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**Lending Costs, Institutional Viability and
Agricultural Credit Strategies in Jamaica**

ABSTRACT

This study analyses the level, structure, and determinants of lending costs in a major agricultural programme. Lending costs are shown to be debilitatingly high, with the major components of costs being loan administration costs and risk costs.

INTRODUCTION

Several studies have analyzed Rural Financial Markets (RFMs) in Jamaica since 1978. These studies have included an overall assessment of the structure and performance of Jamaica's RFMs [Graham et. al. 4], the farm households' experience with and demand for credit [Heffernan 5, Pollard 11], and the impact of the Self-Supporting Farmers' Development Programme (SSFDP) on its farmer clientele [Begashaw 1]. This study complements these efforts by focusing on the issue of lending costs and their effect on the institutional viability of programmes supplying credit for Jamaica's agriculture. In particular, the study analyzes the structure and level of lending costs in the SSFDP programme and how these costs affect the long term viability and growth of the institution.

The main objectives of the study are:

1. to identify and measure the main components of

critical cost areas and furthermore provide some insight into the kinds of policies that might be appropriate for better cost management.

(4) The results of this study might also provide guidelines for the design of improved cost information systems for use by the management of agricultural credit institutions.

(5) Cost studies are useful if they provide managers data from which they can estimate the marginal cost (MC) of specific activities. MC information would enable the institution to operate more efficiently in making loans and providing other services.

(6) Four socio-economic evaluations of the SSFDP have been done to date: in 1972, 1975, 1977 and 1980 [SSFDP 13, JDB 6]. These are in addition to the Begashaw study mentioned above. All these studies show a positive impact of the SSFDP on their farm clientele. But at what cost? This study will address this question and allow us to understand more completely the 'costs and benefits' of the SSFDP.

(7) More generally, this study can serve as a basis for further studies of this aspect of rural financial markets in countries other than Jamaica. It is also hoped that the findings of this study will increase understanding of this vital industry and stimulate further inquiry.

THE SELF-SUPPORTING FARMERS DEVELOPMENT PROGRAMME

The SSFDP is a supervised credit programme established in 1969. Its aim is to provide short, medium- and long-term credit as well as technical assistance to small and medium-sized farmers mainly in the 5- to 25-acre category. The programme also aims at increasing agricultural production to provide food for domestic needs and for the export market. The programme is jointly sponsored by the government of Jamaica (GOJ) and the Inter-American Development Bank

(IDB). To date it has been the beneficiary of four separate loans from the IDB supplemented by the GOJ, a break-down of which is presented in Table 1.

TABLE 1: SELF-SUPPORTING FARMERS' DEVELOPMENT
PROGRAMME: SOURCES OF FUNDS

Contract No.	Contract Date	Million U.S. Dollars		
		IDB Loan	GOJ Loan	Total
269/SI-JA	Dec. 18, 1970	6.20	3.70	9.90
317/SI-JA	March 9, 1972	3.00	1.80	4.80
359/SI-JA	Sept. 1, 1973	7.90	7.85	15.75
516/SI-JA	Dec. 14, 1977	6.00	3.00	9.00

Source: Jamaica Development Bank, *Self-Supporting Farmers' Development Program: Socio-Economic Evaluation Report*, September, 1980 [see 6].

The SSFDP has undergone several administrative changes since its inception. This study covers the period 1974 to 1980 when the programme was administered by the Jamaica Development Bank (JDB).¹ The JDB was paid an annual management fee of 1 per cent of outstanding loans at the end of the year for its management. Operationally, the SSFDP is decentralized with a central office in Kingston and 13 parish (branch) offices covering the entire country.

Costs of Lending

The total cost of lending consists of the cost of loanable funds, the costs of administration, and risk costs. The cost of funds consists of not only explicit interest charges, but also includes some administrative costs associated with the acquisition and management of the funds. Administrative costs arise from evaluating loan applications, monitoring loan performance of borrowers, collecting loans, managing delinquencies, and giving technical assistance to the farmers. Risk costs are losses of interest income and principal as a result of borrowers' failure to meet their contractual obliga-

tions to the bank and non-recoverable costs that the bank incurs in attempting to enforce contractual compliance.

Procedures Used in Estimating Lending Costs

The costs of funds are broken down into direct and indirect costs. The direct cost of funds is the weighted average of interest charges on the four credit tranches, the weights being the percentage share of each tranche in total resources for the specified period. Loan Programmes 269 and 317 carry an explicit interest charge of 2.25 per cent and a service charge of 0.75 per cent for a total of 3 per cent. Loan Programmes 359 and 516 both carry an interest charge of 2 per cent.² The indirect cost of funds is based on the cost of personnel time expended in servicing the IDB loan contracts.

The administrative costs arise out of operating expenses. They include such items as salaries and wages, travel and subsistence expenses, supplies and materials, rental of property, utilities, furniture and equipment, management fees to the JDB, and other operating and maintenance expenses (audit fees, stamp duty and registration, staff training, insurance, and advertising). The 'salaries and wages' and 'travel and subsistence' expenses (and therefore administrative costs) do not include the portions of the operating expenses charged to the cost of funds and those charged to risk cost explained below.

Risk costs are broken down into two sub-components, namely, default costs which are an estimate of the probabilistically endangered part of the portfolio, and an administrative portion comprised of labour costs and 'travel and subsistence' expenses incurred in trying to collect delinquent loans. Maximum and minimum estimates of default costs are computed to reflect the highest and lowest estimates of the probability of defaults used. The upper limit is derived from the probability that all loans greater than 180 days in arrears will not be recovered; and the lower limit from the probability that 50 per cent of the arrears greater than 180 days,

and 50 per cent of the 91 to 180 days arrears will not be recovered. Due to this dichotomy in risk costs, the total cost of lending is presented as a range of upper and lower limits. The probabilities of default used in generating the risk costs may seem unreasonable. They may not be unreasonable, however, if one compares them with the estimated uncollectable loans of the programme by the external auditors of the SSFDP. As part of the IDB loan agreements, GOJ is required to reimburse the SSFDP for any uncollectable loans. Estimates of these uncollectables are made by the external auditors and included in the audited financial statement of the programme. For fiscal years 1974, 1975 and 1976, when these estimates were explicitly separated from the 'loans receivable' account they increased from \$5.6 million in 1974 to \$6.4 million in 1975 and \$6.2 million in 1976.³ From fiscal 1977 the accounts only reflected the actual payments received from GOJ with respect to the estimated uncollectables. This payment was about \$630 thousand in 1977, increasing to a total of \$2.4 million in 1978 and \$4.7 million in 1979.⁴

Two alternative measures of average costs are computed. The first is cost per dollar lent and the second, cost per loan. This is achieved by dividing the operating expenses by the amount (value) of loans and the number of loans respectively in each year. The above approach implicitly assumes that administrative costs incurred in a particular year occurred as a result of only the loans made in that year; thereby disregarding the influence on cost of previous years' loans still in the portfolio. A corollary to this assumption is that the costs of a loan should be charged to the period during which the loan was made. The assumption obviously introduces a bias in these estimates of average cost. This bias is larger the faster the loan portfolio is growing and the larger the share of medium and long term loans in the portfolio. The average cost estimates are, however, important because by comparing the average cost of the SSFDP with that of other credit

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programmes, one can form a judgement about the efficiency of the former programmes relative to other credit facilities. Moreover, the above mentioned bias may not be that great since administrative costs tend to be high in the year the loan is made.

To evaluate the factors behind administrative costs, these costs are disaggregated into the functional categories of loan processing, disbursement, monitoring/collection, and supervision/technical assistance. Ideally, this should involve the allocation of all the elements of operating expenses to these functions. This is not possible; therefore, only the 'salaries and wages' and 'travel and subsistence' expenses are allocated to these functions. This should not unduly affect

TABLE 2: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME: COSTS OF FUNDS AS PERCENTAGES OF LOANS OUTSTANDING, 1974-1980

Year	Costs of Funds		Total (C=A+B)
	Direct (A)	Indirect (B)	
1974 ^a	3.00	.15	3.15
1975	2.99	.14	3.13
1976	2.93	.14	3.07
1977	2.83	.11	2.94
1978	2.67	.10	2.77
1979	2.48	.11	2.59
1980	2.35	.11	2.46
Average	2.75	.12	2.87

^a April to December (9 months)

Source: Computed with unpublished data from the Jamaica Development Bank's Self-Supporting Farmers' Development Program, Kingston, Jamaica.

the results since these two elements of operating expenses constitute the major part of total administrative costs (i.e., they averaged 70 per cent of total operating expenses from 1974 to 1980). The arrears situation of the SSFDP is critically reviewed to ascertain its impact on risk costs. The arrears ratios presented for 1975-1978 are extrapolated (linearly) from fiscal year rates. Those for 1974, 1979 and 1980 are actual end of year rates.

Estimated Costs of Lending

The estimated cost of funds from 1974 to 1980 are presented in Table 2. Each component is expressed as a percentage of the value of loans outstanding. The direct cost of funds decreased continuously from 3 per cent in 1974 to about 2.4 per cent in 1980 for a period average of about 2.8 per cent. With the indirect cost of funds also decreasing, the total cost of funds declined from 3.2 per cent in 1974 to about 2.5 per cent in 1980 for an average of 2.9 per cent. This decline in cost of funds reflects the dominance of the lower cost 359/516 loans in the portfolio in the latter years. Obviously, these costs of funds are highly subsidized, since they do not reflect the opportunity cost of funds. They were also cheaper than if the funds were to have been mobilized from the public. The rates the commercial banks paid on savings deposits in Jamaica, for example, rose from 7 per cent in 1979 to 9 per cent in February 1980, while the Bank of Jamaica Rediscount Rate increased from 9 per cent in 1979 to 11 per cent from January 1980.

Costs of Loan Administration

The adjusted administrative costs of the SSFDP ranged from about 8 per cent of loans outstanding in 1974 to 14 per cent in 1980, for an average of a little more than 11 per cent (Table 3). A perusal of Table 3 shows fluctuations in administrative costs but the trend was clearly upward. Even though it is difficult to compare administrative costs between

institutions or programmes for lack of comparability in what the institutions do and report as administrative costs, the

TABLE 3: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME: ADMINISTRATIVE COSTS AS PERCENTAGES OF LOANS OUTSTANDING,^a 1974-1980

Year	Administrative Costs
1974 ^b	7.96
1975	12.32
1976	11.16
1977	12.24
1978	10.68
1979	11.67
1980	14.27
Average	11.47

^aAdjusted for administrative costs charged to cost of funds (Table 2) and risk costs (Table 4).

^bApril to December (9 months).

Source: Computed with unpublished data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Kingston, Jamaica.

administrative costs of the SSFDP appear to be relatively high. The World Bank has estimated the administrative cost of an efficient institution making medium- and long-term loans to large farmers to be about 3 per cent. It placed the estimate at between 7 and 10 per cent for an institution providing short and long term credit to small farmers [World Bank 16].

Risk Costs

Risk costs are the most difficult to estimate since the measurement of default costs entails a judgement about the probabilistically endangered part of the portfolio. Table 4 presents these risk costs. The lower and upper limit default

costs and the risk administration cost decreased between 1974 and 1976, but subsequently increased continuously.

TABLE 4: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME RISK COSTS AS PERCENTAGES OF LOANS OUTSTANDING, 1974-1980

Year	RISK COSTS				
	DEFAULT (A)		ADMIN. (B)	TOTAL (C=A+B)	
	Lower Limit (1)	Upper Limit (2)		Lower Limit (A1+B)	Upper Limit (A2+B)
1974 ^a	11.70	14.03	.45	12.15	14.48
1975	9.05	17.60	.79	9.84	18.39
1976	7.54	13.18	.79	8.33	13.97
1977	8.12	14.00	.70	8.82	14.70
1978	10.68	18.20	.66	11.34	18.86
1979	14.11	28.03	.92	15.03	28.95
1980	18.02	31.29	.88	18.90	32.17
Average	11.32	19.48	.74	12.06	20.22

^aApril to December (9 months)

Source: Computed with published and unpublished data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Kingston, Jamaica.

The total risk costs consequently increased for the period. It declined from between 12 per cent (lower limit) and 14 per cent (upper limit) in 1974 to between 8 per cent and 14 per cent in 1976 only to continuously increase to between 19 per cent and 32 per cent in 1980. The average risk costs were between 12 per cent and 20 per cent. These risk costs are high. The arrears situation of the SSFDP, discussed later, sheds some more light on the risk exposure of the programme to show that the estimates of risk cost presented above may not be unreasonable.

TABLE 5: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
TOTAL LENDING COSTS AS PERCENTAGES OF LOANS
OUTSTANDING, 1974-1980

Year	Funds (A)	Admini- strative (B)	COST ITEMS Risks (C)		Total (D=A+B+C)	
			Lower Limit (C1)	Upper Limit (C2)	Lower Limit (A+B+C1)	Upper Limit (A+B+C2)
1974 ^a	3.15	7.96	12.15	14.48	23.26	25.59
1975	3.13	22.32	9.84	18.39	25.29	33.84
1976	3.07	11.16	8.33	13.97	22.56	28.20
1977	2.94	22.24	8.82	14.70	24.00	29.88
1978	2.77	10.68	11.34	18.86	24.79	32.31
1979	2.59	11.67	15.03	28.95	29.29	43.21
1980	2.46	14.27	18.90	32.17	35.63	48.90
Average	2.87	11.47	12.06	20.22	26.40	34.56

^a April to December (9 months)

Source: Tables 3 and 4.

Total Cost of Lending

Table 5 shows that the lower limit estimates of total lending cost, apart from a fall in 1976, rose throughout most of the period from 23 per cent in 1974 to 36 per cent in 1980. The upper limit estimates also declined in 1976, but increased overall from 26 per cent in 1974 to 49 per cent in 1980. The mean values of total cost of lending for the period are 26 per cent minimum and 35 per cent maximum. Inspection of Table 5 also reveals that risk cost was the major contributor to this high cost of lending, followed by administrative costs and the cost of funds for the entire period under study. It is also evident from this Table that, with the exception of the cost of funds, total costs and its other components all increased between 1974 and 1980.

Average Costs of Lending

Two measures of average costs are presented in Table 6. The first measure, Cost Per Loan, increased steadily from close to \$1500 in 1975 to more than \$5000 in 1980. The second measure, Cost Per Dollar Lent also rose from \$0.30 to \$0.69 for the same period. The 1974 figures for the average cost measures are abnormally high as should be expected. They represent the first 9 months of the administration of the SSFDP by the JDB, when only 219 loans were made with substantial overhead costs. From 1975 onwards, however, one would expect a decline in the average cost measures as the number and value of loans increased.

TABLE 6: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
AVERAGE COSTS OF LENDING, 1974-1980

Year	AVERAGE COSTS	
	Cost Per Loan	Cost Per Dollar Lent
1974 ^a	3,807	.80
1975	1,472	.30
1976	1,573	.29
1977	1,797	.39
1978	3,789	.76
1979	3,889	.71
1980	5,171	.69

^a April to December (9 months)

Source: Computed with unpublished data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Kingston, Jamaica.

The number and value of loans did increase from 1975 to 1977, but so did the cost per loan and the cost per dollar lent. This reflects the greater proportionate increase in costs for this period than in the number and value of loans. Increases in the average cost figures from 1977 to 1980 are

sharper, reflecting not only the increase in costs but also a sharp decline in the number and value of loans. This implies the existence of excess capacity. These results point clearly to a high degree of relative inefficiency defined in terms of idle capacity (a larger staff servicing fewer loans over time).

TABLE 7: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
PERCENTAGE DISTRIBUTION OF OPERATING EXPENSES
1974-1980^b

Item/Year	1974 ^a	1975	1976	1977	1978	1979	1980
Salaries and Wages	42.0	55.3	58.8	56.9	52.7	54.6	49.5
Travel Expen. & Subsistence	14.4	15.3	15.5	14.5	20.2	23.6	19.5
Supplies & Materials	4.7	1.7	1.5	1.9	2.4	3.4	3.6
Rental of Property	6.3	6.7	8.3	4.0	3.8	3.9	2.5
Public Utility Services	0.8	1.4	2.8	1.7	2.2	2.6	2.3
Furniture & Equipment	5.7	2.8	1.2	0.8	1.3	0.7	0.4
Management Fees	11.7	7.6	8.3	7.7	8.7	7.9	6.6
Other Oper. & Maint. Expenses	14.5	9.9	3.7	12.5	8.8	3.3	15.8
Total Operating Expenses	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a April to December (9 months)

^b Columns may not sum up to 100 due to rounding.

Source: Computed with unpublished data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Kingston, Jamaica.

It has already been ascertained that risk costs and administrative costs were the two major components of the cost of lending from 1974 to 1980. The next two sections probe the factors that influenced these two cost items.

Factors Influencing Administrative Costs

Total operating expenses increased steadily from about \$830 thousand in 1974 to about \$4 million in 1980. As shown in Table 7, the most important component of these administrative costs was salaries and wages. The relative importance of salaries and wages grew from 42 per cent of operating expenses in 1974 to about 50 per cent in 1980. The next important component of administrative costs was travel and subsistence expenses followed, in order of importance, by management fees paid to the JDB.

The breakdown of administrative costs by the functions of loan processing, disbursement, monitoring and collection, and supervision and technical assistance is presented in Table 8. Supervision and technical assistance accounted for the largest share of administrative costs, 34 per cent in 1975/76 and 33 per cent in 1979/80. It is followed by monitoring and collection activities which were responsible for about 27 per cent and slightly more than 28 per cent in 1975/76 and 1979/80 respectively. Loan processing is next in importance, accounting for some 26 per cent in both periods. Loan disbursement accounts for the remaining 13 per cent in both fiscal years. It is interesting to note that while the relative importance of loan processing and disbursement did not change during the period, and that of supervision and technical assistance declined by one percentage point, the relative importance of monitoring and collection rose only 1 per cent. For all practical purposes, this shows no change in the distribution of the resources by the SSFDP to the different functions in the face of mounting delinquency and default problems discussed in the next section.

TABLE 8: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
FUNCTIONAL DISTRIBUTION OF ADMINISTRATIVE COSTS
1975/76^a AND 1979/80^b (PER CENT OF TOTAL)

Function	1975/76	1979/80	Average
Loan Processing	26.0	25.6	25.8
Loan Disbursement	12.9	12.7	12.8
Monitoring/Collection	26.8	28.4	27.6
Supervision/Technical Asst.	34.3	33.3	33.8
SUM	100.0	100.0	100.0

^aApril to March.

Source: Computed with unpublished data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Kingston, Jamaica.

Lending Costs Effects of High Arrears

Factors Influencing Risk Costs

The main component of the risk cost, default cost, is derived from the probabilistically uncollectable delinquent loans or loans in arrears. The arrears situation of the SSFDP from 1974 to 1980 is presented in Tables 9 and 10. Two measures of arrears are presented. Panel A sets forth arrears rate I, which shows arrears as a percentage of loans outstanding at the end of the year. Panel B presents arrears rate II or arrears as a percentage of the loan payments due during the year. The latter measure, arrears rate II, not only shows more sharply the severity of the arrears problem, but it also shows how misleading arrears rate I can be for early detection of an emerging arrears problem.

Table 9 shows the arrears problem of the SSFDP to be very severe with 75 per cent of the loans due in 1975 in arrears. This arrears rate rises continuously to 84 per cent in 1978, declining slightly to 74 per cent in 1980. The deteriora-

tion in the arrears situation is also evident from panel B, where arrears are about 16 per cent of loans outstanding in 1974 and rising steadily to about 42 per cent in 1980. Table 9 shows that the arrears problem and its deterioration affect-

TABLE 9: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
ARREARS RATES OF ALL OVERDUE LOANS AS PERCENTAGES
OF LOANS OUTSTANDING (I-PANEL A) AND OF AMOUNTS
DUE (II-PANEL B), 1974-1980.

Loan Programme	1974 ^a	1975 ^a	1976 ^a	1977 ^a	1978 ^a	1979 ^b	1980 ^b
<i>Panel A - Rate I</i>							
269/317	16.2	21.3	28.5	38.7	47.9	54.6	59.2
359	.4	.5	2.4	5.9	16.3	32.1	42.1
516							31.2
Recovery			6.1	6.2	18.3	44.5	49.7
Portfolio	15.6	16.8	16.6	18.9	24.4	39.3	41.9
<i>Panel B - Rate II</i>							
269/317		75.6	79.0	84.9	87.0		
359		39.8	52.8	70.5	79.9		
516							
Recovery			78.1	83.1	91.7		
Portfolio		75.4	77.0	82.4	83.7	57.5*	73.5

^aExtrapolated linearly from fiscal year rates.

^bDecember 31.

Source: Computed with data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Audited Financial Statement and Supplementary Information, various years; and other unpublished data from same, Kingston, Jamaica.

ed all four IDB loan programmes and the Recovery loan programme as well. An interesting finding is that since loan 359, each of the loan programmes' arrears rates begin at a

higher level then deteriorate more rapidly. Loan Programme 359 began with an arrears rate of 0.4 per cent of loans outstanding in 1974 while that of the Recovery Loan programme began at 6 per cent in 1976. The last loan programme of the SSFDP (i.e. 516) began with a 31 per cent arrears rate I in 1980. This finding is interesting because it refutes an earlier misconception that the arrears problem of the SSFDP is a hangover from the previous administrators of the pro-

TABLE 10: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
ARREARS RATES OF LOANS OVER 90 DAYS OVERDUE
AS PERCENTAGES OF LAONS OUTSTANDING
(I-PANEL A) AND OF AMOUNTS DUE (II-PANEL B)
1975-1980

Loan Programme	1974 ^b	1975 ^a	1976 ^a	1977 ^a	1978 ^a	1979 ^b	1980 ^b
<i>Panel A - Rate I</i>							
269/317		21.0	25.4	35.2	44.6	54.5	55.9
359		.4	1.0	3.3	11.9	31.9	37.1
516							23.1
Recovery Portfolio		16.2	14.3	15.9	20.6	39.1	36.0
			1.7	3.4	13.6	44.5	43.9
<i>Panel B - Rate II</i>							
269/317		74.6	70.8	76.8	81.0		
359		24.0	22.3	38.2	56.5		
516							
Recovery Portfolio		73.0	66.1	68.9	70.7	57.3*	63.2
			25.0	42.8	65.7		

^aExtrapolated linearly from fiscal year rates.

^bDecember 31.

Source: Same as Table 9.

gramme, notably the Agricultural Credit Board (ACB).⁵

It is usually accepted that arrears of loans less than 90 days overdue may not pose any serious threat to a loan portfolio. It is those loans more than 90 days overdue that should be alarming. Table 10 reports the results of using only those loans more than 90 days overdue to compute the arrears rate. It is evident from this Table that the severity of the loan delinquency and default problem is no less if one confines the analysis to loan payments more than 90 days overdue. In fact this measure generates results similar to the earlier measure (i.e. all arrears regardless of length of time overdue). This shows that, not only were the SSFDP arrears rates high and deteriorating but also, a high percentage of them were probabilistically endangered. The probability of default increases the longer a loan remains in arrears.

TABLE 11: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
AGING OF ARREARS AS PERCENTAGES OF ALL OVERDUE
LOANS, FISCAL YEARS, 1975-1979^a

Days in Arrears	PER CENT				
	1975	1976	1977	1978	1979
1 - 90	1.9	3.7	17.7	16.0	15.5
90 - 180	3.1	2.5	12.9	11.2	12.8
Greater than 180	95.0	93.7	69.4	72.8	71.7
All Overdue	100	100	100	100	100

^aYears ending March 31.

Source: Computed with data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Audited Financial Statement and Supplementary Information, various years, Kingston, Jamaica.

Table 11, using fiscal year figures, sheds more light on the ageing of the SSFDP arrears. It shows that 95 per cent of

all the loans in arrears in fiscal year 1975 were more than 180 days overdue. The situation was only slightly better in the other years.

The loan delinquency problem of the SSFDP was not

TABLE 12: SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME:
ARREARS RATES AS PERCENTAGES OF LOAN OUTSTANDING
WITHIN AND BY LAND AUTHORITY (BRANCH),
FISCAL YEARS, 1975-1979^a

Land Authority (Branch)	ARREARS RATES				
	1975	1976	1977	1978	1979
Cambridge	8.7	12.6	13.4	16.5	31.8
Christiana	14.1	14.2	9.1	18.3	18.4
Claremont	7.9	6.8	6.2	8.8	20.3
Falmouth	12.2	12.4	11.7	14.9	19.3
Grange Hill	19.7	21.7	16.0	16.3	22.1
Linstead	24.0	26.0	24.5	23.7	28.7
Mandeville	3.5	5.2	6.2	18.1	24.7
May Pen	20.9	21.4	18.9	23.2	25.0
Morant Bay	19.4	24.8	26.3	16.4	29.3
Port Antonio	26.7	33.6	20.3	31.5	41.5
Port Maria	12.7	16.7	15.7	19.9	27.1
Santa Cruz	12.6	13.0	25.6	15.8	23.3
Yallahs Valley	19.6	21.7	23.7	31.8	32.1

^aYears ending March 31.

Source: Computed with data from the Jamaica Development Bank's Self-Supporting Farmers' Development Programme, Audited Financial Statement and Supplementary Information, various years, Kingston, Jamaica.

restricted to only a few branches but rather permeated the entire programme. It can be seen from Table 12 that all the branches or land authorities experienced high arrears rates. Claremont, which had a relatively better arrears record saw its arrears as a percentage of loans outstanding drop from 8 per cent in fiscal year 1975 to 7 per cent in 1976 only to rise again to 9 per cent and 20 per cent in fiscal 1978 and 1979 respectively. It was these pervasive and high levels of arrears rates with the major part of them probabilistically uncollectable that led to the high risk costs and thereby lending costs found in this study.

The effects of bad debts or loan losses due to default can be devastating due to their influence on the total cost of lending. Lee and Baker used a simple, but effective, formula to accentuate the debilitating effects of default on a loan portfolio [Lee and Baker 7]. They define lending costs by:

$$lc = f + k + r \quad (1)$$

where f , k , and r represent cost of funds, administrative costs and risk premium respectively. The risk premium is an *ex ante* risk cost or the premium required to induce the lender to lend in the face of risks. They point out that the occurrence of a default causes the lender to lose not only the uncollected principal and interest but also the associated cost of funds, f , and administrative cost, k , incurred in having serviced those loans that were never recovered. Lee and Baker conclude: "This relationship makes default a destructive factor for the lender if it reaches any appreciable level." Expressing the cost figures as percentages of the principal loaned, they present the risk premium as:

$$r = \frac{d}{1-d} (1 + f + k) \quad (2)$$

where d , the default rate, is also expressed in terms of the principal loaned.

If we use the period average f and k of 2.87 per cent and

11.47 per cent respectively found in this study (Table 5) and employ the Lee-Baker formula, it can be shown that the SSFDP total lending costs will be 100 per cent of loans outstanding when the default rate reaches 42.8 per cent. A corollary to this is that at a 42.8 per cent rate of default, the risk premiums will be 85.7 per cent of loans outstanding, i.e., the SSFDP would have to charge a risk premium of 85.7 per cent (double the default rate) to break even. The structure and level of arrears experienced by the SSFDP is clearly one that would endanger any loan portfolio and result in the high levels of risk cost found in this study.

Considering the destructive effects of the high arrears and default rates on the SSFDP portfolio, it may be pertinent to investigate the probable causes of the delinquencies and related defaults the programme has experienced.

THE EXPLANATION OF LOAN DELINQUENCY

Several reasons have been given for the non-repayment of loans by farmers. These reasons can be summarized into three main categories, namely:

1. Factors associated with the farmers' *ability to pay*;
2. Factors associated with the farmers' *willingness to pay*; and
3. Factors associated with the *ability and effectiveness* of the lending institution *to collect* due debts.

The first category, *ability to pay*, deals mainly with the levels and variability in incomes which may result in inadequate income to render the borrower unable to meet his contractual loan obligations to the institution. Two key variables affecting the farmer's income are his output and the price he receives for it.⁶ The output is affected by the vagaries of weather, diseases and the availability of appropriate technology. Inadequate marketing facilities can impede the income generation process. Most importantly, government cheap food import policies, exchange rate over-valuation, and

Marketing Board price setting policies would tend to depress local agricultural product prices and/or produce demand, and thereby reduce the ability of farmers to repay their loans. Changing relative prices can also have an effect on farm incomes. If, due to inflation, changes in the prices farmers pay for inputs exceed changes in what they receive for their produce over time the terms of trade will turn against farmers and exert cost squeeze which reduces farm incomes and impair farmers' debt servicing capacity.

The willingness to pay is concerned with farmers' attitudes towards repayment. Some farmers may have the ability to pay and yet not repay loans. These farmers can be said to be unwilling to pay. The farmers that fall into this category may regard government funds as grants and not as loans that should be repaid. This attitude is usually prevalent in situations of political interference in the administration of credit programmes. It is not uncommon for a borrower to consider loans from a public credit programme as his payment for supporting a particular political party. Lack of effective sanctions on non-repayment may encourage farmers further and reinforce arrears behaviour. When other borrowers see defaulting borrowers escape penalties or sanctions, they are also tempted to follow suit.

Another factor influencing a farmer's willingness to pay may be the quality of the service he gets from the institution. Disbursement lags and other rationing techniques that increase the borrower transaction costs (beyond the interest rate) may result in a negative attitude towards repayment. Furthermore, if repayment is not associated with a strong likelihood of receiving more loans in the future, or if lack of repayment does not compromise a defaulter's chances of getting additional loans, then there is no incentive to repay.

The last cause of non-repayment, the ability and effectiveness of the lending institution to collect, deals with the institution's capacity and determination to collect due

loans. A key factor in the capacity to collect loans is adequate staffing and supporting materials and services. An institution may have the staff and materials and yet not be able to use these resources effectively to contain arrears and collect overdue loans.

The severe and pervasive arrears that the SSFDP has faced cannot be explained by the farmers' ability to pay. Despite marketing problems and an occasional flood, drought, or hurricane, available evidence suggests increases in the SSFDP farmers' income, which enhances their ability to pay. The SSFDP's own Socio-Economic Evaluations attest to this fact [JDB 6; SSFDP 13]. The JDB 1977 evaluation, for example, made the following conclusion:

the major findings of the socio-economic evaluation exercise of 1977 serves to reiterate those of its earlier counterparts executed in the years 1972 and 1975, in that, with a few exceptions, beneficiaries had in fact considerably increased overall levels of production in terms of volume and value since getting the loan.

This led to "increases in net income and in overall wealth." The 1980 evaluation also found "a positive impact [of the SSFDP] on its beneficiaries." In its conclusion, it stated that "marked improvement [was] recorded in terms of production, and income over the period reported on." Lastly, the Begashaw study [1] concluded that "a substantial increase in farm level resource use, farm production, farm income, and net worth were observed on borrowers' farms", and that "the SSFDP's contribution towards these increases was found to be through its loan activities."

The search for the basic causes behind the poor collection performance of the SSFDP should focus on the last two categories; i.e., the farmers' willingness to pay on the one hand, and the institution's ability and effectiveness to collect overdue loans on the other. In reference to the latter category, the SSFDP had the capacity to maintain a decent arrears picture and collect overdue loans. It has had adequate staffing and is, operationally, highly decentralized with good

communications between the thirteen parish offices and the central office in Kingston. The Parish Project Officers (branch managers) and their staff would appear to have good rapport with the farmers. Furthermore, this field staff includes for each branch, a full-time loan recovery officer, whose sole job is to collect overdue loans to prevent serious delinquencies. It is this function that generated the administrative cost portion of risk costs in Table 4. It was shown earlier that this cost item increased from about 0.5 per cent of loans outstanding in 1974 to almost 1 per cent in 1980. Despite this increase which, in theory, should dampen the arrears situation, just the opposite occurred, i.e., arrears increased continuously over the period.

At the same time, the SSFDP is a supervised credit programme. The functional cost analysis presented in Table 8 shows that a third of the resources available to the institution in fiscal 1976 and 1980 were devoted to supervision and technical assistance. A little more than one quarter of the resources were used in the monitoring and collection of loans. These two functions together accounted for almost two-thirds of the operating expenses of the programme. The large infusion of resources into these two functions should not only have increased the SSFDP's capacity to contain delinquencies and defaults but also should have increased the farmers' ability to repay through technical assistance.

The foregoing suggests that the causes of the delinquencies and default problems of the SSFDP may be due to the lack of effectiveness or the lack of efficiency, on its part, in using scarce resources to contain the problem, and on the farmers' sheer unwillingness to repay. Both of these factors may, in turn, stem from the initial design and implementation of the programme, and possibly from political interference in the administration of the programme.

The administrative and risk costs of the programme are borne by the government out of budgetary allocation. The government is expected to repay the SSFDP for any loans

deemed uncollectable. This *de facto* loan guarantee arrangement may have had the consequence of weakening the resolve and accountability of managers of the programme. They may not have been sufficiently aggressive and efficient in containing arrears and defaults because they knew that ultimately the government would cover all operating expenses and repay the IDB through other funds.

Political interference may manifest itself in the selection of borrowers. Borrowers receiving loans because of party affiliation may feel less obligated to repay. A change in government may harden that attitude. Lack of any stringent penalties and sanctions against delinquent and defaulting farmers by the SSFDP may also explain this unwillingness to pay on the part of the farmers. The latter point bears further elaboration. From its inception to the present, the major objective of the programme has been to introduce modern production methods to small to medium-sized farmers through long term loans. The emphasis has always been on providing loans to designated enterprise types and farm size categories with a specified level of net worth. Evaluation of the alleged impact of the loan on farm output and income is almost the sole criterion used by IDB to judge the success of the credit programme. Rarely, if ever, has prompt and effective loan recovery been highlighted as an important indicator of programme success. Thus one would expect less attention and concern about rising delinquency and default among those responsible for the programme. An obvious trade-off exists between credit availability goals that emphasize tight financial management with low arrears and basic needs goals that emphasize increased incomes for target groups of farmers. It is dangerous to emphasize one except, to some greater or lesser extent, at the expense of the other. In the case of the SSFDP it is clear they emphasized the latter at the expense of the former.

A further indicator of the low ranking given to loan recovery and low arrears is the lack of any sanctions, penal-

ties or discipline imposed on the SSFDP itself either by the government or the foreign donor agency (IDB). Despite the evidence of rising delinquency and default, the IDB and the government have continued to pass on new loan tranches and overhead subsidies through the years with a minimum of hassle. Given the low priority of loan recovery in the determination of programme success, and the fact that high arrears do not jeopardize continued loans and subsidies from the international lending agencies and the government, it is not surprising to note the lack of any concentrated effort to control growing delinquency and the high cost of lending. As a consequence, however, the credit programme has become a hidden, expensive income transfer programme on the basis of this implicit grants mentality operating both within the donor agency, IDB, and the SSFDP itself.

LONG RUN VIABILITY AND GROWTH

The high costs of lending found in this study would threaten the viability of most credit programmes. These high costs of lending coupled with administered low interest rates and high level of inflation compromise the viability and growth potential of the SSFDP. With total cost of lending that ranged from 23 per cent to 49 per cent of loans outstanding, the SSFDP was only allowed to charge an interest on loans of 4 per cent until 1977 when it was permitted by the government to raise its interest rate to 7 per cent. It is evident that without continued subsidies from the government the SSFDP is not financially viable. While this low loan rate of interest reduced probable revenues to the programme, high levels of inflation eroded the real value of the capital resources of the SSFDP. This effect of inflation can be seen from trends in the real values of the loan portfolio. In real terms the portfolio grew by only 3 per cent between 1974 and 1980 (9.7 million to 10 million) and then declined by 28 per cent between 1977 and 1980.

Little might be done about the effects of inflation on

the loan portfolio. To ensure the long run viability and growth of the SSFDP would require interest rate revaluation and drastic decreases in the cost of lending, especially risk cost. Actions are obviously needed on both fronts, but priority must be given to cost reductions since a breakeven interest rate will be unrealistically high when default costs are as overwhelming as presented above. Loan recovery costs and other lending costs are unnecessary and socially wasteful when the degree of default effectively converts the credit programme into a subsidy transfer programme.

We found out that a third of the operating expenses of the programme is expended on supervision and technical assistance. Prior to 1975 technical assistance to the SSFDP farmer was provided by the Ministry of Agriculture extension agents. Given the impact of this function on costs it might be prudent to return this function to the Ministry of Agriculture.

It is only when unjustifiable costs such as those resulting from excessive defaults have been curtailed that a realistic interest rate can be charged. This interest rate should be able to cover the cost of funds, administrative costs and a reasonable risk premium. A fourth factor in the interest rate revaluation should be a premium to stem the erosion of the portfolio due to inflation. This might be problematic given the high levels of inflation experienced in Jamaica in recent years. Interest rates based on these factors should not only make the institution viable and growth oriented but reduce its dependence on government subsidies and free it from political interference.

FOOTNOTES

¹The JDB was disbanded by the government in 1981.

²Each of these four loan transactions carry an additional 0.5 per cent

commitment fee for the portion of the committed loan not drawn down by the SSFDP. These committed fees are omitted from the interest charge calculations due to lack of knowledge of how much of a loan programme is drawn.

³The fiscal year begins on April 1 and ends on March 31.

⁴Except otherwise stated, all figures are in Jamaican dollars.

⁵The ACB administered the programme from its establishment in 1969 through 1974. The Ministry of Agriculture (formerly the Ministry of Rural Land Development) coordinated the programme during this period.

⁶Other factors that may affect a farmer's income, and thereby his ability to pay, may include land tenure systems and the productivity of the land. Praedial larceny, if unchecked, may be another problem negatively affecting incomes in some countries.

REFERENCES

- [1] BEGASHAW, Girma, "Evaluation of the Small Farmer Development Programme", Unpublished Ph.D. Dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, Columbus, Ohio, 1980
- [2] DESAI, B.M., "Group Lending in Rural Areas", in J.D. Von PISCHKE, Dale W. ADAMS, and Gordon DONALD, (eds.), *Use and Abuse of Rural Financial Markets in Low-Income Countries*, EDI Training Materials, Course Note Series, World Bank, Rev., May 1981.
- [3] GONZALEZ-VEGA, Claudio, "On the Iron Law of Interest Rate Restrictions: The Rationing Behavior of Financial Institutions Matters", Unpublished Paper, Presented at the *Colloquium on Rural Finance*, sponsored by EDI-World Bank, The U.S. Agency for International Development, and The Ohio State University, Washington, D.C., September 1-3, 1981.