

THE IMPORTANCE OF TRANSACTION COSTS IN DOMESTIC
RESOURCE MOBILIZATION AND CREDIT ALLOCATION

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Introduction

Deposit mobilization has become an increasingly constrained activity in Honduras in the past decade. This paper will document first the overall performance of deposit activity and its associated financial deepening measures in Honduras. Next, we offer evidence on the evolving pattern of financial regulations and, in particular, its impact on the shrinking implicit gross margins within which financial intermediaries have been operating in the country. Finally, our focus shifts to the micro-level institutional setting of public and private sector banking activity. Here we investigate the intermediation or transaction costs experienced by these institutions within the Honduran financial environment. In particular we will document and discuss the contrasting pattern of lending costs and deposit mobilization costs incurred by these institutions and draw out important policy implications surrounding these findings.

I. The Macro Setting for Deposit Mobilization Activity

Banking institutions and branches multiplied and expanded rapidly in Honduras from 1950 to 1975. The number of banks increased from 2 to 16 while the number of branches expanded from 7 to 204 over this period of time. From 1975 to 1982 this pattern changed somewhat with a slower period of growth for financial intermediaries. Using an index of the number of inhabitants per branch in the country, we see

this ratio declining rapidly from 160 thousand inhabitants per branch in 1950 to 15 thousand inhabitants per branch in 1975. The ratio declines less rapidly from 1975 to 1978, reflecting the decline in the growth of the branch network.

Financial deepening indicators also reflect this overall pattern of financial evolution from the 1960s to the early 1980s. Using the money supply GDP ratio (M_2/GDP), financial deepening rose from an average of 15 percent in the early 1960s to 24 percent in the early 1970s. It reached its highest level in 1978 (32 percent) after which it began to decline to an average of 23 percent in 1981-82.

Thus we see a growth pattern of institutional and branch expansion of financial intermediaries with a sharply rising level of financial deepening in the economy from 1960 to 1974. However from 1974 to 1978 this movement has stagnated inducing a decline in these indicators of financial growth after 1978. This decline has been a result of indirect and direct impacts on the efficiency of financial intermediation. The rise in inflation since 1974 has been the major indirect influence creating disincentives for financial intermediation in the country. However, direct actions by central bank authorities, in part as a response to inflationary pressures, have raised reserve requirements, expanded the use of rediscount facilities and established various maximum loan ceilings, all of which have introduced

disincentives for deposit mobilization and higher transactions costs in lending activity.

II. The Impact of the Financial Regulations on Gross Spreads in the Financial Sector

Table 1 presents the estimated gross-spread or margin implicit in the interest-rate and reserve policies of the central bank during the period 1970-1982. First, the weighted average of deposit-rate ceilings adjusted by reserve requirements is included in column 1 of table 1.^{1/} The average lending-rate ceiling, as well as the maximum lending-rate ceiling, are seen in columns 2 and 3. The implicit gross margin allowed for financial intermediaries by these financial regulations is estimated for the average lending-rate ceiling and then for the maximum level among these ceilings in the last two columns of table 2.2. It is clear from this table that the gross spread implicit in the central-bank's financial policy has been systematically shrinking over time. If banks had lent all funds at the maximum lending rate, and paid the maximum allowed rate on deposits, their margins would have shown a decrease from a "generous" average spread of 11.1% in the earlier years of the period (1970-1973), to a narrow 5%-spread in the post-1978 period.

^{1/} The (low) interest-rate paid on the proportion of total reserves held in government bonds was not considered in the calculations. However, this represents a minor bias in the estimated average effective deposit-rate ceiling.

Table 1. Deposit-rate Ceilings Adjusted by Reserve Requirements, Lending-rate Ceilings, and Gross-spread Implicit in Interest-rate Regulations and Reserve Requirements, 1970-1982

Year	(1) Average Deposit-rate Ceiling Adjusted by Reserve Requirements ^{a/} %	(2) Average Lending-rate Ceiling %	(3) Maximum Lending-rate Ceiling %	Implicit Gross-spread	
				With Average Lending-rate (2) - (1) %	With Maximum Lending-rate (3) - (1) %
1970	6.85	-	18	-	11.15
1971	6.85	-	18	-	11.15
1972	6.85	-	18	-	11.15
1973	7.22	12.0	18	4.78	10.78
1974	8.50	12.8	18	4.30	9.50
1975	9.40	12.1	16	2.70	6.60
1976	9.40	12.1	16	2.70	6.60
1977	9.40	12.1	16	2.70	6.60
1978	10.19	12.1	16	1.91	5.81
1979	11.93 ^{b/}	12.0	16	0.07	4.07
1980	13.20 ^{b/}	13.3	19	0.10	5.80
1981	14.00 ^{c/}	14.3	19	0.30	5.60
1982	n.a.	15.0	19	-	-

Sources: Central Bank Statistical Bulletins and Central Bank (Superintendency) internal memoranda

a/ Weighted average of interest-rate ceilings on savings deposits and time deposits, adjusted by the reserve rate. Reserve rates: 25% in 1970-72, and 1975-77

28% in 1973-74

30% in 1978-82

b/ Interest-rate ceilings on time deposits were lifted in Dec. 78. Averages for 1979 and 1980 are based on Central Bank (Superintendency) estimates of effective interest-rates paid on time deposits

c/ All interest-rate ceilings on deposits eliminated after May 1981. Average for 1981 based on Central Bank (Superintendency) estimates of effective interest-rates paid.

n.a.: not available.

A more reasonable assumption than the one used in the illustrative example above is that banks have lent on average at rates between the maximum and the average ceilings. On the other hand, it is likely that these banks have paid interest-rates on deposits close to their ceiling levels, since these have been already sufficiently low in real terms to discourage depositors. Under these conditions, the implicit spread set by policy-makers for financial institutions lie between the margin computed using the average ceiling, column 4 in table 2.2, and the spread associated with the maximum lending-rate ceiling. This range implies an average implicit spread between 2.9% and 7% for the period 1974-1978. For the subsequent period, 1979-1982, the average margin implicit in the given financial policy setting of that period would fall between 0.16% and 5%.

The foregoing discussion suggests two final observations. First, given the fact that inflation had fluctuated between 3 and 12 percent in this period, sector-specific regulatory policies affecting the financial system have resulted in low (usually negative) and unstable real deposit-rates, thus penalizing and discouraging savers. The downward trend observed in these real deposit-rate ceilings can be associated with the slow-down and decline in the growth of the Honduran financial sector discussed in the previous section. Second, these combined policies have

implied decreasing operational spreads for financial intermediaries operating with own-resources mobilized from the general public. Regardless of the source of loan funds, these gross spreads implicit in interest-rate, reserve, and rediscount policies range from roughly zero to 7% in the period after 1974. Therefore, if intermediation costs are in effect larger than the gross margins implicit in the regulatory setting then there will be strong incentives for the financial institutions to avoid these regulations at every possible level in order to minimize operational losses. Financial institutions will allocate funds in their loan portfolio to maximize the use of high-interest lines of credit, and will try to pass-on transaction costs to other participants in the system, primarily to the ultimate borrowers.

III. Total Intermediation (i.e. Transaction) Costs in an Institution-Specific Context

The foregoing discussion has set the stage to better understand the way in which the overall regulatory environment has evolved in Honduras in recent years and the likely consequences for financial intermediation. Table 2 summarizes the total intermediation costs for the Agricultural Development Bank in Honduras and the leading private bank in the country. Both have large branch networks and have played an important role in financial activities in the country over the period, the former in being the principal

source through which international donor funds have been channeled into Honduras; and the latter through its relative predominance in the private financial markets of the country.

Rows 1 and 2 of table 2 indicate the distribution of total intermediation costs in each bank between lending costs (row 1) and the costs of mobilizing deposits (row 2). These shares, as well as the average and marginal cost results reported in table 2 were derived from translogarithmic cost functions estimated for both institutions on a time series of branch-level data.^{2/} Rows 3 and 4 show the average and marginal costs of lending on a per-lempira basis, while rows 5 and 6 report the corresponding average and marginal costs figures for the costs of deposit mobilization. Finally, overall intermediation costs (lending costs plus deposit-mobilization costs) are reported in rows 8 and 9 of table 2.

The first important contrast between the two banks is shown in rows 1 and 2 of table 2. Over 70% of the development-bank's costs of intermediation correspond to lending activities, whereas only 29% of its costs are attributed to the administration of deposit accounts. The opposite is true for the private bank, where only 28% of the

^{2/} See Cuevas, Carlos E., "Intermediation Costs and Scale-Economies of Banking Under Financial Regulations in Honduras", Unpublished Ph.D. Dissertation, The Ohio State University, 1984.

Table 2. Lender's Intermediation Costs: Lending Costs and Costs of Mobilizing Deposits. Summary of Findings for the Development Bank and the Private Bank.

Cost Concept	Development Bank (%)	Private Bank (%)
1. Share of Lending Costs in Total Intermediation Costs	71.1	28.9
2. Share of Deposit-Mobilization Costs in Total Intermediation Costs	28.9	71.7
<u>Costs of Lending</u>		
4. Average Costs	10.02	3.39
5. Marginal Costs	7.64	1.69
<u>Costs of Mobilizing Deposits</u>		
6. Average Costs	8.73	5.33
7. Marginal Costs	2.72	6.71
<u>Overall Lender's Intermediation Costs^{a/}</u>		
8. Average Costs	18.80	8.72
9. Marginal Costs	10.36	8.40

Source: Results of cost-system estimations, evaluated at geometric means of the variable in the models.

^{a/} Lending Costs + Costs of Deposit Mobilization

costs are associated with lending, while 72% of the bank's total intermediation costs are related to deposit mobilization. This acute contrast reflects the development-bank's greater reliance on foreign funds and special rediscount lines from the central bank, as compared to the private bank which relies more heavily upon financial resources mobilized from the general public.

Over the period under analysis (1971-1982), an average of 51% of the loan-portfolio of the development bank was funded through foreign funds or central-bank rediscount lines. Furthermore, these external (non-deposit) sources of funds have grown in relative importance with respect to the loan-portfolio from a 44%-average in the period 1971-1974 to a 57%-average in the period 1979-1982. Consequently, the proportion of the total value of new loans funded through deposit mobilization decreased from an average of 56% in the period 1971-1974, to a 43%-average in the last four years of the series. On the other hand, the private bank has relied primarily upon deposits mobilized from the general public to finance its loan portfolio. This bank's access to rediscount lines at the central bank has been limited, and only recently has it engaged in foreign-funded special credit projects. In 1981, a representative year according to bank officials, 91% of the loan portfolio was funded with own deposits, almost 7% came from central-bank rediscount funds, and a little over 1% from foreign funds (primarily

World Bank projects). This sharp contrast in the composition of the banks' liabilities has a counterpart in the allocation of real resources in each bank, that is reflected in the estimated participation of lending and deposit activities in total intermediation costs.

Costs of lending highlight a second striking contrast between the two banks. The estimated average costs of lending are 10% for the development bank, three times as high as those estimated for the private bank (3.39%). The Marginal costs of lending are 4.5 times larger in the development bank (7.6%) than in the private bank (1.7%). This is again reflecting the differences in the sources of funds with which the banks operate. The greater reliance on external funds by the development bank implies the acceptance of loan targets imposed by foreign donors, international lenders, and/or the government. These targets typically imply servicing a more risky and numerous clientele, and a high incidence of relatively small loans. Also, targeted funds are accompanied by monitoring, supervision, and reporting requirements that force the institution to maintain a more centralized operation, and a heavier incidence of supervisory and record-keeping resources, than would be the case in the absence of these targeting requirements.

It is important to note that the cost estimates reported in table 2 do not include provisions for bad debts,

thus representing a lower bound estimate for the operational spread that these institutions would require in order not to suffer operational losses. In this sense, the results obtained for the development bank are particularly striking, especially when comparing these results with the margins contemplated in credit projects funded by external agencies or the central bank. These funding sources usually allow only 3 to 4 percentage points to cover the administrative costs associated with the on-lending of their funds. Thus, to operate with these special lines of credit the development bank experiences an operational loss of over 6%, assuming that all loans are fully repaid.

The foregoing results highlight the existence of a policy inconsistency, in the sense that external donors and/or the government impose on the development bank costly loan-targets without appropriate support to service these targeted clients. The costs of servicing a more risky, more numerous, and more costly clientele, for which the institution is reimbursed only at a margin of 3 or 4 percentage points, seriously compromise the financial viability of the institution. It is interesting to note that the usual 3-4% margin is closer to the average lending costs observed in efficient private commercial banks like the one under study here, than to the average lending costs observed in the development bank. However, as it has been documented elsewhere, the average cost of lending for the private bank

increases substantially when dealing with foreign-funded credit projects.^{3/} The average cost of agricultural loans made by the private bank with World Bank funds has been estimated at 8.4% ignoring default risks, a figure that exceeds by far the 4%-spread allowed in these credit projects for loan-administration costs.

The average costs of mobilizing deposits are also higher in the development bank as compared to the private bank (row 6 in table 2). However, marginal costs of deposit-mobilization show the opposite pattern, they are lower in the development bank than in the private bank (row 7 in table 2). Note also that the private bank has gone beyond the minimum average cost level in its deposit activity, since the marginal costs of deposit-mobilization appears higher than the corresponding average cost. These differences in costs between the two banks are better explained by the contrasts in their scale of operations, and to some extent by differences in the composition of their deposit-clientele. A brief discussion of these differences follows.

Taking the geometric means of the relevant variables in the two banks for the overall period under study (1971-1982), the ratio between the administrative costs of the private bank and those of the development bank is 1.4 to

^{3/} See Douglas H. Graham and Carlos E. Cuevas, "Lending Costs and Rural Development in an LDC Setting: Is Cheap Credit Really Cheap?" Savings and Development, 5 (forthcoming, 1984).

1, the ratio of their loan portfolios is 2 to 1, and the ratio between their deposit portfolios is 6.3 to 1. In short, the private bank has extended its deposit-mobilization activity relatively more than its lending activity. Moreover, this bank has reached a point of decreasing returns to further expansion of its deposit-mobilization activity, unless this expansion relies upon increasingly large average deposit balances. At the other extreme, the development bank is operating on the steep-downward-sloping section of a hypothetical average cost curve for deposit-mobilization, considering the large difference between average costs and marginal costs observed in table 2.

Another factor that contributes to the low marginal costs of mobilizing deposits in the development bank is the incidence of deposits from public-sector institutions that, in general, should imply lower handling costs on a per-lempira basis. Though not documented, the incidence of these deposits is larger in the liability portfolio of the development bank than in the private bank, due to existing regulations that force public institutions to deposit a majority of their cash-flow or surplus funds in the development bank. Yet, the main explanation for the behavior of deposit-mobilization costs in the development bank is overcapacity, since the large difference between average costs and marginal costs should be attributed primarily to under-utilized fixed or quasi-fixed resources in the structure of the bank.

Overall, intermediation costs are higher in the development bank than in the private bank (rows 8 and 9 in table 2). However, this difference is more important in terms of the total average costs of operation than it is in terms of the marginal costs of intermediation. The relationship between the levels of average costs and marginal costs in the development bank is reflecting under-utilization of existing resources, whereas the private bank appears very close to its minimum-cost level of activity (marginal cost almost equals average cost). Marginal costs of intermediation in the development bank are only two percentage points higher than in the private bank, according to the estimations reported in table 2. This result suggests that the differences in efficiency are not too substantial between the two banks. However, an important implication is that marginal-cost pricing would imply large operational losses for the development bank, whereas in the case of the private bank it would represent an almost break-even situation. From a policy-making point of view, if operational margins were administered so that the development bank could cover its marginal costs of intermediation, this bank would still experience substantial losses, since its average costs exceed by far its marginal costs. Under such a policy however, the private bank would earn a profit since its average costs are lower than the marginal costs of the development bank.

In summary, the overall financial climate for deposit mobilization and efficient loan intermediation has been declining in Honduras since 1978. Financial deepening indicators have reflected this decline while the implicit gross spread or margin available for financial intermediation in the country has shrunk considerably from the early 1970s to the early 1980s. Financial regulations in the form of rising reserve requirements, interest rate ceilings and expensive targeting requirements for foreign donor funds have contributed to rising overall transaction costs in the face of declining gross margins for financial intermediation.

Within this scenario, deposit mobilization has been discouraged and reliance upon rediscount facilities and targeted funds has grown, introducing inefficiencies and inequities into the process of financial intermediation in the country. A more flexible interest rate policy and less costly targeting schemes (or their absence altogether) could greatly benefit the overall performance of the Honduran financial sector.