AFRICAN RURAL ECONOMY PROGRAM

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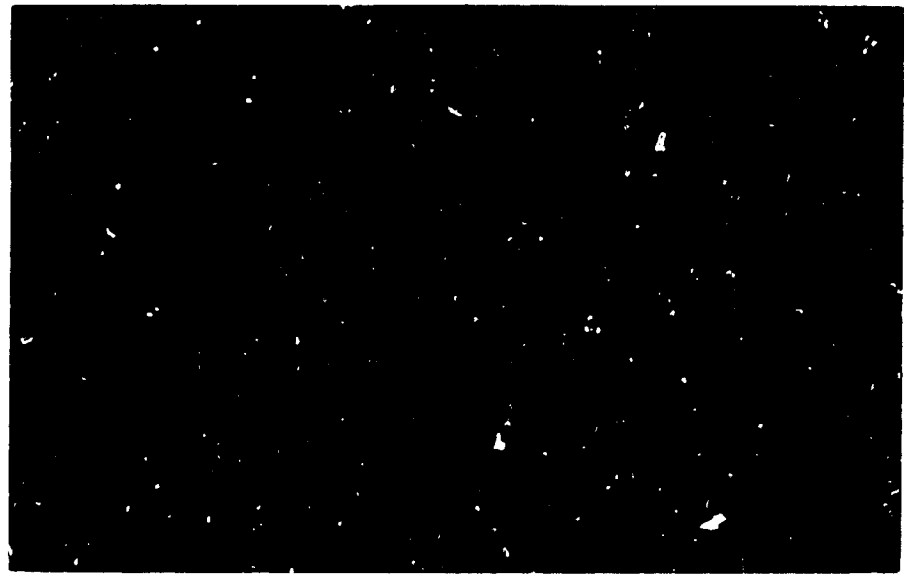

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TECHNIQUES OF PRODUCTION, EFFICIENCY AND PROFITABILITY IN THE SIERRA LEONE CLOTHING INDUSTRY

by

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AFRICAN RURAL ECONOMY PROGRAM

Carl K. Eicher

The African Rural Economy Program was established in 1976 as an activity of Michigan State University's Department of Agricultural Economics. The African Rural Economy Progarm is a successor to the African Rural Employment Research Network which functioned over the 1971-1976 period.

The primary mission of the African Rural Economy Program is to further comparative analysis of the development process in Africa with emphasis on both micro and macro level research on the rural economy. The research program is carried out by faculty and students in the Department of Agricultural Economics in cooperation with researchers in African universities and government agencies. Specific examples of ongoing research are, 'Poor Rural Households, Income Distribution and Technical Change in Sierra Leone and Nigeria,' 'Rural and Urban Small-Scale Industry in West Africa,' 'Dynamics of Female Participation in the Economic Development Process in West Africa,' and 'The Economics of Small Farmer Production and Marketing Systems in the Sahelian Zone of West Africa.'

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Foreward

This paper is one of a series of reports produced by Michigan State University's Off-Farm Employment Project. The project, which is funded by the Office of Rural Development and Development Administration, Development Support Bureau, U.S. Agency for International Development, has the basic purpose of enhancing the ability of AID missions and host country institutions to identify and implement programs and policies that generate off-farm employment and income opportunities benefiting the rural poor. One of the major components of the project is the generation of new knowledge relating to rural non-farm activities. In collaboration with host country institutions and AID missions, detailed field surveys of small-scale enterprises are currently being conducted in Bangladesh, Jamaica, Honduras, and Thailand; the results of these studies will be published in this series. A second component of the project involves the marshalling and dissemination of existing knowledge of rural non-farm activities. A state-of-knowledge paper and special studies relating to off-farm activities will also appear in this series. Previously completed studies in this area currently available thorugh the Off-Farm Employment Project include:

1. Carl Liedholm, "Research on Employment in the Rural Non-Farm Sector in Africa," African Rural Employment Paper No. 5, 1973.

2. Carl Liedholm and Enyinna Chuta, "The Economics of Rural and Urban Small-Scale Industries in Sierra Leone," African Rural Employment Paper No. 14, 1976.

3. Enyinna Chuta, "The Economics of the Gara (Tie-Dye) Cloth Industry in Sierra Leone," February, African Rural Economy Working Paper No. 25, 1978.

4. Adewale Kabawonku, "An Economic Evaluation of Apprenticeship Training in Western Nigerian Small-Scale Industry," African Rural Employment Paper No. 17, 1979.

5. Steve Haggblade, J. Defay and Bob Pitman, "Small Manufacturing and Repair Enterprises in Haiti: Survey Results," Michigan State University Rural Development Series, Working Paper No. 4, 1979.

6. Enyinna Chuta and Carl Liedholm, "Rural Non-Farm Employment: A Review of the State of the Art," Michigan State University Rural Development Papers, Paper No. 4, 1979.

7. Omar Davies, Yacob Hisseha and Claremont Kirton, "Small-Scale Enterprises in Jamaica: Initial Survey Results," Michigan State University Rural Development Series, Working Paper No. 8, 1979.

Copies of these papers as well as additional information on the Off-Farm Employment Project can be obtained by writing:

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I. INTRODUCTION

In most less developed countries (LDCs), empirical evidence is quite insufficient to highlight the existing array of techniques of production on a product-by-product basis (White, 1978). Policy makers, project and program designers, and a few economists still believe that current Western technology provides the only economically efficient production processes for those LDCs. With the continuous adoption of capital-intensive methods of production, the slow growth of urban manufacturing employment has contributed to the increasing rate of urban unemployment. Consequently, increased attention is being focused on ways of expanding small-scale, labor-intensive activities in rural areas. If appropriate policies are to be formulated and the correct decisions made with respect to the appropriate techniques of production, detailed information concerning available factor proportions and the profitability of different technology options is crucial. The objective of this paper is, therefore, to examine the efficiency and profitability of different production processes in the Sierra Leone clothing industry, using recently collected survey data.

1.1 Outline of Paper

This paper will be presented in five sections. Following an introductory section, section 2 will describe some important features of the Sierra Leone clothing industry as it existed during the survey period. In section 3, five representative firms will be synthesized and the major techniques of production identified to enable the analyses of the technical and economic efficiencies of representative types. In addition, representative budgets will be employed to undertake an economic profit analysis of those firms. Section 4 will be devoted to an examination of the circum-

stances under which clothing equipment should be purchased or rented. The final section will include both a summary and the implications of analytical results from the points of view of both policy formulation and project design.

1.2. Source of Data

The input-output data used in the analysis were generated by the author during a 1974/75 survey of small-scale industries in Sierra Leone.[1] A sample of 132 tailoring firms was taken from 13 randomly selected different sized localities and 20 rural enumeration areas in Sierra Leone. Two-thirds of the sample was chosen randomly to reflect the underlying characteristics of the population of tailors in Sierra Leone, while one-third was selected purposively to ensure that firms with different arrays of factor proportions were included in the sample. The survey was carried out over a one-year period and input-output data were obtained on a daily basis. Information on the two large-scale clothing units was based on secondary data.[2]

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[1]The small-scale industry study was a component of the Rural Employment Research Project, based at Njala University College, The University of Sierra Leone, under the leadership of Dr. Dunstan Spencer.

[2]Sierra Leone, "Census of Manufacturing," 1973/74 Central Planning Unit, Freetown.

II. AN OVERVIEW OF THE SIERRA LEONE CLOTHING INDUSTRY

The clothing industry in Sierra Leone was chosen for analysis in this paper due to four major considerations. First, the industry is the leading small-scale industrial subsector, accounting for 31 percent of employment, 33 percent of total establishments, and 37 percent of the value-added in the Sierra Leone small-scale manufacturing subsector (Liedholm and Chuta, 1976).[1] Second, the vast majority of these enterprises, 88 percent, are located in rural areas and are thus important elements in any rural development strategy. Third, the clothing industry in Sierra Leone is one with both small-scale and large-scale units which compete with one another in both product and factor markets. Finally, most developing countries have launched their import-substitution industrialization policies by promoting industries such as brewing, cigarettes, and clothing[2] often supported by distorted factor prices such as unduly low rates of interest, minimum wages, and overvalued foreign exchange rates (Johnson, 1968, p. 74). Such policies have in the recent past resulted in the use of capital-intensive production methods with consequences of unemployment in urban areas (Frank, 1967).

In Sierra Leone, clothing goods and services are produced by both small-scale, labor-intensive tailoring firms[3] that number about 17,000, contributing about 98 percent of the entire value-added in the clothing industry,

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[1]In terms of number of establishments, cloth-working appears to be the most important small-scale industrial activity throughout Africa (Liedholm, 1973, p. 7).

[2]Peter Kilby (1969, p. 108) points out that the cotton textile industry has been one of the major areas of industrialization for some developing countries in the twentieth century.

[3]The aggregate number of such firms was obtained through a detailed street-by-street enumeration of small-scale industries in Sierra Leone. For details, see Chuta and Liedholm, 1975.

and two large-scale, capital-intensive firms. The clothing goods include sewn or knitted fabric such as trousers, jackets, shirts, school uniforms, traditional apparels, dresses, etc., while clothing services, mostly produced by small-scale firms, include the repair of already sewn fabric.

The use of treadle sewing machines is widespread among private small-scale tailoring firms in Sierra Leone. Since electricity is not available in most rural towns and villages, sewing machines are generally operated manually. In addition, there are sewing machines which undertake simple sewing, whereas more complicated types may embroider sewn fabrics. These differences in the type of tasks performed are also reflected in cost differences - Le 100 to Le 110 for simple sewing machines of the Chinese "Butterfly" brand or Japanese "Hedjazi," and Le 230 to Le 300 for the embroidery machines of the Italian "Necchi" brand or the Japanese "Zenith" or "Hijaz." Within the embroidery process type, there is a wide range in the cost of machines - from Le 230 to Le 300 to Le 1000 for the British "Cornely" brand.

In the rural areas of Sierra Leone (localities with less than 2,000 people), most of the small-scale tailoring firms operate in temporary workshops or mud buildings and pay monthly rentals of about one Leone. But in localities with an excess of 2,000 people, 34 percent of private tailors operate in workshops built of cement walls, 25 percent operate on verandas, and another 25 percent operate in mud houses, while about 16 percent utilize temporary workshops. The average workshop space is about 100 square feet (with lower and upper ranges of 20 square feet and 450 square feet per

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[1]These prices were observed for the survey period, 1974/75. Le 1 = U.S. $1.10.

workshop respectively) and average monthly rental is about seven Leones (with a range of Le 1 to Le 50).

Apart from the large number of widely dispersed private tailoring firms, two large-scale tailoring firms are in operation. One of the firms is owned by a foreign company and produces about 14 brands of knitwear with fixed assets of about Le 115,000. The second firm is a joint venture of Sierra Leonean and foreign interests and produces trousers and jackets with total fixed assets of about Le 200,000. Each of the firms operates in permanent cement buildings, which constitute about 46 percent of the value of the total fixed assets.

While the majority of small-scale firms operate by relying mostly on customers who place orders for clothing goods and services, the large-scale firms sew ready-made garments and market these through modern shopping centers in Freetown. Thus, these firms have differentiated their products by adopting sales promotion techniques such as product labelling, packaging and advertising, wholesaling, and retailing. In effect, the large-scale clothing firms cater to the tastes of the emerging middle- and upper-class, while the small-scale clothing entrepreneurs produce for some of the middle-class, but mostly for the lower-class, such as farmers, school children, students, teachers, clerical staff, and small traders. Where both labor-intensive and capital-intensive clothing firms exist, one can argue that there are different products of different qualities in the Sierra Leone clothing industry. However, empirical evidence from Sierra Leone indicates that the existing price differential (given the same fabric) is not so much a result of superior workmanship of the large-scale, capital-intensive firms

as of additional costs resulting from assembly and handling[1] of the final products.

With respect to the efficiency of resource use among the Sierra Leonean clothing firms, two important characteristics should be pointed out. First, the measurements of observed inputs and outputs do not reflect full capacity utilization of plants and equipment. Indeed, the observed levels of excess capacity among the clothing firms ranged from 18 to 86 percent. Reasons for such excess capacity include inadequate demand for products and services, seasonal fluctuations, and lack of or high cost of raw materials. Second, although survey data revealed that about 65 percent of Sierra Leonean clothing firms said that they joined the clothing industry to make profits (not necessarily maximizing profits), 35 percent of those firms joined the industry for other reasons such as family enterprise, father's major occupation, and security.

In the next section, the concepts of both technical and economic efficiency in resource use will be utilized for analytical purposes. The implications of these two characteristics for maximum production and profitability should always be remembered.

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[1]See page 14.

III. BUDGET ANALYSIS OF REPRESENTATIVE FIRMS

3.1 Representative Firm Types

In order to examine the efficiency of the major techniques of production utilized by the different clothing firms in Sierra Leone, data obtained from the 132 small-scale clothing firms[1] included in the sample have been grouped into 5 representative types as shown in Table 1. The use of representative firms in the micro-economic analysis of the industry has the advantage of enabling us to examine the decision-making behavior of a manufacturing enterprise type without necessarily focusing on every firm within the industry (Buckwell and Hazell, 1972). Thus, machine-renting firms constitute about 7 percent of tailoring firms in Sierra Leone, which total about 1,200. Machine rentals cost from Le 1.50 to Le 2.0 per machine/month in Sierra Leone. There is no organized market for renting sewing machines. However, some relatively wealthy businessmen, landlords, or farmers own sewing machines for renting. The second group of representative firms operate simple machines for sewing and/or repairing clothes. These firms, which constitute the bulk of small-scale clothing firms in Sierra Leone (59 percent), do not have the facility for adding embroidery on sewn fabric. The third and fourth groups constitute 24 percent and 10 percent of small-scale clothing firms in Sierra Leone, respectively. Although each of these does straight sewing and embroidery work, the latter utilizes relatively more costly machines. The fifth representative firm type is the large-scale, capital-intensive firm. Only two such firms existed in Sierra Leone during the study period.

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[1]During the survey period (1974/75), a total of about 17,000 small-scale tailoring firms were enumerated in Sierra Leone, employing aobut 28,000 people (Liedholm and Chuta, 1976, p. 15).

TABLE 1

FACTOR PROPORTIONS FOR THE REPRESENTATIVE FIRM TYPES

Firm Type	Capital-Output (K/Y)	Labor-Output (L/Y)	Capital-Labor (K/L)
(1) Machine renting (straight sewing) [MR]	.11	2.7	.04
(2) Straight sewing [SS]	.12	2.0	.05
(3) Straight sewing plus cheap embroidery machines [SSCEM]	.13	1.7	.08
(4) Straight sewing plus expensive embroidery machines [SSEEM]	.38	1.7	.23
(5) Large-scale capital intensive clothing firms [LSCF]	.58	1.3	.45
	Y/K	**Y/L**	**L/K**
(1) Machine renting (straight sewing)	9.09	.37	25.00
(2) Straight sewing	8.33	.50	16.67
(3) Straight sewing plus cheap embroidery machines	7.69	.59	12.50
(4) Straight sewing plus expensive embroidery machines	2.63	.59	4.35
(5) Large-scale capital intensive clothing firms	1.72	.77	2.22

Note: L = annual labor flow, K = annual capital flow, and Y = annual output

The bottom half of table 1 contains the reciprocals of the top half of the table and vice versa. For example, the K/Y ratios are reciprocals of the Y/K ratios and vice versa.

Source: Computed from survey data

3.2 Resource Efficiency Among Representative Firm Types

In order to examine the relative efficiency of resource use among the five representative firm types, attention will be focused on three key economic ratios - output-capital, output-labor, and labor-capital, as shown in the second half of Table 1. The first two ratios yield the values of the average products of capital and labor respectively, while the labor-capital ratio gives the quantities of labor hours that combine with a Leone worth of capital in the production process.

3.3 Technical Efficiency of Firm Types

On the basis of the input-output data collected for each of the sample firms, capital-output, labor-output, and capital-labor were also computed for each of the sample firm types as shown in the first half of Table 1. Labor-input was measured in actual hours that each firm worked during the 1974/75 survey period. Capital was measured in Leones of annual capital services utilized.[1] Output has been measured in Leones of value-added.

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[1]Total annual capital services include annual rental value of workshop, annual services from tools, equipment, and furniture, and working capital. All the tools and equipment stock items have been converted into annual capital service flows using the capital recovery formula:

$$R = \frac{rV}{1 - (1 + r)^{-n}}$$

where R is the constant annual capital service flow, V is the original (undepreciated) market value of the asset, r is the discount rate, and n is the life expectancy of the capital. Although the commercial rate of interest for large firms in Sierra Leone was 10 percent, a discount rate of 20 percent was considered to be an adequate reflection of the social cost of capital and was therefore utilized in computing the capital recovery factor. The lifespan of tools, equipment, and furniture utilized by tailoring firms ranged from 2 to 35 years.

A unit isoquant was derived by joining the coordinates of values of the capital-output and labor-outputs ratios which seemed to be on the "production frontier,"[1] KYI, as shown in figure 1. The isoquant thus derived will be assumed to represent the locus of all technically efficient production processess for producing a Leone value of clothing output and/or services. Given such a discrete and linear isoquant, no firm is able to produce a unit value of output with a combination of inputs in the infeasible space southwest of the frontier (Timmer, 1970, p. 108).

What stands out clearly from Figure 1 is that, with the exception of technique 4, (straight sewing plus expensive embroidery machines), all the techniques of producing clothing goods and services in Sierra Leone during the survey period were technically efficient. The coordinates of the capital-value-added and labor-value-added ratios all lie on the isoquant KYI. However, as can be seen from Table 1, technique 4, (straight sewing plus expensive embroidery machines) is technically inefficient because, when compared with technique 3, (straight sewing plus cheap embroidery machines), it utilizes more capital to produce one Leone value of output. Figure 2 even reveals that point X_1 lies above the isoquant KYI.

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[1]In view of the observed excess capacities (Liedholm and Chuta, 1976) and the possible presence of X-inefficiencies (Leibenstein, 1978, pp. 37-38) among Sierra Leone small-scale enterprises, the use of the concept of "production frontier" does not in any way imply the attainment of maximum output given the observed input combinations (Timmer, 1970; Schmidt and Lovel, 1979). Our isoquant has been derived simply by following the method of Farrell (1957) as applied to the group of representative firms.

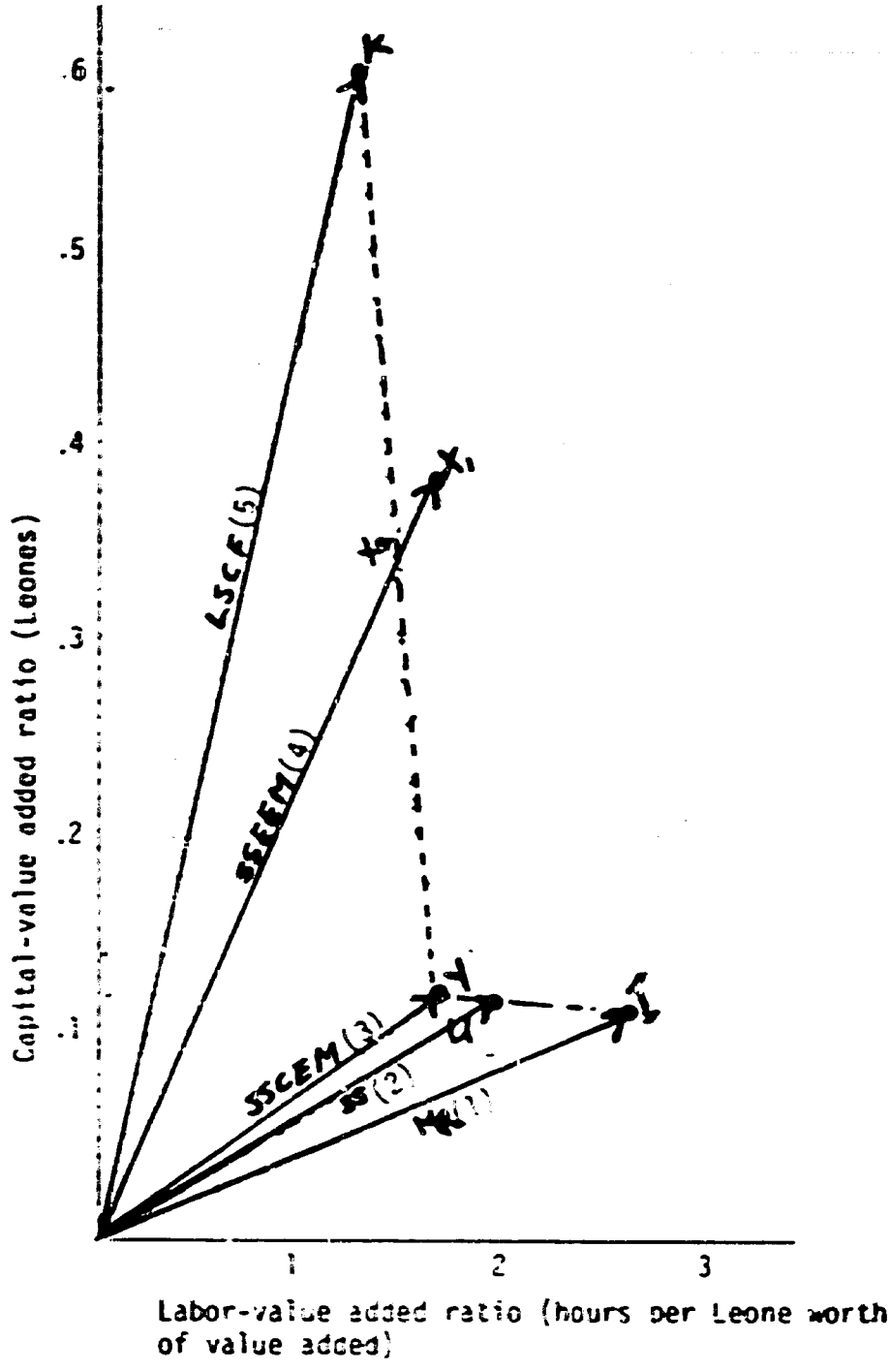

Figure 1. Production processes and isoquant relating capital costs and labor hours required to produce one Leone value-added in the Sierra Leone clothing industry.

The technical inefficiency of technique 4, (straight sewing plus expensive embroidery machines), could be attributed to lack of foresight or knowledge on the part of the entrepreneur to realize ahead of time the inadequacy of the equipment (Johnson, 1972; Leibenstein, 1978). Since it is probable that the marginal value product of these machines is greater than their salvage value, and their salvage price could be less than what they paid for them, the entrepreneurs have still retained them to minimize their losses. Losses could be further minimized if the entrepreneurs could locate their establishments in market situations where the equipment could be utilized more intensively so that capital-labor ratio would be reduced (Johnson, 1972).

3.4 Economic Efficiency of Firm Types

Economic efficiency means the ability of firms to generate both higher value-added and employment per unit of scarce capital, particularly in the short run. It is not meaningful in the absence of any reliable savings and reinvestment data for small-scale industrial firms or systematic time series data on the number of small-scale enterprises, value-added, fixed assets, or employment, to discuss economic efficiency in a dynamic sense, i.e., in terms of the rate of growth of output,[1] or firms within specific industry groups or on the sectoral level.

The second half of Table 1 reveals that, as the productivity of capital declines from 9.1 for machine renting to 1.7 for the large-scale factory, labor productivity increases from .37 to .77 for these same activities.

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[1]Power (1962) points out that the rate of growth of output can be derived from the product of L/K, Y/K, and S/Y where L=labor, K=capital, Y=output, and S=savings (undistributed corporate profits plus profits of unincorporated enterprises).

Although low productivity of labor could be due to inefficiency (such as poor management), it could, however, be a result of a fuller utilization of an abundant resource such as labor (White, 1978, p. 30). Indeed, table 1 reveals that the representative firm types which generate higher levels of output per unit of capital, the scarce factor, also employ more labor per unit of capital. For example, both Y/K and L/K ratios decline from 9.1 to 1.7 and 25 and 2.2 respectively for the representative firm types of machine renting and the large-scale factory. It would seem therefore that the small labor-intensive clothing firms are more economically efficient than the relatively capital-intensive ones, at least in a static sense.

3.5 Economic Profit[1] Among Clothing Firms

Table 2 reveals that the clothing firm type carrying the highest rate of economic profits on total capital cost (101 percent) is the one using technique 3, (straight sewing plus cheap embroidery machines), followed by the second representative firm type, which utilizes simple straight sewing machines and earns 59 percent economic rate of profit. The firm type earning the lowest economic profit (-109 percent) rents machines. One would imagine that being the most labor-intensive firm (see Table 1), possessing both the highest labor-capital ratio (25), and output-capital ratio (9.09), it should maximize on economic profits. However, the activities of these machine renting firms are subject to a serious uncertainty. In the absence of organized rental markets, or any form of legal contracts binding on rental transactions, machine owners often withdraw

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[1]See page 15 and the footnote on table 2 for opportunity cost pricing of capital and labor respectively.

their equipment either at times when sewing activity was at its peak or when the renter ought to be working. Thus, owing to the lack of the necessary institutional arrangements, machine renting becomes the most unprofitable.

Table 2 also highlights the low profitability of the large-scale, capital-intensive firm type, which earns less than one percent economic profit rate. Furthermore, in order to differentiate its products from those of small labor-intensive firms, it incurs extra packaging, labelling and other handling costs which reflect higher prices for the product. It is clear from Table 2 that this firm type devotes as much as 84 percent of its total economic costs to the purchase of material and nonmaterial inputs. Although the firm type that employs straight sewing machines earns 59 percent rate of economic profit, it is less profitable than technique 3, (straight sewing plus cheap embroidery machines), which is more diversified and therefore caters to the various needs of customers. The firm employing the fourth technique, (straight sewing plus expensive embroidery machines), though diversified, employs very expensive machines and therefore earns a negative economic profit rate of -14 percent. In this firm type, annual capital cost as a percentage of total economic cost is the highest (31 percent) as compared with the other firms.

The use of moderately priced equipment to produce a variety of clothing goods and services in small-scale clothing industry could be the most profitable technique of production. Machine renting could be profitable only if the existing elements of uncertainty in such techniques are removed. Finally, large-scale, capital-intensive production methods earn a very low economic rate of profit and therefore do not justify investments at current factor prices.

TABLE 2

BUDGETS OF REPRESENTATIVE CLOTHING FIRMS

Representative Firm Types	Annual Labor Input: Hours by labor type[a]			Annual Labor Input: Cost by labor type[a] Le			Total Labor Costs (Le)	Annual Material and Nonmaterial Input Costs[b] (Le)	Annual Capital Costs (Le)	Total Economic Costs (Le)	Value of Annual Gross Output and Services (Le)	Economic Profits[c] (Le)	Economic Rate of Profit[d] %
	P	H	A	P	H	A							
	A	B	C	D	E	F	G	H	I	J	K	L	M
Machine renting	677		70	237		1.4	238.0	140	30	408.0	272	-136.0	-109.0
Straight sewing machines	774		293	271		6.0	277.0	179	75	480.0	666	186.0	19.0
Straight sewing less expensive embroidery machines	1178	6	882	412	.6	18.0	430.6	419	189	1,038.6	1,832	793.4	101.0
Straight sewing plus more expensive embroidery machines	980	8	815	343	.8	16.3	360.1	536	408	1,304.1	1,073	-231.1	-14.0
Large-scale, capital-intensive clothing firms		70,000			19,000.0		19,000.0	258,500	31,269	308,769.0	311,000	2231.0	.7

[a]Proprietor and family labor (P), hired labor (H) and apprentices (A) have been valued at their per hour opportunity costs -Le .35, Le .10, Le .02 respectively. For more details concerning the estimation procedure, see Liedholm and Chuta (1976, pp. 68-74). Since labor data for the large-scale establishments were not available for labor categories, an average wage per hour or Le .27 (total wage bill divided by hours of employment) was utilized in costing labor. For this paper, 280 working days a year was assumed, thus allowing for the Moslem, Christian, and public holidays. Also an eight hour working day was assumed.

[b]Includes electricity and telephone charges.

[c]Economic profit is defined as the value of column K minus the value of column J where J = G + H + I.

[d]Economic rate of profit = economic profit divided by total capital costs. Total capital cost can be obtained by dividing the capital recovery factor (.24) into the annual capital cost in column I.

Source: Survey data

IV. MACHINE RENTING VERSUS MACHINE PURCHASING

If the element of uncertainty can be removed from the machine renting arrangements, machine renting could indeed be the most efficient short-run technique for generating more output and employment in the Sierra Leone clothing industry. Besides, removing the element of uncertainty could break the barrier to entry into the clothing industry, since in most cases machine renting was resorted to be entrepreneurs who did not possess adequate finance to purchase sewing machines.

So long as the present values of the stream of future values from leasing a machine and its current purchase price are equal, it does not matter if the machine is leased or purchased. If indeed the present value of the future stream of rental payments exceeds that of the current purchase price of the machine, then from the lessee's point of view, a higher opportunity cost is involved and it does not pay to rent. However, the financing of the purchase of the machine is an important consideration If indeed money was borrowed at existing commercial or opportunity cost rates of interest, it may be more profitable to rent the machine rather than purchase a new one. Second, any decision to buy a used sewing machine as opposed to a new one depends on the differential in the discounted values of the stream of income above variable costs during the expected economic life of each type of equipment. Empirical analysis of particular situations will have to be undertaken in order to arrive at decisions, given some particular objectives.

V. SUMMARY AND IMPLICATIONS OF ANALYTICAL RESULTS

The aim of this paper has been to examine the alternative methods of producing clothing goods and services in Sierra Leone, and the profitability of the various techniques of production. The results of such analyses are crucial for formulating policies that would lead to the generation of employment and output within the Sierra Leone economy.

The results of our analyses reveal that, although machine renting firms seem to possess the highest output-capital and labor-capital ratios, their lack of profitability could be due to insecurity of equipment rentals to cope with regular and/or peak work loads. However, our analyses also reveals that, before equipment rental can be encouraged, a thorough cost-benefit analysis of machine rental vis-a-vis machine purchase under alternative financing arrangements needs to be undertaken. Second, both small-scale firms using relatively expensive equipment and large-scale, capital-intensive firms have been shown to be economically unprofitable. However, those small-scale firms utilizing cheap equipment and producing diversified products and services have been revealed as not only efficient, but also most profitable.

An important policy implication for our analytical result is that it is purely illusive to choose the clothing industry for implementing the policy of import-substitution. The output of the two large-scale clothing firms is not only insignificant when compared to the total clothing demand,[1] but the large-scale clothing firms possess very little potential

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[1]Total clothing demand can be defined as the sum of the values of clothing imports, gross outputs of the two large firms, and the small-scale tailoring firms. The relative shares in total demand are 13 percent imports, 7 percent for the two large-scale firms, and 79 percent for the small-scale subsector (Chuta, 1977).

for generating employment. An effective fiscal measure for encouraging the increased use of cheap sewing machines could be to eliminate or substantially reduce the 36 percent tariff currently imposed on such equipment. The results of a recent study of the small-scale industrial sector of Sierra Leone (Chuta, 1977) revealed that the use of other fiscal measures, such as increased tariff on competing imports for protecting the clothing industry and generating employment, may not, in the aggregate, yield satisfactory results. The distortions due to such measures resulted in the misallocation of resources and the eventual decline in aggregate output of the small-scale manufacturing subsector. Specifically, the results of the analysis of the Sierra Leone data revealed that, although such a policy measure resulted in increased employment and output of clothing firms, it penalized the most efficient and export-oriented subsector (gara dyeing).

From the point of view of project design, there could be a need to establish a formal machine renting market to cater to the needs of the numerous journeymen who cannot enter or profitably operate in the clothing industry due to lack of initial finance to purchase machines. Such a market should specify procedures for delivery of equipment and rental payment and clearly outline terms under which machine rentals can be secure in order to avoid the uncertainty of not having any equipment at periods of peak work load.

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