Problems of Capital Formation in Underdeveloped Countries, (New York: Oxford University Press, 1953) p. 1; Horace Belshaw, Agricultural Credit in Economically Underdeveloped Countries, FAO, Agricultural Studies No. 46, Prepared by the Food and Agricultural Organization of the United Nations (Rome: FAO, 1959) p. 230; and Economic Research Service / U.S. Department of Agriculture, Changes in Agriculture in 26 Developing Nations, 1948 to 1963, Foreign Agricultural Economic Report No. 27 (Washington, D. C.: U.S.D.A., 1965) p. 77. Cited herafter as Agriculture in 26 Developing Nations.

[4]Charles D. Kindleberger, Economic Development (2nd ed.; New York: McGraw-Hill Book Co., 1965), p. 83. For examples see R. F. Harrod, Towards a Dynamic Economics (New York: Macmillan Book Co., 1949); and Eusey D. Domar, Essays in the Theory of Economic Growth (London: Oxford University Press, 1957).

Breaking the poverty cycle is not easy. The possibility does exist, however, through the injection of outside capital. This usually takes the form of credit. Credit is the ability to acquire something of economic value in return for the promise to pay in the future. As such, it can be and is provided in many forms and by a variety of both institutional and non-institutional sources.

The purpose of this study is to examine the non-institutional portion of the credit market. More specifically the study is concerned (1) with the characteristics of and conditions within which both the borrowers and lenders of non-institutional credit operate, and (2) with breaking the poverty cycle via non-institutional credit.

Justification

Governments in newly developing countries are generally aware of the importance of agricultural credit and appreciate the need for such credit. Available data show that in most countries there has been a rapid increase in the amount of institutionally supplied credit during the last decade. Yet, there remains a chronic shortage of credit, and an overwhelming majority of farmers in most newly developing countries live and work without any financial help from institutional credit sources.[5] The amount of institutionally supplied agricultural credit outstanding per adult male engaged in

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[5]Food and Agricultural Organization of the United Nations, New Approach to Agricultural Credit, FAO Agricultural Development Paper No. 77 (Rome: FAO, 1964) p. 2. Cited hereafter as New Approach to Agricultural Credit.

agriculture ranges from a few dollars in a number of underdeveloped countries to several thousand dollars in some developed countries. The distribution of the institutional funds, like per capita income, is very uneven. In Peru, for instance, it is estimated that over half the nation's institutionally supplied agricultural credit is granted to less than one per cent of the farmers.[6] One-eighth of Chile's farm population receives two-thirds of its institutionally supplied agriculture credit.[7]

The shortage and uneven distribution of institutional funds in the rural sector arises from both sides of the supply-demand relationship. On the supply side, there are limited numbers of institutional outlets in the rural area, and these few are often curtailed by their small endowment of loanable funds. Farmers, making up the other side of the relationship, are often unable to create an effective demand for institutional funds under existing lending policies.

In an effort to minimize risk most credit institutions have rigorous security requirements. Small owners, tenants, quasi-tenants, and squatters, who constitute the bulk of the active agricultural population in developing nations, are frequently stifled by their inability to meet the security requirements which demand real estate

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[6]William Hoerger (unpublished seminar report, Ohio State University, 1967).

[7]Charles T. Nisbet, "The Informal Credit Market in Rural Chile: Its Nature, Significance, and Relationship to the Institutional Credit Market", (unpublished Ph.D. dissertation, Dept. of Economics, University of Oregon, 1967) pp. 174-76.

or chattel assets, clear titles or written rental contracts, along with satisfactory productivity and income. As a result, many of these small farmers have to resort to non-institutional credit sources, that is, to private money lenders, merchants and traders, friends and relatives, and landlords. The non-institutional lenders are less particular about tangible forms of security. They base their lending operations on intimate knowledge of the borrowers and upon their ability to apply social, economic, and perhaps political pressures to force repayment if necessary. In addition, non-institutional lenders are able to charge interest rates which are sufficiently high to cover any increased amount of risk since regulatory laws are either non-existent or not rigidly enforced.

The importance, at least in numbers of users, of non-institutional credit is quite great. In India, Iran, Thailand, and the Philippines, for instance, eighty to ninety per cent of the farmers using credit obtain it from non-institutional sources.[8]

The Problem

The problem is, if non-institutional credit is an important component of an economy's credit system, what are its characteristics and how does it perform? That is, does the non-institutional component of the rural credit system differ significantly from the institutional component and does non-institutional credit contribute to the economic growth and development of an underdeveloped country?

Some economists feel that countless opportunities exist in underdeveloped countries for short-term investments which yield

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[8]Agriculture in 26 Developing Nations, Op. Cit., p. 82.

output of several times the value of the money capital involved.[9] Belshaw, while not discounting the existence of lucrative opportunities, suggests that the use of agricultural credit in general has not led to a cumulative increase in productive power or levels of consumption.[10] Credit, when used for purposes which do not provide sufficient returns to cover its cost, decreases the economic well being of the user. But when credit eliminates a scarcity that would otherwise curtail or limit production, it is an instrument of economic progress and development.[11]

The Objectives

This study is an attempt to characterize the nature of non-institutional credit in rural Ecuador, and to measure the degree of economic growth, either positive or negative, associated with the use of the credit. More specifically, the basic objectives of the study are:

1. to determine the differences that exist between the institutional and non-institutional credit markets,

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[9]See Anthony Bottomley, "Keynesian Monetary Theory and the Developing Countries", Indian Economics Journal, XII, No. 4 (April-June, 1965) p. 341; and Jerome Pasto, "The Role of Farm Management in Underdeveloped Countries", Journal of Farm Economics, XLIII, No. 3 (August, 1961) p. 609.

[10]Belshaw, Op. Cit., p. 46.

[11]For a more comprehensive treatment of credit as an instrument of progress and as an instrument of stagnation, see John K. Galbraith, "The Role of Credit in Agricultural Development", Proceedings of the International Conference on Agricultural and Cooperative Credit, August 4 - October 2, 1952, Elizabeth K. Baur, ed. (Berkeley: University of California, 1952) pp. 29-33.

including characteristics of both the borrowers and lenders, and the loans,

2. to determine the relative importance of each market,
3. to measure the productivity of non-institutional credit, and
4. to derive from the findings, implications for agricultural credit and development policies.

Hypotheses and Propositions

The study has two general hypotheses and four propositions. The first hypothesis and the first three propositions are considered together as are the second hypothesis and the remaining proposition. The propositions are employed in testing the hypothesis, and serve to further describe the nature of the rural credit markets.

Hypothesis Number One

The first hypothesis to be tested is:

THERE EXIST, IN THE AGRICULTURAL SECTOR, TWO OR MORE CREDIT MARKETS.

Propositions one, two, and three are considered with the above hypothesis and are as follows:

P_1: Non-institutional agricultural credit suppliers provide a greater number of farmers with credit and provide a larger volume of credit than do institutional suppliers.

P_2: In the agricultural sector the institutional credit market is unlike the non-institutional credit market.

P_{2a}: The characteristics of credit suppliers relative to credit use are dissimilar.

P_{2b}: The characteristics of the loans are dissimilar.

P_{2c}: The characteristics of credit users relative to credit use are dissimilar.

P_3: There exists justification for the cost of non-institutional credit to exceed that of institutional credit.

Hypothesis Number Two

The second hypothesis is:

NON-INSTITUTIONAL CREDIT IS AN INSTRUMENT OF PROGRESS AND ECONOMIC GROWTH IN THE AGRICULTURAL SECTOR.

The proposition treated in considering the above hypothesis is:

P_4: The marginal productivity of capital borrowed from non-institutional suppliers is positive and is greater than the borrowers cost of the credit.

The Data

In testing the two hypotheses and in treating the four propositions, both secondary and empirical data are employed. The empirical data come primarily from three types of surveys conducted in Ecuador during 1965 and 1966.[12]

The first survey was conducted with 106 farmers. This sample group of farmers was selected in such a manner as to be representative of Ecuadorian farmers. Any household head who gained

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[12]Ecuador, located on the western coast and crossed by the equator, is the second smallest country in South America. The country is divided into three geographical regions by a high massive double row of mountains. Agriculture employs approximately [illegible] the labor force and accounts for approximately one-third of the gross domestic product. Its GDP in 1965 was U.S. $215 per capita.

a major portion of his livelihood from his personally directed farming activities was considered to be a farmer.[13]

A list of 206 non-institutional credit suppliers was obtained from the farmer survey. The second survey was then conducted with 156 of the non-institutional suppliers.

Lastly, empirical data were collected through interviews and surveys conducted with agencies representative of each of the various types of institutional suppliers of agricultural credit. The institutional suppliers include the Central Bank, commercial banks, credit cooperatives, the National Development Bank, the Land Reform Institute, and special interest development groups which extend credit in the agricultural sector.

The Procedure

The primary concern in Chapter II is that of identifying and characterizing the non-institutional component of Ecuador's rural credit system.[14] In addition, it is useful to establish the importance of the non-institutional credit and to relate its characteristics to its cost.

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[13]It is difficult to determine if the sample is representative since there is a minimum of census and similar data available. In addition, the definitions employed by previous data collectors are difficult if not impossible to determine. See Table 16 and attached note in Chapter II.

[14]The present study, at this point, somewhat parallels a study recently completed in Chile. See Charles T. Nisbet, Op. Cit.

The volume of non-institutional credit and the number of farm families using non-institutional credit are employed in determining its importance, in and of itself, and its importance relative to institutionally supplied credit in rural Ecuador. On the basis of organizational features pertaining to the supply sources, the credit is divided into the two broad categories of institutional and non-institutional. Characteristics of the suppliers, of the users, and of the loans are discussed within each category and are interrelated. The characteristics included are: the lending criteria and procedures used, the services offered, the number of farmers, and the geographical area serviced by the suppliers; the purposes and sizes, the lengths and timeliness, the guarantees, and the interest rates of the loans; and the general social-economic level of the borrowers. Non-institutional interest rates, in view of their determinants, are related to other loan and borrower characteristics.

Chapter III is devoted to the measurement of the growth associated with the use of non-institutional credit in the agricultural sector of Ecuador. The rate of growth is estimated by relating 1964 and 1965 gross farm incomes. In an effort to more closely identify the growth which is associated with the credit, "free factors", including price increases and climatic changes, are partially excluded from the incomes.

The conclusions and their implications, as related to agricultural credit and development policies, are stated in Chapter IV.

CHAPTER II

THE CREDIT MARKETS OF RURAL ECUADOR

Two, somewhat dissimilar, kinds of credit exist in rural Ecuador. One is supplied by non-institutional sources, while the other is supplied by institutional sources.

The non-institutional sources as defined in this study are those lenders of credit who do not require written application forms, who do not receive savings deposits, who do not require membership, and who do not have policy making groups and offices in large cities. The institutional sources are those who require written application forms, who receive savings deposits, who require membership, and/or who have policy making groups and offices in large cities.

In rural Ecuador, merchants, farmers, landlords, friends, relatives, and private money lenders constitute the sources of non-institutional credit. Institutional credit sources include private and public banks, credit cooperatives, and quasi-lending organizations.

The topic of this chapter is divided into three parts. First, the importance of the two types of credit is established; second, the differences that exist between the two credit types are identified; and third, these differences are related to the costs of the two types of credit.

The Importance of Institutional and Non-Institutional Credit

The relative importance of non-institutional agricultural credit varies considerably between countries.[1] The degree to which it is used is dependent upon a multitude of social, economic, and political factors which may or may not be associated with development.

Of the 1062 Ecuadorian farmers sampled, 523 or 49 per cent were and/or had used credit (Table 1). Non-institutional credit suppliers

TABLE 1

NUMBER AND PERCENTAGE OF SAMPLE FARMERS USING CREDIT

	Number of Farmers	Percentage of 1062 Farmers	Percentage of 394 Present Users
Present users of institutional credit only	221	20.8	56.1
Present users of non-institutional credit only	147	13.8	37.3
Present users of both institutional and non-institutional credit	26	2.4	6.6
Past users	129	12.1	
Non-users	539	50.7	
		100.0	100.00

Source: Farmer Survey

[1] Throughout this thesis "agricultural credit" refers to both production and consumption credit used by rural people.

provided 44 per cent of the present users with all or part of their credit, while institutional suppliers provided credit for 63 per cent of the present users.[2] Both types of credit were used by 6.6 per cent of the present users.

In terms of number of farmers served, as Table 1 indicates, the importance of non-institutional agricultural credit approaches that of institutional credit. When the importance is measured in terms of amounts of credit outstanding, however, the institutional suppliers outrank the non-institutional suppliers by nearly tenfold (Table 2).

TABLE 2

AMOUNT OF INSTITUTIONALLY SUPPLIED AND NON-INSTITUTIONALLY SUPPLIED CREDIT HELD BY PRESENT USERS

	Amount of Credit Outstanding (sucres)[a]	Percentage of Outstanding Credit
Institutionally supplied	3,047,100	90.23
Non-institutionally supplied	329,800	9.77
	3,376,900	100.00

[a]18.18 sucres = U.S. $1.00

Source: Farmer Survey, Present Users.

[2]Present users are those farmers who, at the time of the interview, had received one or more loans in the previous 12 months for crop production expenses and/or family living expenses, had received one or more loans in the previous three years for livestock, machinery, and/or equipment purchases, and/or had received one or more loans in the previous ten years for long term real estate purchases or improvements. In most cases the loans were (at the time of the interview) still current or had recently reached maturity.

The Existence of Two or More Credit Markets

As noted in the previous section a significant number of farmers obtain their credit from non-institutional suppliers. Whether these suppliers and users merely represent a portion of a larger more encompassing agricultural credit market or whether they constitute one or more markets in and of themselves is dependent upon the heterogenity encountered among the users and suppliers of agricultural credit in general.

A market is defined as an area or sphere wherein a given set of supply and demand forces operate to determine prices.[3] If there are basic dissimilarities between the borrowers of agricultural credit with respect to credit usage and if there are basic dissimilarities between the suppliers of such credit there is then more than one set of supply and demand forces in operation determining equilibrium prices. As such, the necessary conditions are satisfied for the existence of more than one credit market in the agricultural sector.

In a competitive situation the supply of credit made available at different levels of interest is theoretically dependent upon the administrative costs, the opportunity costs, and the amount of risk involved. Demand for credit arises from its expected return and satisfaction. The satisfaction an individual or a group of individuals expects to receive through credit usage is dependent not only upon economic profits (which undoubtedly vary considerably), but also upon such factors as prestige, comfort, and perhaps survival.

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[3]L. B. Darrah, Food Marketing, (New York: The Ronald Press Co., 1967) p. 8.

The purpose of the remaining portion of the present chapter is to compare and contrast elements which affect or correlate with the forces of supply and demand which determine equilibrium levels; or more specifically, the prices of the credit.

The Institutional and Non-Institutional Agricultural Credit Suppliers

Both public and privately owned organizations provide Ecuadorian farmers with institutional credit. The National Development Bank (Banco Nacional de Fomento) supplies by far the greatest number of farmers with institutional credit. Eighty-five per cent of the institutional credit users interviewed in the farmer survey claimed the National Development Bank as their major source. Private banks and credit cooperatives served as the main source for seven per cent and four per cent of the institutional users respectively. The remaining institutional credit users relied on a variety of organizations.[4]

The importance of the National Development Bank relative to the other institutional sources of agricultural credit is undoubtedly due to its basic objective of servicing Ecuador's agricultural credit needs. To more nearly meet the basic objective, the National Development Bank has 35 branch banks distributed more or less evenly throughout the agricultural areas of the country. Private banks are only found in the larger commercial areas.

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[4]If one compares the National Development Bank with the private banks on the basis of volume of credit extended in recent years, the importance of the private banks is greater. This condition is felt to arise from: (1) the larger commercial farm operations being serviced by the private banks, (2) the private banks' definition of agriculture, and (3) the recent Ecuadorian law requiring that private banks maintain 15 per cent of their total loan portfolio in agricultural credit.

Credit institutions, by their nature, are generally organized with a bureaucratic form of administration. Their lending and collecting criteria are based on a set of standardized policies, and generally follow pre-determined procedures. Such policies and procedures are often very inflexible and tend to be accompanied by an impersonal atmosphere. In addition, the procedures and formalities may be lengthy and too complicated for the small unsophisticated farmers.

In Ecuador's National Development Bank the procedure of obtaining a loan starts with the farmer's visit to one of the Bank's offices. The farmer first talks with the manager of the branch. If the manager believes the farmer might qualify for a loan, a formal application including balance sheet and income statement is submitted to the credit assistant. The application then moves to the inspection section where the farmer's agricultural operation, property title, etc., are inspected. An inspector's report is attached to the application. The credit analyst next receives the application and passes his own opinion. Based upon the reports and opinions of the inspector and credit analyst and upon his own knowledge, the branch manager approves or rejects the loan. If approved, the necessary security contracts and other legal requirements are completed before the loan is disbursed.

While the above set of procedures is from the National Development Bank and is subject to variation between its branches, it is fairly representative of those followed in other institutional suppliers of agricultural credit in Ecuador.

Non-institutional suppliers of credit, although not offering the checking, savings, and other services that some of the institutional sources are able to offer, can provide credit on the spot in a quick and simple manner with a minimum of red tape. The suppliers of non-institutional credit are able to supply both production and consumption credit in such a manner partly because each supplier services only a small area. By curtailing their lending activities to the local level the lenders have an intimate knowledge of their clientel. As such, there are no lengthy standardized lending procedures. The loans are made in privacy and are granted under flexible conditions varying with the conditions and circumstances of the borrower.

Non-institutional lenders usually consider their credit activities to be secondary and/or complementary to their regular occupation. Of the 156 non-institutional lenders interviewed only 31 or 20 per cent said lending was their major occupation. Of the remaining 125 lenders, 67 said they were merchants and 20 said they were farmers.[5]

Of the 156 non-institutional lenders, 81 or 52 per cent considered their lending to be part of their primary occupation. In fact, it is an essential part for some as 47 said they would not continue to make loans if they could maintain the volume of their

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[5]The 38 lenders not accounted for either did not classify themselves clearly or, as in the case of the majority, classified themselves in one of a variety of other occupations including public and private employees.

other business without so doing. The lenders generally said they were extending credit to maintain or expand their primary business (28 per cent), or to create an air of friendship and helpfulness (35 per cent).

Suppliers of non-institutional credit, as previously stated, base their lending activities on intimate knowledge, and are generally dependent upon their own source of capital. As such, non-institutional credit operations are small relative to those which are institutional.

The mean number of farmers served by the non-institutional lenders in the sample was 28 per year, and the mean amount loaned per year by each lender was 20,176 sucres. (In 1965 the official exchange rate was 18.18 sucres = 1 U.S. dollar.) The distributions are skewed toward the upper end, that is, the lenders are generally smaller than the mean shows them to be. Three-quarters of the lenders service less than thirty farmers each, and loan less than 20,000 sucres each per year (Tables 3 and 4).

TABLE 3

NUMBER OF FARMERS SERVED PER YEAR BY 156 NON-INSTITUTIONAL LENDERS

Number of Farmers Served	Number of Lenders	Percentage of 156 Lenders
1 to 10	16	10.3
11 to 20	57	36.5
21 to 30	45	28.8
31 to 40	19	12.2
41 to 50	8	5.1
51 to 75	6	3.9
76 to 100	4	2.6
(without information)	1	.6
	156	100.0

Source: Non-Institutional Lender Survey

TABLE 4

ANNUAL AMOUNT LOANED TO FARMERS BY
156 NON-INSTITUTIONAL SUPPLIERS

Number of Sucres Loaned[a] (Thousands of sucres)	Number of Lenders	Percentage of 156 Lenders
1 to 5	14	9.0
6 to 10	43	27.5
11 to 15	41	26.3
16 to 20	21	13.5
21 to 40	23	14.7
41 to 80	10	6.4
81 to 130	4	2.6
	156	100.0

[a]18.18 sucres = 1 U.S. dollar.

Source: Non-Institutional Lender Survey

The Institutional and Non-Institutional Loans

Loans obtained in the agricultural sector are utilized for many purposes and under a variety of terms and conditions. This section will detail the nature of the loans supplied by the institutional and non-institutional suppliers.

Purposes and Sizes of Loans

Table 5 sets forth the manner in which the present users employed the loans they received in rural Ecuador.[6] The variations between the institutional and non-institutional loans are found to be

[6]The definition of present users should be recalled; see second footnote in this chapter.

the greatest in the broad categories of livestock purchases; land purchases, rent, and improvements; and family living expenses. Since the sample of institutional users is heavily dominated by the National Development Bank, its policies undoubtedly influence the above variations. The Bank seldom extends credit for land purchases and for consumption. It has furthermore encouraged increased livestock production.

TABLE 5

PURPOSES OF LOANS SUPPLIED BY INSTITUTIONAL AND NON-INSTITUTIONAL SOURCES

	Institutional Loans		Non-Institutional Loans	
	Number of Loans	Percentage of 290 Institutional Loans	Number of Loans	Percentage of 229 Non-institutional Loans
Cultivation expenses	71	24.5	62	27.1
Livestock purchases	150	51.7	17	7.4
Machinery and equipment purchases	9	3.1	7	3.1
Land purchases, rent, and improvements	38	13.1	48	20.9
Family living expenses	22	7.6	95	41.5
	290	100.0	229	100.0

Source: Farmer Survey

Perhaps less than might be expected but still significantly large is the percentage of loans issued for family living expenses by the

non-institutional suppliers. The demand for such loans is likely to be highly interest-inelastic as they are not generally demanded on the basis of their physical or revenue product. Rather, the demand occurs out of unusual events such as crop failure, illnesses and deaths, and social events, and out of the seasonal production and income patterns which are accompanied by continuous consumption patterns.

The sizes of the loans supplied by both institutional and non-institutional sources vary considerably (Table 6). Non-institutional

TABLE 6

LOAN SIZES BY SOURCE AND USE

Sucres (00)	Institutional Loans			Non-Institutional Loans		
	Agri-cultural Pro-duction	Family Expenses	Total	Agri-cultural Pro-duction	Family Expenses	Total
1-5	2.5	28.5	4.4	23.7	76.1	43.3
6-10	2.9	28.5	4.7	23.7	15.0	20.5
11-20	3.6	14.3	4.4	16.3	3.7	11.6
21-30	9.7	4.8	9.4	9.6	0	6.1
31-50	14.4	4.8	13.7	5.2	1.3	3.7
51-75	12.6	14.3	12.7	3.0	1.3	2.3
76-100	12.6	4.8	12.0	7.4	1.3	5.1
101-200	19.4		18.1	5.2	1.3	3.7
201-500	14.0		13.0	5.2		3.2
501-1000	4.4		4.0	.7		.5
1001-2000	3.2		3.0			
2001-3000	.7		.6			
	100.0	100.0	100.0	100.0	100.0	100.0

Source: Farmer Survey

loans in rural Ecuador are quite small; the median size being only 800 sucres (U.S. $44.55).[6] Institutional loans, as measured by the median, are ten times larger (Table 7).

TABLE 7

AVERAGE LOAN SIZES BY SOURCE AND PURPOSE
(in sucres)

	Institutional Loans		Non-Institutional Loans	
	Mean	Median	Mean	Median
Cultivation expenses	12,303	6,000	2,990	1,000
Livestock purchases	17,147	9,000	1,518	2,000
Machinery and equipment purchases	65,078	29,000	6,585	1,700
Land purchases, rent and improvement	24,418	13,000	8,663	2,600
SUB-TOTAL (Production Loans)	19,434	9,350	5,242	1,500
Family living expenses	2,186	1,000	916	300
TOTAL (All Loans)	18,243	8,000	3,633	800

Source: Farmer Survey

[6]When the distribution is wide and skewed the median is a more realistic indicator of what is generally meant by average, since half of the observations are at least as large as the median and half are at most as large as the median.

Based upon the number of loans for family living expenses and upon their relatively small size, the non-institutional loans are divided into two sub-types, namely non-institutional production and non-institutional non-production. The latter sub-type includes only those loans classified in the broad category of family living expenses in Tables 5, 6, and 7. The remaining four categories are herein called non-institutional production loans.[7]

Lengths of Loans

The survey conducted with the non-institutional credit suppliers showed that the mean length of non-institutional loans was 10.36 months. This differs only by .34 months, or approximately ten days, from 10.02 months which is the mean loan length for present non-institutional credit users as found in the farmer survey.

Institutional loans customarily have a longer term. Over 65 per cent of the loans of institutional users have a term that exceeds one year, while 89 per cent of the loans held by non-institutional users have terms of one year or less (Table 8). This is consistent with the purposes for which the loans were made.

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[7]The approach of dividing credit into production and consumer or non-production credit on the basis of its use has an inherent weakness. The weakness arises when a loan is used to purchase an article which does not represent the article actually added. For example, a loan used to purchase fertilizer which would have been purchased whether or not the loan was received allows the borrower to increase his consumption.
John W. Mellor, The Economics of Agricultural Development, (Ithaca, New York: Cornell University Press, 1966) pp. 315-316, offers further elaboration of the above weakness and suggests alternatives.

TABLE 8

LENGTHS OF LOANS BY USER CATEGORIES

Period of Time	Loans of Institutional Users		Loans of Non-Institutional Users				Loans of Institutional and Non-Institutional Users	
			Production		Non-Production			
	Number of Loans	Percentage of 257 Loans	Number of Loans	Percentage of 79 Loans	Number of Loans	Percentage of 63 Loans	Number of Loans	Percentage of 51 Loans
1-4 mos.	2	.8	9	11.4	30	47.6	3	5.9
5-8 mos.	28	10.9	17	21.5	14	22.2	9	17.7
9-12 mos.	58	22.6	37	46.8	19	30.2	18	35.3
13-24 mos.	49	19.0	12	15.2	0		7	13.7
25-48 mos.	100	38.9	3	3.8	0		10	19.6
Over 4 years	20	7.8	1	1.3	0		4	7.8
	257	100.0	79	100.0	63	100.0	51	100.0
Without or unaware of due date	1		26		35		7	

Source: Farmer Survey

The user categories and sub-categories, as set forth in Table 8 and in many of the succeeding tables, are based upon the credit source(s), and in the cases of non-institutional users, upon the type(s) of credit used by each individual farmer. These categories and sub-categories of present users are defined as follows:[8]

-- Institutional users, those borrowers who use only credit granted by institutional sources;

Non-institutional users, those borrowers who use only credit granted by non-institutional sources;

Non-institutional users of production credit, those non-institutional users who employ all or a major portion of their credit for production purposes (as defined on page 22);

-- Non-institutional users of non-production credit, those non-institutional users who employ all or a major portion of their credit for non-production purposes;

-- Institutional and non-institutional users, those borrowers who use credit from both types of sources.

The usefulness of the above categories will become more apparent in later sections.

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[8]The definition of a present user is found on page 2, and the definition of a non-institutional credit source is found on page 1.

Loan Disbursements and Repayments

Loans from non-institutional sources are generally thought to be received and/or repaid in kind rather than in cash. The loans of non-institutional users of credit in the farmer survey which were received and/or were to be repaid in kind represents only 31 per cent of the total. Included in the 31 per cent, or 63 loans, are two which were received in cash and kind, and four which were to be repaid with cash and/or kind. Four of the loans were received in kind and were to be repaid in kind and were not double counted. The frequencies with which loans in kind appear in each of the user categories are shown in Tables 9 and 10.

It is worthy to note that 24 per cent of the loans of non-institutional users were received in kind versus 9 per cent which were to be repaid in kind. The explanation seemingly lies with the merchants who complement their business through lending, as merchants provided approximately 60 per cent of the loans which were in kind. The merchants generally sell tools, seed, fertilizer, food, clothing, and other household effects to large numbers, but buy produce only from a few.

Types of Security Offered

Whereas institutional lenders generally require that land or other physical assets be pledged to guarantee their loans, non-institutional lenders are dependent upon less tangible forms of security. Seventy-seven per cent of the institutional users gave guarantees of land or moveable physical assets. Non-institutional

TABLE 9

FORMS IN WHICH USERS RECEIVED LOANS

	Institutional		Non-Institutional				Institutional and Non-Institutional	
			Production		Non-Production			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Received in cash	253	98.1	89	84.8	65	66.3	53	91.4
Received in kind	4	1.5	16	15.2	31	31.6	5	8.6
Received in kind and cash	1	.4	0	0	2	2.1	0	0
	258	100.0	105	100.0	98	100.0	58	100.0

Source: Farmer Survey

TABLE 10

FORMS IN WHICH USERS MAKE REPAYMENT

	Institutional		Non-Institutional				Institutional and Non-Institutional	
			Production		Non-Production			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Repayments in cash	258	100.0	96	91.4	89	90.8	55	94.8
Repayment in kind	0	0	8	7.6	6	6.1	3	5.2
Repayment in cash and/or kind	0	0	1	1.0	3	3.1	0	0
	258	100.0	105	100.0	98	100.0	58	100.0

Source: Farmer Survey

users, on the contrary, guaranteed loans with these same types of tangible security in only 6.9 per cent of the instances (Table 11).

The minimum usage of land and other physical assets in securing the non-institutional loans emphasizes the dependence upon knowledge. That is knowledge of the borrower on the part of the lender. The non-institutional lender relies upon repayment alone not upon repayment and then upon forclosure if the client does not have the desire or ability to repay.

Interest Rates

The cost of non-institutional credit is customarily thought to be high, but the likelihood that it will bear no formal charges is relatively large. Non-institutional credit users said they were not paying interest on 43 per cent of the loans. Institutional credit users were paying interest on all of their loans (Table 12).

The 84, or 43 per cent of the non-institutional credit users who said they were not required to pay interest were asked if they were paying for the use of the creditor's funds through some other arrangement. Only 16 of the 84 believed they were paying for the credit via some other means. Six did not know and 62 said the loans bore no charges. The 62 represents 30.54 per cent of the loans.

Positive interest rates as stated by the farmers in the various user categories appear in Table 13, and range from two per cent to 80 per cent annually. The median and mean interest rates as stated by the institutional users are eight and 8.3 per cent respectively. Mean rates of 16.3, 17.5, and 16.9 per cent are

TABLE 11

TYPE OF SECURITY PLEDGED AS REPORTED BY USERS

	Institutional		Non-Institutional				Institutional and Non-Institutional	
			Production		Non-Production			
	Number	Percent of 243	Number	Percent of 101	Number	Percent of 86	Number	Percent of 57
Land	146	60.1	9	8.9	4	4.6	27	47.4
Security agreement on moveable assets	41	16.9	0	0	0	0	3	5.2
Co-signer	40	16.5	15	14.9	17	19.8	8	14.0
Signature	12	4.9	18	17.8	11	12.8	5	8.8
Nothing	4	1.6	59	58.4	54	62.8	14	24.6
Sub-Total	243	100.0	101	100.0	86	100.0	57	100.0
Unknown	15		4		12		1	
Total	258		105		98		58	

Source: Farmer Survey

TABLE 12

NUMBER OF BORROWERS PAYING INTEREST

	Institutional		Non-Institutional				Institutional and Non-Institutional	
			Production		Non-Production			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	256	100.00	60	58.25	52	55.91	45	77.59
No	0	0	43	41.75	41	44.09	13	22.41
Sub-Total	256	100.00	103	100.00	93	100.00	58	100.00
Does not know	2		2		5		0	

Source: Farmer Survey

TABLE 13

INTEREST RATES, AS REPORTED BY USERS[a]

User Category	Annual Interest Rate Percent																					Total Cases
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	20	22	24	35	48	60	80	
Institutional	5	2	1	2	9	9	178	6	10	1	20	1	1		2		1						248
Non-institutional productive	1	2		2			3		4		7			1	7			9	1		1		38
Non-institutional non-productive				3			1		5		13			1	4	1		3		1	1	1	34
Non-institutional and institutional	3				1	1	26		1		4				2			3					41

[a]Included are only those loans on which farmers were paying interest and could state what they thought the rate to be.

Source: Farmer Survey

derived from the positive interest rates stated by farmers categorized as non-institutional users of production credit, non-institutional users of non-production credit, and (combined) non-institutional users respectively.

There is some reason to believe that the interest rates as given by the users are lower than the true rates and perhaps less than the stated rates. The suspicion arises from two inconsistencies. First, it is doubtful if there are any Ecuadorian credit institutions that are presently charging, or that have in the past several years charged, less than eight per cent. Private banks had stated rates of interest ranging between 13 and 14 per cent and true interest rates approaching 18 per cent,[9] credit cooperatives charged 12 per cent and required borrowers to be shareholders,[10] and the National Development Bank had a stated rate of 8 per cent. It is noted in Table 13 that 28 or 11 per cent of the institutional loans were reported as having interest rates of less than 8 per cent. Secondly, the non-institutional lenders which were interviewed claimed to be charging 26.56 per cent interest. This is the mean of the positive rates and is considerably more than the 16.9 per cent which the non-institutional borrowers said they were paying. The answers to other questions asked of both the lenders and the borrowers did not differ

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[9]G. S. Goodell, H. J. Roth, S. T. Stickley, and J. N. Stitzlein, An Appraisal of the Banco Nacional de Fomento Relative to Agriculture Credit in Ecuador, The Ohio State University Agricultural Finance Center, Columbus, Ohio 1966, p. 5.

[10]Percy Avram, A Report on the Development of a Pilot Project, AID/ECUADOR/CUNA Program, Quito, Ecuador, 1965, p. 21.

so greatly, as is demonstrated by the extremely small difference that was encountered in mean loan lengths on page 23.

Appearing in Table 14 are the interest rates as stated by the non-institutional lenders.

The seeming lack of knowledge concerning the interest rates, particularly on the part of the non-institutional users may come in part from the short terms of the loans and the manner in which the rates are stated. The rates are often quoted on a monthly rather than an annual basis, and may also be given as a percentage of a loan which has a term of less than 12 months.

TABLE 14

NUMBERS OF NON-INSTITUTIONAL LENDERS
REPORTING SPECIFIED INTEREST RATES

Annual Interest Rate													
0	10	12	15	18	20	24	25	30	36	40	42	60	Total Cases
25	3	5	4	5	4	60	1	22	22	2	1	2	156

Source: Non-Institutional Lender Survey

Timeliness of Loans

As was mentioned earlier, the application procedure for obtaining credit from institutional suppliers differs considerably from the procedure used to obtain non-institutional credit. When the borrower applies for credit with a non-institutional lender, he does not have to wait in lines; he does not have to submit income

statements, balance sheets, and land titles; and generally does not have to wait more than a few days to receive his loan.[11]

Generally, borrowers of non-institutional credit receive their loans during the first few days. In fact, 44 per cent of the loans were received on the same day application was made. Another 40 per cent were received within one week. By way of contrast, only 12 per cent of the institutional loans were obtained in seven days or less.

The median amount of time which institutional users, non-institutional users of production credit, and non-institutional users of non-production credit were required to wait before receiving their loans were 30 days, 2 days, and 0 days respectively, as shown in Table 15.

The mean for the institutional users was 37 days, as compared to 2.6 days for non-institutional users.

During the interviews with the non-institutional suppliers of agricultural credit, each lender was asked what they were able to do for the farmers that the larger credit institutions could not do, and what the larger institutions could do that they were unable to do. In summation, the institutional lenders have the capacity to extend larger sums of credit for longer periods to larger farmers. The non-institutional lenders make smaller loans and make them at the time they are needed.

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[11]The requests on the part of institutions vary with the borrower. If the borrower is well known, if he has previously used institutional credit successfully, and if he has friends and/or influence in the institution, the requests may be reduced substantially, as may be the time required to receive the loan.

TABLE 15

NUMBER OF DAYS BORROWERS WERE REQUIRED TO WAIT TO RECEIVE THE LOAN

User Category	Number of Days																						Total Cases
	0	1	2	3	4	5	7	8	10	12	15	18	20	24	30	35	38	40	45	60	90	98[a]	
Institutional	13	3	3	5	3	3	1	13	5	5	42	2	7	1	62	2	2	2	11	28	21	24	258
Non-institutional production	37	11	14	12	2	6	3	11	5		3		1										105
Non-institutional non-production	53	17	12	3	1		1	5	4		1				1								98
Non-institutional and institutional	16	4						5	4		8				10					3	7	1	58

[a] Included in 98 are those that exceed 98 days.

Source: Farmer Survey

The Users of Non-Institutional Credit Relative to Other Farmers in Rural Ecuador

The purpose of the two preceeding sections was to describe the characteristics of the credit sources in rural Ecuador and of the loans given by these sources. This section attempts to characterize the non-institutional users according to certain conditions which are perhaps indicative of their socio-economic levels.

Farm Size and Tenure, and Level of Mechanization

Farmers who obtain credit from non-institutional sources have very small farms. The amount of land they employ is less than any of the other categories appearing in Table 16. The mean amount farmed by the non-institutional users is 14 hectares.[12] Institutional users and past users employed four times as much land, while the mean amounts used by the non-users and by all farmers taken together were three times greater.

The distributions of the farm sizes in each of the categories are generally wide and skewed toward the larger farms. Median sizes are, thus, much smaller. The median size of each of the two non-institutional groups are in the frequency of one to five hectares. (The median sizes are underlined in the table.) Sixty-nine per cent of the non-institutional users are farming less than ten hectares (approximately 25 acres) while eighty per cent of the institutional users were employing ten or more hectares.

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[12] One hectare is equal to 2.471 acres.

TABLE 16

FREQUENCY DISTRIBUTIONS OF FARM SIZES FOR PRESENT USERS, PAST USERS AND NON-USERS

Hectares	Present Credit Users				Past Credit Users	Non-Credit Users	Total[a]
	Institutional	Non-Institutional		Institutional and Non-Institutional			
		Production	Non-Production				
Less than 1	1.8%	7.9%	23.5%	0%	8.5%	15.1%	11.2%
1-4.9	10.0	50.0	30.9	30.8	35.7	35.0	30.6
5-9.9	9.6	14.5	10.3	11.5	10.1	10.9	10.6
10-19.9	14.1	13.2	11.8	19.2	13.2	10.2	11.9
20-49.9	24.1	6.6	8.8	15.4	14.7	12.1	14.4
50-99.9	21.8	3.9	11.8	11.5	8.5	10.0	12.0
100-199	9.5	3.9		7.7	3.1	3.3	4.5
200-299	7.3		2.9	3.8	.8	1.5	2.6
300-399	1.4				1.6	.2	.6
400-499						.4	.2

(Continued on next page)

TABLE 16

Continued

500-999	1.4				1.6	.8	.9
1000-4999					2.3	.4	.5
5000 and more						.2	.1
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]According to the 1954 census of Ecuadorian agriculture, 73.1 per cent of the farm units were less than five hectares in size, 16.7 per cent were between 5 and 19.9 hectares, 8.1 per cent were between 20 and 99.9 hectares, 1.7 per cent ranged from 100 to 499.9 hectares, and .4 per cent were of 500 hectares or more. Those interviewed in the farmer survey were farming more hectares than the census figures suggest. There are two possible explanations for the discrepency. The first is the regions included and the weighted effect of these regions. The 1954 census consisted of farmers living in the coast and in the sierra. Approximately three-fourths of the units were located in the sierra and the remaining one quarter in the coast. Of the farmers included in the present study, approximately half lived in the sierra, one-fourth lived in the coast, and one-fourth lived in the oriente or interior region. The number and percentage of small farms is considerably greater in the sierra than in either of the other regions. The survey shows median farm sizes for the coast and sierra regions to appear in the 5-9.9 hectares and in the 1-4.9 hectares ranges respectively; this is consistent with the census. Farm sizes in the oriente region are, however, much larger and the median is within the range of 20-49.9 hectares.

A second possible explanation relates to the definitions employed in the census and in the survey. The definition of "farmer" as used in the farmer survey appears on page 9. The definition of "agricultural operations" as used in the census could not be found.

Trends within the agricultural sector cannot be derived from these two sets of figures.

Source: Farmer Survey

Eighty-five per cent of the farmers interviewed own land. Ninety-eight and 79 per cent of the institutional and non-institutional users respectively owned land. Land ownership was found in 81 per cent of the cases in the non-user category.

Within the sub-category of non-institutional users of production credit, farmers owned no land in 17.9 per cent of the instances. Of those who owned no land, 8 borrowers or 10.2 per cent of the sample rented land and had written contracts, leaving 7.7 per cent with extremely insecure forms of tenure. Twenty-five per cent of the non-institutional users of non-production credit owned no land. Again, eight of those owning no land had written rental contracts, leaving 13 per cent with little security in their form of tenure. Only .4 per cent of the institutional users owned no land and had no written contract.

A characteristic generally found in underdeveloped countries is the large numbers of farmers working without either mechanical or animal power. Ecuador is no exception, as Table 17 illustrates. Less than half of the 1062 farmers interviewed used animal or mechanical sources of power. Only those farmers obtaining all or part of their credit from institutions employed animal or mechanical sources of power in more than half the instances. Two and seven tenths per cent, 38.1 per cent, and 59.2 per cent of the non-institutional credit users had as their most advanced power source mechanical power, animal power, and man power respectively.

Significant differences exist between the sources of power employed by the institutional credit users and those employed by each type of non-institutional users. There is no significant difference

TABLE 17

SOURCES OF POWER USED BY PRESENT, PAST, AND NON-USERS[a]

	Present Credit Users				Past Credit Users	Non-Credit Users	Total
	Institutional	Non-Institutional		Institutional and Non-Institutional			
		Production	Non-Production				
Mechanical power	9.5%	3.8%	1.4%	11.5%	7.0%	3.9%	5.5%
Animal power	55.2	43.6	31.9	42.3	38.8	34.5	40.0
Man power	35.3	52.6	66.7	46.2	54.2	61.6	54.5

[a]Each farmer is classified on the basis of his most advanced source of power. Mechanical power is interpreted to be the most advanced; and man power the least advanced.

Source: Farmer Survey

between either of the non-institutional groups and the non-credit users.[13]

Educational Levels

The level of education among Ecuadorian farmers is low. Three is the median number of years of formal education for the non-credit users, for the non-institutional users in general, and for the non-institutional users of non-production credit. (Educators generally set four years as the amount necessary if one is to be functionally literate.) With the exception of institutional users, who have a median of six years of formal education, all of the other categories including the total have medians of four years (Table 18).

The number of years of formal education is only one indicator of level of education. The agricultural extension agencies and other entities of similar character can and undoubtedly do provide farmers with knowledge. It is unfortunate that only 11.3 per cent of the sampled farmers had any form of contact with the extension agencies. The farmers having had the greatest contact were those who use both institutional and non-institutional credit. Thirty-five per cent had received some assistance. Eleven per cent and twenty per cent of the non-institutional users and of the institutional users had received assistance.

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[13]The Chi-square test was employed to determine if differences existed. The .05 was selected as the desired level of significance. Only at the .50 level of significance does a difference exist between the non-institutional users of credit and the non-users.

TABLE 18

FREQUENCY DISTRIBUTIONS OF EDUCATIONAL LEVELS
OF PRESENT USERS, PAST USERS, AND NON-USERS

Years of Formal Education	Present Credit Users				Past Credit Users	Non-Credit Users	Total
	Institutional	Non-Institutional		Institutional and Non-Institutional			
		Production	Non-Production				
0	8.1%	19.5%	25.0%	19.3%	20.9%	25.8%	20.8%
1 - 3	19.0	28.6	29.4	23.1	20.1	27.6	25.0
4 - 6	54.3	50.6	41.2	42.4	52.7	38.4	44.6
7 - 9	6.7		4.4	7.6	2.4	2.7	3.6
10 - 12	6.8			3.8	3.9	3.0	3.5
13 and more	5.1	1.3		3.8		2.5	2.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Farmer Survey

The farmers were asked if they would like to be visited by an extension agent if they had not been visited before or if they would like to be visited more often if they had been visited. Eighty-seven per cent of the institutional users wanted to be visited more often. Of the non-institutional users, 73 per cent of the users of production credit and 61 per cent of the users of non-production credit wanted to be visited more often.

Agricultural research institutes, schools, universities, extension agencies, and similar private and public information centers were given as the ideal place for obtaining agricultural related information by approximately one-third of the farmers. The responses of the two sub-categories of non-institutional users were not significantly different from the entire sample. Fourty-six per cent of the users of institutional credit responded in the above manner, while 58 per cent of the users of both institutional and non-institutional credit gave this answer.

Perhaps further indicative of educational levels is the manner in which the farm is managed. Over one-half of the institutional users claimed to have long range plans and approximately one-quarter of non-institutional users said they had similar plans.

When the percentages of farmers changing their methods of cultivation were compared, 24 per cent of the institutional users and 29 per cent of the non-institutional users had changed methods in the previous five years. Thirty-four per cent of the sampled farmers apply chemical or organic fertilizer to their crops. Thirty-eight per cent of the institutional credit users and 44 per cent of the non-institutional users used either organic or chemical fertilizers.

Only at the .50 level of significance are institutional users and non-institutional users significantly different with respect to use of fertilizer and to changes in cultivation methods. This lack of difference is partially explained by the make-up of the agricultural operations of the two groups. A larger proportion of the institutional credit users are less dependent upon cultivated crops, as livestock is their primary income producer.

Levels of Income

Based upon the variations in farm sizes, levels of mechanization, years of formal education, and amount of external assistance, one expects similar variations to exist in levels of income. Such is the case, as Table 19 demonstrates.

The incomes set forth in Table 19 are gross incomes accruing to the sampled farmers during the year of 1965. They include all products sold by the farmer and his family and all incomes earned while employed off the farm. The table includes only those farmers who quoted their total incomes and who had incomes greater than zero.[14]

Incomes of Ecuadorian farmers are small. The median gross income was only 6000 sucres, or approximately 330 U.S. dollars. Institutional users maintained the highest level of gross income with a median value of 14,500 sucres. Non-institutional users of production

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[14]Farmers not included in Table 19 were generally unable to remember the amounts of their sales, a few however may have had false premonitions concerning the purpose of the survey.

and non-production credit had gross incomes equalling 4,910 and 2,900 sucres. The median for both types of non-institutional credit users was 3,890 sucres, and the median for the non-user group was 4,668 sucres.

In terms of net income, the above absolute differences would not be so great, as one would expect the production expenses of the institutional credit user earning a gross income of 14,500 sucres to exceed those of a farmer with a gross income of 2,900 sucres. The important point is however that a farmer earning U.S. $160 or $200, be it gross or net income, is likely to encounter difficulty maintaining his family of six, and repaying a loan.[15]

Limiting Factors

The low levels of income and the inability to obtain purchasing power in general limit a great number of the Ecuadorian farming operations. When farmers were asked what they felt to be the factor which restricted their operation the most, 52 per cent said it was money or said they lacked the necessary money with which to obtain a limiting factor such as land, equipment, and livestock. Non-institutional users and institutional users responded in the above manner in 72 per cent and 61 per cent of the instances. Only 46 per cent of the farmers obtaining credit from both institutional and non-institutional sources stated money to be, either directly or indirectly, limiting.

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[15]The mean number of members in each household was found to be 6.13. This is consistent with the median, and the variation between categories was slight.

TABLE 19

FREQUENCY DISTRIBUTIONS OF POSITIVE GROSS INCOMES OF PRESENT, PAST, AND NON-CREDIT USERS[a]

Level of Incomes (sucres)	Present Credit Users				Past Credit Users[f]	Non-Credit Users[g]	Total[h]
	Institutional[b]	Non-Institutional		Institutional and Non-Institutional[e]			
		Production[c]	Non-Production[d]				
1-499	2.0%	9.6%	7.8%	0%	5.1%	6.1%	5.3%
500-999	2.0	5.5	4.7	4.0	8.6	8.6	6.6
1,000-1,999	1.5	9.6	21.9	0	5.1	13.6	9.9
2,000-3,999	14.3	20.5	25.0	20.0	23.1	17.3	18.2
4,000-5,999	7.8	12.3	17.2	4.0	6.0	10.6	9.9
6,000-7,999	5.4	6.9	6.3	12.0	7.7	8.9	7.7
8,000-9,999	2.9	6.9	3.1	4.0	3.4	3.7	3.7
10,000-19,999	24.6	12.3	4.7	16.0	19.7	10.4	14.5
20,000-29,999	9.9	5.5	6.2	12.0	4.3	6.3	6.9
30,000-49,999	12.8	4.1	3.1	20.0	5.1	3.0	5.9
50,000-99,999	9.9	4.1	0	4.0	.9	6.7	5.9
100,000-499,999	5.4	2.7	0	4.0	9.4	3.9	4.6
500,000-999,999	.5	0	0	0	0	.9	.5
1,000,000 and more	1.0	0	0	0	1.7	0	.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Included are only those farmers who quoted their total incomes and whose total cash incomes were greater than zero.

[b]203 farmers are represented in this category.

[c]73 farmers are represented in this sub-category.

[d]64 farmers are represented in this sub-category.

[e]25 farmers are represented in this category.

[f]117 farmers are represented in this category.

[g]462 farmers are represented in this category.

[h]944 farmers are represented in total.

Source: Farmer Survey

Credit users were asked what they felt curtailed the amount of credit they could obtain. Lack of security was the most common response among the non-institutional users of non-production credit. Slightly over half responded in this manner. The answer given most frequently by the other three types of present credit users was lack of credit institutions and/or lack of loanable funds within the institution. This answer was given by 59 per cent, 42 per cent, and 65 per cent of the institutional users, the non-institutional users of production credit, and the users of both institutional and non-institutional credit respectively.

The location of the farm in respect to an institutional source of agricultural credit did not have a significant effect on the type of credit which was being used. Farmers were divided into three time zones. Twenty-six per cent of those who were required to travel less than one-half hour to reach the nearest institutional source used institutional credit. Sixteen per cent of those living within the one-half hour to one hour zone used institutional credit, and 20 per cent who were required to travel more than one hour used institutional credit. (There is a significant difference only at the .25 level of significance.) Thirteen per cent, 16 per cent, and 13 per cent of the farmers living less than one-half hour, living one-half to one hour, and living more than one hour from the nearest institutional source respectively used non-institutional credit.

The Cost of Non-Institutional Credit

The cost of obtaining loans from non-institutional credit sources in underdeveloped countries is high. Non-institutional lenders

in rural Ecuador said their loans carried an average annual interest rate of 26.6 per cent; a rate which may prey heavily upon the meager incomes of the borrowers.

This section sets forth the components of the rural rate of interest and discusses the determinants of each. The components are: (1) the unit opportunity cost of the product loaned--money, (2) the administration charge on each unit loaned, (3) the unit premium for risk, and (4) any unit monopoly profit.[16]

Opportunity Cost

Non-institutional lenders have three broad alternative uses for their money; they can lend it, they can invest it, and they can hold it. The return or satisfaction derived from the money when it is employed in the latter two manners should theoretically determine the opportunity cost component of the interest rate.

If the lender has ample reserves the satisfaction from holding his money in liquid form will be small, and the opportunity cost should approach the return on government bonds. This, of course, is only the case when competitive conditions prevail, and only after compensation has been made for risk and administrative costs. If the lender does not, however, have as many liquid reserves as he would like, he will demand an interest rate which contains a larger opportunity cost component. The latter instance occurs when there is a

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[16]Anthony Bottomley, "The Structure of Interest Rates in Under-Developed Rural Areas," Journal of Farm Economics, Vol. 46, No. 2, May 1964, p. 313.

sudden increase in the demand for the lender's funds, or when the lender operates with slender reserves.[17] The stronger the lender's desire to hold his funds in a liquid form the sharper will be the pain of parting with them and the higher the interest rate will be.

When the lender's funds are not used for the entire year the opportunity cost component will be equal to the amount that could be earned in alternative investments which employ the funds for a full year. Also, inflation is expected to effect the opportunity cost in a positive manner.

Administration Cost

Number of loans, size of loans, and length of loans normally determine the administrative cost component of the interest rate of non-institutional credit. A fourth element, the cost of providing the lender with additional funds, is sometimes included. The first three elements vary inversely with the amount the lender is required to charge per monetary unit loaned.[18]

Three-fourths of the non-institutional lenders in Ecuador made thirty or less loans in 1965 (page 18). A certain portion of each lender's income must come from his lending activities. This portion approaches 100 per cent for those who have lending as their principal occupation, and is levied against the borrowers. By increasing the number of loans per lender the amount levied against each borrower can be reduced; in effect, the fixed cost is divided into more parts.

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[17] Ibid., p. 317.

[18] Anthony Bottomley, "The Cost of Administering Private Loans in Underdeveloped Rural Areas," Oxford Economic Papers, Vol. 15, July 19 , pp. 154-163.

The variable costs per sucre loaned are reduced when the size and length of loans are increased. It requires nearly the same amount of time to negotiate a four-week 200 sucre loan as it does to negotiate a two year 20,000 sucre loan. The median size non-institutional loan was 800 sucres, and the mean length was slightly over ten months (pages 21 and 24).

Non-institutional credit suppliers commonly finance their own loans, but some obtain credit from other suppliers. The cost of obtaining additional reserves is likely to be high since they may trace backwards through several suppliers. In the case of credit which is associated with rural trade, the merchant may obtain the credit from a wholesaler who obtains it from a commercial bank, and the bank may obtain it from the central bank. At each stage an administrative action must be carried out, and each action must be paid for, raising the ultimate rate of interest.[19]

Premium for Risk

It seems probable that the premium for risk, taken with administration costs, are largely responsible for the high rates of interest charged by non-institutional suppliers.[20] Wherever the loans are small and the risk is great, high interest rates are likely to prevail. The cost of consumer credit in developed countries does not differ greatly from the 24 to 36 per cent interest rate encountered

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[19]Ibid., p. 162.

[20]Anthony Bottomley, "The Structure of Interest Rates in Underdeveloped Rural Areas," Journal of Farm Economics, Vol. 46, No. 2, May 1964, p. 318.

in the non-institutional credit markets of underdeveloped countries.[21] U. Tun Wai has constructed a table showing that lenders must charge interest rates of 22.2 per cent on loans which have opportunity and administrative cost components equaling 10 per cent and a 10 per cent chance of default.[22] A 15 per cent rate of default requires a 29.4 per cent interest charge, if opportunity and administration costs remain at 10 per cent.

It is difficult to estimate the amount of default a lender will anticipate and in turn try to compensate himself for. Seventy-four per cent of the interviewed Ecuadorian lenders felt that some of their borrowing clientel encountered difficulty in repaying the loans. In Thailand it was estimated that 20 per cent of the non-institutional loans would not be repaid.[23] If a lender is extremely adapt at screening out the potential defaulters he may be able to reduce the premium for risk to a minimum. A minimum which perhaps approaches zero. If the farmers who have a larger degree of risk associated with them are to have their credit demands serviced, they will be required to compensate the lenders for the risk.

The premium for risk is reduced as the value of collateral pledged against the loan increases. But only 6.9 per cent of the

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[21]U. Tun Wai, "Interest Rates Outside the Organized Money Markets of Underdeveloped Countries," Staff Papers of the International Monetary Fund, Vol. VI, 1957-58, p. 123.

[22]Ibid., p. 110.

[23]Millard Long and others, Agricultural Credit in Thailand, Kasetsart University, Bangkok, Thailand, June 1965, p. 25.

non-institutional loans in the sample were guaranteed with tangible assets. When loans are not secured by tangible assets, the lender is dependent upon the borrower's willingness and ability to repay. The informal social-economic relationships that generally exist between the borrower and the non-institutional lender promote a willingness to repay, if the ability exists. A borrower's first priority is generally his family. If there is only sufficient production and income to meet the family's most basic requirements the loan will go unpaid. The level of income and productivity vary inversely with the degree of risk. Non-institutional credit users had an average gross income of approximately U.S. $214, and the average family size was six (page 45).

Monopoly Profit

Non-institutional lenders are imperfect competitors, or outright monopolists. The profits accruing from the lender's imperfect or monopolistic position make up the fourth component of interest rates. It is often implied that this component is chiefly responsible for the high rates of interest of underdeveloped countries.[24]

The market imperfections arise primarily from the degree of knowledge the lenders and borrowers have of each other and from the relationships that may bond them together. Relationships such as landlord-tenant, market agent-producer, and creditor-debtor constitute bonds which may be quite strong.

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[24]Anthony Bottomley, "Monopoly Profit as a Determinant of Interest Rates in Underdeveloped Rural Areas," Oxford Economic Papers, Vol. 16, No. 3, October 1964, p. 431.

Lenders who are not knowledgeable of a prospective borrower will likely request that a high premium for risk be paid. If one lender knows, better than any other outside competitor, the circumstances of the borrower he will be able to estimate the element of risk more closely. He will in turn be able to collect a monopoly profit which is equal to the difference between his estimate and his closest competitor's estimate of the risk premium, assuming other costs are equal.

The more the lender knows about the potential credit suppliers, the better equipped he is to search out the market. A borrower who does not know how to contact other suppliers, who is unaware of the terms, who is illiterate, and who does not travel outside his immediate area is at the integrity of the lender. Half of the non-institutional credit users had only one credit supplier (Table 20). The average rate of interest as quoted by the borrowers was approximately 10 per cent less than the rate quoted by the lenders (page 34). One-half of the borrowers have three or less years of formal education (page 43).

Non-institutional credit suppliers in rural Ecuador seemingly have the opportunity to collect "exorbitant" or "usurious" rates of interest. There are some who, undoubtedly, are taking advantage of the opportunity, but there are indications that many are not. Thirty per cent of the interviewed lenders said they would discontinue their lending activities if it would not affect their other business. The lenders generally felt that any increase in the amount of interest collected would cause a proportionally larger decrease in the number

of farmers borrowing from them, and any decrease in the interest rate would cause their costs to be greater than their returns.

TABLE 20

NUMBER OF SOURCES OF CREDIT AVAILABLE TO USERS[a]

Number of Sources	Institutional Users	Non-Institutional Users		Users of Institutional and Non-Institutional
		Production	Non-Production	
One	77.4%	47.4%	55.2%	0%
Two	16.7	34.2	20.9	69.2
Three	5.0	15.8	17.9	19.2
Four	.9	2.6	3.0	7.7
Five	0	0	3.0	3.9

[a]Available source is interpreted to mean a source from which the user feels he can obtain a loan.

Source: Farmer Survey

It is indeed difficult to determine if the 26.6 per cent non-institutional interest rate is fair or unfair. Perhaps its fairness is unimportant since it is unlikely to change if the non-institutional users do not change.

Summary Results

The primary concern of this chapter has been that of determining if, in fact, there is more than one credit market in rural Ecuador. The size of the markets and the components of the

interest rates have also been examined. Treatment is first given to the importance of non-institutional credit.

Proposition One: Non-Institutional Agricultural Credit Suppliers Provide Greater Numbers of Farmers With Credit and Provide a Larger Volume of Credit Than Do Institutional Suppliers.

Proposition one is rejected on the basis of the farmer survey findings. Of the 1062 Ecuadorian farmers interviewed, 247 were present users of institutional credit and 173 were present users of non-institutional credit. There were 3,047,100 sucres of institutionally supplied credit and 329,800 sucres of non-institutionally supplied credit held by the sample farmers at the time of the interviews. The credit was divided into the two broad categories on the basis of the organizational features pertaining to the supply sources.

Proposition Two: In the Agricultural Sector, the Institutional Credit Market is Unlike the Non-Institutional Credit Market.

To more fully examine this second proposition, it has been divided into three sub-propositions, one of which deals with the suppliers, one with the loans, and one with the borrowers.

P_{2a}: The Characteristics of Credit Suppliers Relative to Credit Use Are Dissimilar.

P_{2b}: The Characteristics of the Loans Are Dissimilar.

P_{2c}: The Characteristics of the Credit Users Relative to Credit Use Are Dissimilar.

Empirical findings support each of the sub-propositions and in turn proposition two. In reference to P_{2a}, the institutional sources

of agricultural credit in Ecuador generally have standardized policies, have predetermined, inflexible, lengthy, and perhaps complicated procedures, are surrounded by an impersonal atmosphere, and serve large geographical areas. In contrast, the non-institutional lenders base their lending activities, which are usually secondary or complimentary, on intimate knowledge, and are able to service the borrowers' demands in a quick, simple, and flexible manner. Non-institutional lenders generally function within a small area. Three-fourths of the sample lenders service less than thirty farmers and loan less than 20,000 sucres per year.

The dissimilarities that exist between the loans of the institutional and non-institutional credit markets of rural Ecuador are seen in Table 21. Shown in Table 22 are socio-economic characteristics of the institutional and non-institutional borrowers pertinent to P_{2c}.

Proposition Three: There Exists Justification for the Cost of Non-Institutional Credit to Exceed That of Institutional Credit.

Although it is not conclusive, the empirical and secondary data strongly suggest proposition three to be a true statement. The four components of interest rates, namely, opportunity cost, administrative cost, premium for risk, and profits accruing from imperfect competition, are set forth and discussed. Constituted in the suppliers cost schedule are only the first three components.

A non-institutional lender's opportunity cost may or may not be higher than that of an institutional supplier. The administrative cost in the non-institutional market should seemingly be larger per

monetary unit loaned, as non-institutional loans are much smaller and shorter than institutional loans. Non-institutional lenders make few loans and may have to charge for obtaining outside funds. There is limited use of tangible security in the non-institutional market and the socio-economic level of the non-institutional users is low (Tables 21 and 22). The premium for risk may, thus, be considerably higher in the non-institutional market. There are, undoubtedly, profits accruing from imperfect market conditions, but the data suggest this may not be the norm.

TABLE 21

LOAN CHARACTERISTICS FOR THE INSTITUTIONAL AND NON-INSTITUTIONAL CREDIT MARKETS

Characteristic	Institutional	Non-Institutional
Purpose		
production	92.4%	58.5%
non-production	7.6	41.5
Size		
median	8000 sucres	800 sucres
Length		
over one year	65.8%	11.3%
one year and less	34.2	88.7
Form		
cash	98.1	69.0
kind	1.9	31.0
Guarantee		
land and physical assets	77.0	7.0
Interest rate		
mean	8.3	26.6
Timeliness		
loan received in 7 days or less	12.0	84.6
loan received after 7 days	88.0	15.4

Source: Farmer Survey and Non-Institutional Lender Survey

TABLE 22

INSTITUTIONAL AND NON-INSTITUTIONAL
BORROWER CHARACTERISTICS

Characteristic	Institutional	Non-Institutional
Farm size		
10 hectares or more	79.6%	31.4%
less than 10 hectares	20.4	68.6
Tenure		
ownership	97.7	78.9
Power source		
mechanical or animal	64.7	40.8
man	35.3	59.2
Education		
more than 3 years	72.9	49.0
3 years or less	27.1	51.0
Extension assistance		
received	20.4	10.9
Gross income		
median	14,500 sucres	3,890 sucres
8000 sucres and larger	67.0%	27.0%
less than 8000 sucres	33.0	73.0

Source: Farmer Survey

Based upon propositions one and three, and primarily upon the empirical confirmation of proposition two, the first hypothesis is accepted. That is:

THERE EXIST, IN THE AGRICULTURAL SECTOR,

TWO OR MORE CREDIT MARKETS

CHAPTER III

THE PRODUCTIVITY OF NON-INSTITUTIONAL CREDIT IN RURAL ECUADOR

The characteristics and conditions thus far presented are important, but of equal importance is the productivity of the credit. Estimated rates of growth provide the means by which the productivities of the credit are herein obtained. It is unfortunate that the available data do not afford the opportunity to derive the marginal productivities of the borrowed funds. The marginal productivity of borrowed capital would generally be a more useful figure.

Economic theory states that positive marginal productivity of capital is a necessary condition for further capital investment. If this condition does not exist, more investment cannot be justified. The positive marginal productivity of capital connotes that the expected income from the capital asset is at least as large as the asset's supply price. Positive marginal productivity of capital is not, however, a sufficient condition for further investment, unless there is no financial cost arising from the use of the monetary funds in acquiring the asset. The financial cost is generally computed as the rate of interest, and can be compared with the marginal productivity of capital. If the financial cost is less than the marginal product of the capital, the sufficient condition is satisfied and the expected return exceeds the cost of acquiring the asset.

The question of whether or not the borrower can afford to pay a comparatively high rate of interest is, thus, dependent upon the productivity of the borrowed capital. So long as the marginal product of the borrowed funds is greater than the cost, be it "exorbitant" or not, it will be profitable for the farmer to continue investing borrowed funds. The profit accruing to the farmer through the use of the borrowed funds contributes to his level of living and/or to his productive capacity and in turn to the growth and development of the economy.

Rates of Growth

The rates of growth can only be estimated since all of the change in product does not appear in the change in gross income. This problem arises from the present accounting identity which equates absolute change in gross farm sales to absolute change in gross farm income. Any change in the components of gross income which do not enter the market are not included. These include changes in consumption of products produced on the farm, changes in the amount of farm produced inputs employed in further production on the farm, and changes in the amount of production which is stored on the farm. In a subsistence type of agriculture an increase in gross farm sales may be small or insignificant while the increase in the product may be quite significant, due primarily to the increased consumption of products produced on the farm.

The inconsistency that arises from equating the gross farm income and gross farm sales is expected to cause the change in the gross farm income, as estimated by the change in the gross farm

sales, to differ from the change in the real gross farm income. The degree of difference may be reduced, however, if the change in gross farm income is estimated from the aggregate change in farm sales for a group of farmers. It is necessary that this inconsistency be kept in mind as the analysis proceeds.

The gross farm incomes, as measured by gross farm receipts, for 1964 and 1965, and the percentage changes that occurred between the periods are presented in Table 23.

TABLE 23

1964 AND 1965 GROSS FARM INCOMES AND PERCENTAGE CHANGES BY USER CATEGORIES

	1964 Gross Farm Income (sucres)[a]	1965 Gross Farm Income (sucres)[a]	Percentage Change $(\frac{1965}{1964}-1)$
Present Credit Users			
institutional	7,696,975	8,929,932	16.019
non-institutional			
production	815,779	892,656	9.424
non-production	278,391	290,672	4.441
institutional and non-institutional	429,560	661,020	53.883
Past credit users	5,113,979	5,318,500	3.999
Non-credit users	9,791,646	10,245,106	4.631
Total	24,126,207	26,337,886	9.167

[a]In 1965 the official exchange rate was 18.18 sucres equal U.S. $1.00.

Source: Farmer Survey

The gross product in the Ecuadorian agricultural sector expanded by 9.2 per cent between 1964 and 1965. Non-institutional users expanded their product by 8.1 per cent during the same period. The percentage changes can be interpreted directly as being unadjusted rates of growth.

Growth rates or changes in incomes as presented in Table 23 may be induced by factors which are not within the farmer's control. Two of the more important are the climatic conditions and the price level.

The most obvious climatic conditions are rainfall, sunshine, and temperature. A change in any one of these can directly affect the level of output. Shifts in the level of output are expected to influence the price level. But, the price level reflects much more than just changes in output. Price is by definition the product of the many forces associated with the supply and demand schedules.

Adjusting for a change in the price level is a relatively simple matter since both output and price are measured in monetary units. Secondary data suggesting the degree of price change are generally available. The adjustment of the change in the income is attained by employing equation (1).

$$(1) \quad \left(\text{Income}_t \div \frac{(\text{Prices}_t)}{(\text{Prices}_{t-1})} \text{Income}_{t-1} \right) - 1$$

equals the rate of growth adjusted for price change

If the income and price changes are small the adjusted growth rate can be estimated by merely deducting the percentage change in

prices from the percentage change in income (equation (2)).

$$(2) \qquad \frac{\text{Income}_t}{\text{Income}_{t-1}} - \frac{\text{Prices}_t}{\text{Prices}_{t-1}}$$

equals the estimated rate of growth adjusted for price change

Using equation (2), the rate of growth adjusted for price change would be three per cent if income increased by five per cent between periods t-1 and t, and if prices increased by two per cent between the same periods. The adjusted growth rate is 2.94 per cent when equation (1) is used.

Determining the amount of income change which is the effect of climatic changes is considerably more difficult. There are no readily available indicators which can be compared directly with the change in output. A ten per cent increase in rainfall or a two degree change in temperature cannot be subtracted directly from an income change. The relationship first has to be determined, since growth is measured in monetary units and rainfall and temperature are measured in inches and degrees.

The correlation that exists between changes in climatic conditions and changes in price level should be kept in mind. An attempt to adjust the growth rate for both climatic and price changes is likely to bias the results. More favorable weather conditions would directly affect income through increased product and would indirectly affect income through a price change.

Neither the relationship between weather and output nor the relationship between output and prices is known for the Ecuadorian

agricultural sector. Thus, for the present analysis it is only possible to adjust the growth rate by the price level. Some portion of the change in the level of output is by assumption included in the price level change.[1]

The price index for food products shows an estimated 3.89 per cent increase between 1964 and 1965.[2] By substituting the income figures of Table 23 and the 3.89 per cent price increase into equation (1), the rates of growth adjusted for price change can be obtained. The adjusted rates are shown in Table 24.

Ecuador's gross domestic product grew by 4.2 per cent annually between 1960 and 1965, or 2.3 per cent less than called for by the national development plan. The GDP of the agricultural sector averaged only 2.7 per cent growth per year during the same period,

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[1]The increase in crop production, excluding pineapple, bananas, and sugar cane, between 1964 and 1965 was 23.8 per cent. Milk, eggs, and meat production increased by 3.5, 9.4, and 1.6 per cent respectively between 1964 and 1965. Area devoted to crop production, again excluding the above three crops, increased by 16.4 per cent. Source: Ecuador, Junta Nacional de Planificacion y Coordinacion Economica, Indicadores Economicos, Vol. 1, Numero 1, Abril 1966, Quito, pp. H-8 and H-9.

[2]The 3.89 per cent increase represents the mean consumer food price change of three price indices. The price indices were developed for the labor class of Quito, the employer class of Quito, and the labor class of Guayaquil. Wholesale price indices including 1965 were unavailable. For each year between 1960 and 1964, however, the change in the wholesale prices of food products closely approximates the mean change in consumer prices, estimated by the above manner, for the same years.
Sources: Ibid., p. H-9, and Memoria del Gerente General del Banco Central del Ecuador Correspondiente al Ejercicio de 1964 (Quito: Imprenta del Banco Central, 1965) p. 135.

due primarily to a growth rate of less than one per cent in 1963 and only 2.2 per cent in 1964.[3] The gross product of the sampled farmers was 5.08 per cent larger in 1965 than in 1964 (Table 24). Ecuador's estimated annual population change is a positive 3.2 per cent.[4] Population changes within the rural and urban sectors are unknown.

TABLE 24

RATES OF GROWTH ADJUSTED FOR CHANGE IN PRICE LEVEL

User Category	Adjusted Rate of Growth Between 1964 and 1965
Present credit users	
institutional	11.675%
non-institutional	
production	5.327
non-production	.502
institutional and non-institutional	48.121
Past credit users	.105
Non-credit users	.713
Total	5.080

Source: Computed from original data.

[3] Inter-American Development Bank, Socio-Economic Progress in Latin America, Sixth Annual Report, 1966, (Washington, 1967), pp. 197-198.

[4] Ibid., p. 196.

Credit and the Growth Rate

Capital is a determinant of the output level. The degree to which it affects output is dependent upon its scarcity relative to the scarcities of the other inputs. Inherent in the definition of economically underdeveloped countries is the low level of capital use.

The preceding suggests that increased use of credit (external capital) will normally be followed by an increased level of output. The absolute increase in the value of output must be greater than the costs associated with the new capital assets.[5] If this relationship does not hold, the investment will be economically unprofitable for the farmer.

Annual costs associated with the acquisition of the new capital assets can theoretically be derived. This is done by combining the value of the new capital assets used up during the year with the financial costs of the capital funds which were used to acquire the depreciated portion of the new capital assets. The procedure becomes quite complicated, however, when the additions consist of investments with different rates of depreciation, and when the amount of net investment varies from year to year. Under such circumstances, the investments must be divided into groups on the basis of their acquisition dates and their depreciation rates.

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[5]New capital assets, as used here, is net investment; or that portion of gross investment which is in excess of the amount required for replacement.

The annual increase in the amount of credit used by the institutional users is estimated to be approximately 9.7 per cent.[6] A debt of 2,735,278 sucres was held by the institutional users at the time of the interviews. Based on this, the institutional users used approximately 200,980 sucres more credit in 1964 than in 1963, and approximately 220,480 sucres more in 1965 than in 1964. If the loans (investments) have an average life of two years, return equal amounts of product each year, and carry an average interest rate of 8.31 per cent, the 1965 costs associated with the increased credit would be 228,242 sucres. Depreciation and financial charges constitute 210,730 and 17,512 sucres respectively of the added costs.

When the 228,242 sucres are deducted from the 1965 gross farm income and new growth rate, adjusted for price change and additional credit expenses, is approximately 8.8 per cent.

Neither the empirical data nor Ecuadorian secondary data provide an indication of the amount of change taking place in non-institutional credit usage. The Food and Agricultural Organization of the United Nations, however, believes the increase in the amount of institutional credit in underdeveloped countries has not reduced the proportion of non-institutional credit.[7]

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[6]The estimate is the mean of the percentage changes for 1962-63, 1963-64, and 1964-65. Source: Paul Warner, "The Use of the Capital-Output Ratio in Planning Agricultural Sector Investment," (Unpublished Master's Thesis, Department of Agricultural Economics, Ohio State University, 1967) p. 49.

[7]Food and Agricultural Organization of the United Nations, The State of Food and Agriculture 1965; Review of the Second Postwar Decade (Rome: 1965) p. 179.

Accepting, for a moment, FAO's statement to hold for Ecuador enables the analysis to continue. The non-institutional users of production credit at the time of the interviews held a debt of 222,100 sucres. Non-institutional loans have an average length of less than one year and an average interest rate of 26.56 per cent. Employing the 9.7 per cent annual increase indicates a change in non-institutional production credit between 1964 and 1965 of 17,902 sucres. The 17,902 sucres and financial costs of 4,755 sucres constitute extra expenses which should be deducted from the 1965 gross farm income. The resulting rate of growth, adjusted for price change and additional credit expense, would be 2.65 per cent. Applying the same procedure, the adjusted growth rate of the non-institutional non-production users would be a negative .58 per cent, and the adjusted rate for both groups taken together would be 1.83 per cent.

It is very unlikely that the increase in the amount of non-institutional credit used for production purposes changed by 9.7 per cent between 1964 and 1965. The change may have been smaller or larger than 9.7 per cent. An increase of approximately 25 per cent in the amount of non-institutional production credit used would reduce to zero the rate of growth adjusted for price change and additional credit expense.

No attempt will be made to adjust the growth rate of the farmers using both institutional and non-institutional credit since the weaknesses of the approach are further magnified by the small sample.

Other Inputs and the Growth Rate

Thus far, the analysis has dealt directly only with changes in the independent variables of credit and price. The growth rate is influenced by changes in other input elements. Land, labor, technology, and capital (excluding that capital acquired via credit) are four such elements.

In underdeveloped countries, labor's product is thought to be small, since a common characteristic of these nations is chronic underemployment. The typical Ecuadorian farmer and his family work less than half the time that might be reasonably expected.[8] The average product of one hour's labor in Ecuador is 1.3 kilograms of corn or 1.0 kilograms of rice. In Colombia, one hour produces 2.8 or 3.0 kilograms of corn or rice respectively, and in Argentina one hour produces 25.9 or 35.0 kilograms of corn or rice respectively.[9] The marginal cost of labor in Taiwan's labor-intensive agricultural sector is five times greater than its marginal return.[10]

Land like labor has a small average product in Ecuador. One hectare of land in Ecuador produces 635 kilograms of corn or 1055 kilograms of rice. The neighboring country of Colombia produces

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[8]Anthony Bottomley, "Agricultural Employment Policy in Developing Countries: The Case of Ecuador," Inter-American Economic Affairs, Vol. 19, No. 4, 1966, p. 54.

[9]U.N. Economic Commission for Latin America, "Productivity of the Agricultural Sector in Ecuador," Economic Bulletin for Latin America, Vol. VI, No. 2, October, 1961, p. 74.

[10]Hsing-Yiu Chen, "Structure and Productivity of Capital in the Agriculture of Taiwan and Their Policy Implications to Agricultural Finance," (unpublished Ph.D. dissertation, Department of Agricultural Economics, Ohio State University), p. 69.

1443 or 1988 kilograms of corn or rice on each hectare. Argentina's corn and rice yields are approximately three times larger than those of Ecuador.[11]

Perhaps implicit from the preceding is the fact that the products forthcoming from the employment of more labor and land are likely to be small, and the growth in Ecuador's agricultural sector is primarily the result of technology and capital. Capital may be external and received in the form of credit, or it may be internal and saved from the farmers income. The importance of internal capital, upon output, is indeed difficult to estimate.

Although the effects of internal capital and technology changes cannot be estimated separately, they and perhaps the effects of land and labor changes and the portion of the yield change effect not included in price change can be deducted from the growth rate of those farmers using non-institutional production credit. The combined effects of these elements produced a growth rate of .713 per cent for those farmers classed as non-credit users (Table 24). Differences that exist between the non-credit users and the users of non-institutional production credit are indeed small. The Chi-square test of significance showed the two groups not to be significantly different with respect to farm size, educational level, and gross farm income at the .25 level of significance. Based upon the similarities, it seems plausible to say the combined effects of internal capital, technology, land, labor, and yield are equal for the non-users and the

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[11]U.N. Economic Commission for Latin America, Op. Cit., p. 71.

users of non-institutional production credit. The .713 per cent estimate is deducted from the adjusted growth rate of the non-institutional users of production credit.

Adjusted for a 3.89 per cent increase in price level, for the increased expenses arising from a 9.7 per cent increase in the amount of credit used, and for a .71 per cent increase arising from the combined effects of internal capital, technology, land, labor, and yield, the resulting growth associated with the use of non-institutional production credit is 1.93 per cent. The 1.93 per cent is derived by dividing the 1964 adjusted gross farm income of 853,530 sucres [815,779 x 103.89% (price level increase) x 100.71% (technology, internal capital, etc., increase)] into the 1965 adjusted gross farm income of 869,999 sucres [892,656 - 22,657 (increased credit expenses)] . If the change in the amount of credit used had increased by approximately 24 per cent annually, growth associated with the credit would be zero.

Summary Results

This chapter has had as its concern the productivity of the non-institutional credit in rural Ecuador.

Proposition Four: The Marginal Productivity of Capital Borrowed From Non-Institutional Suppliers is Positive and is Greater Than the Borrower's Cost of the Credit.

Due to the lack of data, proposition four can neither be rejected nor accepted. The estimated 1.93 per cent growth associated with the use of non-institutional credit for production purposes, although by

no means conclusive, suggests the proposition is true. The growth associated with the credit use was obtained by deducting the increased principal and financial expenses (of a 9.7 per cent expansion of credit use) from the 1965 gross farm receipts, and then by dividing the 1965 adjusted gross farm receipts by the 1964 gross farm receipts after adjusting them upward to account for the 3.89 per cent increase in the price level and for the .71 per cent increase in output resulting from changes in a variety of other factors including technology, internal capital, land, and labor.

Included in the analysis are many estimates based on a variety of assumptions. Some of the assumptions are:

1. Gross farm receipts show all changes occurring in gross farm income.
2. The prices the farmers receive for their product change proportionally with the prices consumers pay.
3. There has been a 9.7 per cent annual increase in the amount of credit the users of non-institutional production credit have employed.
4. The costs of the credit remained constant at 26.56 per cent.
5. Growth arising from changes in the amounts of land, labor, technology, internal capital, etc. is equal to .71 per cent for the farmers who use no credit and in turn for the users of non-institutional production credit since the differences between the two groups are slight.

Undoubtedly, some if not all of these assumptions contain a degree of error. It is doubtful, however, that the error contained in any one assumption or in all the assumptions combined is great enough to switch the positive adjusted growth figure to one which is negative. (If the annual rate of increase in the amount of credit used was approximately 24 per cent or greater instead of 9.7 per cent, the adjusted growth would be negative.)

The growth associated with the use of non-institutional non-production credit is negative (when the assumptions one, two, three, and four are employed). This is not surprising, however, since the demand for such loans is not based upon economic criteria and as such the returns cannot be measured in economic terms.

The second hypothesis,

> NON-INSTITUTIONAL CREDIT IS AN INSTRUMENT OF PROGRESS AND ECONOMIC GROWTH IN THE AGRICULTURAL SECTOR

like proposition four can neither be rejected nor accepted. The growth associated with the credit suggests the hypothesis is true, but only for the farmers using the credit for production purposes.

CHAPTER IV

CONCLUSIONS AND IMPLICATIONS

Emphasis in this study has been divided into two themes. The first serves to identify and to establish the existence of two (or more) rural credit markets in Ecuador, and the second concerns itself with the economic growth accruing from the use of non-institutional credit in Ecuador. With regard to the former, separate credit markets were found to exist. The conclusion evolves as the result of comparing the loan, lender, and borrower characteristics of the non-institutional credit market with those of the institutional market. Loans granted by non-institutional sources are generally much smaller and shorter, more timely and costly, unsecured, and more likely to be in kind and for non-production purposes than are institutional loans. Non-institutional lenders are able to give quick, simple, and flexible service since they base their activities on intimate knowledge. Borrowers of non-institutional credit are ordinarily encountered at a lower socio-economic level than are the borrowers of institutional credit. The institutional market, relative to the non-institutional market, services the demands of more farmers and supplies greater amounts of credit in Ecuador. Interest rates in the non-institutional credit market are high, but perhaps justifiable. The characteristics of the non-institutional lenders, loans, and borrowers are reflected in the high levels of risk, in

the high administrative costs, and possibly in the opportunity costs.

Positive economic growth is seemingly associated with the use of non-institutional production credit in Ecuador's agricultural sector. Available data permitted the effects of changes in price level, labor use, land use, internal capital use, and technological level, and the increased expenses arising from the increased credit use to be deducted from the estimated growth rate of the farmers using non-institutional production credit. The resulting growth attributable to the credit was found to be approximately 1.93 per cent. Credit obtained in the non-institutional market for non-production purposes is seemingly unproductive economically in the short run. Non-institutional credit in general probably contributes to the economic growth of the farmers using it and in turn to the sector and the economy as a whole.

This latter conclusion is contradictory to the claims of some writers who suggest non-institutional credit leads to the economic oppression of its users. Undoubtedly it does in many instances, but the findings herein tend to indicate non-institutional credit is normally not oppressive. The users of non-institutional credit are not, however, growing as fast as the users of institutional credit nor at the rate the national development plan calls for.

If the farmers who borrow capital in the non-institutional market could obtain the same credit at a lower cost their economic profits would be increased or their losses would be decreased. The farmers using the less expensive credit would benefit economically, as

would the agricultural sector and the society.[1] Similar results might be forthcoming if the credit were provided with more favorable terms aside from the interest rate. By extending the loan length, for example, the profits accruing from a loan may be increased, especially where there are large price dips at harvest time.

Providing more agricultural credit and providing credit that will increase the farmers' profits, the sectorial benefits, and the societal benefits is an issue which has received a great deal of attention. There are two ways in which the issue can be approached. The first and more common is from the supply side. Emphasis is generally given to the introduction of new credit sources and/or to the extension of existing sources. The second way is from the demand side and entails the creation of a more effective demand.

Too often, perhaps, the issue is dealt with under the assumption that non-institutional lenders, by collecting exorbitant rates of interest, economically oppress their borrowers. When such is the case, regulations are often made which call for the elimination of the non-institutional lenders or for the establishment of limits within which they must operate. The effects of these regulatory laws on interest rates are small if positive, but are more likely to be negative if an attempt is made to enforce them.

Two supply side approaches which are economically more realistic are (1) the creation of more effective institutional competition and (2) the integration of non-institutional lenders

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[1]Economic benefits would accrue to the society if the less expensive credit was also less costly to provide.

into the overall monetary and credit systems. With respect to the first approach much emphasis has been placed on the establishment of agricultural development banks, credit cooperatives, and laws requiring private banks to include agricultural loans in their portfolios. Credit institutions are, however, generally operating in a different market with a different type of farmer. Some of the striking differences existing between the loans and borrowers of the two markets appear in Tables 21 and 22.

The cost of providing small amounts of credit for short periods of time to farmers with little production capacity and collateral is high. All too often institutional lenders are unable to charge interest rates which are sufficiently high to cover the costs of providing credit to small farmers. But even if they were, it is very unlikely that institutions operating through standardized procedures and policies can offer credit to these farmers at a lower cost than can the non-institutional lenders, unless opportunity cost and monopoly profit constitute a significant portion of the interest charge. The institutional suppliers are likely to incure greater administrative costs and be subject to higher degrees of risk.

If institutions are to effectively compete with non-institutional lenders, they must concern themselves with more than just the item of costs. Farmers are likely to see cost as the only weak point of non-institutional credit, and are likely to view all the other points and services as advantages.

It is doubtful if the expansion of institutional credit operations in Ecuador can bring about a meaningful decrease in the rural interest rate, especially when each institution collects one

standardized interest rate. Some of the larger lower-risk farmers of the non-institutional market would possibly be able to obtain institutional credit at a slightly reduced cost. The expansion would likely result in a more intensive use of credit on the part of present institutional users. (A result which would likely lead to a larger domestic product.)

The latter approach, integrating the non-institutional lenders into the overall credit and monetary systems, is sometimes suggested. This approach, like the above, is based upon the premise of reducing monopoly profits and opportunity costs. The opportunity cost component is reduced by enabling the lender to discount his loans and to draw upon institutional funds. Each lender would theoretically expand his operation; increasing the competition and forcing the interest rates down. It is doubtful if this approach would work as well in practice as in theory, however. Administrative costs and risk premia are minimized on the basis of the lender's near perfect knowledge of the borrower. An expansion of the lending operation would probably cause the administrative and risk charges to increase quite rapidly as the lender's knowledge of each succeeding borrower would decrease. Again, the results would depend, in part, upon the size of the opportunity and monopoly components of the non-institutional interest rates.

Approaching the problem, of increasing farmer profits and societal benefits via agricultural credit, from the demand side tends to be more promising. It is possible to create a more effective demand in a variety of ways, and pre-supposing the demand will be met,

the profits and benefits should be increased. The methods by which it is possible to create a more effective demand can be divided into two classes. One class includes those methods which the credit suppliers can carry out, and the second class includes those methods which are generally external of the credit operation.

Credit institutions can probably increase the demand for their funds by informing the existing and potential clientel more fully of their services and procedures, and by modifying their services and procedures. An educational-advertisement program would likely eliminate some of the misconceptions and would generally inform farmers of what qualifications potential borrowers must possess and what is expected of the borrowers. The number of applications from qualified farmers would be expected to increase as farmers become aware of the alternative source of credit and competition would be increased. Knowing what is expected of them, the borrowers are likely to constitute a smaller risk to the lender.

By increasing the number and quality of services offered and by changing the procedures employed, institutional lenders and perhaps non-institutional lenders would increase the demand for their funds. Demand for institutional funds is probably stifled by the complicated procedures, and could be increased if the loans were more timely and were accompanied by services such as marketing (purchase and sales) and supervision. The expenses of providing such services would cause the supply cost of credit to increase, but the farmer profits and societal benefits would be expected to increase by a larger proportion.

Methods which are external to the credit operations and which are expected to create a more effective demand are generally long run.

They involve changes in the farmer and in the infrastructure. Increasing levels of education, development of new technology, expansion of extension services, improvement and expansion of price incentives and of transportation, storage, and market facilities, and redistribution of land are means by which effective demand is created and expanded.

As the effective demand is created and expanded via the latter manners, the farmers' productive capacities are increased since they gain control and use new or improved factors of production, services, and facilities. An inverse relationship generally exists between a borrower's productive capacity and the cost of providing him with credit. Each of the four interest rate components may be reduced as the farmers increase their productive capacities and advance to a higher level on the socio-economic spectrum.

The administrative component of the interest rate is reduced as loans are made for longer periods of time and for larger amounts. Risk is reduced as the margin between the subsistence needs of the farmer's family and the level of his production increases. Risk is further reduced by the pledging of tangible assets. The opportunity component likewise may be decreased if it is high and if the borrower has obtained an alternative source of credit. Any monopoly profit, the last of the four components of interest rates, is reduced through the acquisition of alternative credit sources.

Any solution which will reduce interest rates and/or increase borrower profits and societal benefit ll depend upon the ability of the borrower to obtain less expensive and/or more profitable credit.

The ability to obtain less expensive and/or more profitable credit is dependent upon the borrower's awareness of alternative credit sources and upon his productive capacity (including his stock of tangible assets). Increased productive capacity and awareness are consequences of socio-economic growth and are conditions which will allow and force lenders to operate more efficiently.

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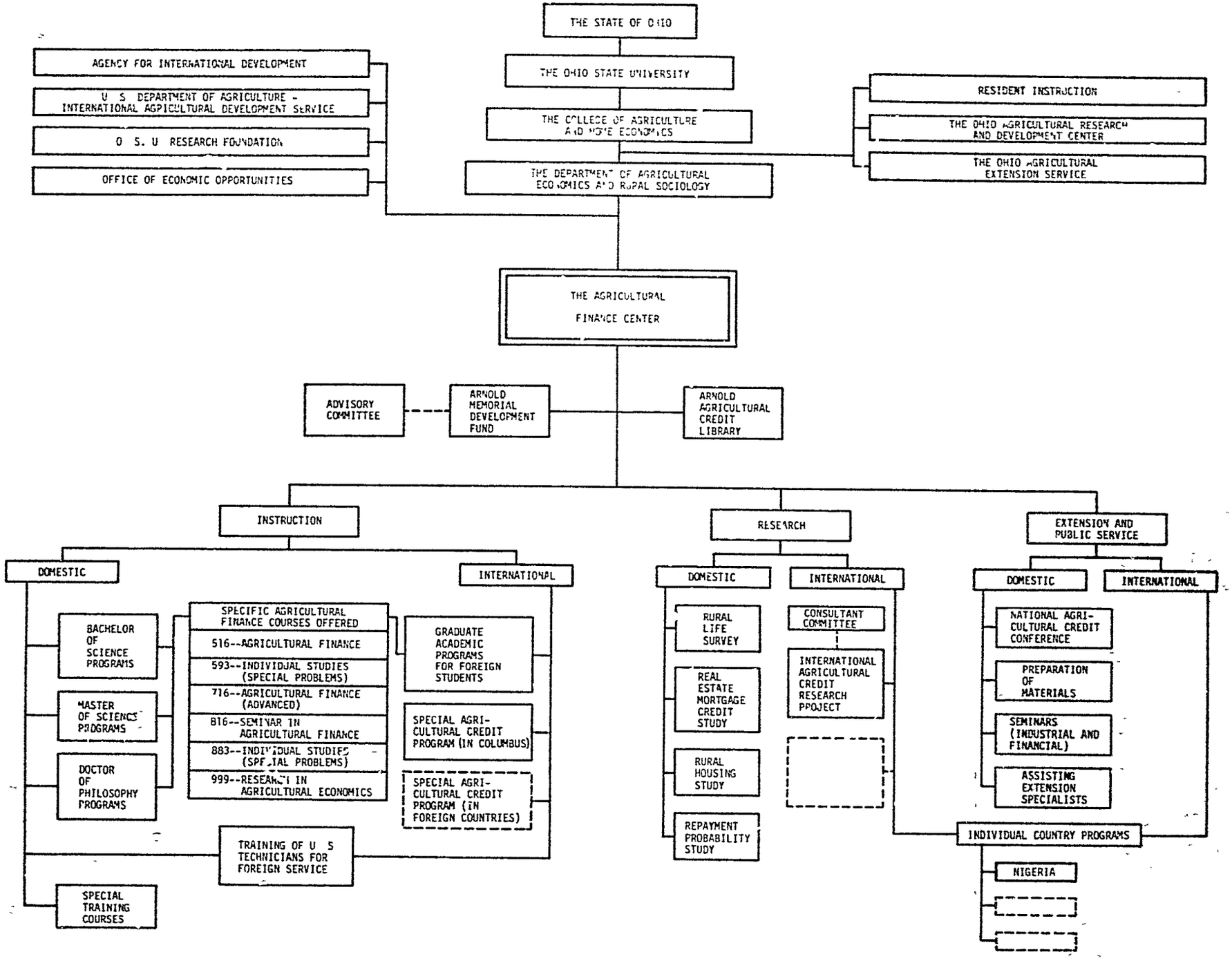
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