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I. Introduction

In discussions on the cost of credit in less developed countries, emphasizing the level and structure of rates paid by financial institutions on their liabilities, attention is seldom focused on transaction costs of lending for want of relevant information. This study is a modest attempt at presenting estimates of the transaction costs of lending to the small-scale sector by different financial institutions in a developing country, the Philippines. This country has been selected, first, because there has recently been a major effort to promote the growth of the small-scale sector, and in consequence a complex network of lending channels and institutions has been developed, and, second, because adequate data are available.

Transaction costs of lending consist of the cost of administering credit and the cost of the risk of default. Administrative costs are those which are directly attributable to the processing, delivering, and administering of loans. In percentage terms, costs of administration are expected to rise as the size of loans falls, the duration of loans shortens, and accounting services are expanded in order to cope with a large number of small-scale borrowers. Costs of risks and defaults incorporate an element to cover losses through default. The more careful the loan appraisal,

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supervision of loans, and pursuit of delinquents, the higher the administrative costs are likely to be. There may, therefore, be a trade-off between the costs for default risk and administrative costs.

The effective cost of credit to any borrower (effective gross return to a financial institution) is, by definition, a summation of three components: the composite interest rate paid by financial institutions on their liabilities; the rate of return obtained by owners of the financial institution on their equity capital; and the transaction costs of managing assets and liabilities—the last item includes administrative costs of asset and liability management plus expenses to cover the risk of default on loans and losses on investment in securities and any premia on loan and deposit insurance. In short, the effective rate on bank lending is equal to net pure profit (required rate of return on stockholders' equity) plus interest cost plus transaction costs. In discussing interest rates in the context of economic development, only the lending rate, the deposit rate, and the spread between them are generally considered and analyzed. This spread is taken to represent the net profit rate, which tacitly implies zero transaction costs within the bank. In principle, therefore, any transaction costs tend to increase the spread between loan and deposit rates. Conversely, any reduction in transaction costs tends to reduce this spread. It is clear, therefore, that a study of the magnitude of transaction costs and their components is helpful in understanding the factors that underlie this spread which has to be reduced in order to facilitate efficient development of the financial system.¹

In this study, transaction costs have been estimated for the lending operations of different financial institutions in the Philippines with recipients of the loans subdivided by size and activity.²

II. Procedures Used in Estimating Transaction Costs

The transaction costs of lending are made up of administrative costs and default risk expenses. Administrative costs are a summation of wage and salary expenses and other administrative costs such as printing, stationery, rent, travel, etc. Estimates have been made of those administrative costs involved in lending operations. These include not only the direct costs of lending operations but also a portion of the administrative costs of other supporting departments.

Expenses for default risk are defined as those expenses for the risk of loan default incurred by the lending institutions, for example, provision for loan losses, the loan guarantee fees paid, and the actual bad debts

¹ See, for instance, a study by V. V. Bhatt, "Interest Rate, Transaction Costs and Financial Innovations," *Domestic Finance Studies* no. 47 (Washington, D.C.: World Bank, Development Economics Department, January 1978).

² Interest rates and cost estimates apply to August 1977 when this study was undertaken. While interest rates have subsequently increased, it is unlikely that cost estimates have changed substantially.

incurred. Not included are the costs of operating the various guarantee schemes of the Central Bank of the Philippines. Since they cover the whole spectrum of financial institutions, allocation of their costs to the particular institutions could not be made. It is not expected, however, that this would substantially alter the estimates, since the two major guarantee schemes are operating at a surplus.³

The Development Bank of the Philippines (DBP) has organized its accounting system on a profit-center basis, so that the functional cost information reported in this study was provided directly by DBP. Each department/unit maintains its own administrative expense account, showing the estimated proportion of service to other departments/units. Provision for loan losses was allocated to agricultural, industrial, and real estate loans on the basis of the loans in litigation. Allocation of the provision for losses in industrial loans to the small-, medium-, and large-scale sectors is on the basis of their respective arrearage rates.

The Private Development Corporation of the Philippines (PDCP) has data on wages and salaries for staff involved in lending to small and to nonsmall recipients. Provision for loan losses was allocated to small and nonsmall recipients on the basis of past due loans.

The administrative costs of all operations are available for the rural banks and private development banks (PDBs), but no functional breakdown of administrative costs exists. For the DBP and PDCP this breakdown has been obtained. Specifically, the administrative costs for lending operations of rural banks have been estimated in the following manner. The unit cost of administering loans, investments, deposits, and other operations may differ between the DBP and rural banks, but it is assumed that the unit cost of administering loans relative to that of administering other operations is the same between the institutions. This procedure has also been used to derive the administrative costs of agricultural and industrial lending of rural banks, since this cost breakdown is available for DBP operations. Expenses for default risk consist of the change in the provision for loan losses plus guarantee fees paid plus actual bad debts. Functional allocation of these expenses was done on the basis of the functional distribution of past due loans of the rural banks and PDBs.

The allocation of administrative costs of PDBs and of the administrative cost and expenses for default risk of commercial banks was done by regression methods, which may be viewed as techniques of statistical cost accounting. Given observations on total administrative cost and

³ Loans extended by the rural banks under the Supervised Credit Scheme (constituting 60% of total outstanding loans) are covered by a compulsory guarantee scheme, the Agricultural Guarantee Fund (AGF). Rural banks pay a 1% fee for 85% coverage of loan default. In practice, very few claims have been made on the AGF and the fund is operating at surplus. The same is true of the Industrial Guarantee Loan Fund (IGLF) covering small-industry lending. The whole question of the costs of operating the guarantee funds, however, is a complex one which deserves further study.

total expenses for default risk of a cross section of banks, least-squares regressions of such costs on various assets and liabilities were run. The resulting regression coefficients are estimates of administrative cost and default risk expressed as percentages per period of the respective asset or liability item in the bank portfolio.

III. Estimated Transaction Costs of Some of the Financial Institutions in the Philippines⁴

Table 1 presents the estimated transaction costs of lending to the small and nonsmall sectors by different financial institutions. Evidence presented therein indicates that transaction costs decline with the size of the recipient of loans. There are several reasons for these results. First, administrative costs are fairly constant regardless of the size of the loan recipient. If anything, such costs are probably higher for small firms than for large ones. A great number of small firms have incomplete financial statements and therefore require more time to piece together bits of information for a satisfactory evaluation of their financial position. At any rate, the consequence is that the administrative cost as a percentage of the size of the loan declines as the size of the loan recipient increases.⁵

TABLE 1
TRANSACTION COSTS OF LENDING BY INSTITUTION AND BY
ACTIVITY AND SIZE OF RECIPIENT (In % of
Outstanding Loan in Each Category)

	Admin- istrative Costs (1)	Default Risk Expenses (2)	Total Trans- action Costs (3)
Small-scale agriculture:			
Rural banks	3.5	2.0	5.5
Development Bank of the Philippines	3.9	3.4	7.3
Private development banks	3.0	3.2	6.2
Small-scale industry:			
Development Bank of the Philippines	3.0	2.5	5.5
Private Development Corporation of the Philippines	3.0	3.7	6.7
Private development banks	4.0	2.3	6.3
Large-scale industry:			
Development Bank of the Philippines5	1.3	1.8
Private Development Corporation of the Philippines2	2.3	2.5
Commercial banks4	1.7	2.1

SOURCE.—Financial statements from concerned financial institutions.

NOTE.—Copies of detailed procedures in estimating these costs are available on request from the authors. Col. 3 = col. 1 + col. 2.

⁴ For a detailed description of the financial institutions engaged in lending to the small-scale sector, see section 2 of K. A. Saito and D. P. Villanueva, "Transaction Costs of Credit to the Small-Scale Sector in the Philippines," *Domestic Finance Studies*, no. 53 (Washington, D.C.: World Bank, Development Economics Department, December 1978).

⁵ As the size of the loan recipient increases, so does the average size of its borrowings.

Similarly, it is reasonable to expect default risk expenses to go down with the size of the borrower. Large firms are better known and tend to exhibit good repayment records. They are likely to be more diversified in their operations, thus further enhancing their ability to pay back loans. Furthermore, most loans to large firms are collateralized, making it unnecessary or even undesirable to set aside large sums to cover the possibility of default. On the other hand, a great number of loans to the small-scale sector are unsecured and a risk premium is added to cover a higher probability of nonpayment of principal and interest.

Transaction Costs of Lending to Small-Scale Farmers

The transaction costs of lending (administrative and default expenses) to small-scale farmers were found to range from 5% to 7% of outstanding loans. Administrative costs of lending to small-scale farmers were between 3% and 4%. These costs are low for such lending; the administrative costs of agricultural credit institutions in other countries were found to be more than twice this percentage.⁶

Default risk expenses of lending to the small-scale farmer vary considerably with the institution, depending upon its bad debt experience, accounting practices, and coverage of its loans by guarantee. When a major portion of the loan portfolio is covered by special guarantee arrangements with the Central Bank, default risk expenses incurred by the lending institution are low; for example, for the rural banks they are only 2% of outstanding loans. When loans are not so extensively covered by guarantee arrangements, as with the Development Bank of the Philippines (DBP) and the private development banks (PDBs), the default risk expenses are around 3%.

The average interest cost of obtaining funds,⁷ other than for rural banks which obtain the bulk of their funds at special rates from the Central Bank, is in the range of 5%–7%. Thus, lending to small-scale agriculture can only be viable for financial institutions if they charge an interest rate of between 10% and 14% of the outstanding portfolio plus some margin for profit. In terms of credit granted, this rate would be even higher.

Transaction Costs of Lending to Small-Scale Industry

The transaction costs of lending are found to be slightly lower for small-scale industry than for agriculture. The administrative costs of lending to small-scale industry by the DBP and PDCP are 3% of outstanding loans,

⁶ See Appendix A. The World Bank Sector Policy Paper, *Agricultural Credit* (Washington, D.C.: World Bank, May 1975), stated that "for an efficient credit institution . . . providing a mix of short- and long-term loans to farmers administrative costs would be between seven and ten percent of the total portfolio" (pp. 44–45).

⁷ I.e., total interest payments, as recorded in the profit and loss statement, divided by the volume of funds received.

and those of the PDBs a percentage point higher. Default risk expenses are in the range of 2%–4%. Total transaction costs are thus in the range of 5%–7%. With the exception of the PDBs who benefit from a special arrangement with the DBP, the interest cost of funds is 7%–8%, slightly higher than for agricultural lending. Total costs—interest plus transaction costs—are thus on the order of 12.5%–15% of outstanding loans, so that an interest rate of this magnitude plus some profit margin must be charged on lending to the small-scale industrial sector if such activities are to be financially viable.

As one would expect, lending to large-scale industry is found to be much less costly. The DBP's administrative costs for such lending are only 0.5% of outstanding loans to this sector, while the PDCP's costs are even lower (0.2%). With default risk expenses on the order of 1%–2%, the transaction costs of lending to large-scale industry are less than 3%. Funds are obtained at 7%–8%, so that the total costs involved in lending to large-scale industry—interest cost of funds plus transaction costs (not including any margin for profit)—are in the range of 10%–11%.

Currently, interest rates of 16%–19% are charged on large-scale industrial lending by the DBP and PDCP. The profit-center data provided by the DBP⁸ show the DBP to be making a profit of almost 5% on its lending operations to large-scale industry and a loss of almost 1% on its lending operations to small-scale industry. The DBP is thus subsidizing its small-scale lending with its profits from large-scale lending.

IV. Conclusion

The problem of extending credit to the small-scale sector can thus be summed up as follows: with the real cost of lending to small farmers being approximately three times and the cost of lending to small-scale industry being approximately twice that of lending to large-scale industry, how can an adequate supply of funds be made available to the small-scale sector at a cost reasonable to the borrower while maintaining the long-run viability of the financial institutions?⁹ Lending to the small-scale sector is, therefore, feasible only under one or a combination of the following financial arrangements:

1. Interest rate charged on small-scale lending should be sufficiently high as to cover these costs. If costs of funds are assumed to be in the order of 7%–8%, and assuming a profit margin of 2%, then a minimum

⁸ The DBP has organized its accounting on a profit-center basis; its cost data are thus allocated by function. Costs taken into account are administrative costs and the interest cost of funds; in its profit-center accounting, the DBP does not allocate expenses for default risk. These estimates were made by the authors.

⁹ For an analysis of appropriate interest rate policies in LDCs, see D. R. Khatkhate, "False Issues in the Debate on Interest Rate Policies in Less Developed Countries," Banca Nazionale del Lavoro *Quarterly Review*, no. 133 (June 1980), pp. 205–24.

interest rate of 11% and a maximum of 17% on the *outstanding* volume of loans would need to be charged.

2. Those institutions which extend credit to the small-scale sector obtain the funds at a special rate from the Central Bank. This was the case with the rural banks, which, because of their access to cheaper funds, paid an implicit interest cost of only 2.9%. As a result they are among the few institutions which are able to make a net profit on lending to the small farmer.

3. Cross-subsidization occurs within the financial institutions, which has been a feature of the financial institutions in the Philippines. The DBP has been lending to the small-scale sector at a net loss, but it is able to cover this loss from its more lucrative activities.

As long as credit extension to the small-scale sector is a policy objective,¹⁰ then it must be recognized that there are costs involved of the magnitude described above which will have to be borne by the borrower, by the lending institution, or by the government. In the first option, these costs are passed on to the borrower, which results in a market-determined pattern of allocation. In the second option, the government bears this cost and also has considerable flexibility in credit allocation through the rediscounting policies. The government can control the volume and terms of credit, as well as the type of recipient. A further advantage of this procedure is that it would not work against the long-run viability of the financial institution; the institutions become merely the channels of lending, and there is no trade-off between borrower and lender in the sense that the development of the small-scale sector is not achieved at the expense of the institutions' capacity for effective performance. Thus, if the small-scale sector is to be subsidized, there is much to be said for the subsidy being passed to and through the lending channel. To the extent that the specialized lending institutions are government owned and managed, then, like the rediscounting scheme described above, they can be a powerful medium for ensuring that specific sectors of the economy receive adequate credit at an appropriate cost. They also can play a significant role in the development of specialized skills in appraisal or promotion techniques.¹¹

The Philippine experience shows that certain specialized lending institutions operating in conjunction with the guarantee fund are an appropriate vehicle for extending credit to the small-scale sector. The rural

¹⁰ Besides the social and political justification, such a policy could also be supported on purely economic grounds in terms of the shadow price of employment, the potential growth of output of the small-scale sector, etc.

¹¹ Such institutions, however, can be excessively dependent on the government for resources rather than broadening their links with the general financial system. See e.g., W. Diamond and R. Gulhati, "Some Reflections on the World Bank's Experience with Development Finance Companies," World Bank Staff Working Paper no. 145 (Washington, D.C.: World Bank, February 1973).

banks are a particularly good example. Considering the nature of their lending operations, the administrative costs are low. As we have mentioned, the administrative costs of agricultural credit institutions in other countries have been found to be more than twice this percentage.¹²

One reason for the relatively low administrative costs of rural banks may be the fact that many of them are owned and managed by those who were originally the local moneylenders. As a result of a government policy to institutionalize the informal sector, local moneylenders were encouraged by the Central Bank to establish rural banks. In such a capacity they could utilize to full advantage their contacts with the local clientele and their knowledge of local conditions and problems. An additional factor may be the rather conservative attitude of rural bankers concerning collateral requirements and their tendency to rely less on project analysis.¹³ It is true that rural banks currently have problems with arrearages, but this is to be expected, given the nature of agricultural lending. In comparison to credit institutions of other LDCs, the percentage of overdue loans to total portfolio is not particularly high.¹⁴ Moreover, the relatively low transaction costs of their lending operations do clearly indicate that this kind of institutionalization of the informal sector is a particularly appropriate way of extending credit to the small-scale sector.

A related study¹⁵ reveals that, though the two groups of banks—rural banks and PDBs—differ hardly at all in technical efficiency, there is a significant difference in price or allocative efficiency.¹⁶ This finding corroborates the evidence of lower transaction costs of the rural banks relative to those of the PDBs. Moreover, the same study concludes that the PDBs are less efficient in staffing their branches for any given size of assets they manage; the rural banks are unit banks whereas the PDBs support a network of branches. These conclusions, coupled with the much broader coverage of the country by the rural banks, suggest that the rural banks are more efficient institutions in meeting the credit needs of the small-scale sector.

¹² See the Appendix for a comparison with the administrative costs of credit institutions in other LDCs.

¹³ For example, 63% of the volume of loans granted in 1973 by rural banks had real estate mortgage as collateral, 31% were secured by chattel mortgage, guarantees, securities, bank deposits, crop pledges, and only 6% were unsecured.

¹⁴ See Appendix, table A2.

¹⁵ D. Richard and D. Villanueva, "Relative Efficiency of Banking Systems in LDCs: The Philippine Experience," *Journal of Banking and Finance* 4, no. 4 (1980): 1-20.

¹⁶ Bank *A* is said to be more technically efficient than bank *B* if *A* provides a higher level of bank services from an identical set of measured resources. Assuming that both *A* and *B* are of equal technical efficiency, the bank with the higher level of profits is considered the relatively more price-efficient firm. Technical efficiency is a pure technological concept, abstracting from consideration of prices. Price or allocative efficiency is an economic concept, recognizing that different banks succeed in varying degrees in maximizing profits, i.e., in equating the value of the marginal product of each variable input to its price.

Appendix

TABLE A1
ADMINISTRATIVE COSTS FOR SELECTED CREDIT INSTITUTIONS OF LDCs

Country	Institutions	Cost (% of New Loans)	Cost (% of Total Resources)
Africa:			
Ghana	ADB	10	10
Ivory Coast.....	CNCA	...	9
Kenya	AFC	...	3
Morocco.....	CNCA	10	3
Senegal.....	BND	...	3
Uganda.....	COOP	50	...
Asia:			
Bangladesh	KTCC	17	10
	BKB	...	3
China, Republic of.....	Farmers' Association	...	2.5
India	LDB	...	3
Indonesia.....	BIMAS (improved)	25	...
Jordan.....	ACC	30	3
Korea.....	NACF	6	4
Lebanon.....	BCAIF	...	3
Malaysia.....	BPM	20	...
Pakistan.....	ADB	...	3
Thailand.....	BAAC	13	8
Turkey.....	SCR	5	2
	BAT	...	6
Latin America:			
Brazil.....	ACAR	10	...
Colombia	INCORA	10	7
Costa Rica.....	BNCR	7	3
Equador.....	DAPC	4	...
El Salvador.....	ABC	16	11
Mexico.....	FONDO	3	1
Peru.....	ADB	...	6

SOURCE.—*Agricultural Credit*, World Bank Sector Policy Paper (Washington, D.C.: World Bank, May 1975), annex 13.

TABLE A2
MEASURES OF LOAN DELINQUENCY OF SELECTED CREDIT INSTITUTIONS OF LDCs

Country	Institutions	Arrears to Portfolio	Arrears Rate*
Africa:			
Ethiopia.....	Welamo	...	3
	CADU	...	50
Ghana.....	ADB	...	55
Ivory Coast.....	BNDA	...	15
Kenya.....	GMR	25	33
	AFC	51	36
Malawi.....	Lilongwe	...	2
Niger.....	CNCA	11	29
Nigeria.....	WSACC	52	80
	FAID	...	95
Morocco.....	SOCAP	...	50
	CNCA	13	5
Sudan.....	COOP	...	26
	ABS	...	13
Tanzania.....	NDCA	28	50
Tunisia.....	BNT	66	50
	Local credit unions	...	50
Uganda.....	COOP	10	...
Asia:			
Afghanistan.....	ADBA	37	77
Bangladesh.....	AB	43	76
	IRDPA	...	40
India.....	PCCS	34	7
	PLDB	12	20
Iran.....	ACBI	...	44
Jordan.....	ACC	41	82
Korea, Republic of.....	NAFC	7	15
Malaysia.....	BPM	6	21
Pakistan.....	ADB	36	65
Sri Lanka.....	New credit scheme	50	41
Thailand.....	BAAC	...	50
Turkey.....	ABT	29	43
Vietnam, Republic of.....	Rural banks	...	5
Latin America:			
Bolivia.....	Agricultural bank	1	68
Chile.....	INDAP	16	60
Colombia.....	Caja Agraria	19	...
	INCORA	4	16
Costa Rica.....	BNCR, BCR	35	...
El Salvador.....	ABC	37	81
Honduras.....	BNF, supervised credit	10	18
Jamaica.....	ADB	31	10
Peru.....	Plan Costa	33	...
	BFA	30	...

SOURCE.—*Agricultural Credit*, World Bank Sector Policy Paper (Washington, D.C.: World Bank, May 1975), annex 12.

NOTE.—These measures have various shortcomings. Most agencies consider re-scheduled loans as having been repaid. A low ratio of arrears to portfolio may not mean much when loans are expanding rapidly and not yet due while at the same time the repayment rate on previous loans is poor.

* The arrears rate is equal to 100 minus the repayment rate.

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