
This work is licensed under a
Creative Commons
Attribution – NonCommercial - NoDerivs 3.0 Licence.

To view a copy of the licence please see:
<http://creativecommons.org/licenses/by-nc-nd/3.0/>

IDS/WP 127

(832)

(a) UNIVERSITY OF NAIROBI
(b) Institute for Development Studies
Working papers

AN EMPIRICAL STUDY OF SMALL-SCALE
RURAL INDUSTRY IN KENYA

By

Frank C. Child*

WORKING PAPER NO. 127

LIBRARY
10 FEB 2011
INSTITUTE OF
DEVELOPMENT STUDIES

INSTITUTE FOR DEVELOPMENT STUDIES

UNIVERSITY OF NAIROBI

P.O. Box 30197
Nairobi, Kenya

NOVEMBER 1973

RN 322664

IDS



095549

*Visiting Professor of Economics, Institute for Development Studies, University of Nairobi. I wish to acknowledge the assistance of K. Musyimi, J.M. Mwigeh, W. Njeru, and J. Isiaho, of the University of Nairobi, who conducted the field interviews. I am also grateful to John Griffing, Economics Department, University of California, Davis who programmed the statistical analysis for the computer.

Views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of the Institute for Development Studies or of the University of Nairobi.

LIBRARY
10 FEB 1971
INSTITUTE OF
DEVELOPMENT STUDIES

AN EMPIRICAL STUDY OF SMALL-SCALE
RURAL INDUSTRY IN KENYA

By Frank C. Child

Frank C. Child

ABSTRACT

This is a report of an empirical study of eighty-seven small-scale rural firms, clients of Kenya's four Rural Industrial Development Centers. Its purpose is to measure profitability and social performance of firms representing the Intermediate Sector of Kenya's economy. In addition, the study contains some descriptive statistics.

Available data suggest that the Intermediate Sector is growing at an accelerating rate and may be expected to continue to do so. The firms are typically small but provide a better than average Kenyan income for their owners. The rate of return on invested capital exceeds that of the Modern Sector by a substantial margin.

Both the capital-output and the capital-labor ratios are low. Capital invested in the Intermediate Sector makes a larger contribution to national product and creates more employment than does an equivalent amount of capital formation in the Modern Sector. Furthermore the wages earned by workers compare tolerably well with working-class incomes of the Modern Sector and exceed wages in commercial agriculture.

At various points within the paper, characteristics and problems of small-scale rural firms are described and some policy guidance is offered.

I wish to acknowledge the assistance of J. M. W. Njiru, W. Njiru, and J. J. J. of the University of Nairobi, who conducted the field interviews. I am also grateful to John Griffin, Economic Department, University of California, Davis who programmed the statistical analysis for the computer.

Views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of the Institute for Development Studies or of the University of Nairobi.

A public policy of support and promotion of the intermediate sector is justifiable only if we can verify empirically the casual observation that the very small-scale firms which comprise this sector yield a favourable return on invested capital and generate employment at a low cost per job. Expenditure of public funds from a limited development budget requires identification of investment outlets in which both the capital/output and capital/labor ratios are low.

In addition, a field study would yield descriptive data and provide insights into the problems of these firms which, in turn, might suggest specific policy guidance. It would be valuable, for example, to find support for or refutation of the commonly held notion that credit is a crucial bottleneck in the development of small-scale enterprise, that transport, utilities, or communication facilities would accelerate growth of rural industry, or that lack of product and technical production information is an obstacle to growth. Finally, an empirical study could reveal something about the behavior and characteristics of entrepreneurs of small-scale enterprise: managerial skills, accounting methods and their use, inventory or investment policies, the development and use of labor-skills, and the background and training of the businessmen themselves.

To these ends we at the Institute for Development Studies, University of Nairobi, undertook a field study of very small-scale rural enterprise. Our study revealed that the capital requirement per job created by these firms is low, much lower than for the economy as a whole; the return on capital invested is more favorable than the return ordinarily available in the Modern Sector. In addition the study suggested that infrastructure investment by the government would likely speed the growth of small-scale rural enterprise, credit is not a major bottleneck, and that management skills urgently need improvement. Alas, the study did not provide much help or guidance toward identification of entrepreneurial talent, a resource which by common consensus is in scarce supply in Kenya.

I

Our sample, all rural firms, was drawn from among the clients of Kenya's four Rural Industrial Development Centers (RIDC's.)* We chose

* The RIDC's, presently four in existence out of a projected nine, are subsidiaries of the Kenya Industrial Estates, an organization which is, in turn, a subsidiary of the Industrial and Commercial Development Corporation. The latter is a parastatal body with, as the name implies, responsibility for promotion, and financing in part, development projects in Kenya. Each RIDC has a manager and support staff, a general mechanic, a sheetmetal technician, a wood working technician and an expatriate adviser. The RIDC's have the special responsibility to provide small-scale rural industry with technical assistance and, if appropriate and available, credit. Each has a headquarters which contains workshops in which demonstrations, equipment repair, or even production operations can be provided for clients, and there are classrooms for formal training programs.

to study RIDC clients for two reasons: (1) client firms are selected for their high potential and (2) firms benefiting from RIDC assistance should be more cooperative about supplying information essential to our study. The estimate of the potential of client firms is, of course, a matter of judgement on the part of RIDC personnel. Their criteria included the usual outward signs of success: profitability, growth, quality of product, appearance of the firm's equipment and facilities, use of "modern" or "progressive" methods. In some cases the attitude, behaviour and personality of the owner of a struggling enterprise could be persuasive. RIDC personnel seek out those enterprises which, in their judgement, are likely to benefit from the services which the Center can provide. With due allowance for errors in judgement, and the RIDC managers would be the last to claim infallibility, one would expect RIDC clients to be above average performers in their business; if any small firms in rural Kenya can succeed, these should. In short, our sample was purposive, not random; it is representative of the comparatively well managed, more or less successful rural enterprises. Hopefully, they are examples of what small-scale rural enterprises can do and, perhaps, the prototypes for further industrialization.

In the end, we discovered that not all of the firms visited had "high potential", some were poorly managed, some were losing money and seem destined to failure, some survive only by constant transfusions of new capital. This should not be surprising; in economically advanced highly developed economies some 50% of all newly established enterprises fail within two years. A newly developing economy should not be expected to do better.

With respect to our access to reliable information, the apparent obligation of the client to the RIDC was expected to create an openness and cooperativeness which a randomly selected firm is unlikely to exhibit. Interviewers, with the cooperation of the RIDC managers, operated out of RIDC headquarters in their respective areas and were treated as de facto employees of the Centers. In each case the interviewer was a native of the region where he worked and spoke the local language. They were also third-year, Bachelor of Commerce students at the University of Nairobi -- a mixed blessing. Although each was familiar with economic concepts and accounting terminology, they were over-educated by comparison with the businessmen interviewed who had limited education and were in some cases illiterate. Our aspirations to the contrary, the businessmen sometimes proved uncooperative. It was clear that some of them were benefiting from technical assistance from the local RIDC and, in return, they

~~treated the interviewer cordially and openly.~~ Others were cooperative only to the extent that they thought the Center and the interviewer could provide them with a loan. A few were actually hostile toward the Center which, they asserted, hadn't done anything for them. Some businessmen, perhaps the better ones, felt that they could ill afford to take time away from their work to "chat" for two or three hours or more with an inquisitive, not obviously valuable (to them) interviewer. Some were suspicious of our motives. Finally, a large number of businessmen, even though willing to provide answers to our questions, were unable to do so; ~~their accounting records were incomplete or innaccurate~~ and some had no records at all. They often relied on memory in responding to questions which called for quantitative replies.

Out of some 120 firms selected, 105 interviews were completed and of these, some eighty-seven contained information sufficiently complete and consistent so that, in our judgment, it was reasonably reliable.

The eighty-seven firms in our sample are located in four regions of Kenya: Western Province, Nyeri District of Central Province, and Embu and Machakos Districts of Eastern Province. Thirty-six different market centers are represented. (See Appendix, Table 1, for a complete listing of the 87 sample firms by type of activity and location). More than a third of the firms studied (30) were makers of furniture, a common type of small-scale enterprise not only in rural areas but in the 'harambee' or squatter industrial areas of Kenyan cities. Their products include household items such as chairs, tables, cupboards, shelves and beds, desks and chairs for schools, and coffins. Another three firms, successful in their carpentry/furniture business, have expanded into house construction or household hardware sales; one also operated a sawmill.

Fifteen firms are engaged in metal working: tinsmiths who produce pails, drinking water containers, poultry feeding equipment, rain gutters (for houses), oil lamps and the like; blacksmiths who produce charcoal stoves, farm implements, hand tools, or virtually anything that can be handcrafted from iron or steel, or a combination of both. A few of the more innovative entrepreneurs among the metal-working enterprises have extended themselves to production of new (for Kenyan rural industry) products: steel window frames for houses or commercial buildings, metal furniture, ox carts for rural cartage, or water tanks for collection and

storage of rainwater run-off from sheetmetal-roofed houses. (The latter provides a supply of safe drinking water.) Most of these expanded firms continue to produce their basic line of traditional metal products but in a few cases, classified elsewhere in our sample, the firms have given up their original activity entirely.

Virtually all of the wood- or metalworking firms engage in repair work. In addition, a total of twenty-one firms in our sample were classified as repair or servicing enterprises. Nine of these firms combine metal- or woodworking with repair services which have become their major source of revenue; one has given up his original blacksmithing to deal exclusively in bicycle and general repairing. Eight repair firms, which clearly did not emerge from former handicraft enterprises, service automobiles, trucks, tractors or bicycles; three firms provide sales and servicing of bicycles and radios.

Our sample included six sawmills producing cut timber and, in some cases, millwork such as doors and door frames or windows and window-frames. The remaining twelve firms in the sample include two shoemakers, a baker, two tailors (one of whom retailed products from Nairobi as well as his own), a maize miller, a photographer, a printer, a maker of cement building blocks, a mattressmaker, a dry cleaner, and an ox cart producer.*

III
Despite the comparative neglect of small-scale enterprise by Kenya's development planners, this sector of the economy appears to be growing at an accelerating rate. Only 8 firms of our sample, less than 10%, were in existence before the "emergency" of the 1950's; most of these were owned by Asians and have since been taken over by citizens. Another 14 firms were established in the six years prior to independence in 1963. (See Table 3.) Twenty-six firms, 30% of the sample, were established in the last six years of the 1960's and 38, 44% of the total, were established in the 3½ years from 1970 to mid-1973 when the field work for this study was done. This growth cannot be a consequence of public policy. The Rural Industrial Development Centers have not been functioning long enough to have had a noticeable impact; the Kenya Industrial Estates, established to promote small-scale enterprise, have concentrated on urban firms in

* The descriptive statistics of our study confirm and extend the findings of Inukai and Okelo. See their "Survey of Rural Enterprise in Nyeri District, a Report to DANIDA", 1972. See also, I. Inukai, "Rural Industrialization in Kenya: A Country Study", a paper prepared for Meeting on Rural Industrialization, Bucharest, September, 1973, United Nations Publication (ESA/SD/AC.5/6).

the Modern Sector of the economy. Indeed, public policy has been, more by accident than design, a deterrent to growth of rural small-scale industry.

Inukai's study of licensing practices for small-scale firms has shown that the law discriminates against those firms which are unable to meet production standards or working conditions prescribed by laws designed by the former colonial government to exclude native Kenyans from manufacturing enterprise.* Further, the business license fees charged seem quite arbitrary if not discriminatory, bearing no obvious relationship to the income earning capacity of firms. Only one of the eighty-seven firms in our sample was unlicensed -- one would expect a publicly financed agency like an RIDC to deal only with legally operating enterprise. The one unlicensed firm, however, was required to pay shs 2/- per working day, roughly shs 600/- per year, for the right to continue his business.+ This tiny firm's "license" fee compares with shs 40/- to shs 200/- per annum paid for licenses by enterprises operating legally in the same area. This single example is consistent with the more numerous cases uncovered by Inukai in his enumeration of firms drawn from a much larger group.

Building codes, established to meet aesthetic, architectural, and engineering standards imposed by the former colonial government and based on British conditions, are excessive in comparison to the technical needs of enterprises and create an impediment to entry and growth. Our study did not, of course, indicate how many potential firms had been excluded by lack of access to facilities (or licenses) but it did reveal some insight into the impact of these laws. Forty-one firms occupied "permanent" structures, built in accordance with legal standards. (See Table 8.) Another 28 occupied "semi-permanent" quarters constructed of wood, mud or sheet metal; these buildings provided adequate shelter for equipment and for workers but they failed to meet legal standards set for buildings or for working conditions. Firms in the vicinity of those included in our sample and utilizing similar facilities were being closed down, slowly but systematically, to make way for "modernization".

* See I. Inukai, "Legal Framework for Small-scale Enterprise" in F.C. Child and M. Kempe (editors) Small-scale Enterprise: Nairobi: Institute for Development Studies, Occasional Paper No.6, 1973, pp 88-99.

+ We were told that the payment went to the Urban Council.

A major concern of the particular entrepreneurs whom we interviewed was the uncertainty of their business existence and a quest for an alternative location for their work. (See Table 2.) The problems were proportionately greater for those 16 firms which occupied "temporary" facilities made from salvaged lumber, sheetmetal or other material and which, in appearance, are akin to the squatters' homes frequently seen in Hong Kong, Karachi, or in the barrios of some Latin American cities.

At least half of the firms in our sample faced the prospect of acquiring new, more expensive buildings, of moving beyond the jurisdiction or attention of the local authorities (and probably that of their customers too), or of closing their businesses. In a number of cases, there was an obvious need for sanitary facilities, water and sewage, for the benefit of the workers and for protection of society at large. Other than this, however, we could not find evidence of unduly high social cost inflicted on society by the existence of these "sub-standard" buildings. They might possibly offend aesthetic standards of the elite but that is a matter outside the concern of most Kenyans. On the other hand, higher cost facilities would surely mean less income for producers, higher cost for their products which are sold primarily to low income consumers, or both. It would be a pity indeed, if contrived, unnecessarily high building standards should delay or limit the opportunity for lower income groups to share in the incipient economic growth of the nation.

IV

The products offered by rural small-scale industry in Kenya are not the sort that would sell readily in the markets of London or New York nor to high income consumers in Kenya. But similar firms do produce and sell similar products for the benefit of lower income consumers in Nairobi or other urban centers of Kenya. These products are, using the economists' jargon, "inferior goods". This unfortunate term does not necessarily mean that the quality of the good is inferior, although it might be; the technical definition of an inferior good is "one purchased by consumers in lower income brackets for which there is a higher price substitute purchased by higher income consumers". The implication is that demand for an inferior good declines as incomes rise. The world economy is replete with examples: grain as a staple in the diet is usually

replaced in part by poultry, meat or dairy products as economies grow.* A curious example from a very affluent society is the Volkswagen, demand for which declines as consumers become rich and substitute the Mercedes as a means of transportation.

As Kenyan economic growth proceeds, one may expect that the simple handmade furniture, currently selling in a growing market, will be replaced by factory-made articles finished to a high gloss after construction by specialized, skilled craftsmen using modern and efficient woodworking machinery. Similarly, the handmade clothing and shoes will be replaced by factory and machine-made articles while the charcoal stoves of the blacksmith will disappear in favor of modern cookers. Rural maize mills will disappear as consumers buy their maize, already milled, from provision stores; ox carts will disappear in favor of lorries or automobiles and water tanks will be replaced by modern water systems. But all of this will surely be a long time coming. Economic growth and the achievement of affluence is a slow process and will take, literally, generations. The market for "inferior goods" will be with us in the meantime. Indeed, it may be expected to grow. As the economy develops and the presently poor achieve higher incomes, they will be replaced on the income scale by the presently very poor who will become less so. Since there are more of the latter than the former we may expect that, for the foreseeable future, there will be an expanding market for the products of the firms under study here.

At the present stage of Kenya's development, the products offered might well be considered "superior". The clothing offered by tailors and the shoes offered by cobblers, rather crude when judged by sophisticated Nairobi standards, are nonetheless a major improvement over traditional clothing and footwear and are clearly revealed as preferred by those who buy them. The traditional banda made of mud smeared on a wooden framework is beginning to yield to homes of wood, brick or stone; the thatched roof is being replaced by sheet metal or even tile; and windows now appear with steel frames. The simple bed produced by small furniture shops is rapidly replacing the traditional "built-in" bunks of traditional bandas. While these new things, too, will pass, they may be expected to

* The proportion of grain in the average consumer diet might well be used as an index of the level of economic development or well-being of world economies.

sell for years to come. That they currently sell in an expanding market is indicated by the businessmen's estimate of their own economic position; the overwhelming majority of those interviewed reported that their profits were satisfactory to good, and rising. (See Table 10.) The rapid, accelerating growth of the number of enterprises is a prima facie case that the social and private product of capital invested in the enterprises is favorable. The limit on growth is not the market but, rather, the supply of labour skills and of entrepreneurial talent.

Those who thoughtlessly inhibit or overtly deny growth of the output of these "inferior good" industries, those Kenyan policy makers who insist on European standards only for housing, furniture, and clothing are, in effect, limiting the benefits of economic growth to the privileged few. They would deny access to a modest but improved living standard for the mass of the population.* For a newly developing economy, consumer choice limited to highest quality and cost standards or none, usually means the latter for the bulk of the population.

V

Our study provided limited evidence that infrastructure investment in Kenya would have a salutary effect on the Intermediate Sector. About one-third (31) of the firms use electricity provided by East African Power and Lighting. (See Table 20.) Another eight firms use petrol or diesel fuel to generate their own electricity and one firm, a sawmill, used a petrol engine to drive its machinery. The latter nine firms and a majority of the thirty-nine firms which reported no source of power at all, indicated a desire for access to regular electrical service. About half of the complaints about machinery were related to lack of power. Several firms, in anticipation of extension of East African Power's service to their area, had purchased power driven equipment. Their particular expectations have been disappointed -- in some cases for more than two years -- and the power equipment remains unused, collecting dust and rust.

The most frequently mentioned complaint of the firms studied was with respect to transport, lack of good roads or access to service of common carriers. (See Table 2.) At least part of the numerous complaints

* They are eligible for membership in the "Marie Antoinette School of Economics" whose motto, coined by its founder, is "Let Them Eat Cake."

about access to raw materials was based upon distance from the source of supply. Some firms had purchased their own transport equipment but, for small enterprises, access to frequent and reliable service by common carrier would be more economical. More and better roads, together with availability of electricity, would cut costs and raise the productivity of the workers of the firms studied.

VI

Like petty enterprise everywhere, most of the firms in our sample (59) were individual proprietorships; another 27 were owned by two or a very few partners. (See Tables 4 and 19). One firm is a cooperative with 99 members.* Eleven of the partnerships, the result of mergers of previously existing enterprise, are almost exactly offset by the 12 proprietorships that survive terminated partnerships. There is no example on our study of a limited company.

For all firms save three, the owners participate in the daily affairs of the enterprise; in seventy cases they share in the actual production work. (See Table 5.)

Seventy-seven of the owner/managers interviewed asserted that they were literate, thirty-eight in Swahili and their tribal language and another thirty-nine in English as well. (See Table 16.) These claims seem excessive in comparison with the level of schooling indicated for the same people. (See Table 17.) Only twenty-three said they attended secondary school; another twenty may have attended primary school long enough to achieve functional literacy (standard 5?).

Other formal training which contributed to preparation for a business career includes 11 cases of study in a technical school, three persons attended the Kenya Industrial Training Institute at Nakuru, and two attended village polytechnics. (See Table 18.) Students of penology and rehabilitation will be pleased to know that one businessman in our group acquired his skills at the Kenya Prison Industries. All of this suggests that formal training has been significant but only for a minority of the entrepreneurs contacted. Table 15 reveals that experience is, quantitatively, the most important teacher. Fifty-two owner/managers were

* This firm is a tribute to the organizing ability and capital-raising ingenuity of one man. His activities will be discussed below, see p. 16.

engaged in wage employment as their occupation prior to going into business for themselves. Our study did not reveal the particular source of training of the twenty businessmen who were engaged in another business prior to establishing their present firm.

Some of our entrepreneurs spread themselves quite thin: forty owner/managers (46%) also participate in another business; thirty-seven (42%) have shambas on which they assist, at least seasonally.

None of this suggests that entrepreneurial talent is abundant. On the contrary, a public policy to promote entrepreneurial spirit and to develop entrepreneurial talent would be desirable. Regrettably, there is no neat or easy answer to the question of how this may be accomplished. However, two rather general suggestions come to mind. The first is to strengthen the technical schools and to increase their attractiveness to primary school leavers. The present academically oriented secondary schools, with programs designed primarily for university-bound students, clearly do not and cannot provide many young people with a practical education. And those who drop out of the program tend to be stigmatized. We propose a program to upgrade the curriculum and the faculty of the technical schools together with a public education (propaganda?) program which emphasizes the advantages of a technical education. The former calls for increased expenditure, on equipment and faculty, to parity or better with counterparts in ordinary secondary schools. The latter would include a public information program about the income opportunities available in "practical" jobs, especially from productive enterprise, together with public policy statements about the need for such contributions to the growth of the Kenyan economy. This last would enhance the status and prestige of business, money-making activities.

A second policy proposal is to upgrade and extend on-the-job training and apprenticeship programs, something that can be done at relatively small cost to the development budget but which should yield good returns. Such programs are the primary sources of small-scale businessmen and, as we shall see later, of trained labor. Business enterprise which will offer such training both in production and management could, if they meet certain standards, have their programs "officially certified" and thereby become eligible for technical assistance and, possibly, direct money subsidies from a special government agency set up for that purpose. It seems likely that management and labor development programs could be partly underwritten, with funds and personnel, by a foreign development

assistance agency. Some sort of public funding is almost certainly necessary to offset the bias against privately-financed training programs whose worker/beneficiaries, in the absence of indentured servitude, are permitted and even encouraged to leave their positions to strike out on their own once they have been successfully trained.

VII

The age composition of the firms in our sample, assuming that these firms are reasonably representative, suggest that business entry into the Intermediate Sector is easy. (See Table 3.) Other evidence points to the same conclusion. We have already noted that the firms are very small. (See Tables 4,5, and 19.) The technological knowledge required of the would-be business man is modest; sixty-seven of the fabricating firms in the group reported that they copied both the product and the technology from another, existing enterprise -- although two firms reported receiving product-design assistance from a Rural Industrial Development Center. For entrepreneurs engaged in servicing or repair work, all that is required is to learn the trade, accumulate a little capital and to have the temerity to risk going it alone. While it is likely that the firms would operate more efficiently or more profitably with better educated managers, formal education requirements have not thus far imposed a serious barrier to entry. (See Tables 17 and 18.)

Moreover, the initial capital requirements are very modest. (See Table 22, line 1.) The modal amount of initial investment among firms in our sample was shs.500/-; shs.1,000/- was enough for 50% of the firms to get started and 75% of all firms needed less than shs.4,000/- at entry. The average amount of initial investment, shs.7,960/-, overstates the case because the mean is more than proportionately affected by those firms in the sample with extreme values, one of which began with an investment of shs.85,000/-.*

As indicated in Table 6, personal saving was the normal source of capital funds at the time of establishment, supplemented in twelve cases by loans. (See Table 25.) With the notable exceptions of the loans from the locally-based Joint Development Loan Boards (JDLB), loans made at the time of establishment were made to firms with relatively large (for the sector under study) capital requirements. Two loans from private

* A takeover from an Asian.

individuals were made by non-citizen sellers of well-established but Kenyanized enterprise. The commercial bank and Industrial and Commercial Development Corporation (ICDC) loans were made to firms located in the urban centers of the regions studied and, typically, promoted establishment of relatively large enterprises. In each case the loan proceeds were used to purchase equipment consistent with the size of firm and production methods considered appropriate for the Modern Sector of the economy. Only the JDLB loans were small, directed to support of very small-scale enterprise.

On the other hand, the five ICDC loans and two of the three JDLB loans for new enterprises, were made in Western Province, suggesting that these agencies may be trying to ameliorate regional imbalances in Kenya's economy. Casual observation leads one to believe that economic development in Western Province is a step or two behind those portions of Eastern and Central Province included in our study. The latter contain more modern industry; improved housing is much more in evidence, e.g., stone construction steel window frames, or sheet metal roofs. The use of animal power and ox carts, for those who cannot yet afford tractors or lorries, is fairly common in the Central and Eastern Provinces but hardly seen in Western Province. Similarly, water tanks for catching and storing of rain water, fairly common in Embu, Machakos and Nyeri Districts, are just beginning to appear in Western Province. In at least one case, the zeal of the ICDC loan officer and the enthusiasm of a borrower combined in agreement on a large but disastrous loan. The loan proceeds were used to buy equipment for fabrication of large water storage tanks for which the regional market was as yet insignificant. Although a few units of the firm's output are sold from time to time and a larger market may soon emerge, for the present the expensive equipment is rarely used, the loan is in default, and the businessman relies on his traditional tinsmithing activities for survival.

VIII

Our data and our impressions revealed that capital for expansion, while hardly abundant, has not been critically scarce. The fifty-nine firms which complained about a shortage of equipment were essentially the same firms which complained about lack of credit. (See Table 2.) Their complaints are belied, however, by the fact that seventy-two firms reported they had substantial excess capacity, even though the excess capacity estimates shown in Table 22, lines 7 and 8, are almost certainly exaggerated. Excess capacity estimates were often made off-the-cuff by the owner/managers and

were not consistent with the conditions observed during our cursory examination of the enterprise, its equipment and premises. Nevertheless, excess capacity was evident and this fact together with others in the study, confirms our belief that complaints of credit shortages for financing acquisition of capital goods are exaggerated.

Businessmen always complain about lack of credit, especially to survey-research workers; they often jump to the conclusion that a loan is one thing that a research worker might be able to assist them to obtain and so they register their complaint. Their view on this score is often reinforced by the fact that loans figure prominently in discussions with technical assistance personnel. Loans are relatively easy forms of assistance to grant and to receive; they are also easily counted and recorded for activity reports to higher authorities as evidence of doing one's job. Useful information with respect to product design, production technology, or management technique, on the other hand, is both more difficult for a technician to give and for a businessman to accept or implement. Experience in other countries, more or less confirmed by this study in Kenya, suggests that if an enterprise is profitable and if the manager is reasonably aggressive and inventive, capital funds are frequently -- though not always -- obtainable.*

It was agreed by all owner/managers interviewed that capital equipment is rarely available from suppliers on credit. Expansion of capacity was financed for all 87 firms by reinvested earnings, supplemented in 32 cases by infusions of savings generated from sources outside the enterprise itself. (See Table 7.) When the firms' own resources proved inadequate, loans for expansion were floated by 23 firms, about one out of four in the sample. As was the case for loans at establishment, the largest expansion loans to the larger firms were made by ICDC; the smaller loans to the smaller firms were made by JDLB's. All ICDC loans and JDLB loans, and the majority of commercial banks loans, financed equipment or building purchases. (Twenty-three out of 32 firms which owned their own buildings paid cash for them.) Even working capital loans, if any, were secured by the borrowers' building or equipment. There was no example of an unsecured loan, for either establishment or expansion of a firm.

* See for example, F.C. Child and H. Kaneda, "Prelude to the Green Revolution, a Study of Small-Scale Industry in the Pakistan Punjab", EDCC, forthcoming. (Working Paper No.11, Department of Economics, University of California, Davis.)

Curiously, and in contrast to the case of loans at establishment, there is not a single expansion loan, from any source, to firms in Western Province and only one example in Machakos District. Virtually all firms receiving expansion loans were located in Nyeri or Embu regions. This fact may reflect regional discrimination sometimes alleged by politically active Kenyans. Alternatively, it may reflect the development lag in the neglected regions, a fact about which there is fairly wide consensus. Whether the absence of loans to lagging regions is a cause or an effect, is a debatable question.

We were also interested to observe that two-thirds of all commercial bank loans for expansion were made in the Embu region, suggesting either responsive or aggressive banking practices in that area. In a country in which authority is normally centralized, junior officials hesitate to exercise independent judgement, discretion, or to accept responsibility. It is easier to take no action than to risk the criticism and retribution that follow an action which might prove to be mistaken, i.e., better no loan than to risk a bad loan. It appears that some banker(s) in the Embu area feel differently.

IX

The term of loans is typically short: up to five years for ICDC loans, three years for JDLB loans, and two years for commercial bank loans. Such short terms are normal, especially in a newly developing country where capital investment is not very "deep", where the "recoupment period" of the borrowers is also short.

The usual stated interest rates for loans from commercial banks and the ICDC were 8.5% to 9.5%; for JDLB loans the most often quoted rate was 6.5%. In a number of cases, however, the firms in our sample provided us with a repayment schedule and, after a little calculation, we discovered that the real, effective rate of interest on loans was different: as low as 4.5% in one case, but in more cases, the calculated rate ran to 12%, 17% and 20% or more. (See Tables 25 and 26.)

Unfortunately we discovered this phenomenon too late in our study to verify it for all firms receiving loans or to recheck the reported cases. It is at least possible that some of our respondents provided us with inaccurate information. Moreover, we are informed that, at least for commercial banks loans, bank policy requires that the stated and the effective rates of interest shall be the same, i.e., interest is

paid on the actual declining balance and the repayment schedule is set up to amortize the loan at the stated interest rate over the period of the loan.* Nevertheless, the monthly payments and the term reported by several borrowers, on loans from both official and private lending sources, imply an effective interest rate different from the stated rate. Further, several firms reported that at the time of loan disbursement, an immediate partial repayment was required so that the net loan proceeds fell short of the face amount of the loan. In effect the loan was immediately discounted, raising the effective rate of interest. Even allowing for reporting errors, the frequency (and sincerity) of these reports led us to believe they were true. (We cannot discern any reason for respondents to mislead us on this point.)

It is possible that ICDC or JDLB policy permits or requires loans to be offered at a discount. But if discounting of loans or initial charges for making loans are contrary to official policy, it is possible that loan officers are demanding such payments as kickbacks in return for loan approval; similarly, monthly payments set above the amount necessary for amortization at the stated rate may reflect extra-legal payoffs. If the reported practices are contrary to official policy of the lenders, if loan officers are violating the rules for personal gain, they could be detected by careful auditing procedures. Both practices are common among lending agencies in the developing world where actual interest rates are set below the equilibrium, market-clearing rate. Loan rationing makes such practices both possible and rewarding.

In addition to the practice of advance loan repayments, which raises the spectre of kickbacks to loan officers, we found other evidence of malfeasance in the lending process. One loan recipient alleged that he obtained his loan only after agreement to purchase his capital equipment and to buy his raw materials from sources specified by the loan officer, at prices above the normal market.

The businessmen who reported discounting or tying of their loans were not complaining; they accepted these practices as facts of life. Others, however, spoke with some bitterness about their inability to obtain any loans through normal channels, asserting that loans were available only on a discriminating basis and that, lacking proper connections, they were

* A colleague, J.D. Von Pischke, who is doing a study of rural credit, verified this policy with officials at the Nairobi headquarters of a commercial bank.

effectively discriminated out of the market. This is a common type of complaint among those who fail to obtain loans, sometimes a just complaint but often a rationale or an excuse to explain their own failure to qualify for a loan. The justice of the complaints of unsuccessful loan applicants is difficult to determine but, in some cases, suspicion is hard to avoid. One loan applicant was notified, after months of delay, that his file had been forwarded to a field officer for verification and evaluation but the file could not be found at the field office nor, upon inquiry, at the main office. After further months of delay the applicant provided his own file copies of the papers -- which represented a heavy investment in time and effort for a small firm -- and these papers too disappeared into the maw of the bureaucracy. This story, if true, is an example of either monumental incompetence by the lending agency or, possibly, a failure of the loan applicant to recognize an invitation to appease the venality of the loan officer.

Our study yielded more optimistic, successful, and happier examples. Individual initiative and effort can accomplish remarkable things even in the face of adversity. The cooperative firm in our study, for example, was originally organized to agglomerate a group of carpenter/furniture-makers into a more effective whole. The enterprise was successful and profitable but it needed capital funds for expansion and modernization. Efforts to obtain a loan from private commercial or official government sources were rebuffed. The coop manager then hit upon the idea of opening the business to investment by new shareholders whose contribution would be funds but not participation in day-to-day production or management. When coop membership reached 100, admissions were closed even though a queue of potential investors remained. With the capital thus raised, and with advise and counsel from a Rural Industrial Development Center, this profitable firm has acquired new facilities, purchased better equipment, and expanded its operations to new but related lines of business.

Another less spectacular but no less interesting anecdote is the case of a carpenter employed by a furniture maker. He saved enough of his wages to purchase the minimal equipment and supplies for production of cement building blocks. He hired five employees who worked in an open field (but under a tree) and he was in business for himself. His cement block output sold readily and the entrepreneur soon invested his profits in building and equipment to establish his own furniture-making enterprise. He continues to supervise his cement block firm but soon must leave the job with his original employer -- to manage his projected hardware shop.

X

As indicated above, loans for capital equipment are sometimes available; working capital loans are more difficult to obtain and from all reports, working capital is a more binding constraint. There were 65 complaints about availability of raw materials (see Table 2) and probing revealed that these were usually associated with limited availability of cash or transport. For most firms, only limited amounts of raw materials could be purchased at any one time and this entailed high unit price plus high transportation cost. Only twelve firms reported that they could obtain raw materials on credit from suppliers.

On the other hand, 56 firms reported that they were willing to sell on credit and 54 had accounts receivable outstanding at the time of the interview. (See Table 22, lines 3 and 4.) Called upon to extend credit but unable to receive it exerts a working capital squeeze which few firms in our study can afford. Actually, most of the small enterprises limited their credit sales and their bad debt losses were trivial. The examples of large credit sales were cases of firms which sold to government or quasi-government organizations: uniforms, building materials, or furniture sold to local government units for use in public office buildings, schools, hospitals and the like. These organizations rarely pay cash on delivery and never pay in advance. Participation in this market, perhaps a fairly large one from the standpoint of firms in our study, depends upon a willingness to sell on short-term credit. Unfortunately, short-term credit to governmental units frequently becomes long-term credit. The large sums of accounts receivable referred to in Table 22 are, mostly, due from governmental units or government-related entities.

Probably the most interesting and unfortunate story in this connection is that of a young entrepreneur who worked for several years as an employee of a large firm in a metropolitan area. He returned to his home area with his accumulated savings and established a metal-working firm, capitalizing on his acquired technical skills and his natural entrepreneurial talent. He started by producing some of the traditional products of metal-working firms but soon was marketing steel window frames and metal furniture of his own design. His big chance came with a large order for windows and furniture for a building under construction by a local government unit. Although he fulfilled his contract to the apparent satisfaction of the buyer, he has been waiting for months for payment. Meantime he lacks working capital to purchase raw materials necessary to continue his normal business activities. As a relatively new firm he has

no line of credit with raw material suppliers nor access to credit from a commercial bank. He supports himself and most of his five employees by doing repair and servicing work which requires few inputs purchased from other firms, but is also less remunerative. His once expanding enterprise barely survives. Similar stories, with less dramatic consequences, are told in all the areas studied.

One of the easiest, effective public policies to encourage small-scale enterprise in rural Kenya is for governmental units to patronize them and, more importantly, to pay them promptly. Since local government units are in part financed by central government subventions, and since they are subject to certain procedural requirements set by the central government, it would be a relatively simple matter to mitigate this particular problem. Government regulations could be drawn to require prompt payment of purchase obligations; in the case of larger contracts, provision for progress payments is appropriate. An alternative would be to permit or even to require discounting by commercial banks of certified and endorsed government obligations. Government guarantees could absorb credit risk. To limit the cost of discounting their claims, the purchasing organization could be held responsible for interest payments beyond some period of, say, 60 days.

XI

Government sales are substantial for only a small fraction of the firms in our sample. For most, and for the firms in the Intermediate Sector as a whole, government sales are not important. But access to working capital is. The most likely and convenient source of working is Kenya's commercial banking system and its numerous branches. There are (at least) three reasons for the absence of a healthy and continuous debtor/creditor relationship between small-scale rural firms and commercial banks: (1) lack of credit worthiness, (2) lack of knowledge, and (3) the high cost of administering very small loans.

Lack of creditworthiness, real or simply presumed, is understandable. Virtually all of the firms studied, or at least their present owner/managers, are newcomers to business enterprise and have had no opportunity to prove their bona fides. Like bankers everywhere, Kenyan bankers are dubious about neophyte businessmen; they must prove themselves creditworthy before credit will be extended. For all practical purposes, a new firm must show that it does not need a loan before being judged eligible to receive one.

Some small firms are unable to obtain loans because they lack the knowledge of how to go about getting one. Otherwise creditworthy, they lack information on procedures or the temerity to use them. Moreover, the typical banking staff is also inexperienced and does not aggressively seek loan outlets, certainly not among firms in the Intermediate Sector.

Presumably both creditworthiness and market information will improve with the passage of time. The process might be hastened by technical assistance personnel. The new and inexperienced businessman studied here, even when his operation is profitable, can usually use guidance on organizational efficiency. They can also use advice on product quality and marketing; they need assistance on how to keep financial records and how to use them as a tool of management -- and all the other factors which, in the judgment or rules of thumb used by bankers, attest to credit-worthiness. This sort of technical assistance, a real need, and not just something to please the money lenders, together with information and guidance about the intricacies of entering the money market are things which might well be provided by the Rural Industrial Development Centers. It is also something which they are currently ill-prepared to do. Their present staff consists of production technicians, not managerial consultants. The latter should be added to their several staffs. Not only will small firms be better able to satisfy the bankers' loan criteria, business performance might be improved.

Bankers assert, correctly, that very small loans cost more than they are worth; the interest received hardly covers the cost of paper work involved in preparation and evaluation of the loan, disbursing and collecting the funds. Excess administrative costs might well be borne by the government, at least until the firms grow to a size and gain an experience rating which makes lending to them a profitable activity. The administrative cost of a loan, surely not more than a few hundred shillings, might be paid directly to the commercial bank lender by, say, the ICDC or the JDLB. But the loan itself is best made by a bank at normal commercial rates. On the one hand the banks already have the machinery necessary to issue and collect loans and its existence obviates the need for an additional bureaucracy. On the other hand, the banks can operate on commercial principles and need not feel embarrassment, political or other, about enforcing collection. (Too many firms think of a government loan as something which is given rather than a temporary use of funds which must be repaid.) Finally, by using commercial channels a permanent, long-term relationship can develop, one which will sustain itself without continuing government subsidy; the relationship will be a commercial rather than an eleemosynary one, more durable and less susceptible to corruption.

XII

If there was any doubt that our study concerns small-scale enterprise, it should be dispelled by Table 23. The average employment of the firms in our sample is 7.3, 6.3 of whom are production workers. Even these figures overstate the norm due to the presence of a few extreme cases of relatively large employment. Over three quarters of the firms employed five or fewer production workers and the modal number was three.

Not much should be made of the skill classification of workers shown in Table 23. We accepted the owner/managers' classification in each case even though we are quite sure that some workers classified as semi-skilled by one firm would be considered skilled by the standard of another, or vice versa. More interesting is the relative importance of apprentices in the total; thirty firms, over a third of our sample, have on-going apprenticeship programs with, at the time of our survey, a total of seventy-two apprentices. Table 13 shows that all but two of the 80 firms that replied to our question about training, said that their employees acquired their skills on the job, in an apprenticeship program, or with another firm in a similar business. In nineteen cases the firm employed at least one worker with formal training at a village polytechnic, a technical school, or the Kenya Industrial Training Institute but, it is clear, the industry provides its own training for the vast majority of its production employees.

The group also employed 90 non-production workers; in 52 of these cases the person involved is the owner/manager himself. Since virtually all owner/managers were active in the day-to-day activities of their firms, we were faced with the problem of how to classify them as production or non-production workers. With due recognition that we would make errors of judgment, we decided to classify the owner/managers as a non-production worker if his function as organizer and manager was more critical than his role as a production worker. Thus, even though the large majority of the 52 owner/managers classified as non-production workers also engage in production work comparable to that of their most skilled employees, and may even spend a majority of their time so engaged, we classified them as managers. In some 29 cases we classified the owner as a skilled production worker because his role, usually in the smaller firms, was essentially the same as that of the employee along side of whom he worked; his ownership role was primarily as supplier of capital and his management function was very limited.

Thirty firms employed a total of 38 other non-production workers. (See Tables 23 and 24.) Few firms could afford the luxury of a typist or secretary but 14 employed clerks, 8 employed bookkeepers and 8 employed supervisory or managerial personnel. The monthly wage of non-production employees ranged from a pittance of Shs. 40/- to a relatively handsome Shs. 1,000/-. The medians for clerks, bookkeepers and supervisors were roughly similar to those of the various skill classifications.*

XIII

The range of monthly take home pay for production workers is also indicated on Table 24. Apprentices were typically paid very little or nothing at all. There is an ample supply of young men willing to work for nothing or for a small subsistence allowance in exchange for the opportunity to learn a trade. Forty-seven firms, over half, supplemented wages with meals, shelter, or clothing but we were unable to estimate the value of this payment in kind. Its existence means that our wage data understate workers' incomes somewhat. Forty-six firms, predominately those located outside of the main District towns, typically released their workers to work on their shambas during the planting or harvesting seasons. A few of the firms in our sample worked very long hours. (See Table 22, lines 5 and 6.) Although an eight-hour day and a forty-five hour week were "normal", a few firms worked as much as a 12-hour day and a 72-hour week. The pay basis (see Table 9.) is mostly a time rate although 9 firms used piece rates only and another 19 used a combination of piece and time rates.

Average monthly earnings of production workers in our sample:

Shs 237 for skiller workers,
Shs 153 for semi-skilled workers, and
Shs 104 for unskilled workers,

* For the benefit of the Woman's Liberation Movement, who might suspect that there is discrimination against employment of women in Kenya, we note that we found only one case of a female supervisory employee in our sample. In the owner's normal absence, this lady virtually ran the firm, a medium-sized enterprise by the standards of our study. Her monthly wage was Shs. 150/- significantly below that of any of the skilled and semi-skilled workers under her supervision and below the wage of other managers of comparable responsibility in the area. She was also a relative of the owner.

compare with the average monthly earnings in the modern sector, for 1972:

Shs. 155 in agriculture,
Shs. 414 in services,
Shs. 636 in manufacturing, and
Shs. 475 in all sectors *

The comparison is favorable to small-scale rural industry only with respect to the agricultural sector of the modern economy.

The comparison is somewhat more favorable, and possibly more relevant, if we eliminate the highly paid non-citizens from the modern sector data. In 1971, the latest year for which data are available, of all black Kenyans employed in the modern sector:

19% earned less than Shs. 100/- per month,
34% earned less than Shs. 150/- per month, and
48% earned less than Shs. 200/- per month. +

In contrast, the median monthly earnings of production workers in the sample were:

Shs. 220 for skilled workers,
Shs. 150 for semi-skilled workers, and
Shs. 100 for unskilled workers.

Small-scale rural industry comes off fairly well in this comparison, especially when we note that the Modern Sector data includes the income of all employers, highly paid executive and professional personnel, as well as production workers.

Equally important, the Modern Sector data are dominated by the relatively sophisticated, urban economies of Nairobi, Mombasa and Kisumu which represent only a minority of the total Kenyan economy. Employment in this Modern Sector is not an option which is open to many; as a practical matter, only a minority of Kenya's rapidly growing labor force has a reasonable hope of employment in the Modern Sector.⁵ And most of those

* Source: Government of Kenya, Central Bureau of Statistics, Economic Survey, 1973, p.142.

+ Source: Government of Kenya, Central Bureau of Statistics, Statistical Abstract, 1972, p.229.

5 See my "Employment, Technology and Growth - the Role of the Intermediate Sector," in Small Scale Enterprise; Nairobi: Institute for Development Studies, Occasional Paper No. 6, April 1973, pp.6-18

who do will face the problem of finding housing in the burgeoning ghettos of the city, probably separation from their families, and accommodation to the higher cost of living in the city. For the majority, the alternative is agriculture, hopefully commercial agriculture, or the intermediate sector. The latter is at least as rewarding as commercial agriculture and certainly more rewarding than continued occupation in the traditional sector.

Table 14 indicates that the vast majority of firms, 84 of the 86 that responded to the question, recruited workers from within their local district. Twenty of these firms supplemented their labor force by at least one worker recruited from outside their district. The businessmen in our sample ranged in age from 23 to 55 which is, curiously, almost exactly the age group found to be most mobile in Kenya. That is, the age group from the low twenties to the low fifties is precisely that which migrates during working years. This group doubles the age-specific sex ratio in the areas of in-migration and cuts it in half in areas of out-migration. When they go to the city they bring a variety of social and political problems.* Since migration is clearly a function of employment opportunities per capita, one may predict that growth of rural, small-scale industry would help ameliorate the problem of migration and crowding of the cities.

XIV

Nine firms in our group provided space for "verandah" workers. This a device whereby a self-employed craftsman rents space for himself (and possibly for another worker or two in his employ) on the premises of a licensed firm. The verandah workers pass as the lessor's employees. This system of sub-letting space contributes to the renting firm's revenue and circumvents building or licensing problems of some mini-scale enterprises, often those just getting started as independent businessmen. Verandah workers are not included in the employment figures discussed above but they are, we suspect, quantitatively significant in rural Kenya.

XV

The firms in our sample, in their small-scale way, are quite profitable. Table 27 is a frequency distribution of gross profits. We did not deduct depreciation expenses nor debt service to arrive at a net profit figure. We neglected the former because estimation of capital consumption

* I am grateful to my colleague, Bernard Wasow, for information on age composition of Kenyan migrants and for insights into the relationship between age-specific sex ratios in different regions and availability of income earning opportunities. See his "Regional Inequality and Migration in Kenya". IDS Working Paper No. 125, October 1973.

is a tricky business at best; for the small firms in our sample, with their data limitations, it was virtually impossible to obtain consistent, sensible, and reliable figures. We neglected interest expenses because, for our purposes, the distinction between owned and borrowed capital is not crucial to estimating total social return on capital -- though it is important to the borrower and the lender.

Gross profit is here defined as sales less the sum of wages (including wages of management), purchased inputs, rents and miscellaneous expenses. We obtained estimates on an annual basis by expanding the monthly figures given at the time of the interview -- a choice of evils. On the one hand we found that most owner/managers were unwilling or unable to provide data on an annual basis; they felt more comfortable talking about the current month. But then we had to convert to an annual basis by expanding the monthly figures by the number of months of "normal" operation during the year, again a risky business.*

Gross profit figures thus defined may still miss the mark. Wages of management did not present a problem. For employed managers we used the reported salary. For the majority who managed their own firms, we accepted their reported monthly "drawing" if it seemed reasonable. For the remainder who reported that they took out of the business whatever was "needed to live on" or whose reported salary was out of line, too high or too low in comparison with others, we used a wage equivalent to their highest paid employee or the wage of management of other, similarly situated firms in the same region.

Purchased inputs are almost certainly under-stated because we were not able to obtain useful figures on operating cost of vehicles. We almost certainly missed, consistently, a number of minor miscellaneous expenses. On the other hand, our purchased input figures are too high because we did not deduct the (unknown) increase in stocks during the previous year. Finally, the figure for sales, and hence the figure for gross profits, is probably understated because our survey was conducted during May and June which is a period of seasonally low sales.

* A number of firms closed down or cut operations to a minimum during planting or harvesting seasons; this was especially true in more remote areas. In a few cases we further adjusted our figures for purchased inputs to allow for the non-representativeness of the interview month.

One cannot reasonably assume that these omissions cancel each other. It does seem reasonable that the errors and omissions will be reasonably consistent from firm to firm -- with one exception: omission of transport operating costs will tend to over-state, consistently, the gross profit of those firms with transport equipment. Since the latter is related to size, in part, it is a source of bias.

In short, our estimates of gross profits should be considered just that, estimates. And with these caveats in mind, we note that the average annual gross profit of the firms in the sample is shs.38,890/-. (See Table 27.) However, 80% of the firms earned less than that figure: the distribution is very strongly skewed to the high side. Perhaps more representative is the median gross profit of shs.11,980/-. But even the median does not describe the situation fully; gross profits vary over an extremely wide range, from a high over half a million shillings to a loss of about shs.40,000/-. Nine firms generate very high gross profits, over shs.100,000/- per year, respectable by any standard. Twelve firms show negative gross profits and another five have gross profits so small that, after allowance for depreciation and interest (if any) their net profit must approach zero or be negative. Almost one out of five firms appeared to be failing or on the margin at interview time. Still, four out of five are performing respectably and half of the group generates gross profits of shs.1,000/- per month or more. Comparing this figure with incomes in the modern sector (above, p.22) and remembering that wages of management have been treated as a cost, the owners of the firms in our sample are in a relatively high income bracket.

Table 28 shows the gross profit data expressed as a percentage of the firms' investment in fixed capital. Again, the most striking characteristic of these data are their variability. The gross rate of return ranges from a low of - 1,000% to a high in excess of 5,000% - extremes usually associated with the high labor-intensity of production in a few small enterprises. A few firms use a miniscule amount of capital so that their gross profit, as a percentage of capital, appears astronomical. Still, even after allowing for these extreme cases, there is a wide variation. Twelve firms (about 14%) show negative returns; half of the firms earn a gross return on investment in excess of the median of 143.3% and 15 (about 17%) earn over 800%. Perhaps the most meaningful figure is the aggregate return on investment: the eighty-seven firms in our study earned, gross, 155.7% on a total investment in fixed capital of almost shs.2.2 million. Even if we allow an arbitrary (and fairly high) 20% for capital consumption, the net return on capital is a generous 135%.

If we include stocks in our capital base (see Table 29) the median rate of return is reduced to 75.1% and the aggregative return of all firms is 114.7% on a total investment of nearly shs.3,000,000/-.

XVI

Private profitability is important, as an incentive to investment and entrepreneurship. More important from the social point of view is the generation of income and employment associated with capital formation, i.e., the gross capital/output ratio (K/O) and the gross capital/labor ratio (K/L). The former indicates the capital formation required or associated with increments to the gross domestic product, assuming the availability of other primary inputs such as labour; the latter indicates the capital requirements per new job created.

We have used three different capital measures to calculate the ratios, K/L and K/O. Capital measure No. 1 is the firms' reported investment in fixed capital. This understates the capital requirements for those 56 firms which rent their premises. The estimated value of rented buildings is included in measure No. 2. We found it impossible, however, to ascertain the precise market value of rented premises so we assumed, not too arbitrarily, that the value of buildings was ten times the annual rental. This may be an understatement of market value but not of construction cost. Stocks are included in capital measure No. 3. Stocks represent a necessary and legitimate social investment although we have some reason to believe that stocks are excessive for a number of firms in our study.*

Estimated K/O and K/L ratios for all firms, calculated three ways, are presented in Tables 30 and 31. Using capital measure No. 3, the largest, the ratios are:

	K/O	K/L
Median	.43	shs.3,646
Aggregate, all firms	.44	shs.5,566

Because of wide disparities in firm size, the aggregate ratios -- total capital for all firms divided by total output and employment respectively -- are the more meaningful figures. These statistics indicate that shs.4,400/- invested in firms like those studied will add shs.10,000 to the economy's

* See my note on "Entrepreneurship and Management in a Society in Transition", P. 51.

annual output. Put another way, capital invested in the intermediate sector, when combined with other inputs (mostly labor) will yield over 225% (before depreciation).

Comparable figures for the modern, monetized economy are difficult to obtain. Kenya's 1970-74 development plan included estimates of K/O for a number of development projects in particular industries. These ranged from .71 in clothing to 8.79 in sugar with an average for all industry projects of 2.3*. Tobin estimated K/O by sectors from the national accounts of 1964-71. His estimates range from .41 in banking, insurance and real estate (the only sector with K/O less than 1.2) to 7.35 in electricity and water. The K/O for all private sectors is 2.9⁺. Even allowing for a large margin of error in our estimates, investment in the intermediate sector has a substantial margin of social productivity over the modern sector.

On the employment side, the investment per new job created in the group of firms studied (and using our highest estimate) is shs.5,566. Again, comparable figures for the modern sector are scarce. Rough calculations from the national accounts indicate that capital formation per job created was shs.65,000/- during the period 1963-71. The difference from K/L in our study seems outrageous and is almost certainly an inappropriate comparison because the former includes all sectors of the modern economy -- services, utilities, and government -- which have inherently high capital/labor ratios but are nevertheless important to Kenya's development and probably have a favorable impact on the productivity of capital elsewhere, including the intermediate sector being studied. The only industry-specific estimates from the modern sector that have come to our attention are those of Pack who calculated that the paint and textile industries, each had a K/L ratio of shs. 14,000/-.⁵

* Republic of Kenya, Development Plan, 1970-74, Nairobi, 1969, p. 310.

+ James Tobin, "Estimates of Sectoral Capital/Output Ratios for Kenya," Nairobi: Institute for Development Studies, Discussion Paper No.171, 1973, p. 8.

§ H. Pack, "Employment and Productivity in Kenyan Manufacturing," Nairobi: IDS Working Paper 54, August 1972.

On the basis of this very limited evidence we venture to suggest that capital formation per job created in the modern sector is about three times that of the firms in our study. Put the other way around, investment in the intermediate sector would generate about three times as many jobs as a similar sum invested in the modern sector.*

XVII

From the K/O and K/L statistics we can reasonably infer that the social productivity of investment in the intermediate sector exceeds that of capital formation in the modern sector -- at least at the margin. We cannot conclude that massive re-direction of investment is indicated, for two reasons: First, much of the development budget is devoted to education, development of resources, extension of public services, utilities and infrastructure such as roads and sanitary facilities. The social productivity of these activities is very high and resounds favorably, though probably immeasurably, to the productivity of investment in all other sectors. These activities must needs continue. Secondly, K/O and K/L are certainly not linear functions. That is, the intermediate sector can absorb new capital formation at a limited rate without a decline in both ratios. Investment can proceed and continue to have high yields and low cost per job only if complementary resources are available. Massive investment in the intermediate sector would eventually run into shortages of skilled workers and of qualified entrepreneurs. While we have no reason to think that supplies of these two types of manpower have been exhausted neither have we any reason to think they are unlimited. Indeed, the immediate bottleneck for Kenyan growth almost certainly lies in the supply of qualified manpower. In short, the indicated public policy is to shift emphasis and resources from the modern sector to the intermediate sector and, simultaneously, to emphasize those development activities which will increase supplies of skilled labor and entrepreneurship.

* As this is being written, I have pondered the K/O and K/L statistics. They look good; indeed, they look too good. With a bit of checking I have discovered that I failed to ask Mr. Griffing, who did the computer-programming for statistical procedures, to deduct "purchases from other firms" from the output of the firms in the sample. The output figure used is gross output rather than value added. It is the latter which properly should have been used. The calculations will have to be done again and will be published in a revision of this paper. It should be noted, however, that no conceivable revision of the statistics to reflect purchases from other firms could raise K/O to approach that of the modern sector.

This discussion serves to recall and to emphasize the need for public programs and social policies designed increase the supply of entrepreneurship and to enhance labor skills. (See section VI above.) Introduction of manual training curricula in primary schools and aggrandizement of technical schools at the secondary level are indicated -- if necessary at the expense of academic secondary schools, colleges and universities. Expansion of extension services by organizations like the Rural Industrial Development Centers and underwriting of apprenticeship programs and on-the-job training would have a high social return and should be undertaken -- even at the expense of more formal programs like Kenya Industrial Training Institute or Kenya Institute of Management.

XVIII

Tables 32 and 33 present a comparison of the profitability and social performance of firms which have received loans and those which have not.

All 12 borrowers from commercial banks operate with a positive gross profit rate though one, at +14%, is close to the margin. The K/O and K/L ratios cover a fairly wide range in a small number of cases but all are reasonably close to the middle of the distributions for the whole sample, except for two firms with very high K/L ratios of 10,500 and 15,300.

Official lending agencies (ICDC and JDLB) have tended to pick firms with less than the median rate of return of non-loan receivers and less than the aggregate rate of return for all firms, but this observation does not necessarily imply criticism.* Presumably their function is to lend to firms which would not ordinarily qualify for a commercial loan or which are more than normally risky. They have picked five real losers with negative rates of return, one at -1015% on invested capital. Another firm is marginally profitable at +14.1%. There is some tendency for official agencies to pick firms with relatively high K/O and K/L ratios; of the latter, three are between 13,000 and 16,000. This may reflect a tendency to look favourably upon more capital-intensive (modern) technology when considering loan qualifications. Such was not the case for commercial bank lending.

* Due to an error in my instructions for computer programming, 4 firms which received multiple loans, from both official agencies and private sources, were omitted from the statistical summaries of Tables 32 and 33. This error will be corrected in a revision of this paper.

Loans are available but not necessarily in the amounts or frequency desired. These data do not tell us anything about firms in need of loans, possibly creditworthy, but unable to obtain them. Our earlier discussion (see sections VII-X) suggested that loans at establishment were not a major problem. Loans for expansions were somewhat more scarce and loans for working capital might be a special problem. At that point we recommended policies designed to promote loans by commercial banks to firms in the intermediate sector. (See Section XI.) Specifically, we recommended that technical assistance agencies, in their efforts to promote better products, better technique, and better management practices would ipso facto improve profitability and creditworthiness. Further, assistance in setting up bookkeeping systems to record and to help management to control the flow of funds would, inter alia, demonstrate that creditworthiness exists. Finally, the most likely and effective vehicles for extension of credit to business firms are ordinary credit agencies; technical assistance personnel should introduce their clients to commercial banks and assist them in loan application procedures.

Commercial banks have singular advantages as credit agencies: their very existence obviates creation of an additional organization and a duplicate bureaucracy, they offer fewer opportunities for extra-legal practices, and they can establish a continuing, long-term relationship with the client. If necessary in the early stages, a subsidy to private lenders (and borrowers) would be appropriate and almost certainly less costly to the government than establishment and maintenance of another separate organization. From the limited data given above, we can now see that private lenders may have less bias, toward capital-intensive technology.

Greater reliance on commercial banks may contribute to a lessening of the urban/rural imbalance, a problem which is attracting increasing attention of Kenyan development planners.* Commercial bank branches have been established in rural market centers all over Kenya. As incomes have begun to rise and the rural population has become familiar with banks, deposits have risen. Loans in rural areas have not risen in proportion: the loan/deposit ratio of rural bank branches is low and falling. The vast majority of bank loans are made in urban areas; the urban loan/deposit ratio can rise. The commercial banking system becomes, willy-nilly, the

* I am told, in conversations with officials at the Ministry of Finance and Planning, that this problem will receive increased emphasis in the forthcoming Five-Year Development Plan.

instrument for transferring resources from rural to urban Kenya. A policy to promote loans in rural areas will slow, though probably not reverse, this phenomenon.*

Loan funds have recently become available to the Rural Industrial Development Centers and the RIDC's are expected to supplement their technical/^{assistance to} clients with direct loans. This is a most unfortunate policy. It adds to the work load of an already understaffed agency and reduces the likelihood that their clients will contact ordinary credit channels. Moreover, combining the technical assistance and credit functions can only reduce the RIDC's effectiveness in the former, vastly more important role.

Initially an RIDC client may be more receptive to advice if a loan is in the offing. He is attracted by the prospect of a relatively easy loan and will adopt, or at least appear to adopt, modes of behavior which portend a favorable loan decision. But once the loan is made, its very existence is deleterious to the relationship between the two parties. On the one hand, RIDC now has a vested interest in the success of the enterprise; to demonstrate the wisdom of its decision which has involved public funds, it must defend the enterprise and go to great lengths to insure its success. RIDC personnel may be tempted to participate in the firm's management, if that should prove necessary, to insure success or to correct a mistake. Loans from technical assistance agencies lead to disproportionate demands on the time and efforts of their personnel. On the other hand, as a loan collection agency the RIDC and the client become adversaries rather than allies. A debt collector is not a welcome visitor and when this role is played by technical assistance personnel, it creates frictions and exacerbates any previously existing tensions.+ Kenya should be reducing the number of official credit agencies, not increasing them. It certainly should not intermingle the credit and technical assistance functions.

* I am indebted to J.B. von Pischke of IDS for information with respect to rural/urban disparities in the loan/deposit ratio.

+ RIDC managers or technicians have sometimes been mistaken for emissaries from ICDC. As such they are assiduously avoided by owner/managers of debtor firms, especially if the loan is a bit in arrears.

XIX

Our field study has revealed that small-scale rural industry is profitable; it provides a better than average income to the Kenyan businessmen engaged. The rate of return on capital compares favorably with Kenya's modern sector and with that of other developing economies. The reward to labour, while not magnificent, ^{compares} reasonably well with modern industry and very favorably with modern agriculture. Employment in the intermediate sector is certainly to be preferred to subsistence agriculture or to unemployment, disguised or open; the latter are the only available options for a substantial portion of Kenya's rapidly growing labor force.

At the aggregative level, capital invested in the intermediate sector makes a larger contribution to national product and creates more employment than does an equivalent amount of capital formation in the modern sector.

Despite the (thus far) lack of public assistance, small-scale rural industry is growing at an accelerating rate and, assuming that our sample is reasonably representative, we may expect continued growth. Entry is easy; capital and technological requirements are modest. Capital for establishment of a business is available from private and personal sources; capital for expansion can be drawn from reinvested earnings supplemented in some cases with loans. Working capital may become a problem.

For the most part, both entrepreneurs and workers have been drawn from the labor force of the modern sector or trained within the intermediate sector itself. Limited supplies of entrepreneurship and skilled labor for the expansion of existing firms or establishment of new firms are probable barriers to expansion of the intermediate sector.*

For the short-run the indicated public policy is to assist existing firms with an expanded technical assistance program, promotion of on-the-job training, and encouragement of relationships with the banking system. For the longer run, Kenya will benefit from a shift of

* This is a topic to be discussed in my "Entrepreneurship and Management in a Society in Transition", IDS Working Paper No. 128.

emphasis in the education system, from almost complete emphasis on an academic curriculum toward some manual training and technical education.

We have found nothing to contradict our earlier, tentative conclusion: "...the Intermediate Sector offers a favourable return on scarce capital, generates productive jobs at a low investment per job, utilizes saving not otherwise available, develops new skills at low cost to society -- a combination hard to beat. It might even slow the rate of urbanization. A developing economy could hardly ask for more.*"

* From my "Employment, Technology and Growth -- the Role of the Intermediate Sector", in Small Scale Enterprise, IDS Occasional Paper No. 6., 1973, p. 18.

Table 1

Statistical Tables
Number of Firms in Sample, by Type of Product

Type of Product (a)	To Accompany			
	Kenya	Uganda	Tanzania	Total
Manufacturing, electrical	1	0	0	1
Manufacturing, iron	1	0	0	1
Manufacturing, iron and electrical	1	0	0	1
Manufacturing, furniture	4	10	10	24
Automobile repair	1	0	0	1
Auto, cycle, general repair	0	1	1	2
Cycle, radio repair business	0	0	0	0
Metal working, cycle and general repair	1	0	0	1
Cycle and general repair	1	0	0	1
Metal working, general repair	1	0	0	1
Woodworking, furniture	1	0	0	1
Furniture, house construction	1	0	0	1
Furniture, hardware sales	1	0	0	1
Furniture, hardware, sawmill, construction	1	0	0	1
Tailoring	0	0	0	0
Tailoring plus cloth retailing	0	0	0	0
Shoemaking + Repair	1	0	0	1
Baking	0	0	0	0
Radio selling	0	0	0	0
Photography	0	0	0	0
Common building blocks	1	0	0	1
Printing	1	0	0	1
Business making	1	0	0	1
Dry cleaning	0	0	0	0
Ice carts	1	0	0	1
Total	22	10	10	42
No. of Firms Represented	10	11	10	31

An Empirical Study of Small-Scale Rural Industry in Kenya

By
Frank C. Child

IDS/WP 127

Table 1

Number of Firms in Sample, by Region and Type of Product.

Type of Product (s)	Region				Total
	Machakos	Embu	Nyeri	Kakamega	
Metalworking, tinsmith	1	5	0	2	8
Metalworking, iron	1	1	0	1	3
Metalworking, iron and tinsmith	1	0	3	0	4
Woodworking, furniture	4	6	10	10	30
Automobile Repair	1	0	0	3	4
Auto, cycle, general repair	0	0	1	3	4
Cycle, radio repair plus sales	0	1	0	2	3
Metal working, cycle and general repair	1	1	2	0	4
Cycle and general repair	1	0	0	0	1
Metal/wood working, Ox carts, general repair	4	1	0	0	5
Sawmill	0	2	3	1	6
Furniture, house construction	1	0	0	0	1
Furniture, hardware sales	1	0	0	0	1
Furniture, hardware, sawmill, construction	1	0	0	0	1
Tailoring	0	0	0	1	1
Tailoring plus cloth retailing	0	0	1	0	1
Shoemaking + Repair	0	1	1	0	2
Baking	0	0	1	0	1
Maize milling	0	0	1	0	1
Photography	1	0	0	0	1
Cement Building blocks	1	0	0	0	1
Printing	1	0	0	0	1
Mattress making	1	0	0	0	1
Dry Cleaning	0	0	1	0	1
Ox Carts	1	0	0	0	1
Total	22	18	24	23	87
No. of Market Centers Represented	10	5	10	11	36

Table 4

Form of Business Organization

<u>Form of Organization</u>	<u>Number</u>
Individual Proprietorship	59
Family Partnership	13
Non-Family Partnership	3
Mixed Partnership	1
Cooperative	1
Total	87

Table 5

Extent of Owner Participation

<u>Owner Participation</u>	<u>Number</u>
Supply of Capital Only	3
Capital and Management	13
Capital, management, production work	66
Varied (in partnership)	4
Not indicated	1
Total	87

Table 6

Source of Funds at Time of Establishment

<u>Source</u>	<u>Number</u>
Personal Savings - wages or salaries	48
Personal Savings - agriculture	12
Personal Savings - another Business	14
Personal Savings - not specified	7
Personal Savings - wages plus agriculture	4
Personal Savings - wages plus another business	2
Total	87

Table 7

Source of Funds for Expansion

Source	Number
Reinvested earnings	54
Reinvested earnings plus savings from agriculture	21
Reinvested earnings plus savings from wages elsewhere	3
Reinvested earnings plus savings from other enterprise	6
Reinvested earnings plus new shareholder	1
Reinvested earnings plus savings from multiple sources	2
Total	87

Table 8

Type of Building Occupied

Type of Building	Number
Temporary building; "squatter" type	16
Semi-Permanent; wood, mud, sheet metal	28
Permanent; constructed to legal standard	41
not indicated.	2
Total	87

Table 9

Pay Basis for Employees.

Pay Basis	Number
Daily rate	5
Weekly rate	1
Monthly rate	45
Piece Rates	9
Monthly and piece rates	12
Combination of different time rates and piece rates	7
No response	8
Total	87

Table 10

Owner Opinion of his Business Profits

Profits are:	Number	Profits are:	Number
Satisfactory	42	Rising	54
Good	24	Falling	6
Permit Survival	18	Stable	2
Negative	1	No response	25
No response	2	Total	87
Total	87		

Table 11

Book-keeping Systems Used

	Number
1. Cash Book	12
2. Sales/Purchase Record	2
3. No. 1 plus No. 2	35
4. No. 1 plus Inventory Record	1
5. No. 1, No. 2, plus Inventory Record	14
6. Complete accounting system	10
7. No. 6 plus regular accountancy statements	2
8. Not indicated	11
Total	87

Table 12

Other Income - earning Activities of Owner/Managers

	Number
Another business firm	32
Shamba	21
Shamba plus another Business	8
Wage employment elsewhere	1
None or no response	25
Total	87

Table 13

Source of Workers' Training

	<u>Number</u>
1. On-the-job, apprenticeship, or with another firm	59
2. No. 1 supplemented by village polytechnic	11
3. No. 1 supplemented by "technical school" trainee	6
4. No. 1 supplemented by KITI* trainee	1
5. No. 1 supplemented by KITI and Village polytechnic	1
6. Village polytechnic and KITI	1
7. "Approved" technical school and trade examination	1
8. Not indicated	7
Total	<u>87</u>

*Kenya Industrial Training Institute

Table 14

Source (Home) of Workers

Extended family only	3
Extended family plus local district	9
Local District, no family	52
Local District plus outside District	13
Outside district	1
All of the above	7
Not indicated	2
Total	<u>87</u>

Table 15

Owner/Managers' Previous Occupation

Wage employment, similar business	34
Wage employment, different business	18
Another, similar business	12
Another, different business	8
Agriculture	8
Teaching	3
School	3
Not indicated	1
Total	<u>87</u>

Table 16

Owner/Managers' Language and Literacy

	Spoken	Written
Vernacular and Swahili	46	38
Vernacular, Swahili, English	37	39
More than three	2	-
No response	2	10
Total	87	87

Table 17

Owner/Managers' Schooling

Years of Schooling:	Number	Years of Schooling	Number
Not indicated	10	7 -	2
1-	3	8 -	12
2-	15	9 -	1
3-	5	10 -	3
4-	11	11 -	0
5-	6	12 -	2
6-	12	Total	87

Table 18

Technical Schools Attended by Owners

	Number of Owners
Village Polytechnic	2
KITI	3
Technical School (government)	11
Army	1
Prison Industries	1
Total	21

Table 19

Number of Owners per Firm

Number of Owners	Number of Firms
1	59
2	16
3	7
4	2
5	1
6	1
99	1
Total	87

Table 20

Power Source

Source	No of Firms
None	39
Electricity	31
Generator (of Electricity)	8
Gas (for welding equipment)	4
Petrol	1
No answer.	4
Total	87

Table 21

Complaints About Tools and Equipment

Complaint	Number
High Price	20
Lack of servicing	8
Poor Quality	6
All of the above	2
Total	36

Table 22

Amount of Initial Investment, Licensing Cost, Accounts Receivable and Bad Debt Losses, Normal Workday and Workweek, Excess Capacity.

Characteristic	Number of Firms Reporting					Remarks
	Low	Mode	Median	Mean	High	
1. Initial Investment (Shillings)	10	500	1000	7959	85,000	75% less than shs. 4,000
2. Annual Cost of Licenses (shillings)	10	-	140	191	1,000	
3. Accounts Receivable Outstanding (shillings)	40	-	1350	-	24,000	56 firms willing to sell on credit; 5 firms reported accounts receivable in excess of shs 10,000
4. Bad debt losses, previous year (shillings)	0	-	50	-	10,000	5 firms reported losses of more than shs. 2000; 1 firm reported shs. 10,000 loss
5. Normal workday (hours)	5	8	-	-	12	One firm less than 8
6. Normal workweek (hours)	25	48	-	-	72	One firm less than 44
7. Excess capacity with present equipment and labor force (percent)	0	-	35	-	75	Owners' estimates, judged as high
8. Excess capacity with present equipment and facilities but with increased labor inputs (percent)	0	-	45	-	95	Owners' estimates, judged as high

Table 23
Labor Employed, by Skill Classification

	No. of firms Reporting	Employment per Firm			
		Low	Mode	Median	Mean
1. Production Workers					
Skilled	81	1	1	2	2.7
Semi-skilled	67	1	1	2	2.8
Unskilled	32	1	1	2	2.3
All Production Workers	87	1	3	5	6.3
2. Non-production Workers	87	0	1	1	1.0
				Total Employees	
				130	1,000
				542	1,000
				502	300
				130	300
				130	300
				104	130
				123	300
				521	900

<u>High</u>	<u>Total</u> <u>Workers</u>	<u>Remarks</u>
24	219	1 firm with more than 10
39	189	2 firms with 7 or more
12	75	2 firms with 6 or more
44	555	2 firms with more than 18
9	<u>90</u>	
	<u><u>645</u></u>	

Table 24

Workers Pay, Shillings per Month

	No. of Firms Reporting	Low	Mode	Median	Mean	High
<u>Production Workers</u>						
Skilled	81	100	200	220	237	600
Semi-skilled	67	50	150	150	153	300
Unskilled	32	50	90	100	104	170
Apprentices	30	0	30	30	43	120
<u>Non-Production Workers</u>						
Clerks	14	40	-	150	-	360
Typists	1	180	-	180	-	180
Book-keepers	8	40	-	120	-	600
Supervisors	2	270	-	285	-	300
Employed Managers	6	150	-	245	-	1,000
Owner Managers	52	50	-	190	-	1,000

Table 25

Loans at Establishment

Source	Number of Loans	Amount (shillings)	Interest Rate (%)	Term (months)
Private Individual (1)	2	29 - 57,000	-	Indefinite
Commercial Bank	1	20,000	20	18
I.C.D.C. (3)	5	25 - 65,000 (2)	8.5-9.8	60
J.D.L.B. (3)	3	2 - 4,000	5.5-6.5	24-36
Other Government (4)	1	15,000	4.5	24
Total	12			

Notes:

- (1) These two loans represent the agreed purchase price of two firms acquired by citizens under the Kenyanization policy. After initial payment, debt is amortized out of profits over an indefinite term at an unspecified interest rate.
- (2) Median and Mean loan size, shs. 50,000.
- (3) All I.C.D.C. loans and two out of three J.D.L.B. loans made in Western Province.
- (4) National Bank of Kenya loan made, apparently, on non-commercial terms.

Table 26

Loans for Expansion

Source	No. of Firms Receiving loans	Amount (shillings)	Interest Rate (%)	Term (months)
Commercial Bank (1) (2)	6	2-15,000 (5)	7.17	10-24
I.C.D.C.	4	3-80,000 (6)	9.0-11.2	36-60 (7)
J.D.L.B.	8	3-12,000 (8)	6.5-24.0	18-36 (9)
Other Government (3)	1	3,000	7.0	24
Com'l Bank + ICDC (4)	1	36,600	8.2	40
JDLB + ICDC (4)	1	20,500	8.5	36
Relatives + Com'l Bank (4)	1	6,000	12.0	36
Com'l Bank + J.D.L.B (4)	1	14,000	15.2	27
Total	23			

Notes:

- (1) One firm, not here enumerated, had unused overdraft facilities.
- (2) All firms, save one, located in one district - Embu.
- (3) Loan arranged by local Trade Development Officer with National Bank of Kenya
- (4) Two or more loans in each case.
- (5) Median = shs. 4,500; Mean = shs. 5,833
- (6) Median = shs. 15,000; Mean = shs. 28,750
- (7) All loans save one at 60 months
- (8) Median = shs. 5,000; Mean = shs. 5,563
- (9) Only three loans at less than 36 months.

Table 27

Firms' Gross Profit, Annual
Basis at Current Activity Rate (1)
(Shillings)

Profits or Losses	f	# of Firms
More than Shs. 10,000 loss	2	- 28,240
Shs. 10,000 to Shs. 1 loss	10	- 1,740
Shs. 0 - Shs. 9,999	28	+ 4,624
Shs. 10,000 - Shs. 19,999	12	15,385
Shs. 20,000 - Shs. 29,999	11	23,188
Shs. 30,000 - Shs. 39,999	7	35,861
Shs. 40,000 - Shs. 49,999	2	41,600
Shs. 50,000 - Shs. 59,999	2	54,055
Shs. 60,000 - Shs. 69,999	2	65,534
Shs. 70,000 - Shs. 79,999	0	-
Shs. 80,000 - Shs. 89,999	0	-
Shs. 90,000 - Shs. 99,999	2	93,600
Shs. 100,000 - Shs. 199,999	4	154,632
Shs. 200,000 and over	5	301,794
	<u>N = 87</u>	
		<u>Md. = Shs. 11,980</u>
		<u>X̄ = Shs. 38,890</u>

(1) Gross Profits = Profits before depreciation allowances.
Also, see text p. 23ff, for qualifications.

Total Gross Revenue = Shs. 3,303,328 = 152.7%
Investment, Fixed Capital = Shs. 2,172,077

Table 28

Gross Profit as Percent of Fixed
Capital Invested

Rate of Return	f	Simple (unweighted) X of Class
more than 200% (loss)	2	- 698.9%
- 200% - -100.1% (loss)	2	- 153.1%
- 100% - -0.1% (loss)	8	- 27.9%
0% - 49.9%	13	+ 22.6%
50% - 99.9%	16	73.6%
100% - 199.9%	11	153.8%
200% - 299.9%	4	232.1%
300% - 399.9%	6	339.1%
400% - 499.9%	5	443.4%
500% - 599.9%	3	546.0%
600% - 699.9%	2	646.6%
700% - 799.9%	0	-
800% - 899.9%	2	869.9%
900% - 999.9%	1	980.4%
1,000% - 1,999.9%	2	1,298.9%
2,000% - 2,999.9%	6	2,301.8%
3,000% or more.	4	4,865.1%
	<u>N = 87</u>	<u>Md = 143.3%</u>

N.B. Combined or aggregative Rate of return:

$$\frac{\text{Total Gross Revenue}}{\text{Investment, Fixed Capital}} = \frac{\text{Shs } 3,383,398}{\text{Shs } 2,172,077} = 155.7\%$$

Table 29

Gross Profit as Percent of
Invested Capital, Including Stocks

Rate of Return	Number of Firms	Simple (unweighted) % of Class
More than - 200% (loss)	1	-354.8%
- 200% - 100.1% (loss)	2	-130.0%
- 100% - 0.1% (loss)	9	- 25.8%
0% - 49.9%	21	+ 26.8%
50% - 99.9%	15	70.4%
100% - 199.9%	11	149.9%
200% - 299.9%	6	255.9%
300% - 399.9%	4	341.9%
400% - 499.9%	4	445.8%
500% - 599.9%	4	559.1%
600% - 699.9%	2	668.3%
700% - 799.9%	0	-
800% - 899.9%	0	-
900% - 999.9%	1	909.9%
1,000% - 1,999.9%	6	1,482.0%
2,000% or more	1	5,575.2%

N = 87 M = 75.1%

N.B. Combined or aggregative rate of return:

$$\frac{\text{Gross Profits}}{\text{Capital Invested, Incl. Stocks}} = \frac{\text{Shs. } 3,383,398}{\text{Shs. } 2,948,700} = 114.7\%$$

Table 30

Gross Capital - Output Ratio of Firms,
Using Alternative Measures of Capital

Capital/Output ratio	Capital Measure (1) No. 1	Capital Measure (2) No. 2	Capital Measure (3) No. 3
	f	f	f
0 - 0.09	35	15	15
0.1 - 0.19	20	17	15
0.2 - 0.29	10	6	11
0.3 - 0.39	3	10	6
0.4 - 0.49	4	9	11
0.5 - 0.59	3	6	5
0.6 - 0.69	2	5	5
0.7 - 0.79	1	4	3
0.8 - 0.89	2	2	6
0.9 - 0.99	0	2	3
1.0 - 1.09	2	2	2
1.1 - 1.19	0	1	3
1.2 - 1.29	1	1	0
1.3 - 1.39	0	0	1
1.4 - 1.49	0	0	0
1.5 - 1.99	2	1	1
2.0 - 2.99	2 (4)	3	3
3.0 and over	0	3 (5)	3 (6)
N =	87	87	87
Median Ratio	.12	.33	.43
Aggregate Capital/Output Ratio - all Firms.	.24	.38	.44

Notes: (1) Capital = Firms' Fixed Investment
 (2) Capital = No. 1 plus estimated value of rented buildings.
 (3) Capital = No. 2 plus value of stocks
 (4) 2.50 and 2.56
 (5) 3.33, 3.98, 6.19
 (6) 3.33, 4.04, 7.84

Table 31

Gross Capital - Labor Ratio of Firms,
Using Alternative Measures of Capital
(Investment, in Shillings per employee)

Capital/labor Ratio (shillings per employee)	Capital Measure No. 1	Capital Measure No. 2	Capital Measure No. 3
0 - 999.9	38	19	12
1,000 - 1,999.9	17	11	12
2,000 - 2,999.9	8	13	13
3,000 - 3,999.9	5	8	7
4,000 - 4,999.9	6	8	7
5,000 - 5,999.9	5	10	10
6,000 - 6,999.9	1	3	6
7,000 - 7,999.9	3	3	3
8,000 - 8,999.9	0	4	5
9,000 - 9,999.9	0	1	3
10,000 - 10,999.9	1	1	3
11,000 - 11,999.9	0	0	0
12,000 - 12,999.9	0	0	0
13,000 - 13,999.9	1	0	0
14,000 - 14,999.9	1	3	0
15,000 - 15,999.9	1	0	3
16,000 or more	0	3 (4)	3 (5)
	<u>87</u>	<u>87</u>	<u>87</u>
Median Ratio.	Shs. 1,250	Shs. 3,101	Shs. 3,646
Aggregate Capital/Labor Ratio - all firms	Shs. 3,055	Shs. 4,871	Shs. 5,566

- Notes:
- (1) Capital = Firm's Fixed Investment
 - (2) Capital = Firm's Fixed Investment plus estimated value of Rented Buildings.
 - (3) Capital = Firms Fixed Investment plus value of land and buildings plus value of stocks.
 - (4) Shs. 20,200; 25,819; 25,933.
 - (5) Shs. 20,530; 26,026, 27,780.

Table 32

Performance Comparison of Firms Receiving Loans at Establishment with those which Received No Loans.

Category of Firms	Return on K	Performance Measure (1)	
		K/O	K/L
1. All 87 firms in sample, aggregate	155.7%	.24	3055
2. Firms receiving no loans, median	151.0%	.11	1247
3. Firms receiving loans from private sources:			
a. Median (2)	120.0%	.48	7735
b. Fraction with "better" performance than firms with no loans. (3)	2/4	0/4	1/4
c. Fraction with "better" performance than sample aggregate (3)	2/4	1/4	1/4
4. Firms receiving loans from official sources.			
a. Median (2)	75.7%	.34	1750
b. Fraction with "better" performance than firms with no loans (3)	1/9	1/9	4/9
c. Fraction with "better" performance than sample aggregate (3)	1/9	4/9	5/9

Notes: (1) "K" defined as investment in fixed capital, measure no. 1 of Tables 30 and 31.

(2) Because of very small number of terms 4 and 9 respectively, and the very wide dispersion and of owner's performance statistics the median rather than the mean is presented.

(3) "Better" performance is defined as a higher rate of return on investment and a lower capital/output or capital/labor ratio.

(1) Capital = Firms Fixed Investment
 (2) Capital = Firms Fixed Investment plus estimated value of Rented Buildings
 (3) Capital = Firms Fixed Investment plus value of land and buildings plus value of stocks
 (4) Srs. 20,200; 22,819; 22,923
 (5) Srs. 20,200; 22,819; 22,923

Table 33

Performance Comparison of Firms Receiving
Loans for Expansion with those which Received
no Loans

Category of Firms	Performance Measure (1)		
	return on K.	K/O	K/L
1. All 87 Firms in sample, aggregate	155.7%	.24	3055
2. Firms receiving no loans, median	151.4%	.12	1200
3. Firms receiving loans from private sources:			
a. median	72.0	.09	1426
b. Fraction with "better" performance than firms with no loans	3/8	5/8	3/8
c. Fraction with "better" performance than sample aggregate (4)	3/9	5/9	5/9
4. Firms receiving loans from official sources.			
a. Median	72.0	.17	2762
b. Fraction with "better" performance than firms with no loans (4)	3/12	4/12	4/12
c. Fraction with "better" performance than sample aggregate (4)	3/12	8/12	7/12

Notes: (1) "K" defined as investment in fixed capital, Measure No. 1 of Tables 30 and 31.

(2) The Median rather than the mean is presented because of the very small number of firms which received loans, 8 and 12 respectively, and also because of great dispersion and skewness of distribution.

(3) "Better" performance is defined as a higher rate of return on investment and a lower capital/output or capital/labor ratio.

(4) Actually 16 firms, not 12, received official loans. These 4 additional firms also received loans from private sources and, due to error in computer programming, were omitted from the comparison. They will be included in the revised calculations.