PN-ABA-282
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AGENCY FOR INTERNATIONAL DEVELOPMENT
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ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number: 936-5315

2. Contract/Grant Number: DAN-5315-A-00-2070-00

3. Publication Date: June 5, 1988

4. Document Title/Translated Title:

5. Author(s)
1.
2.
3.

6. Contributing Organization(s): The Ohio State University

7. Pagination: [illegible]

8. Report Number: [illegible]

9. Sponsoring A.I.D. Office: ST/RD

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)
1. Rural Financial Markets
2. Rural-Urban
3. Honduras
4. Latin America
5. Central America
6.

12. Supplementary Notes

13. Submitting Official: John Craig[illegible]

14. Telephone Number: 875-4410

15. Today's Date: 8/12/88

DO NOT write below this line

16. DOCID

17. Document Disposition
DOCRD [ ] INV [ ] DUPLICATE [ ]

WORK SHEET

Studies in
Rural Finance

Economics and Sociology
Occasional Paper No. 1478

FINANCE AND RURAL-URBAN INTERACTIONS IN HONDURAS

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Revised Version
June 8, 1988

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Introduction

Financial development is key for market integration, rural-urban specialization, and improved resource allocation. The provision of a means of payments and of intermediation between savers and investors accelerates growth and improves income distribution. In rural economies, however, high transaction costs result in low returns to depositors, a high cost of funds for investors, and small financial markets. Government intervention (inflation, overvalued exchange rates, and interest-rate ceilings) usually increases these transaction costs as well as market fragmentation.

Financial progress has shown a pronounced urban bias. The network of bank branches has been concentrated in the main cities, only a few rural agents have had access to formal loans and deposit facilities, and specialized rural financial institutions have not been viable. Non-uniform transaction costs and inadequate regulation explain much of this bias. An expansion of the rural branch network increases access to financial services, but the funds mobilized may be channelled toward urban centers, accentuating the bias. If balanced growth is important, this poses a dilemma.

This paper uses the method of linear graph to measure flows of funds between three nodal regions and the corresponding nodes within regions in Honduras. Region boundaries are determined by the road network and by distance. Nodes are localities with at least one full-service bank branch. Dominant nodes (Tegucigalpa, San Pedro de Sula, and La Ceiba) are the main centers of economic and political power. A simplified balance sheet is used to determine the direction of financial flows and the net gradients. The paper explores the impact of financial repression on the geographical concentration of the flows of funds.

Role of Finance in Regional Development

Specialization and the division of labor are crucial for economic growth and rural-urban integration. In developing countries growth is accompanied by the specialization along crop lines among farmers and by the transfer of functions formally carried out by rural households to urban specialist. This division of labor facilitates the introduction of equipment, changes in organization, and the use of more productive technologies, and it thus raises the productivity of labor and land (Johnson and Kilby). The division of labor among producers cannot go ahead, however, without the expansion of markets to integrate their activities. Financial development is key for the expansion and integration of all markets.

The financial sector is unique to the extent to which its markets, prices, and policies impinge upon the rest of the economy. Money is the only good that trades against every other good; interest rates are pervasive relative prices (Shaw). The provision of a means of payments is essential for trade and the division of labor in commodity and factor markets. Intermediation services make specialization between savers and investors possible. In the absence of finance, producers are either condemned to take advantage of their opportunities only to the extent allowed by their endowment of resources or forced to invest theirs in poor marginal internal activities. Since those who can generate savings are not necessarily those with the best investment options, the financial system shifts resources towards their most profitable uses, channelling them from units and areas of limited growth potential to those where rapid expansion is possible. This widens portfolio opportunities for wealthholders, accelerates growth, and improves income distribution.

Limited financial progress in developing countries reflects resource constraints, lack of education, the isolation of economic units, and market fragmentation. If yields on physical and human capital are low, savings, investment, and financial accumulation are pointless. Most developing countries, however, are short of physical and human wealth and long of investment opportunities at high rates of return. High transaction costs, however, stand in the way of financial-market expansion. Economic policies (inflation, interest-rate restrictions, overvalued exchange rates, confiscatory reserve requirements, and administrative credit allocations) also result in financial repression and further increase transaction costs and market fragmentation.

High borrowing and lending costs are observed particularly in rural economies, where transactions are small, risks high, and information costly. Due to these transaction costs, returns to savers are low, funds for investment are expensive, and financial markets are small. Financial progress reduces these costs through exploitation of economies of scale and of scope, the accumulation of information, professional management, portfolio diversification, and term, size, and risk transformations. Specialization among intermediaries increases the variety of financial assets available to wealthholders and improves the quality of services supplied.

Finance and the Urban Bias of Development

Many have expressed concern about the urban bias of economic development. Observed disparities between rural and urban growth and welfare are inefficient and inequitable. They persist only because a small proportion of investment has gone to agriculture. The proportion of skilled people who support development --doctors, bankers, engineers-- going to the rural areas has been lower still. Governments have accentuated the rural-urban disparities through the allocation of public expenditure and taxation, the deterioration of the terms-of-trade of agriculture, and the encouragement of rural savings to flow to industrial investment, because the value of manufacturing output has been artificially boosted (Lipton).

The urban bias of financial progress in developing countries has paralleled the concentration of economic activity in urban nodes. Non-uniform transaction costs, much higher in rural than in urban areas due to the lack of infrastructure and to the small size, heterogeneity, and geographical dispersion of rural firms, explain much of this bias. Financial policies have accentuated it. Interest-rate restrictions have made it more difficult for intermediaries to service rural clients (Gonzalez-Vega). Regulation, prejudices against informal lenders, and restrictions to entry in formal markets have also contributed. Exchange-rate policies have favored foreign financial centers, while economic crises have further augmented these biases.

The network of bank branches has been concentrated in the urban areas. Only a small proportion of the rural population has had access to formal credit, from institutions prepared to provide loans but not other forms of financial services; fewer have had access to deposit facilities. Funds disbursed have come from governments, central banks, and international donors. Limited intermediation between local savers and investors has resulted in discrepancies among marginal rates of return on rural investments, while incomplete institutions have lacked financial viability and have offered a poor service (Adams and Graham).

In a few developing countries, governments have promoted rural banks or the expansion of the network of rural branches of national intermediaries. This has introduced a new dilemma. Although the branch network does increase access to financial services for the rural population, it is feared that the savings so mobilized will be channelled towards urban investment, further decapitalizing the countryside. On the one hand, however, intermediation improves allocation and facilitates participation in the fruits of growth for non-residents. On the other hand, it may accentuate regional disparities if spatial opportunities are not evenly distributed. Given perfect markets and efficiency and equity objectives only, therefore, rural financial deepening is desirable. Imperfections, externalities, and distortions as well as non-economic objectives, such as balanced regional growth or pole development, may still raise the question of the optimal regional pattern of financial progress.

The Honduran Financial System

Honduras is the second poorest country in the Western Hemisphere, with a per capita income of U.S. $ 700 a year. It is primarily agrarian, with over two-thirds of the labor force in the rural areas and one-third of the GDP generated in agriculture. Agricultural exports account for 80 percent of the foreign exchange earned. Only 4 percent of farms are large, 29 percent are small, and 67 percent are minifundia. The vast majority produce basic grains. Rural families are characterized by low per capita incomes (U.S. $ 100 a year), little education, and poor living conditions. They often live in isolated mountain valleys or regions with difficult access to sources of modern health, financial, and agricultural services. They rarely succeed in getting formal loans (less than 10 percent of farmers receive credit). While very few have savings accounts, they generally attempt to save a little for special future needs.

The financial system of Honduras is dominated by 16 private commercial banks and 3 public development banks. With the exception of savings and loan associations, there are few other financial institutions. During the 1960s and 1970s the country experienced significant financial deepening, reflected in the creation of numerous institutions and the growth of credit volumes. This progress was made possible by exchange-rate stability and the absence of inflation. The ratio of M2 to the GDP grew from 13 percent in 1960 to 35 percent in 1978. At the same time, the ratio of domestic credit to the GDP increased from 12 percent in 1960 to 44 percent in 1978. Honduras thus enjoyed the fastest process of financial deepening in Central America. After 1978, however, in real terms the system suffered a severe contraction. The ratio of M2 to the GDP fell to 29 percent in 1982. In addition, by 1981 the real value of the flow of new loans from the banking system had declined to 67 percent of its 1978 value, while the flow of agricultural loans had declined to 47 percent of its 1977 value. The number of borrowers declined too, as marginal clients, primarily rural, were denied access to loans. The proportion of credit devoted to agriculture declined with financial repression; the proportion received by small farmers shrank even more, according to the iron law of interest-rate restrictions (Gonzalez-Vega).

Market Concentration

Between 1970 and 1983 the Honduran financial system experience a continued deconcentration trend reflected by the declining shares of the larger institutions in the allocation of credit, the mobilization of deposits from the public, and the expansion of the branch banking network. Market deconcentration was particularly important for savings and time deposits, where competition took the form of both higher interest rates and implicit rewards to bank customers. This intense competition contributed to an increased mobilization of deposits until 1978. Since then, greater financial repression and higher inflation rates made it impossible for implicit payments to sufficiently compensate the negative real deposit rates.

Deposit markets had been highly concentrated in the early 1970s. Afterwards, the smaller institutions became more active in their efforts to obtain larger market shares. This was achieved by the more rapid expansion of the bank networks of the smaller banks in the urban areas. Thus, competition in the market for deposits contributed to the urban bias of financial progress. Deposit-mobilization windows proliferated in the cities and, by 1984, the first automatic teller machines were introduced in Tegucigalpa by one of the small banks.

Variations in the degree of concentration of financial markets can be assessed by the use of indices such as the Herfindahl index, which is computed as the sum of the squared percentage market shares of the participating institutions. A value greater than 1800 for this index reflects a highly concentrated market; values between 1200 and 1800 are said to reflect moderately concentrated markets; and values under 1200 are indicative of unconcentrated markets.

Herfindahl indices were computed for selected components of the balance sheet of financial institutions. As observed in Table 1, all indices reflected a sustained trend towards market deconcentration. The index for the total assets of the banking system declined from 1422 in 1970 to 790 in 1979, the period of a more active deconcentration. A more pronounced process of deconcentration was observed with respect to loans and investments. The process of deconcentration was even more significant with respect to liabilities, which presented a higher degree of concentration than the assets of the banking system. In effect, the Herfindahl index for demand deposits declined from 2368 in 1970, when the market was highly concentrated, to 977 in 1977, a level which characterizes unconcentrated markets. In addition, the Herfindahl index for savings and time deposits declined from 2618 in 1970 to 729 in 1983. This reflected a shift in the preferences of depositors from non-interest bearing to interest-bearing accounts, as a result of increasing inflation and more intense competition in this market, particularly through higher interest rates and more conveniently located offices. In spite of the increased competition in the market for deposits, restrictions on interest rates and other regulations limited the efforts of the intermediaries in increasing the volume of deposits mobilized once inflation accelerated after 1978 and their value shrunk.

Expansion of the Banking Network

During the 1960s and most of the 1970s, the Honduran financial system expanded both in terms of the number of institutions and of bank branches. By 197[illegible] eleven private commercial banks and three public development banks competed in the market for deposits. However, only five of the private commercial banks had been established prior to 1960. Five new commercial banks were created between 1970 and 1985, but a large bank failed in 1981 and forced the Central Bank to bail out its depositors in order to maintain public confidence in the system. One additional public institution was also created during the same period, while the number of savings and loan associations increased from one to seven.

In the case of commercial banks and the agricultural development bank (BANADESA), the branch network increased from 134 offices in 1971 to 244 in 1983. Most of the new branches (110) were opened by private commercial banks, while only 7 were established by BANADESA. The number of offices of savings and loan associations also increased significantly, from 1 to 36. As a result, the average number of branches per commercial bank increased from 8.5 in 1970 to 14.5 in 1983, and from 1 to 5.1 for savings and loan associations.

Despite of the significant deconcentration in the market for deposits and loans, the urban bias of the expansion of the Honduran banking system is well reflected by the increase in the number of branches that operate in Tegucigalpa and San Pedro de Sula, from 57 percent of the total in 1971, to 62 percent by 1983. These variations in the degree of concentration of the branch network can also be assessed by the use of Herfindahl indices, as shown in Table 2. The Herfindahl index of concentration of bank branches in Honduras increased from 1862 in 1971 to 2097 in 1983. This result indicates that the geographical distribution of the banking system has not only been highly concentrated, but that the degree of concentration has also increased through time.

Banks operate both full-service and limited-service branches in Honduras. The latter mobilize deposits but do not grant loans. Therefore, these branches reduce transaction costs to savers but not to borrowers and they accentuate the flow of funds towards the cities. Full-service branches accounted for 37 percent of all bank offices in 1971. The relative importance of this type of branch declined steadily, to 26 percent of the total by 1983. The expansion of the branch network emphasized, therefore, the mobilization of deposits rather than the provision of credit. Herfindahl indices of concentration were also computed by type of branch. In the case of full-service branches, this index slightly increased, as shown in Table 2. The high index for limited-service branches indicates acute concentration. In both cases, the moderate rate of change of the indices is explained by the fact that during the period the relative importance of limited-service branches increased steadily. The proliferation of deposit-taking branches reflected increased competition in the market for deposits, particularly in Tegucigalpa and San Pedro de Sula, the major urban centers. This indicates that transaction costs for both depositors and intermediaries are lower in the urban than in the rural areas.

Methodology for the Definition of Regions

There are three approaches in defining regions. First, the concept of a homogeneous region relies on its unifying features, but fails to consider intra-regional interactions. Second, the concept of a nodal region takes into account these interactions and treats spatial dimensions as important criteria for the definition of regions. Each region has one or more major nodes, allowing for the identification of patterns of dominance, while the cohesiveness within the region results from internal flows, contacts, and interdependencies. Third, the concept of planning region responds to the desire of applying a particular set of policy instruments or programs to specific areas (Richardson).

For the analysis of flows of funds, the nodal-region approach is the most appropriate. In this paper, the economic boundaries of physical regions were established on the basis of the road network and the distance between each region's nodes and the dominant one. Nodes were defined as localities where at least one full-service bank branch operates. A dominant node is the center where political power is concentrated. On the basis of these criteria three regions can be clearly delineated in Honduras: the Southeast, where the dominant node is Tegucigalpa; the Northwest, where San Pedro de Sula is dominant; and the Northeast, where La Ceiba is dominant.

Measurement of the Flows of Funds

The analysis of the flows of funds within the commercial banks is performed in two ways. First, a simplified balance sheet is used to identify the direction of the flows. It is assumed that the volume of credit outstanding in each region is backed by deposits mobilized in that region and by funds from foreign lenders, the Central Bank, and the bank's equity capital. Thus, it becomes possible to identify surplus and deficit regions. Funds from surplus regions and from exogenous sources satisfy the excess demand for credit of deficit regions. The second approach compares the relative volumes of credit outstanding and deposits mobilized across regions, without considering exogenous sources of funds. It was further assumed that all funds are allocated regionally in the same proportion as the observed total demand for credit. This allows for the estimation of gradients for the flows of funds between each region's nodes and between regions. A net gradient is the difference between the proportion of total loans and of total deposits at each node.

Table 3 presents the proportions of loans outstanding, deposits mobilized, and allocations of exogenous funds for the 17 nodes used to characterize the Honduran economy. Over 91 percent of deposits were mobilized in the dominant nodes of the three regions, which absorbed 93 percent of the loans and over 97 percent of the exogenous funds. This reflected the lack of penetration of the financial system in the rural areas and the fragmentation of the Honduran economy. During the period under analysis, two of the peripheral nodes in each one of the regions behaved as net suppliers of funds, i.e. their outstanding deposits were larger than their outstanding portfolio of loans. This reflected the decapitalization of the countryside in favor of the urban centers.

Because of the high concentration of banking operations in the dominant nodes, the behavior of each node within a particular region closely followed that of the dominant node. During the 1978-83 period a significant increase of the total proportion of credit granted was observed in Tegucigalpa. The relative share of credit for this node increased from 47 percent in 1979 to 55 percent by mid-1982. In contrast, the relative participation of the San Pedro de Sula node declined from 41 percent by mid-1979 to 35 percent by mid-1981, and only recovered partially by 1983. This significant changes, which partly reflect the severe contraction of the total volume of credit granted as a result of the crisis, mostly serve as evidence of the abandonment of agricultural and other activities outside the urban centers, such as industry in the Northwest region, perceived to be riskier by the commercial banks.

When exogenous funds are ignored and gradients for the flows of funds are estimated for the period, a net gradient is established not only from the corresponding peripheral nodes to the dominant node in each region, but also from the Southeast region to the Northwest and the Northeast regions. This may reflect the existence of more profitable opportunities in these areas, which is consistent with their more rapid development in recent years. The direction and relative magnitude of the gradients are presented in Figure 1, using the method of linear graph (Fei).

If the urban concentration of deposits and loans and the observed pattern of the flows of funds reflect the existence of more profitable investment opportunities in Tegucigalpa, San Pedro de Sula, and La Ceiba, as a result of lower risks and wider portfolio options, the financial system is contributing to a better allocation of resources. More privately attractive opportunities in urban areas, however, may not adequately reflect social costs and benefits. This may be the case in Honduras, given protectionist policies. Tariff protection of manufacturing, an overvalued exchange rate, export taxes, price controls on foodstuffs, and imports of cheap food have artificially reduced the profitability of rural investment. The financial concentration observed reflects the impact of these distortions on relative profitability. Credit flows, however, cannot offset low incomes or low returns to investment in agriculture, even at preferential interest rates. Cheap credit cannot make an unprofitable investment profitable. Rather, borrowers will attempt to avoid the privately unprofitable use of resources and, given the fungibility of funds, will channel the additional liquidity provided by the loans toward more attractive uses (Von Pischke and Adams).

Given relative prices and incentives in the Honduran economy, rural savers receive low returns from agricultural investments. Improved opportunities for depositing savings in financial institutions will increase their incomes, by allowing them to participate in the fruits of investment elsewhere, even if this accentuates regional disparities. Present policies repress rural incomes; the absence of deposit facilities further reduces them. If existing distortions are not corrected, the financial system may at least supply valuable services to the rural population and reward it with some returns from urban investments. The optimum approach will be to attack the distortions at their source, through better prices, equilibrium exchange rates, additional public investment, and technological progress in the rural areas. When this happens, the financial system will then contribute to a better allocation of resources, both from a private and social perspective.

The urban concentration of the flows of funds may also reflect non-uniform transaction costs. These costs are, in general, higher in the rural than in the urban areas, while those associated with loans are higher than those associated with deposits. Moreover, competition for funds among Honduran commercial banks, under interest-rate restrictions, has taken place through the creation of numerous and more conveniently located branches. On the other hand, underequilibrium interest rates on loans have generated excess demands for credit that have necessitated nonprice rationing mechanisms for the market to clear. Non-interest borrowing costs, particularly in the case of marginal rural clients, have been among the preferred mechanisms for rationing, further concentrating loan portfolios (Gonzalez-Vega).

Interest-rate restrictions and other forms of regulation have increased transaction costs and market fragmentation, thus accentuating the urban concentration of financial flows. As financial repression has augmented, during the recent crisis, concentration has increased, as predicted by the iron law of interest-rate restrictions (Gonzalez-Vega). The proportion of loans granted in Tegucigalpa increased from 48 percent in 1978 to 53 percent in 1982, while the proportion granted in the three dominant nodes combined increased from 92 to 94 percent. The proportion of deposits mobilized in Tegucigalpa increased from 53 percent in 1978 to 56 percent in 1982, while in the case of the three nodes augmented from 93 to 98 percent.

In summary, non-uniform transaction costs explains the substantial urban bias of financial development in Honduras. This bias has been accentuated by incorrect financial and non-financial policies. Interest-rate restrictions and other banking regulations have augmented the differentials among transaction costs and increased market fragmentation. Price, exchange-rate, and fiscal policies have repressed the profitability of rural investment, further contributing to the flow of funds from the countryside to the cities.

Table 1: Honduras: Herfindahl Indices of Concentration for Selected Components of the Balance Sheets of the Banking System, 1970-1983.

Year	Total Assets	Loans and Investments	Demand Deposits	Savings and Time Deposits
1970	1422	1723	2368	2618
1971	1360	1460	1691	2166
1972	1241	1399	1439	1921
1973	1220	1333	1411	1817
1974	1133	1296	1456	1844
1975	1128	1249	1380	1720
1976	920	1039	1066	1490
1977	805	900	977	1284
1978	797	907	1070	1082
1979	790	797	1086	954
1980	824	859	1106	905
1981	798	752	920	854
1982	805	736	969	749
1983	787	676	889	729

Source: Computed by the authors from Banco Central de Honduras, Boletin Estadistico, several years.

Table 2: Honduras: Herfindahl Indices of Concentration for the Number of Branches of Commercial Banks and BANADESA, by Institution, and by Locality by Type of Branch, 1971-1983.

Year	Institution	Locality		
		Total	Full-service	Limited-service
1971	1635	1862	1536	2154
1972	1645	1867	1488	2155
1973	1621	1833	1442	2083
1974	1482	1887	1461	2124
1975	1490	1885	1447	2106
1976	1424	1914	1507	2122
1977	1361	2011	1575	2221
1978	1337	2053	1575	2265
1979	1273	2081	1607	2318
1980	1194	2093	1638	2276
1981	1271	2097	1657	2271
1982	1248	2097	1657	2271
1983	1218	2097	1657	2271

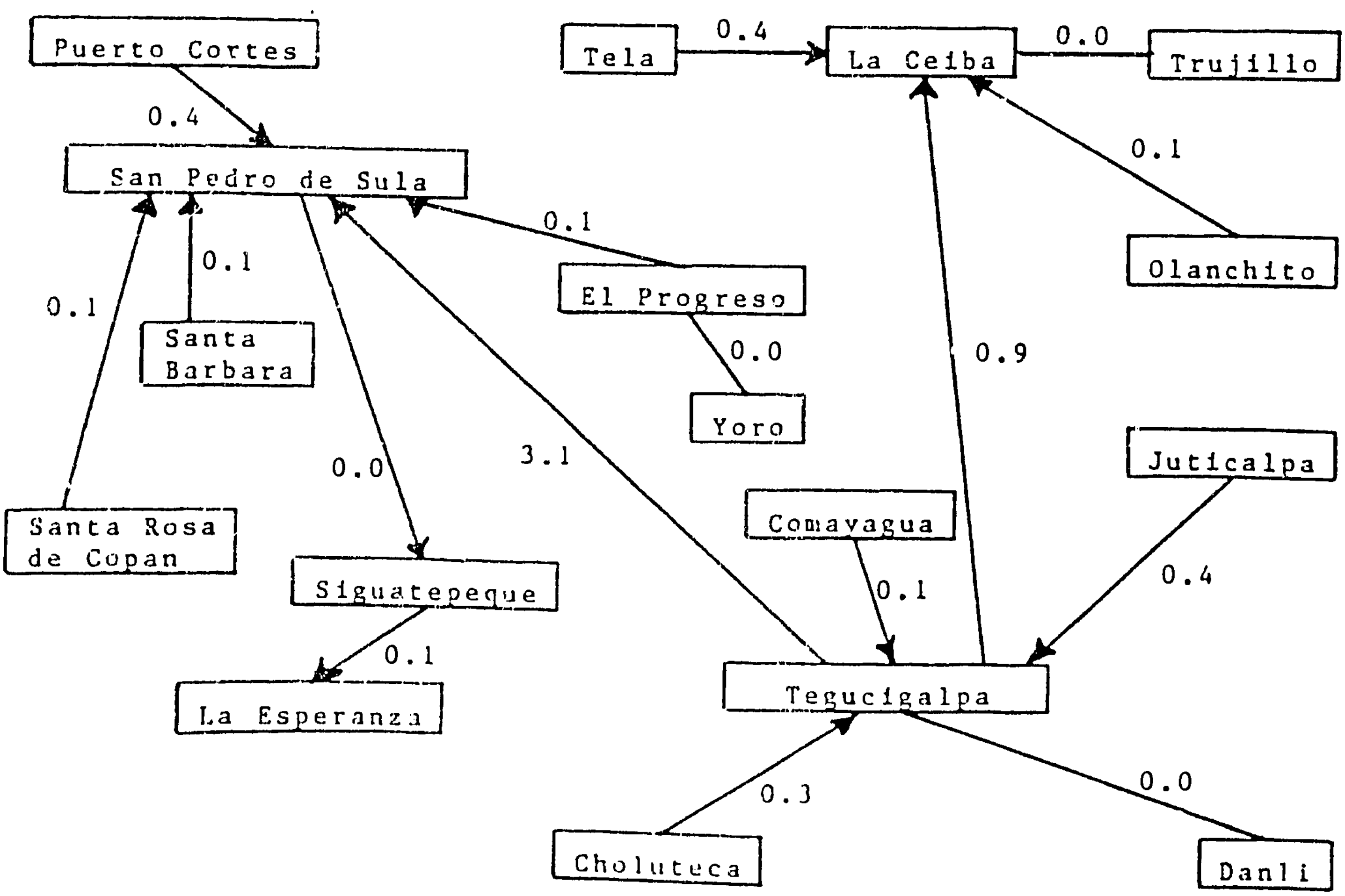
Source: Computed by the authors from unpublished records of the Banco Central de Honduras.

Table 3: Honduras: Average Proportions of Deposits, Credit, and Exogenous Funds by Locality, 1978-82 (percentages).

Node	Deposits	Credit	Other Sources	Gradient
Tegucigalpa	54.5	51.3	45.2	-3.2
Comayagua	0.3	0.2	-0.1	-0.1
Juticalpa	1.0	0.6	-0.1	-0.4
Danli	0.7	0.7	0.7	0.0
Choluteca	1.3	1.0	0.4	-0.3
San Pedro de Sula	33.8	37.6	44.8	3.8
Puerto Cortes	0.9	0.5	-0.4	-0.4
El Progreso	0.3	0.2	0.1	-0.1
Yoro	0.1	0.1	0.0	-0.1
Santa Rosa	2.4	2.3	2.1	-0.1
Santa Barbara	0.2	0.1	-0.2	-0.1
Siguatepeque	0.3	0.2	0.3	-0.1
La Esperanza	0.3	0.4	0.6	0.1
La Ceiba	3.1	4.5	7.4	1.4
Tela	0.5	0.1	-0.6	-0.4
Trujillo	0.1	0.1	-0.2	0.0
Olanchito	0.2	0.1	0.0	-0.1
Total	100.0	100.0	100.0	0.0

Source: Computed by the authors from unpublished records of the Banco Central de Honduras.

Figure 1. Honduras: Net Gradients of Flows of Funds between Regions and between Localities, 1978-82.



End Notes

Dr. Camacho is a recent graduate from The Ohio State University and Prof. Gonzalez-Vega teaches agricultural economics and economics at the same university. An earlier version of this paper was presented at the XIX International Conference of Agricultural Economists in Malaga, Spain, September 1985. This research was funded in part by the agricultural credit project in Honduras, sponsored by teh U.S.A.I.D. Mission in Tegucigalpa. The authors want to thank the staff of the Central Bank of Honduras and of the U.S.A.I.D. Mission for their support.

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