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UGANDA'S MANUFACTURING SECTOR

E. J. STOUTJESDIJK

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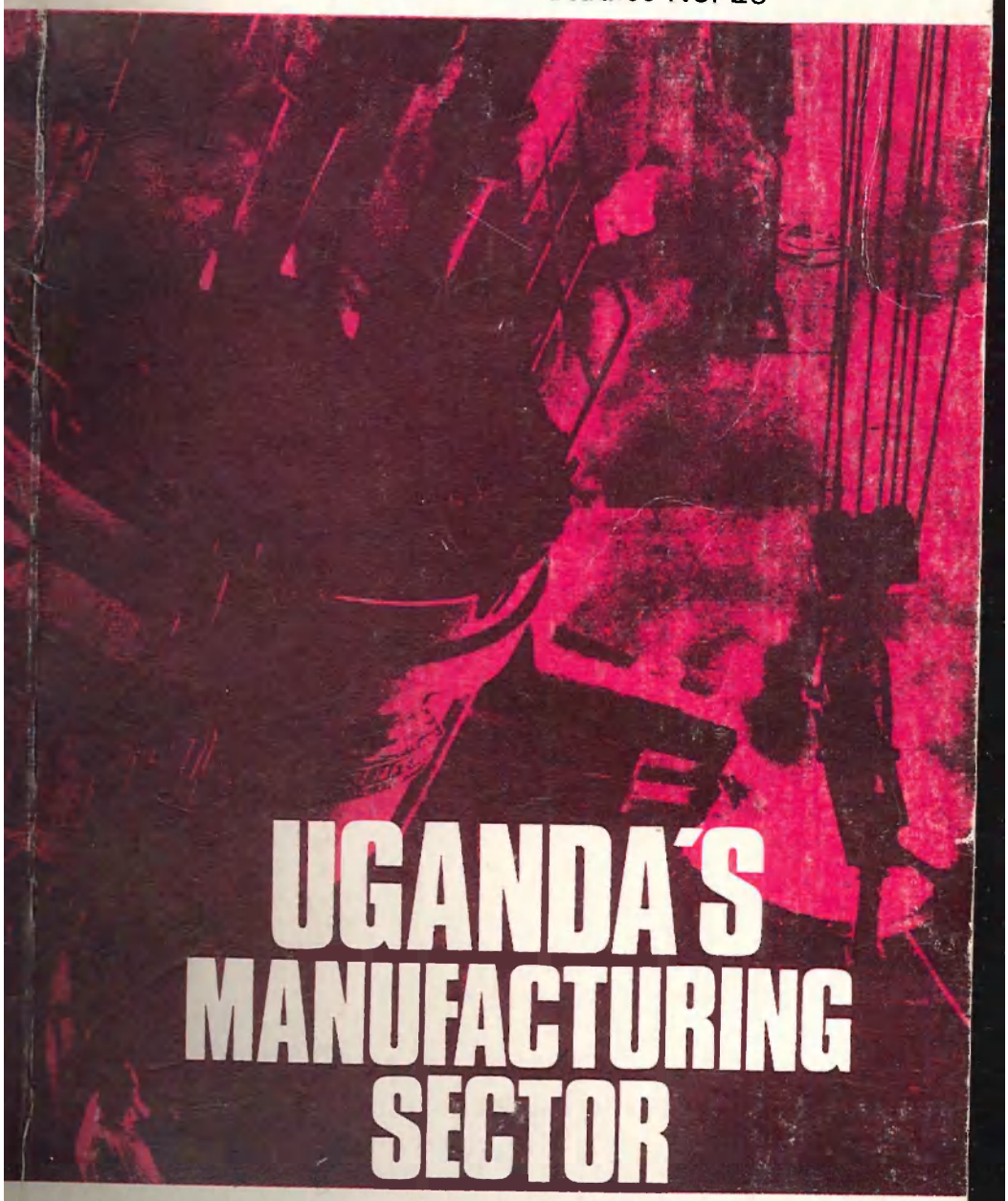

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by

E. J. STOUTJESDIJK

EAST AFRICAN STUDIES 29

Uganda's Manufacturing Sector

Written under the auspices of

The Makerere Institute of Social Research,

Kampala, Uganda

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A contribution to the analysis of industrialisation in East Africa

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Contents

FOREWORD

This study results from an initiative taken by the Development Centre of the Organisation for Economic Co-operation and Development for a co-operative research project on industrialisation in which this Institute should participate together with the Institut Science Economique Applique, Dakar, the Institut de Recherches Economiques et Sociales, Kinshasa and the Nigerian Institute of Economic and Social Research, Ibadan.

To help with this study the Development Centre seconded Mr. E. J. Stoutjesdijk for eighteen months to this Institute; this monograph contains the results of part of his work during his secondment but does not adequately reflect his total contribution to the project. I wish to record the sincere gratitude of the Institute to the Development Centre and to Mr. Stoutjesdijk for his contribution to our research programme.

June, 1967

W. T. Newlyn
Director of Economic Research
Makerere Institute of Social Research

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This study is the result of eighteen months of research at the East African Institute of Social Research, now the Makerere Institute of Social Research, Makerere University College, Kampala, on secondment from the Development Centre of the Organisation of Economic Co-operation and Development, Paris. Although the writer is a member of this Organisation, the opinions expressed in this book do not necessarily reflect those of O.E.C.D.

The number of persons to whom I am indebted in relation to this study is too large for me to mention everyone individually, but a few exceptions must be made. In the first place, I would like to express my deep gratitude to Mr. Walter Newlyn, at present Director of the Economic Development Research Project at E.A.I.S.R.; he read the manuscript in its draft form and made many valuable suggestions. Without his guidance I would not have been able to write this book. Needless to say, any remaining errors are entirely mine.

The regular contact with colleagues at Makerere, both in the E.A.I.S.R. and the Department of Economics, in private discussions and during the weekly seminars, has proved to be very useful. I am particularly grateful to Mr. Donald Mead for his comments and suggestions.

The collection of statistical information has been greatly facilitated by co-operation from various government institutions, particularly from the Uganda Development Corporation, the Ministry of Economic Development and Planning (Statistics Division) and the Ministry of Commerce and Industry. Of their staff, I would particularly like to thank Miss A. Martens (Statistics Division) and Mrs. Sserwadda (U.D.C.).

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E. J. Stoutjesdijk

March, 1967

Economic Development Research Project
East African Institute of Social Research

Organisation of Economic Co-operation and Development
Development Centre, Paris

I

INTRODUCTION

A. The scope of the study

The development of Uganda's manufacturing sector occupies an increasingly important place in the economic development strategy of the country. This study deals with some of the aspects of this development, providing in this way the framework for a number of more specific studies, currently underway in the Makerere Institute of Social Research (formerly the East African Institute of Social Research), relating to the industrial sector.

The study starts off with a short description of the Uganda economy. This is followed by a summary of the discussion that has taken place so far on the most appropriate strategy for industrialisation and an assessment of the influence this discussion has had on the officially adopted strategy towards industrialisation in Uganda.

A description of the present structure of the manufacturing sector is given in Chapter 2. The growth of the manufacturing sector, and the place it occupies in the Uganda economy, is analysed over a ten-year period. The results of the latest industrial survey, for 1964, are briefly discussed, and attention is paid to the role of the Uganda Development Corporation (UDC), particularly with respect to the manufacturing sector; five of the subsidiaries of UDC in the manufacturing sector have been described in more detail.

Chapter 3 gives data on Uganda's external trade in products of the manufacturing sector, in detail for the year 1964, and in summarised form for the period 1960-1964. The trade data are given re-classified by industrial origin, in such a way that the branches of industry correspond to those given in the annual survey of industrial production.

Three sets of projections of Uganda's manufacturing sector have been given in Chapter 4. First of all, the manufacturing sector programme in the current five-year plan has been summarised. Secondly, Uganda's manufacturing sector has been projected on the basis of a projection model, first suggested by Professor Chenery and subsequently developed for the United Nations, on a number of alternative assumptions regarding the growth of population and

income per head in Uganda by 1970, 1975 and 1980. For comparative reasons, the model has been applied to Kenya and Tanzania, and the results are briefly indicated; this method of projection has also enabled us to make a partial assessment of the effect of the East African Common Market on the growth of manufacturing industry in the three East African countries. Finally, the implications for Uganda of a larger Eastern African regional market, as suggested by the Economic Commission for Africa, have been indicated.

In Chapter 5 some observations have been made on the overall prospects of Uganda's manufacturing sector.

B. The case for industrialisation

The modern economic history of Uganda dates from around 1900. The railway reached Lake Victoria at Kisumu in 1901, connecting Uganda via the Lake with Mombasa. Since that time, cash crops have been introduced, among which cotton initially took the dominant place, which it lost only recently to coffee.

Wrigley[1] distinguishes three phases in Uganda's economic history since 1900. In the first twenty years of the century, both African peasant production and non-African estate production developed, and it was not clear which of the two would become dominant in Uganda's economy. By around 1922, it became clear that African peasant production would become the most important, and it was from then onwards actively encouraged and organised by the Government. The third phase started around the end of World War II when, owing to enormous rises in the prices for Uganda's traditional exports, finance became available for the development of power and communications which made possible the first industrial activities, such as copper mining, and cement and textile manufacturing. Following the three phases suggested by Wrigley, Uganda can be said to have entered a fourth phase with independence in 1962, during which active economic planning machinery was set up, culminating in Uganda's first 'comprehensive' development plan, the *Second Five-Year Development Plan 1966-1971*[2], being the first phase in a fifteen year perspective plan, of which the chief targets are a doubling of Uganda's monetary income per head, and a significant change in the structure of the economy.

Economic progress in Uganda has been, and still is, predominantly dependent on two agricultural products, cotton and coffee. In 1923, cotton and coffee accounted together for almost 90 per

cent of Uganda's total exports, of which cotton alone formed 84 per cent of total exports. In 1965, coffee accounted for about 50 per cent of total exports, and cotton for another 25 per cent.

Total Gross Domestic Product has grown by 3.9 per cent per annum, in constant prices, over the period 1954-1964. In 1966, GDP reached a level of £260.8 million, of which £197.7 million originated in the monetary sector, the remaining £63.1 million being the imputed value of subsistence production. Including subsistence agriculture, more than 50 per cent of total GDP is attributable to the agricultural sector alone, while 15 per cent was added by commerce, and more than 11 per cent by government administration and miscellaneous services. The remaining 25 per cent of GDP originated in all other activities, including manufacturing, construction, mining, electricity, and transport and communications.

Uganda has a population of approximately 7.7 million persons at present, of which 95 per cent still live on the land. With a GDP of £260.8 million, this means an income per head of the population of only £34.8. Moreover, the growth of population over the last ten years has been very rapid, 2.5 per cent per annum, and it is even expected to rise to approximately 3 per cent during the next decade. This would imply that Uganda's total population will double within 25 years. Although it cannot be said that, in relation to available land, Uganda is overpopulated, this rate of growth of population poses serious problems in relation to income targets. It is usually assumed that a certain, more or less stable, relation exists between the amount of net investment in a given year, and the subsequent increase in income. This relation has become known as the capital-output ratio, and it is put at about 3 for Uganda. This means that to maintain income per head of the population in Uganda, given a rate of growth of population of 3 per cent per annum, requires net investment of 9 per cent of Gross Domestic Product per year. For every one per cent *growth* in income *per capita*, an additional 3 per cent of GDP has to be invested net. In the light of these figures it is clear that the rate of growth of population becomes of crucial importance for the achievement of a given target for income per head.

The rate of growth of population implies also serious problems in connection with employment targets. If the proportion of the total population employed by the modern sector is to increase, it has to absorb population at a faster rate than the growth rate of population. In 1964, the reported African employment was less than 3 per cent of total African population, but this figure excludes domestic servants, those seasonally employed in crop

processing industries, and those employed in peasant agriculture. Total employment in these excluded activities can be put at about 60,000 persons, giving a total for wage employment in Uganda of slightly less than 4 per cent of total population. Not only is this percentage distressingly low, it has even decreased over the last few years. Baryaruha[3] has estimated that between 1954 and 1964, total employment decreased by 1.4 per cent per annum. Compared to the rate of growth of population of 2.5 per cent during that period, this means that the rate of absorption of population employed in the economy fell short by not less than 3.9 per cent of the rate of expansion required simply to *maintain* the proportion of the population employed in 1954. Although special circumstances during that period partly explain the result, the fall in employment during a period of rising GDP suggests questions about the choice of techniques of production which will be dealt with later.

Against this recent background of stagnating income per head and employment, combined with the vulnerability of Uganda's economy to fluctuations in the prices and volume of the two principal export crops, the need to industrialise has become evident. Although it was never seriously questioned that industrialisation in the long run was a good thing for East Africa, considerable discussion has taken place in the past on its timing and on the most appropriate strategy for the development of the manufacturing sector in East Africa, and, at a later stage, on the role which the East African Common Market could play.

C. Industrial strategy

The pure classical theory of international trade taught that in the absence of artificial barriers to the free interchange of goods, each country would specialise on those products in which it had a comparative advantage and import those in which it had a comparative disadvantage, thus maximising economic efficiency. Accordingly, the theory deals with natural protection offered by transport costs only, and government intervention in the establishment of new industries is rejected. If comparative advantages in producing industrial products are not sufficient to make exports of these commodities possible, the recommendations regarding industrialisation are limited to the establishment and development of relatively small undertakings, and the expansion of local industry depends entirely on the growth of the domestic market.

The pure classical doctrine was later modified in such a way that initial obstacles to efficient industrial production were taken

into account, resulting in the 'infant industry' and later the 'infant economy' argument for short-run protection, but it was still insisted that, in the long run, the industry should be able to compete with imports without the protection of tariff barriers. By these standards, four types of industrial activity are usually considered to be feasible, assuming the country in question does not have a specific resource advantage in valuable minerals, such as oil: (i) processing industries based on local agricultural products e.g. cotton, (ii) industries which manufacture articles which are costly to transport relative to their intrinsic value, e.g. beer, (iii) assembly industries, e.g. suitcases, and (iv) industries producing perishables, e.g. bread.

More recently the classical doctrine has come under heavy fire, both in its pure and modified version. The law of comparative advantage is static and does not take into account demographic factors. If the rate of growth of population is high, it might be necessary to set up industries which will never be competitive but which are needed to keep *per capita* incomes and employment rising. "Instruments such as tariffs, exchange controls, and import licensing are therefore part of the permanent tool-case of any government in a developing country, undergoing a population explosion, especially if its export earnings are not buoyant."[4] This argument leads logically to a strategy of industrialisation based on permanent protection; this strategy has much in common with the policy of concentrating on stimulating import-substitution, which has been strongly supported in East Africa by Massell, Clark, van Arkadie, and others.[5]

The argument in favour of such concentration usually runs as follows. Given the desire to industrialise, a country faces two theoretical alternatives which are not mutually exclusive, (*a*) to produce for the domestic market, or (*b*) to produce for the export market. The possibilities of exporting manufactures are usually considered to be narrowly limited, unless specific resource advantages exist; not only do transport costs form a barrier, but also import tariffs and quantitative restrictions imposed by other countries have to be overcome. The substitution of domestically produced goods for imported manufactures seems therefore the only reasonable point of departure for industrialisation in a developing economy. Comparative costs should not be ignored entirely, because sooner or later import-substitution in manufactured consumer goods will reach its limits, and export markets will have to be found for such goods, if economic growth is not to be blocked as is the case in some Latin American countries.

This 'strategy' has been attacked from various angles. In the

first place by those that doubt whether export possibilities are really as limited as usually assumed. This argument is often linked to the suggestion that to the extent that the possibilities are limited this could be rectified if the regulations of the General Agreement of Tariffs and Trade, prohibiting the subsidisation of exports ('dumping') were to be relaxed on the same grounds as protection is at present allowed, to protect an 'infant industry'. According to this view the present international rules create a bias in favour of import-substitution and could therefore lead to an inefficient development strategy.

Another attack on the policy of industrialisation by concentrating on import-substitution, has been launched by Lacroix,[6] representing a discontent of many, mainly French, economists with this policy. In their view, import-substitution leads to a strategy which is based on *present* demand, which is determined by the very economic and social structure that must be transformed, or, as Lacroix states it: development strategies may be appreciated according to whether they are more or less suited to generate cumulative progress; it matters little whether they are more or less import-substituting.[7] The main weakness in these objections is that import-substitution is not a criterion for investment, but a description of a necessary phase in industrial development. Given the desire to industrialise, and in the absence of possibilities of exporting manufactures on a substantial scale, the substitution of domestically produced goods for imported manufactures is the only alternative. Once the potential for import-substitution is conceded, growth of local industry does now not only depend on the growth of the domestic market, as in the classical model, but also on the introduction of effective, and if necessary, permanent protection of the existing market from imported manufactures, thus stimulating the establishment of new industries.

There are, however, some other points of criticism that can be raised concerning the emphasis being placed upon import-substitution, which concern the implications rather than the policy as such. In the first place, the present scope for import-substitution is in fact very small; if Uganda were able at present to replace *all* imported manufactures by domestically produced goods, the extra product thus generated would add only a few percentage points to Gross Domestic Product. It is, of course, out of the question that Uganda would be able to replace all imports by domestic production, if only because of the limited size of the domestic market, and this further reduces the feasible effects of import-substitution.

A second point relating to the size of the import-substitution potential concerns the usually accepted rule-of-thumb that the quantity of manufactured goods imported indicates the market potential for domestic production behind protective barriers. This is, however, not so; the potential market can be estimated only if one has some knowledge of the extent to which consumers react on differences in price and quality. The need for protection implies that domestic production costs are relatively high, and initially, at least, the quality of domestically produced commodities will be inferior; these two factors will tend to reduce the import-substitution potential.

Complementary to the discussion on industrialisation strategies is the discussion on the desirability of forming larger markets, particularly with respect to the effects this has on the development possibilities of manufacturing industry. There is no doubt that the desire for industrialisation has increased the attractiveness of economic union. The larger the market, the larger the opportunities for import-substitution on an efficient scale, given the fact that protection should have its limits. With regard to the gain from economic union, Massell[8] has distinguished four situations with respect to a specific industry:

(*a*) The industry can be economically established in neither a single country nor a union of all countries in the region.
(*b*) The industry cannot operate efficiently in a single country, but can operate efficiently in an economic union, provided that there is only one single plant in the industry.
(*c*) An individual country can support a single plant in the industry, but the union can support several plants.
(*d*) A single territory can support several plants in the industry.

In cases *a* and *d*, economic union generates no appreciable gain, but in case *b* scope is created for an import-substituting industry, while in case *c* the union can benefit from competition.

By far the most ambitious attempt to show the advantages of regional co-operation in Africa has been undertaken by the Economic Commission for Africa (E.C.A.). At the end of 1965, a conference was organised at Lusaka on the harmonisation of industrial development programmes in Eastern Africa. Eastern Africa in E.C.A. terms includes the following twelve countries: Ethiopia, Somali Republic, Kenya, Tanzania, Uganda, Malawi, Rhodesia, Madagascar, Burundi, Mauritius, Rwanda and Zambia. A large number of working papers were submitted dealing with the market prospects

and production implications of a large number of manufactures. Political relationships between potential member countries have been modified since then, and have limited the feasibility of such a larger market arrangement for a number of countries in the sub-region, for the immediate future at least. But, although the consumption studies, which form the basis of the recommendations, do not always appear convincing, the Commission's conclusion[9] gives a rough indication of the potential such a union would have.

Among 21 main branches of industry analysed, 8 branches are proposed to be developed in such a way that self-sufficiency is reached in the sub-region by 1975. These are clothing, wood and cork, furniture and fixtures, footwear, rubber products, basic chemicals, non-metallic products, and iron and steel. Although some industries will not reach this level of production (textiles, petroleum and coal products, basic metals, metal products and engineering, transport equipment) some others will produce more than the demand within the sub-region because of the favourable export prospects, i.e. food, beverages and tobacco, cordage and ropes, paper and paper products, tanned leather, non-ferrous metals, and pig-iron. But, states the report on page 75,[10] export promotion is not the main direction of the development of the East African sub-region in the period 1965-1975. More important is the development of import-substituting industries. For a more detailed description of the implications for Uganda, see section (d) of Chapter 4.

One of the important considerations in the continuous efforts to maintain a viable common market in East Africa, consisting of Kenya, Tanzania and Uganda, has undoubtedly been the enlarged industrial potential of such a larger market. Ndegwa's study of the East African Common Market[11] gives a good account of the history and present state of tensions within the common market, which centre mainly around the inequitable results of the process of industrialisation which are claimed by Uganda and Tanzania to flow from concentration of industry in Kenya. The outcome of the latest attempt to find a workable formula for the distribution of costs and benefits in the area, the Report of a Commission headed by Professor Philip, is unfortunately not known at the moment this is written, but the scarce press releases so far indicate in any case a moderately hopeful future. In the background of these discussions of the distribution of costs and benefits, there should always be the realisation of the very limited possibilities for industrialisation which the East African countries have on their own.

So far, our summary of industrial strategy issues has concentrated on the market constraint, which is, particularly in Uganda, a crucial determinant of the prospects for industrial development. If the market for most manufactured products is small, the minimum viable scale on which those commodities can be produced becomes of extreme importance. The minimum viable scale of production is closely related to the choice of techniques of production, in the sense that labour-intensive production techniques require usually much smaller output ranges for efficient production than capital-intensive techniques. Moreover, it was hoped that one of the effects of industrialisation in developing countries would be an increase in employment opportunities, and it is obvious that, given the limited amount of capital available, this target would be easier to achieve if labour-intensive methods of production were chosen. It was even assumed that given the relative abundance of labour and the relative scarcity of capital, it would also be in the interest of the entrepreneur to choose a labour-intensive technique of production.

For a number of reasons, however, this has not happened in Uganda in the last decade. In many cases, the choice of alternative techniques of production may be extremely limited, or even non-existent, for technical reasons. In some cases, production may have to be capital-intensive because no alternative exists; this is obvious: but if the choice is not determined by technical factors then economic considerations can be decisive.

Even where wage rates are low relative to high-income countries, this does not mean that labour *costs* are low. The productivity of unskilled labour is usually very low, and it requires much supervision. Moreover, the structure of the Ugandan labour force, which has strong migratory tendencies, makes training on the job often unattractive. Minimum wages have forced wage rates above equilibrium level and in the absence of corrections according to shadow prices, production cost per unit might be lower in the case of capital-intensive techniques. This consideration of profit maximisation is not only conclusive for private entrepreneurs, but is particularly stressed in the Uganda Plan. Furthermore, foreign entrepreneurs might only be interested in the production technique used in their own country, for management and marketing reasons. A further reason for government accepting a capital-intensive technique is the creation of forward and backward linkages in the economy as a whole.

Evaluating the arguments which have been summarised above

on the strategy of industrialisation, we come to the following conclusions. The classical doctrine of free trade does not have much relevance to the world economy at present in which few of the conditions are fulfilled on which the theory is based. Suitably modified, however, the law of comparative advantage retains its value, and should not be ignored entirely; industries might, however, have to be introduced even if they will *never* be competitive if it is the only alternative by which *per capita* incomes can be kept rising. In the long run, this cannot apply to industries which may eventually have to export.

Given the desire to diversify the economy and also given the limited scope for exports of manufactures outside economic unions or free trade areas, import-substitution and industrialisation are virtually identical.

The tendency for industrial production in developing countries to be predominantly capital-intensive, is likely to continue if the present discrepancy between actual and equilibrium prices for the factors of production is not corrected by, for example, fiscal measures, leading to the subsidisation of unskilled labour, and the taxing of capital, in place of the present fiscal incentives to use capital instead of labour.

D. The Government's industrial strategy

The industrial strategy, as it is outlined in the second Five-Year Development Plan, reflects clearly the later stages in the discussion on the market constraint summarised above. Apart from processed primary products, the export possibilities for manufactured products are considered very limited, and "export markets will not usually form the basis for the establishment of manufacturing industry" (p. 81). The emphasis is evidently put on manufacturing for the domestic market and the rest of East Africa: "The basic industrial strategy will therefore be import-substitution in the Uganda market combined with production for export to adjacent African countries" (p. 82). The main advantages of this industrial strategy stated in the plan, are the following:

"(*a*) the existing size of the local market is easily discovered from the current flow of imports;

(*b*) future market development is predictable from the planned growth of the economy;

(*c*) local industries will enjoy both natural and tariff protection in the Uganda market."

A special section is devoted to the Common Market in East Africa. Although the planners seem fairly certain that Uganda's

participation in the Common Market has diverted industries away from the country, it is recognised that Uganda's most successful industry has benefited greatly from the free access to markets in Kenya and Tanzania, and there is no doubt that the implementation of the manufacturing sector programme of the current development plan would be more readily achievable if this free access could be maintained. Furthermore, "the full implementation of the programme will be aided by the increasing sale of industrial products in the markets of other African countries" (p. 80).

The public sector plays an extremely important role in Uganda's industrial strategy. The Government's agency for developing industry is the Uganda Development Corporation, and it has a successful record behind it as an initiator of new projects, both on its own, and in co-operation with private interests. The importance of UDC is to some extent counter-balanced by a number of private investors, among which the Madhvani Group and the Mehta Group occupy the most important place. The resulting 'mixed' structure of private and public participation in the manufacturing sector reflects the pragmatic approach which the Uganda Government has chosen towards industrial development.

Foreign participation in the development of Uganda's manufacturing sector is recognised as a necessity, given the lack of indigenous capital and entrepreneurial skill, and special encouragement to foreign investors is given in the Industrial Charter and the Foreign Investment (Protection) Act. The Uganda Industrial Charter is given in the appendix to this chapter.

With respect to the labour-intensity of projects in the manufacturing sector, the Plan states that the employment effects will only be one of a number of criteria in choosing a project. "As Uganda is just beginning the process of industrialisation the need to create an adequate industrial base as a foundation of future development must, in the end, override other considerations in deciding whether to accept a project or choose a particular design" and "In these circumstances, it is Government policy to favour the labour-intensive techniques where there is a clear choice of method and the capital-intensive method offers no great advantage in lower costs or easier financing" (p. 84).

So much for a summary of the most important strategy issues, as they are outlined in the Uganda Plan. Many of the elements of the discussion on industrial strategy in general, described in the previous section, are to be found in the Uganda Plan. The most important omission, in the writer's opinion, is the requirement of efficiency in the long run, particularly for industries producing

exportable commodities. Such industries should not only be able to compete with imports if protection is removed, but should also be able to compete in international markets if the domestic market is saturated, and their expansion is not to be blocked. Admittedly, the length of the period during which expansion can continue behind protective tariff walls might be very long, particularly if larger market arrangements are established with other countries. But the latter will be more feasible if the general efficiency of manufacturing industry is high, and supply prices within such a common market are more or less equal to import prices from outside.

References

1. C. C. Wrigley. *The Development of Economic Agriculture in Uganda.* E.A.I.S.R., Kampala 1953.
2. Uganda Government. *Second Five-Year Plan 1966-1971 Work for Progress.* Entebbe 1966.
3. A. Baryaruha. *Factors Affecting Industrial Employment.* E.A.I.S.R. Occasional Paper No. 1, Oxford University Press, Nairobi, 1967.
4. Dudley Seers. "The Role of Industry in Development; Some Fallacies". *The Journal of Modern African Studies* 1 (December 1963) pp. 461-5.
5. Benton F. Massell. "Industrialisation and Economic Union in Greater East Africa". *East African Economics Review* No. 9, December 1962, pp. 108-22.
   Paul G. Clark. *Development Planning in East Africa.* East African Studies No. 21, East African Publishing House, Nairobi, 1965.
   Brian van Arkadie. "Import-Substitution and Export Promotion as aids to Industrialisation in East Africa". *East African Economics Review,* Vol. 1 New Series 1964, pp. 40-56.
6. J. L. Lacroix. "Le concept d'import substitution dans la theorie du developpement economique". *Cahiers Economiques et Sociaux,* Vol. III No. 2, June 1965.
7. J. L. Lacroix. *op. cit.* p. 174.
8. Benton F. Massell. *op. cit.*
9. Economic Commission for Africa. *Industrial Co-ordination in East Africa.*
10. *A Quantified Approach to First Approximations* E/CN.14/INR/102, 20 October 1965.
11. Philip Ndegwa. *The Common Market and Development in East Africa.* East African Studies No. 22, East African Publishing House, Nairobi, 1965.

APPENDIX

The Uganda Industrial Charter

Preamble

The Government of Uganda, in its determination to accelerate the pace of Uganda's economic progress, seeks local and overseas investment in the industrial development of Uganda. The terms which the Government of Uganda offers to such capital and enterprise are described in this Charter.

2. The Charter will apply to companies, partnerships or individuals investing capital in new industrial developments, and to whom the Government of Uganda has granted Approved Status by the conclusion of an Agreement based on this Charter. A form of Agreement to suit individual circumstances will be available to prospective investors.

3. If an Approved Enterprise is wholly or largely the property of a non-Ugandan company, partnership or individual, or if it is to obtain all or most of its capital from outside East Africa, the Government may recognise it in its Agreement as an External Approved Enterprise.

4. In addition to the specific provisions of this Charter, the Government will provide an Approved Enterprise such help and support as is reasonably necessary to enable it to operate successfully in Uganda, and will refrain from any actions calculated or likely to place it at a disadvantage compared with its competitors.

5. In return for the undertaking given in paragraph 4, an Approved Enterprise will be expected, besides observing the conditions of this Charter and of its Agreement, to conduct its affairs not only for its own profit but also for the advancement of Uganda.

Security of Investments, Remittance of Profits and Repatriation of Capital

6. Under section 22 of the Uganda Constitution the Government cannot nationalise or expropriate any kind of property without making legal provision for prompt payment of adequate compensation. Moreover, interested parties have a right of access to the High Court of Uganda. It states:

"(1) No property of any description shall be compulsorily taken possession of, and no interest in or right over a property of any description shall be compulsorily acquired, except where the following conditions are satisfied, that is to say—

(a) the taking of possession or acquisition is necessary in the interests of defence, public safety, public order, public morality, public health, town and country planning or the development or utilisation of any property in such a manner as to promote the public benefit; and

(b) the necessity therefore is such as to afford reasonable justifica-

tion for the causing of any hardship that may result to any person having an interest in or right over the property; and

(c) provision is made by law applicable to that taking of possession or acquisition—

(i) for the prompt payment of adequate compensation: and

(ii) securing to any person having an interest in or right of access to the High Court of Uganda, whether direct or on appeal from any other authority, for the determination of his interest or right, the legality of the taking of possession or acquisition of the property, interest or right, and the amount of any compensation to which he is entitled, and for the purpose of obtaining prompt payment of that compensation.

(2) Nothing in this section shall be construed as affecting the making or operation of any law so far as it provides for the taking of possession or acquisition of property—

(a) in satisfaction of any tax, rate or due;

(b) by way of penalty for breach of the law, whether under civil process or after conviction of a criminal offence under the law of Uganda;

(c) as an incident of a lease, tenancy, mortgage, charge, bill of sale, pledge or contract;

(d) by way of the vesting or administration of trust property, enemy property or the property of persons adjudged or otherwise declared bankrupt or insolvent, persons of unsound mind, deceased persons, or bodies corporate or unincorporate in the course of being wound up;

(e) in the execution of judgments or orders of courts;

(f) by reason of its being in a dangerous state or injurious to the health of human beings, animals or plants;

(g) in consequence of any law with respect to the limitation of actions; or

(h) for so long only as may be necessary for the purposes of any examination, investigation, trial or enquiry, or, in the case of land, the carrying out thereon—

(i) the work of soil conservation or the conservation of other natural resources; or

(ii) of agricultural development or improvement that the owner or occupier of the land has been required, and has, without reasonable and lawful excuse, refused or failed to carry out.

(3) Nothing in this section shall be construed as affecting the making or operating of any law for the compulsory taking of possession in the public interest of any property, or in the compulsory acquisition in the public interest in or right over property, where the property, interest or right is held by a body corporate established by law for public purposes in which no moneys have been invested other than moneys provided by Parliament."

7. The remittance of profits out of Uganda and the repatriation of external capital is covered by the Foreign Investments (Protection) Act attached as Appendix to this Charter.

Taxation

8. An Approved Enterprise will be liable to the normal direct taxation levied on businesses in Uganda. This, at present, provides both for an initial "investment deduction" allowance of 20 per cent in respect of new industrial buildings and machinery therein and for "annual deduction", which together effectively allow 120 per cent of such investment expenditure to be written off. Consideration will, however, be given to increased investment deductions in suitable cases, and also to accelerated annual deductions in exceptional cases, and such increased concessions on these deductions, and the investments to which they relate, will be specified in the Agreement.

9. The employees of an Approved Enterprise will be liable to normal personal income tax.

10. An Approved Enterprise will be liable to local rates, water rates and similar dues and taxes levied by local government authorities within Uganda, and will not be entitled to claim from these authorities such benefits as reduced land premia or reduced annual land rents. The employees of an Approved Enterprise will be liable to graduated tax or other personal taxes levied by these authorities. Nevertheless, under the provisions of paragraph 4 of this Charter, the Government of Uganda will use its good offices on behalf of an Approved Enterprise if it appears that a local government authority is discriminating against the Enterprise in respect of the taxes levied.

Shareholders and Partnerships

11. An External Approved Enterprise will be required to make provision for developing local Ugandan shareholdings or partnerships in a way appropriate to its financial structure and organization. This will be specified in its Agreement. Normally an External Approved Enterprise which is a company will be expected to make generally available for purchase by Ugandans shares of a value totalling at least 25 per cent of the shareholdings with voting rights which are attributable to the capital invested in Uganda, and to do so within a period of five years from the conclusion of its Agreement. Likewise an External Approved Enterprise which is a partnership or an individual will normally be required to make provisions for offering partnership to one or more Ugandans within a period of five years.

Personnel

12. As a general principle, the Government will expect an Approved Enterprise to train and employ as high a proportion of Ugandans as is reasonably possible, at all levels, and specifically to draw all its unskilled workers from Uganda. The Government will, however, be generous in issuing employment permits when an Approved Enterprise starts to operate in Uganda, and will continue to be generous in doing so for an Enterprise which is in good faith training

Ugandans at a satisfactory rate for senior positions. Whenever practicable, the numbers and categories of non-Ugandans to be given employment permits, and the initial duration of the permits, will be specified in the Agreement with an Approved Enterprise; such permits will not normally be related to individual persons.

Industrial Relations

13. An Approved Enterprise, like any other enterprise in Uganda, will of course have to conform with the provisions of the Uganda employment and trades disputes legislation. An Approved Enterprise which operates properly in this respect can rely on the good offices of the Government in seeking just solutions to industrial disputes.

Non-Discrimination

14. Discrimination on account of race, tribe, place of origin, colour or creed is contrary to the spirit and the letter of section 29 of the Uganda Constitution. Approved Enterprises will be expected to avoid any such discrimination in the conduct of their affairs, and in particular in the treatment of their employees.

Industrial Facilities

15. The Government will facilitate the importation of machinery, equipment, materials and components necessary for the efficient operation of an Approved Enterprise. The existing East Africa tariff structure already provides a considerable degree of protection. However, the Government will in appropriate cases consider increasing tariff protection; it will also consider permitting duty-free importation of necessary machinery, equipment, materials and components. Any such tariff protection or duty-free importations will be specified in the Agreement. These provisions will not be negated by any measures to control imports, which are now, or may be in future, in force in East Africa generally, or in Uganda in particular, except for any general or special prohibitions of trading with any particular country and except for any general regulations on such matters as public health and safety.

16. In assessing what imports under paragraph 15 are reasonably necessary for the efficient operation of an Approved Enterprise the Government will expect it to use East African materials as far as this is practicable; if at first an Approved Enterprise imports manufactured components, it will be expected to increase progressively the proportion of its products manufactured in Uganda. Detailed provisions for such imports may be included in its Agreement.

17. If an Approved Enterprise has difficulty in acquiring secure title to land suitable for its operations, the Government will, within the provisions of the Uganda Constitution, help the Enterprise to obtain suitable land on reasonable terms.

18. The Government will, as a general rule, expect Approved Enterprises to establish themselves in towns where basic urban services and certainly social services already exist. If as a matter of policy the Government requires a particular industry to be located in a particular area, it may give appropriate concessions to an Approved Enterprise to offset any extra expenses due to location there.

19. In any general provisions to assist industrial and other economic development, including export promotion, the Government will treat an external Approved Enterprise, and give it the same facilities and assistance, as is given to a wholly Ugandan enterprise.

2

THE PRESENT STRUCTURE OF THE MANUFACTURING SECTOR IN UGANDA

A. Introduction

Most of the data on which this chapter is based are taken or derived from the two surveys of industrial production that have been carried out so far in Uganda, the *Survey of Industrial Production 1963*, and the *Survey of Industrial Production 1964*.[1] If any other source is used, this is specified; if one of the industrial surveys is used we have referred to it as *1963 Survey* or *1964 Survey*.

The problems involved in the presentation of a statistical picture of the manufacturing sector are discussed in Appendix 1 to this chapter; whenever more specific explanations are required we will refer to this appendix.

No statistical information of a systematic nature has been published so far in Uganda on establishments in the manufacturing sector employing less than 10 persons; the survey figures include industrial establishments with 10 or more employees only, although an attempt was made to include all those employing 5 or more persons in the latest (1964) survey. The quality of the returns to the questionnaire, and the coverage were considered so poor, however, that they were finally deleted. Due to this partial coverage, the picture of the manufacturing sector is incomplete, but preliminary estimates of output and employment in manufacturing establishments employing less than 10 persons have been made by the Statistics Division of the Uganda Ministry of Planning. These unpublished estimates put the gross output of establishments excluded from the industrial survey at about 50 per cent of the gross output of those included, in other words an underestimate of 33 per cent, and the underestimate of employment in the manufacturing sector is, at least, 50 per cent. A rough estimate of the number of tailors not included in the survey, puts the figure at 25,000, or higher than the total employment in firms which employ 10 or more persons which comprise the manufacturing sector covered by the surveys.

The manufacturing sector is defined to include the processing of agricultural products (cotton, coffee and tea) and manufacturing industries, but excludes mining and quarrying, building and con-

struction, and electricity generation. In the description of the manufacturing sector we have kept the two sub-sectors, processing and manufacturing industries, separate as much as possible; the data on manufacturing industries is much more reliable and complete than for processing and, strictly speaking, not all activities included under processing belong to the manufacturing sector (see also Appendix 1 to this chapter).

An analysis over time of the structure of the manufacturing sector in Uganda is only possible for broad aggregates, no detailed data being available prior to 1963. The two surveys of industrial production referred to above are the only ones ever carried out in Uganda, and not only is a one-year period between them too short to draw any conclusions on structural changes within the sector, but also the surveys are not comparable in the sense that variations are more often attributable to improved coverage rather than indicating growth or decline. In the description that follows, comparisons between 1963 and 1964 are made only in those cases in which the nature of the variation is clearly specified. For an analysis of the changing structure of the manufacturing sector on the basis of broad sub-sectors (processing of agricultural products, manufacture of food products, and miscellaneous manufacturing), data are available [2] and we will pay attention to both the changing structure within the manufacturing sector, and to the relative position of each of the sub-sectors in Uganda's Gross Domestic Product.

B. The place of manufacturing in the Uganda economy

(i) *Value Added*

The contribution of the manufacturing sector to Gross Domestic Product in Uganda is relatively small; the 1964 Survey recorded a total value added of the manufacturing sector of £17.1 million, and one only needs to compare this figure to total agricultural product in the same year of £98.2, to conclude that Uganda is still predominantly an agricultural country. The predominance of agriculture is, of course reflected in the composition of the manufacturing sector, in which the processing of agricultural products contributes 30 per cent of total value added, while a substantial part of other manufacturing activities, such as sugar and tobacco manufacturing, textiles, and most of the manufacture of food products, is directly related to the agricultural sector. The agricultural sector is not only the main supplier of raw materials to the manufacturing sector, it is, at the same time, the main determinant of the domestic market

for manufacturing products to which Uganda's industries are largely geared. Although it is not possible, in the absence of consistent time-series, to assess this relationship in quantitative terms, it is a well known fact that Uganda's industrial development since 1950 has been dependent on the growth in farm incomes.

The relatively modest role, which manufacturing has so far played in the Uganda economy, is illustrated in a number of tables and graphs covering the period 1954-64. The figures given have to be considered with care, however. When the first Survey of Industrial Production was published in 1965, reporting on the year 1963, it appeared that the previous official estimates of the product of the manufacturing sector, published in the annual GDP series, were considerably off the mark, and this was confirmed by the 1964 Survey. The estimate in the GDP series for 1963 was £12.1 million of value added in the manufacturing sector, while the 1963 Survey reported a figure of £16.3 million, a figure that was revised in the 1964 Survey to £16.8 million. For 1964, the figures were £12.8 million and £17.1 million, respectively. These revisions threw rather serious doubts on the accuracy of earlier estimates of manufacturing product in the GDP estimates and, indeed, on the estimate of Gross Domestic Product as a whole. The Second Five-Year Plan concludes on the basis of this recent evidence that the official GDP figures are probably underestimated by at least 10 per cent.[3]

Table 1 and Graph 1 give the official estimates of GDP and value added in the manufacturing sector for the period 1954-1962; for 1963 and 1964, the revised estimates of manufacturing product and GDP have been given, following the suggestion in the Second Five-Year Plan of a revaluation of GDP by 10 per cent. The figures are given in constant (1960) prices, which means that the changes during the period are attributable to changes in quantities produced only, price changes being eliminated. For the period 1954-1962, the figures are taken from *The Real Growth of the Economy of Uganda, 1954-1962*[4], for the years 1963 and 1964 the same deflators are used as in the *Background to the Budget 1966-1967*.[5]

The figures suggest that in terms of physical production hardly any shift to industrialization has taken place in Uganda over the period 1954-1964; the share of manufacturing in total GDP has been around 8 per cent throughout the period, and no clear trend is discernible. The revisions of GDP and of the value of manufacturing product in 1963 and 1964, referred to earlier, make a firm conclusion on the growth of manufacturing product relative to other components of GDP, over the whole period, impossible,

Table I

THE SHARE OF MANUFACTURING IN GDP, UGANDA, 1954–1964
(CONSTANT 1960 PRICES)

£ million

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963*	1964*
A. Cotton Ginning, Coffee curing and Sugar manufacture	4.0	4.6	4.8	5.3	4.8	4.1	3.9	4.5	4.5	7.5	6.3
B. Manufacture of food ..	1.4	1.1	1.1	1.3	1.4	1.2	1.2	1.2	1.1	1.9	1.8
C. Miscellaneous manufacture	3.1	4.7	6.0	5.3	5.1	4.7	4.8	4.8	4.6	6.6	7.2
D. Total manufacturing ..	8.5	10.4	11.9	11.9	11.3	10.0	9.9	10.5	10.2	16.0	15.3
E. Monetary GDP	84.5	91.6	97.1	191.8	102.0	107.9	110.8	110.5	106.8	132.8	141.6
F. Total GDP	118.8	126.6	133.6	139.3	140.2	147.4	152.1	149.1	150.2	176.8	187.1
G. D/E X 100%	10.1	11.4	12.3	11.7	11.1	9.3	8.9	9.5	9.6	12.0	10.8
H. D/F X 100%	7.2	8.2	8.9	8.5	8.1	6.8	6.5	7.0	6.8	9.0	8.2

Sources: (1) Uganda Government, *The Real Growth of the Economy of Uganda 1954-1962*, Entebbe, 1964.
(2) Uganda Government, *Background to the Budget, 1966/1967*, Entebbe, 1966.
* An explanation for the sudden jump in manufacturing value added is given in the text (see page 20)

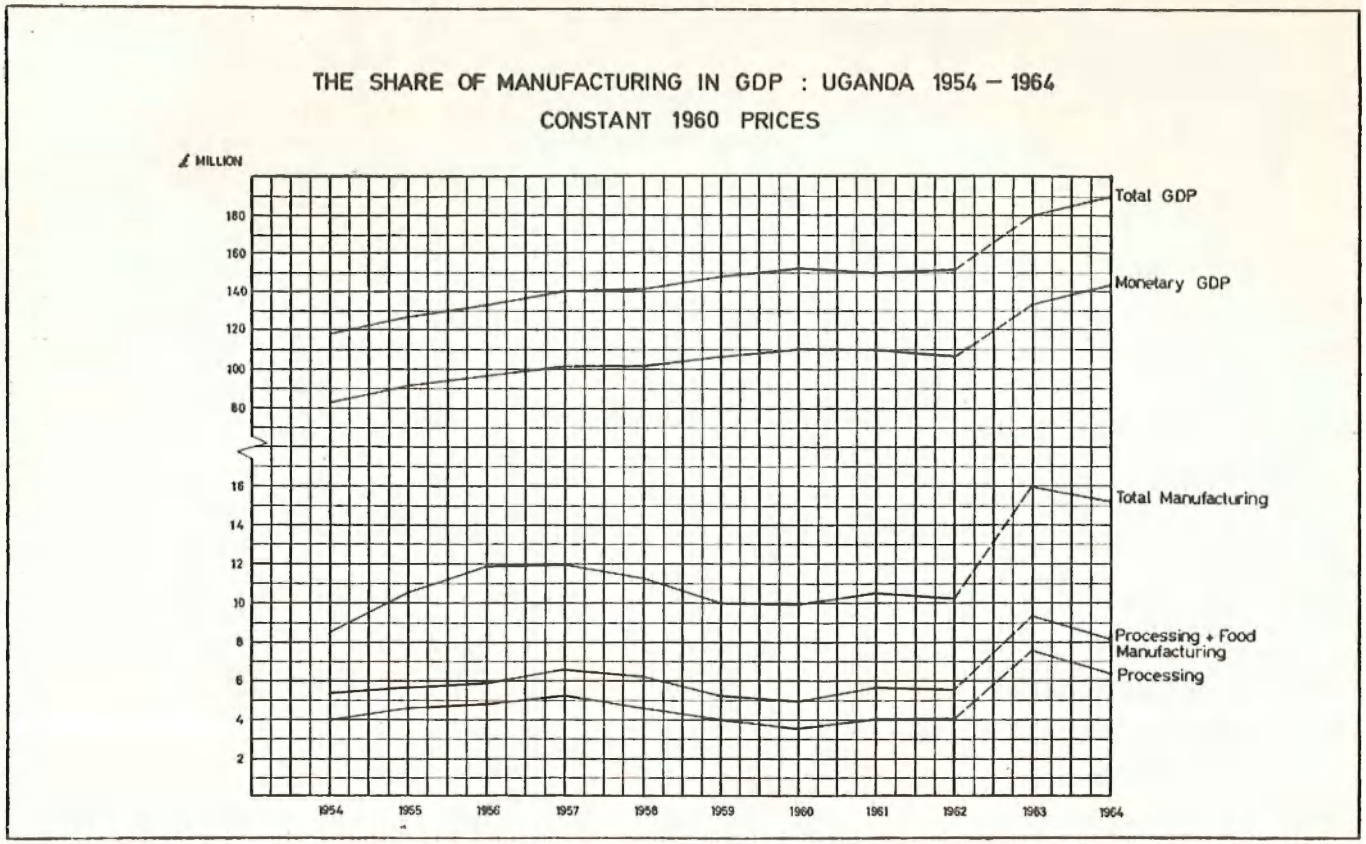

THE SHARE OF MANUFACTURING IN GDP : UGANDA 1954 – 1964
CONSTANT 1960 PRICES
£ MILLION
180
160
140
120
100
80
16
14
12
10
8
6
4
2
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
Total GDP
Monetary GDP
Total Manufacturing
Processing + Food Manufacturing
Processing

Figure 1

but if the error in the GDP series prior to 1962 was consistent, the share of manufacturing product in GDP has steadily fallen during the period 1956 to 1960 (see also Graph 2).

Another conclusion that can be drawn from Table 1 is that within the manufacturing sector the relative shares of the three sub-sectors has remained comparatively stable, although the 1963-1964 figures indicate that the width of the gap between processing and food on the one hand, and miscellaneous manufacturing on the other hand, has been somewhat underestimated in earlier years. Furthermore, the underestimate of the value added in manufacturing is in the first place attributable to an underestimate of miscellaneous manufacturing, and to less extent to the other two sub-sectors.

It can be argued, that the use of constant prices is not the most appropriate way to determine the place of manufacturing in the Uganda economy, and that current prices should be used instead. In this way, changes in the value of the product of the various sectors in the economy are compared rather than the quantities produced. In view of the falling prices of agricultural products this alternative method could have a considerable impact on the share of manufacturing product in GDP. However, Graph 2 in which the relative shares of manufacturing in total and monetary GDP have been given, both in constant 1960 prices and in current prices, shows that the picture is essentially the same in both cases. In current values, the share of manufacturing is even virtually always lower. On the whole the curves are very close, implying that price movements in the various sectors of the Uganda economy have, on average, been compensated by volume changes in the opposite direction.

A third alternative way of assessing the place of manufacturing in the Uganda economy is to use constant prices for the product of the various sectors and GDP as a whole, but to correct the GDP estimate for changes in the terms of trade. Uganda's economy is to a large extent dependent on the prices in the world market, visible exports being approximately 35 per cent of monetary GDP, and visible imports having a value of about 25 per cent of monetary GDP. Price movements in imports and exports have, therefore, a considerable influence on the economy of Uganda. The terms of trade, expressed as the price index for imports divided by the price index for exports, and multiplied by 100, have continuously deteriorated since 1954. Compared to 1954, 1.7 times the volume of exports is required in 1963 in order to obtain the same quantity of imports as in 1954.

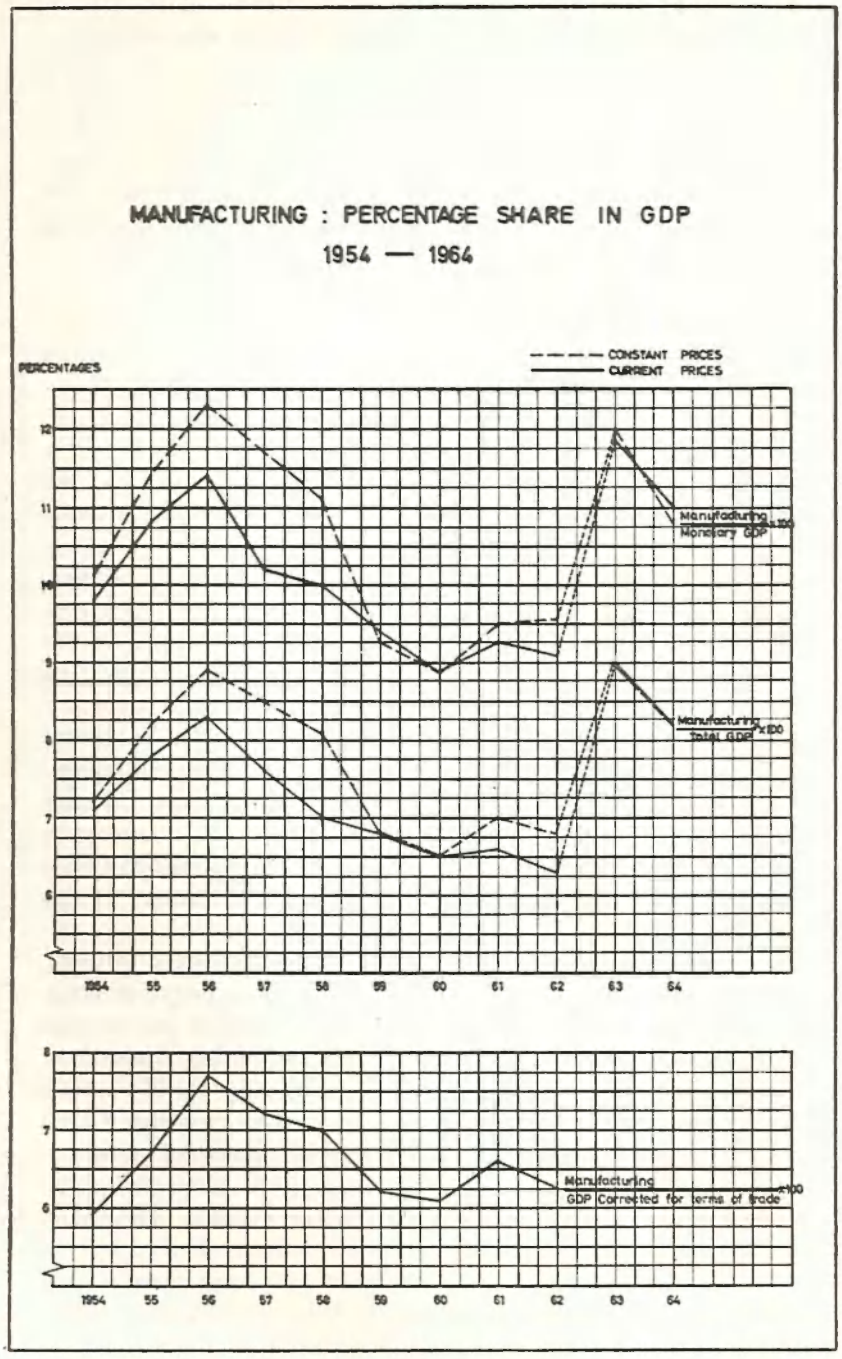

MANUFACTURING : PERCENTAGE SHARE IN GDP
1954 — 1964
PERCENTAGES
CONSTANT PRICES
CURRENT PRICES
Manufacturing / Monetary GDP x100
Manufacturing / Total GDP x100
Manufacturing GDP Corrected for terms of trade x100
1954 55 56 57 58 59 60 61 62 63 64

Figure 2

The share of manufacturing product in Gross Domestic Product at market prices, corrected for changes in the terms of trade, is also given in Graph 2. The GDP figures thus corrected are from *The Real Growth*[6]. As can be seen, the picture is similar to the other two valuation methods, although the share of manufacturing in GDP is now at its lowest level.

(ii) *Employment*

The employment effects of industrialization in Uganda are the subject of analysis in a recent study by Baryaruha.[7] On the basis of macro-economic time-series and by case-studies of six of the larger industrial establishments in Uganda, he examines the relation between changes in output and changes in employment. Covering the period 1954-1964, his main conclusion is that for the economy as a whole employment fell in spite of rising production in the monetary economy. In manufacturing alone, however, (excluding processing), value added at constant prices is shown to have decreased by 15.8 per cent, while employment grew by 4 per cent. In so far as these conclusions are based on the GDP data, they may have been invalidated to an unknown extent by the 1963 and 1964 Surveys of Industrial Production. Furthermore, the employment figures as reported in the annual *Enumeration of Employees*[8] also appear to be inconsistent with the Surveys. The 1964 Survey reported a total number of employees in the processing and manufacturing industries of 39,510, and this total excludes all employees in establishments with less than 10 persons employed. The "Enumeration of Employees" for that year reports only 35,700 persons employed in processing and manufacturing industries, and yet, this figure is supposed to include *all* establishments. One of the discrepancies appears to be in the figures for the processing industries, and is no doubt due to the statistical problem of dealing with seasonal employment. The 1964 Survey reports 17,200 persons employed in coffee and cotton processing, the Enumeration only 7,300. For other manufacturing the figures are 22,300 and 28,400 respectively.

With respect to Baryaruha's conclusions we can, therefore, state that only if it can be assumed that the error in the official estimates he used has been consistent over time, are his conclusions unaffected by these recent revisions.

Mainly because of the unreliability of earlier estimates of value added and employment in the manufacturing sector, we will confine ourselves here to a brief comparison of 1963 and 1964, based on the Surveys for those years. In 1963, the labour force in the process-

ing sector was 18,995; in 1964 this figure decreased by 1.5 per cent to 18,672. For manufacturing industries the Surveys indicate an increase of 8.4 per cent, from 19,220 to 20,838, over the same period. Total employment in the economy for the years 1963 and 1964 (adjusted for underestimates of the processing sector) was 233,900 and 236,300, respectively, and the two sub-sectors accounted thus for a share of 8.1 and 8.2 per cent in 1963, and 7.9 and 8.8 per cent in 1964. The shares in total employment are compared to the shares in total monetary GDP (in current prices) in table 2; the figures illustrate clearly the extensive use of labour per unit of output in the processing industries. For other manufacturing activities, the shares are more or less equal, implying that input of labour per unit of value added is about the same as for the monetary economy as a whole.

Table 2

THE SHARES OF MANUFACTURING EMPLOYMENT AND VALUE ADDED IN THE UGANDA ECONOMY, 1963-1964

	Processing		Other Manufacturing	
Year	*Share in total employment*	*Share in total mon. GDP*	*Share in total employment*	*Share in Total mon. GDP*
	%	%	%	%
1963	8.1	4.0	8.2	5.3
1964	7.9	7.9	8.8	8.5

The total wage bill in the manufacturing sector, as reported in the *Enumeration of Employees*, for the years 1963 and 1964, is close to the Survey figures for those years. This must, however, be a coincidence; it implies that the wages of labourers not included in the processing sector in the Survey, are more or less compensated for by the wages and salaries paid in establishments with less than 10 employees included in the Enumeration. If this applies to the period before 1963 also, the total wage bill has increased by about 160 per cent over the period 1957-1964. This not only implies that average wages in the manufacturing sector have risen extremely fast, but also, in the absence of growth in manufacturing value added, that the other items in the value added figure must have declined very rapidly. These other items comprise depreciation, interests, profits, rents and remuneration to directors and are hereafter referred to as trading surplus. Although the unreliability of the value added figures of earlier years has to be taken into account, the figures given in table 3 suggest a rate of decline of the trading surplus in the manufacturing sector in total, during

the period 1957-1962, of 7.7 per cent per annum, while the Survey figures imply a rate of decline of the trading surplus for the years 1963-1964, of 2.6 per cent.

C. A description of the manufacturing sector

The description of the manufacturing sector is first of all based on the 1963 and 1964 Surveys. The data given in the 1964 Survey have been briefly summarized for the 26 branches of industry distinguished, and the most important aspects and relations are discussed. The structure of manufacturing industry in Uganda, in which a small number of relatively large firms dominate the supply market in certain branches, creates its own problems of statistical information. Data on individual establishments are often classified, and can then only be published in the form of aggregates or ratios. It was, therefore, only in a limited number of cases possible to go beyond the degree of detail of the Surveys, for example in the case of public companies, which publish annual accounts and reports, and in those cases that information was published elsewhere, such as in newspapers, trade journals, etc. Among the public companies, the subsidiaries of the Uganda Development Corporation deserve special attention, not only because of the reliable statistical information contained in the annual reports of the Corporation, but also because of the important place it occupies in Uganda's manufacturing industry; we have devoted a special section of this chapter to the Uganda Development Corporation.

Table 3

THE DEVELOPMENT OF VALUE ADDED AND ITS COMPONENTS TOTAL MANUFACTURING SECTOR, 1957-1964
(Current Prices)

£million

Year	*Value added*	*Total wage bill*	*Profits, interests and depreciation*
1957	11.1	3.7	7.4
1958	10.3	3.8	6.5
1959	10.1	4.0	6.1
1960	9.9	4.3	5.6
1961	10.4	4.8	5.6
1962	9.8	4.7	5.1
1963	16.8	5.3	11.5
1964	17.1	5.9	11.2
Annual growth rate			
1957–1962 ..	−2.5%	4.9%	−7.7%
1963–1964 ..	1.8%	11.3%	−2.6%

(i) *The 1964 Survey of Industrial Production: The Manufacturing Sector*

In 1964, the manufacturing sector of Uganda consisted of 604 known establishments employing 10 or more persons; the processing industries accounted for 282 out of this total. Cotton ginning showed the largest number of establishments within one branch of industry, 133, closely followed by coffee curing, which had 120 establishments in that year. In the sub-sector of manufacturing industries, the number of establishments per branch of industry is much smaller; the only notable exception is the repair of motor vehicles, where 55 firms are recorded which employ 10 or more persons. The number of establishments per branch of industry in itself does not give a sufficient indication of the market structure, for which an analysis by size is required. The 1964 Survey has carried out such an analysis on the basis of number of employees, number of establishments, and turnover, by size-class, but in order to comply with the statistical ordinances referred to earlier, some branches of industry had to be combined. Moreover, no details have been given on coffee and cotton processing, and the following summary concerns, therefore the manufacturing sub-sector only.

Out of the total of 322 establishments, only 44 employed more than 100 persons, and employed in total 12,585. In terms of turnover, the 44 largest establishments in Uganda had a share of 74 per cent of total turnover in manufacturing industries, or £28.4 million.

Table 4 summarizes the information by size-class for manufacturing industries as a whole; details are given in Tables 6 and 7.

Table 4
MANUFACTURING INDUSTRIES, 1964: SIZE STRUCTURE (PERCENTAGES)

	Employees			
	10-19	20-49	50-99	100 and more
Share in:				
Number of establishments ..	37.0	34.2	15.2	13.6
Total employees	8.2	16.1	15.4	60.3
Total turnover	6.5	9.4	10.1	74.0

Source: Calculated from 1964 Survey, Tables XVI a–c.

The concentration of employees in the larger establishments in manufacturing can also be shown as follows. Manufacturing establishments are broken down into three size-classes: smaller than 20 employees, from 20 to 49 employees, and larger than 49, and employment in each of those classes is given as a percentage of total employment in that branch of industry. The tendency to concentrate in large firms is then found by the ratio of the share

in employment of firms employing more than 19 employees to the share in employment of firms employing less than 50 employees. If all employees are concentrated in the modal size-class (20-49 employees) the ratio is 1; it is smaller than one if there is a tendency to concentrate in establishments smaller than 20 and larger than 1 if there is a tendency to concentrate in establishments larger than 50 employees. Due to lack of detail in the 1964 Survey some branches had to be combined; the results are given in table 5. The highest concentration ratio is found in sawmilling, followed by textiles etc. and the group consisting of miscellaneous food, sugar, tobacco and beverages. The fourth industry group with a concentration ratio higher than the average for manufacturing industries as a whole is clay products, glass, cement and concrete. The smallest ratio is found in miscellaneous wood products, and this would undoubtedly have been more pronounced if establishments smaller than 10 employees were included.

Table 5

MANUFACTURING INDUSTRY, 1964: THE TENDENCY OF EMPLOYEES TO CONCENTRATE IN LARGE ESTABLISHMENTS (PERCENTAGES)

	Employees			*Concentration ratio*
	10-19	20-49	50 and more	$\frac{(2)+(3)}{(1)+(2)}$
	(*1*)	(*2*)	(*3*)	(*4*)
Meat, fish industry, grain milling, bakery products, confectionery ..	14.9	22.0	63.1	2.306
Misc. food, sugar, tobacco, beverages	2.2	12.0	85.8	6.887
Textiles, wearing apparel, cordage, rope, twine, footwear	5.9	7.4	86.7	7.075
Sawmilling, plywood	1.2	5.0	93.8	15.936
Misc. wood products	54.3	45.7	—	0.457
Furniture	21.8	29.4	48.8	1.527
Printing, publishing	11.5	34.1	54.4	1.941
Chemicals, oils, fats	7.1	20.4	72.5	3.378
Clay products, glass, cement, concrete	3.0	13.3	83.7	5.951
Metal products	8.3	18.3	73.4	3.447
Repair of motor vehicle	28.7	35.8	35.5	1.105
Total Manufacturing	8.2	16.1	75.7	3.778

Source: See Table 4.

The most important information collected and given in the 1964 Survey on the manufacturing sector in Uganda is summarized in tables 6 and 7, the former giving the absolute values, the latter expressing some of them in ratios.

Table 6 gives data on the number of establishments per branch of industry, the turnover and gross output, value added, number

of employees, the total wage bill (including payments in kind) and a residual, which we have called trading surplus, and which is the difference between total value added and the wage component. Although the trading surplus does not say much about the size of profits, it indicates the upper ceiling of this item, in other words, profits have in any case not been higher than the figures given for trading surplus. As can be seen, the trading surplus in manufacturing industries was much larger than in processing industries, although the turnover was about the same. The average trading surplus per establishment in the whole manufacturing sector is rather small, £18,560; for manufacturing industry it is on average three times as large as for processing industries, £27,205 compared to £8,688. Since capital investments in manufacturing industries are probably much larger than in processing, it should be stressed that this comparison does not necessarily imply that the returns on capital in processing are lower than in manufacturing industries.

In table 7 a number of ratios are given in order to throw light on the significant relationships between value added, gross output, trading surplus, employment and labour turnover.

The value added over gross output ratio shows huge variations per branch of industry. For manufacturing industries as a whole it is three-and-a-half times as large as for processing industries, but the average for the latter is heavily influenced by the ratio for coffee processing. The highest ratio is found in electrical machinery (0.66), followed by structural clay products, and the group of glass, cement, and concrete products.

The share of wages in total value added is still very low in Uganda, although we have shown in table 3 that it is rapidly rising. For manufacturing as a whole, it is 34.3 per cent, and the variations within the sector are considerably less great than for value added over gross output. This implies that the total wage bill in manufacturing industries is much larger than in processing industries, although the number of employees is about the same.

The value added per employee is almost three times as large in manufacturing industries than it is in processing industries, Sh. 13,100 compared to Sh. 5,200. Considerable variations will be noticed, the highest ratio being found in metal industries (Sh. 36,500), and the lowest in footwear (Sh. 2,900). A number of factors are responsible for these variations, of which one of the most important is the capital intensity in the branch of industry, but due to lack of statistical information on this point we cannot analyse this further.

The trading surplus by branch of industry is expressed both

as a percentage of value added and of turnover. Although the percentage share of the trading surplus in value added in the manufacturing sector is high (65.7 per cent), it is rather low if expressed as a percentage of total turnover (14.6 per cent). The average trading surplus/turnover ratio in processing industries is 6.4 per cent; for manufacturing industries it is 22.8 per cent. Using the statistician's rule-of-thumb concerning the capital-output ratio, and putting it at 3 for the manufacturing sector as a whole, we can also make a rough estimate of the gross return on capital (again including depreciation, directors' fees, and interest). The trading surplus is 65.7 per cent of value added, and to approximate capital employed we have to multiply value added by 3, giving a ratio of trading surplus over capital employed of 22 per cent. Although the assumptions on which this calculation is based might be reasonable for the manufacturing sector as a whole, it is obviously impossible to do a similar exercise for the branches of industry separately until more detailed data on capital employed in each branch is known. This is the case for some of the subsidiaries of the Uganda Development Corporation, with which we will deal later.

The last item in table 7 requiring further explanation is the labour turnover ratio. This ratio is taken from the 1964 Survey, in which it is described as a concept designed to indicate the movements of individual employees, and which is defined as follows:

$$T = \frac{(L+E) \times 100}{2 \times P}$$

where,

T=labour turnover in percentages

L=number of permanent employees who left the employment during the year

E=number of permanent employees engaged during the year

P=total labour force at the end of the year.

The concept thus defined is difficult to interpret. It not only includes the replacement of individual permanent employees that leave voluntarily, but also the changes in the total permanent labour force as a result of management decisions. Only if the latter are assumed to be relatively small in number, can the ratio be taken to indicate the stability of the labour force. This assumption does not hold for Uganda in 1964. The average labour turnover ratio for manufacturing industries was 10 per cent in that year. Assuming the total labour force in manufacturing industries to be permanent (in other words, no seasonal employment), the

Table 6

THE MANUFACTURING SECTOR IN UGANDA IN 1964: SOME BASIC DATA

Industry	*Number of Establish-ments*	*Turnover* £ Million	*Gross output* £ Million	*Value added* £ Million	*Number of Employees 31st Dec.*	*Total Wage Bill (including Payment in kind)* £ Million	*Trading Surplus Col (4)– Col. (6)* £ Million
	1	2	3	4	5	6	7
A. Processing industries	*282*	*38.44*	*38.58*	*3.91*	*18,672*	*1.46*	*2.45*
Cotton ginning	133	15.55	15.55	1.84	12,296	0.73	1.11
Coffee processing	120	20.42	20.42	1.52	4,888	0.55	0.97
Tea processing	29	2.47	2.61	0.55	1,488	0.18	0.37
B. Manufacturing	*322*	*38.42*	*38.02*	*13.16*	*20,838*	*4.40*	*8.76*
Meat and fish industry	3	0.50	0.49	0.04	299	0.06	–0.02
Grain milling	14	1.44	1.42	0.10	391	0.05	0.05
Bakery products and Confectionery	14	0.93	0.94	0.18	696	0.12	0.06
Miscellaneous Food Preparations	7	0.66	0.67	0.06	208	0.03	0.03
Sugar and Tobacco	21	9.44	9.44	3.85	2,947	0.88	2.97
Beverages	8	1.92	1.91	0.74	879	0.30	0.44
Textiles and wearing apparel	21	4.33	4.30	1.89	3,191	0.78	1.11
Cordage, Rope and Twine	3	0.21	0.23	0.06	286	0.03	0.03
Footwear	5	0.09	0.10	0.02	142	0.02	—
Sawmilling and plywood	25	1.08	1.08	0.45	2,691	0.28	0.17
Miscellaneous wood products	7	0.13	0.13	0.05	129	0.02	0.03
Furniture	24	0.31	0.30	0.10	703	0.09	0.01
Printing and publishing	25	0.96	0.96	0.39	1,013	0.28	0.11
Rubber products	7	0.33	0.34	0.11	189	0.06	0.05
Basic industrial chemicals	6	0.35	0.34	0.08	421	0.08	—
Oils and fats	16	4.10	4.00	0.33	1,121	0.17	0.16
Soap and other chemical products	6	1.14	1.11	0.06	377	0.05	0.01
Structural clay products	5	0.17	0.17	0.10	452	0.05	0.05
Glass, cement and concrete products	14	1.49	1.40	0.77	1,224	0.24	0.53
Metal industries and engineering	30	7.34	7.27	3.26	1,895	0.42	2.84
Electrical machinery	3	0.04	0.04	0.03	62	0.01	0.02
Repair of motor vehicles	55	1.39	1.36	0.47	1,493	0.39	0.08
Motor cycles and bicycles	3	0.02	0.02	0.01	29	..	0.01
C. Total manufacturing	*604*	*76.86*	*76.60*	*17.07*	*39,510*	*5.86*	*11.21*

Source: 1964 Survey, *op. cit.*

Table 7

THE MANUFACTURING SECTOR IN UGANDA IN 1964: SOME RATIOS

Industry	*Value added / Gross Output*	*Wages / Value added* %	*Value added / employee* Shs. '000	*Trading surplus / Value added* %	*Trading surplus / Turnover* %	*Labour Turnover* %
	1	2	3	4	5	6
A. Processing industries	*0.10*	*37.3*	*5.2*	*62.7*	*6.4*	*x*
Cotton ginning	0.12	39.7	4.2	60.3	7.1	x
Coffee processing	0.07	36.2	6.3	63.8	4.8	x
Tea processing	0.21	32.7	7.9	67.3	15.0	14
B. Manufacturing	*0.35*	*33.4*	*13.1*	*66.6*	*22.8*	*10*
Meat and fish industry	0.09	150.0	3.1	–50.0	–4.0	21
Grain milling	0.07	50.0	6.5	50.0	3.5	2
Bakery products and Confectionery	0.19	66.7	5.2	33.3	6.5	7
Miscellaneous Food Preparations	0.09	50.0	6.3	50.0	4.5	23
Sugar and Tobacco	0.41	22.9	26.5	77.1	31.5	12
Beverages	0.39	40.5	16.4	59.5	22.9	5
Textiles and wearing apparel	0.44	41.3	12.1	58.7	25.6	11
Cordage, Rope and Twine	0.28	50.0	5.3	50.0	14.3	4
Footwear	0.18	100.0	2.9	—	—	29
Sawmilling and plywood	0.42	62.2	3.4	37.8	15.7	8
Miscellaneous wood products	0.35	40.0	6.9	60.0	23.1	5
Furniture	0.33	90.0	3.3	10.0	3.2	3
Printing and publishing	0.40	71.8	8.0	28.2	11.5	4
Rubber products	0.31	54.5	11.5	45.5	15.2	9
Basic industrial chemicals	0.24	100.0	4.0	—	—	33
Oils and fats	0.08	51.5	5.6	48.5	3.9	4
Soap and other chemical products	0.06	83.3	3.6	16.7	0.9	10
Structural clay products	0.60	50.0	5.1	50.0	29.4	5
Glass, cement and concrete products	0.55	31.2	13.1	68.8	35.6	19
Metal industries and engineering	0.45	12.9	36.5	87.1	38.7	14
Electrical machinery	0.66	33.3	10.5	66.7	50.0	6
Repair of motor vehicles	0.35	83.0	6.4	17.0	5.8	4
Motor cycles and bicycles	0.30	—	6.0	100.0	50.0	7
C. Total manufacturing	*0.22*	*34.3*	*9.7*	*65.7*	*14.6*	*x*

Source: Calculated from 1964 Survey, *op. cit.*

total of entries and departures (L+E), was 4,168 in 1964, given a total labour force at the end of that year of 20,838. Compared to the end of 1963, the labour force in manufacturing industries increased by 1,618, reducing the number of voluntary departures plus *replacements* to 2,550 and giving a total number of permanent employees voluntarily leaving employment in the manufacturing sector of 1,275, which is considerably lower than usually assumed for Uganda.

The average for the manufacturing industries, however, again conceals considerable variations within the sub-sector. The highest labour turnover is in basic industrial chemicals (33 per cent), closely followed by footwear (29 per cent) and miscellaneous food preparations (23 per cent). The lowest labour turnover is observed in grain milling (2 per cent) and furniture (3 per cent). One would need much more detail on the labour force, particularly on its geographical distribution and its dependence on wage employment relative to farm income, to attempt an adequate explanation for the variations in labour turnover per branch of industry. A rank correlation on the assumption that the labour turnover is related to the number of establishments in the same branch, thus facilitating mobility, did not prove significant. There is, however, a significant correlation between labour turnover and wage rate, in the sense that the higher the average wage rate in a branch of industry, the higher the turnover, but although significant, the correlation coefficient is not very high (Spearman's rank-order coefficient of 0.86).

(ii) *The Uganda Development Corporation*

The bulk of the larger companies in Uganda's manufacturing sector is under the control of or associated with two large concerns, the Uganda Development Corporation (hereafter referred to as UDC) and Muljibhai Madhvani Ltd. The latter is a private concern, and consequently does not publish annual reports; as a result virtually no data are known on the concern or its individual companies, producing a wide variety of products, such as sugar, edible oils, margarine, coffee, tea, beer, textiles, matches and steel. Some of these activities are in collaboration with other private investors, such as the Mehta Group.

In contrast to Madhvani, relatively detailed information is published by UDC on its subsidiaries, which numbered 32 at the end of 1965, of which 9 are in the sub-sector of manufacturing industries. In this section we will pay attention to some of those in some detail. In addition to the 9 manufacturing establishments

which are subsidiaries of UDC, there were 7 manufacturing companies associated with UDC, in the sense that UDC has a financial interest in the firms concerned, but does not hold a majority of the shares. The annual report of UDC does not give much information on these companies, except information of a financial nature in the consolidated balance sheet of UDC. A complete list of companies in which UDC is involved is given in Appendix 2 to this chapter.

The UDC was established on 12th June 1952, under the UDC Ordinance 1952. The initial capital was £5 million, provided by the Uganda Government as equity capital, which relieved the company from the start of the obligation to pay interest and amortization; moreover, the company does not have to pay dividends to the sole shareholders, although one of the recommendations of the World Bank mission to Uganda in 1960 was that UDC should start making dividend payments to the Government. It is argued that this would then serve a dual purpose, as it would in the first place show to potential entrepreneurs that the largest industrial organisation in the country can actually make a return to the investor, and in the second place make a contribution to the financing of the country's development plan. These arguments for the payment of dividends to the Government are rather weak; the profitability of some of the UDC ventures can be seen directly from the published annual accounts, and the role of supplier of finance is already played perfectly well by UDC, as its expansion plan is closely related to Uganda's development plan. The payment of dividends for the latter reason would appear to be justified only if finance is required for a project outside the scope of the UDC which has a higher priority than any of the UDC projects.

The financial structure of UDC enabled the company to plough back its profits (after taxation) to finance other projects, and owing to the reinvesting of profits, the net assets were considerably higher at the end of 1965 than the issued and paid capital. On the 31st December, 1965, the authorized share capital of UDC was £8 million, of which £6.4 million was issued and fully paid, with the Uganda Government as sole shareholder; net assets at that date were, according to the consolidated balance sheet, £9.7 million, or 50 per cent higher than the issued share capital.

The Annual Report and Accounts of UDC for 1965 gives some interesting, albeit highly aggregated, information on the total contribution made to the economy of Uganda by the UDC and its subsidiaries and associates. The book value of the owned fixed assets at the end of 1965 was £19,780,105, the gross turnover for the year was £21,003,506, and the total number of employees in

that year was 18,279 who were paid £3,437,853 in wages and salaries.

The Report also gives information on the deployment of UDC's net resources and borrowing. At the end of 1965, the total of net resources and borrowing was £11,805,000 of which borrowing accounted for only £2,147,000. The distribution of this total is shown in table 8 but no breakdown has been given for the proportion borrowed. The emphasis put by UDC on the role of assisting Uganda's industrial development, is clearly illustrated by table 8; more than 50 per cent of the total is invested in the industrial sector, while only 25 per cent is directed at the agricultural sector. The emphasis placed upon the development of the textile sector, in which nearly as much has been invested as in the agricultural sector as a whole, illustrates the extent to which the government policy of import substitution is reflected in the company's investment policy.

Table 8

UGANDA DEVELOPMENT CORPORATION, 31st DECEMBER 1965 DISTRIBUTION OF NET RESOURCES AND BORROWING

	£'000	*Percentages*
Agricultural/Industry	191	2.0
Miscellaneous industry	248	2.6
Enamelware	267	2.8
Fertilizers	372	3.8
Mining	378	3.9
Finance	611	6.3
Food and Beverages	708	7.3
Property	934	9.7
Hotels and Tourism	942	9.8
Building Materials	1,097	11.3
Textiles	2,992	31.0
Agriculture	3,065	31.7
	11,805	122.2
Less: Borrowings	2,147	22.2
	9,658	100.0

Source: UDC Annual Report and Accounts, 1965

No such breakdown as that given in table 8 is published for turnover, value added or employment but for five subsidiaries in the manufacturing sector both employment figures and value added figures have been made available. Until 1965, these five subsidiaries constituted UDC's total interest in the manufacturing sector as far as subsidiaries are concerned, and the totals mentioned above thus give an impression of the place of UDC in manufacturing industry.

(*a*) *UDC and manufacturing industry in Uganda*

Although the scope of activity of the UDC is not limited to industrial development, there is reason to assume that originally the Corporation was designed to assist primarily in Uganda's industrialization. Nyhart[9] goes even as far as to suggest that agricultural activity was provided for in the bill creating the UDC "almost as an afterthought". Although that might have been true for the first years in UDC's existence, it has gradually widened its field of interest, and has at present investments in practically every sector of the Uganda economy.

In this section we will pay attention to the development of UDC's interest in manufacturing industry in Uganda, and in particular, to the following UDC subsidiaries: the Uganda Cement Industry, the Uganda Metal Products and Enamelling Company, Nyanza Textile Industries, Tororo Industrial Chemicals and Fertilizers and the East African Distilleries. For these companies we not only have the balance sheets and the annual reports for the period during which they are subsidiaries of UDC, but also the employment figures. Unfortunately the value added figures may not be given for the companies separately.

Before discussing the five companies separately, we will summarize some of the information available, in such a way that an evaluation is possible of the importance of the five UDC subsidiaries in manufacturing industry as a whole in Uganda, using for comparison the Survey figures for 1963 and 1964.

In 1963, the five firms employed in total 3,905 persons, and this number increased to 4,019 in 1964. Comparing these figures to total employment in manufacturing industry in those years, as given in the Surveys, of 19,220 and 20,838 respectively, the UDC companies accounted for approximately 20 per cent of total employment in manufacturing industry in both years.

The value added of the five firms in 1963 and 1964, was £2.5 million and £2.9 million respectively. Compared to total value added in manufacturing industry in the same years, of £11.2 million and £13.2 million, the share was 22.3 per cent in 1963 and 22.0 per cent in 1964. These percentages correspond closely to the share in total employment in both years, implying that the inputs of labour per unit of value added in the five firms is approximately the same as in manufacturing industry as a whole.

Total investment in fixed assets at cost for the five companies was £6.3 million in 1963 and £6.9 million in 1964. The total accumulated depreciation in both years was £2.9 million and £3.3 million, respectively. No accurate estimate exists of total capital invested

in Uganda's manufacturing industry but if the earlier estimate of total capital in manufacturing industry in Uganda, using a capital-output ratio of 3, is correct, the share of the UDC companies in total fixed capital in manufacturing industry in Uganda is only 18.6 and 17.4 per cent respectively for the years 1963 and 1964. This is rather lower than suggested by the labour and value added shares and it is possible that a capital-output ratio of three is too high for Uganda's manufacturing industry as a whole; for the five UDC companies it is only 2.5 for the years 1963-1965. If this ratio is used, the share in total fixed capital increases to a more plausible level of 22.5 per cent in 1963 and 20.9 per cent in 1964.

The employment provided by and the fixed capital of the five manufacturing companies have increased very rapidly over time, as illustrated by table 9. The value added figures, which are available for 1963, 1964 and 1965 only, are also included in the table.

Table 9

UDC SUBSIDIARIES IN THE MANUFACTURING SECTOR

Year	*Total Employment*	*Total value added* £'000	*Total fixed capital at cost* £'000
1954	572	N.A.	1,243.6
1955	658	N.A.	1,864.5
1956	635	N.A.	2,154.8
1957	763	N.A.	2,443.9
1958	706	N.A.	4,229.5
1959	2,250	N.A.	4,481.3
1960	2,725	N.A.	5,265.4
1961	3,142	N.A.	5,687.4
1962	3,698	N.A.	6,217.4
1963	3,905	2,518.4	6,328.2
1964	4,019	2,912.3	6,859.9
1965	4,558	3,486.8	8,662.2
1966	5,116	N.A.	N.A.
Growth rates per annum			
1954-1965 ..	22.0%	N.A.	24.0%
1963-1965 ..	8.0%	17.7%	17.0%

During the period 1954-1965, total employment in the five companies grew by 22.0 per cent per annum, while fixed capital at cost grew slightly faster, by 24 per cent per annum. It should be realized, however, that these growth rates express the growth of UDC's total interest in manufacturing industry, rather than the growth of each of the firms. The additions are mainly due to the establishment of new companies, and much less to the growth

of individual firms. The latter aspect will be dealt with in more detail later.

Although over the period 1954-1965, employment and capital grew on average at approximately equal rates, such an average conceals the remarkable change that took place after 1963, when capital grew twice as fast as employment, and value added increased even faster.

The issued and paid up share capital of the five companies together was £3,717,505 at the end of 1965. Of this total, £2,001,383 was in the hands of UDC itself, while another £1,067,000 was held by Uganda Crane Industries Ltd. and £9,490 by Ugadev Holdings Ltd., two subsidiaries-holding companies of UDC. The remaining £639,632 was held outside UDC, the larger part by Uganda Development Finance Co.

We now turn to a brief discussion of each of the five companies in turn. It should be stressed from the beginning that this discussion does not claim to be complete. For a respectable industry study much more statistical data should be known than is available and publishable at present. The major reason for this is that all five companies are either monopolies or—even worse from the point of view of data publication—duopolies. As a result, no information can be published on such items as the cost structure, turnover, value added, and the structure of inputs. As the situation is not likely to change in this respect in the near future a description which is in some respects incomplete is better than no description at all.

(*b*) *The Uganda Cement Industry Limited, Tororo*

Cement has been produced in East Africa for a long time, i.e. from 1933, in which year the East African Portland Cement Company was established at Nairobi. The factory was very small, and used clinker imported from the United Kingdom as raw material. It was for a long time to come the only East African producer of cement, but satisfied only a fraction of total demand of cement in the region.

After the Second World War, the domestic production of cement in East Africa suddenly became of great importance to the current industrial strategy. Cement production enjoys a considerable natural protection due to the transport element in the delivery cost of cement, and the market constraint was expected to be alleviated in the light of the decision to build the Owen Falls Dam which would result in a huge demand for cement. A cement factory was set up at Tororo, which was, after serious teething troubles,

opened in 1953 by the then Governor of Uganda, Sir Andrew Cohen. The opening represented both the inauguration of the first complete cement works in East Africa, and the beginning of the success story of UDC as far as investments in manufacturing industry are concerned. The company's issued share capital was £1.2 million of ordinary shares, all held by UDC, and £20,000 of preference shares issued to the Bukedi African Local Government.

The raw material position of the factory was from the beginning not very good. The limestone deposits at Tororo have a high iron ore content, which posed a number of serious technical problems. Nevertheless, the factory succeeded not only in producing a high quality product compared to international standards (although it is acknowledged that its long hardening time is a disadvantage for most uses), but also at a competitive price. When the factory started production in 1953, the average import price in Uganda was Sh. 378 per ton. The wholesale price in Uganda for cement manufactured by the Uganda Cement Industry Ltd. at that time was Sh. 330, a price which gradually decreased to Sh. 235 in 1958, and Sh. 240 at present.*

The market for cement is a highly fluctuating one, dependent as it is on the building and construction sector, which is in itself a highly volatile economic sector. The recession in building and construction activity during the years 1958-1965 in Uganda has consequently had a serious impact on the production of Uganda's cement industry. The relationship between consumption, production and capacity is illustrated in graph 3. The rapid increase in the capacity of the Uganda cement industry reflects, in fact, the overall situation in East Africa very well. Cement was never included in any industrial licensing scheme as textiles had been, and already in 1958 the installed capacity for cement production in East Africa was twice as high as total demand for cement in East Africa. Only Kenya has succeeded in acquiring a substantial export market outside East Africa, although Uganda has exported a limited quantity of cement to the Congo until this country closed the border in 1959. Recently, the level of building and construction activity has risen again in Uganda, and can be expected to rise further during the implementation of the Second Five-Year Plan. The cement factory at Tororo is now working at 75 per cent of capacity and the construction of a second cement factory is planned in Western Uganda where better quality limestone has been discovered.

* Approximately 40-50% of Tororo cement is bought on Government contract, for which sales discount is given of 12.5 per cent.

The annual reports of UDC give relatively detailed statistical information on the cement company; the balance sheets of the company are summarized in table 10 for the lifetime of the company up to 1965. Table 11 gives detailed data on the growth of fixed assets by type, and the corresponding depreciation allowances. As can be seen from table 10, the issued and paid up share capital of the company decreased sharply in 1962, and this was due to the repayment to shareholders of Sh. 7/- on each Sh. 20/- ordinary share, reflecting the unfavourable prospects of the firm under the influence of the recession in building and construction activity. In 1963, the share capital of the company was increased again to £1,032,500 on which level it has remained. The company has made profits ever since it started operations, although the level of profits has fluctuated considerably due to factors discussed above. From 1963 onwards, the profits include those made by the Universal Asbestos Manufacturing Company (E.A.) Ltd. in which the Uganda Cement Industry Ltd. had a financial interest from 1955 but which became a wholly owned subsidiary in 1963.

The fixed assets, as described in table 11, increased steadily over the period 1953-1965, on average by 6.6 per cent per annum. The biggest jump occurred in 1955-1956, when a major expansion was undertaken, increasing the capacity from 50,000 tons of cement per annum to 150,000 tons.

During the same period, employment has increased by only 4.3 per cent per annum, and comparing this to the growth in fixed assets, the company has become slightly more capital-intensive, the amount of capital per employee increasing from £2,148 in 1954, to £2,674 in 1965. In 1965, however, the company did not work at full capacity, and although only marginal additions to the labour force would have been required, the capital-intensities are not fully comparable. Output per head increased from 71.7 tons in 1954, to 84.1 tons in 1964.

As far as employment is concerned, 1953 is an outstanding year, the figure for that year being twice as high as in 1954. The main reason is that in that year the factory started production and, not only was labour completely unskilled, but also a large number of activities not directly related to cement production, such as clearing the site, required large amounts of labour.

In table 12, a number of ratios have been presented concerning capital intensity, rate of utilization, and output per head.

(*c*) *Nyanza Textile Industries Limited, Jinja*

Nyanza Textile Industries Ltd. (hereafter Nytil) was the first

Table 10

SUMMARY BALANCE SHEETS OF UGANDA CEMENT INDUSTRY LIMITED, TORORO

£'000

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
1. Issued and paid Share capital	1,220.0	1,220.0	1,350.0	1,350.0	1,520.0	1,520.0	1,520.0	1,520.0	1,520.0	995.0	1,032.5	1,032.5	1,032.5
2. Revenue Reserves ..	3.7	40.9	182.1	385.7	365.7	493.8	528.2	579.6	598.5	558.9	445.3	386.3	599.7
3. Fixed Assets	1,228.8	1,243.6	1,846.5	2,138.3	2,320.2	2,401.0	2,463.5	2,484.9	2,532.9	2,552.0	2,558.4	2,586.3	2,650.4
4. Depreciation	88.6	190.7	293.5	403.9	572.7	736.8	919.9	1,086.3	1,253.3	1,403.3	1,534.8	1,668.9	1,782.5
5. Book value	1,140.3	1,052.9	1,553.0	1,734.4	1,747.5	1,664.2	1,543.6	1,398.6	1,279.6	1,148.7	1,023.6	917.4	867.9
6. Trade investments ..	—	13.5	32.0	50.0	50.0	82.8	91.0	86.6	111.7	111.5	112.4	90.2	92.5
7. Current Assets ..	370.7	262.4	240.3	317.1	536.8	661.1	622.2	813.0	1,007.2	690.0	688.3	596.0	1,109.9
8. Intangible Assets ..	17.5	—	—	—	—	—	—	—	—	—	—	—	—
9. Current liabilities ..	1,304.8	67.9	293.2	365.8	448.6	394.4	208.6	198.4	280.0	396.2	346.4	184.8	438.2
10. Net Profit	4.5	55.5	142.1	212.4	284.5	313.4	203.3	231.5	184.6	135.4	116.2*	291.4*	689.6*

* Includes profit of subsidiary company, The Universal Asbestos Manufacturing Company (E.A.) Ltd.

Table 11

UGANDA CEMENT INDUSTRY LTD: FIXED ASSETS

£'000

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Assets at cost	*1,228.8*	*1,243.6*	*1,846.5*	*2,138.3*	*2,320.2*	*2,401.0*	*2,463.5*	*2,484.9*	*2,532.9*	*2,552.0*	*2,558.4*	*2,586.3*	*2,650.4*
a. Buildings	1,191.3	250.1	364.3	378.6	623.8	678.5	700.9	700.5	713.1	715.0	716.9	718.0	724.4
b. Plant		940.6	967.1	971.3	1,612.0	1,634.7	1,661.2	1,679.4	1,713.0	1,730.5	1,734.0	1,748.4	1,784.9
c. Plant under Construction	—	—	453.5	720.5	—	—	—	—	—	—	—	—	—
d. Vehicles	30.4	44.4	46.6	52.4	66.1	67.7	81.0	84.3	86.1	86.0	86.9	88.7	108.5
e. Furniture	7.2	8.4	15.0	15.5	18.3	20.2	20.4	20.7	20.8	20.6	20.6	31.2	32.7
Depreciation (accum.) ..	*88.6*	*190.7*	*293.5*	*403.9*	*572.7*	*736.8*	*919.9*	*1,086.3*	*1,253.3*	*1,493.3*	*1,534.8*	*1,668.9*	*1,702.5*
a. Buildings	73.4	10.0	22.9	40.5	63.9	93.2	122.6	145.0	172.6	196.2	218.7	140.6	262.2
b. Plant		152.4	240.8	329.3	461.9	580.1	715.9	849.2	981.1	1,104.2	1,211.2	1,316.2	1,401.9
c. Vehicles	14.3	26.3	26.1	28.4	38.6	52.6	68.1	76.3	81.6	84.1	85.3	85.7	90.3
d. Furniture	0.9	2.0	3.7	5.8	8.3	10.9	13.4	15.9	17.9	18.9	19.7	26.5	28.1

Table 12

UGANDA CEMENT INDUSTRY LTD: SELECTED ECONOMIC INDICATORS

Year	*Employment*	*Fixed Assets at cost £'000*	*Capacity in tons*	*Production in tons*	*Fixed Assets per labourer (2:1)*	*Production per labourer in tons (4:1)*	*Rate of utilization in £ (4:3)*	*Investment per tons of capacity (2:3)*	*Net profit before taxation as a percentage of total capital*
	1	2	3	4	5	6	7	8	9
1953	(1,009)	1,228.8	50,000	16,913	(1,217.8)	(16.8)	(0.34)	245.8	0.4
1954	572	1,243.6	50,000	40,989	2,174.1	71.7	0.82	248.7	4.4
1955	658	1,846.5	....*	49,234	2,806.2	74.8	....*	....*	9.3
1956	635	2,138.3	....*	58,957	3,367.4	92.8	....*	....*	12.2
1957	689	2,320.2	165,000	85,434	3,367.5	124.0	0.52	140.6	15.1
1958	592	2,401.0	165,000	104,447	4,055.7	176.4	0.63	145.5	15.6
1959	615	2,463.5	165,000	80,332	4,005.7	130.6	0.49	149.3	9.9
1960	644	2,484.9	165,000	71,056	3,858.5	110.3	0.43	150.6	11.0
1961	653	2,532.9	165,000	64,884	3,878.9	99.4	0.39	153.5	8.7
1962	602	2,552.0	165,000	55,042	4,239.2	91.4	0.33	154.7	8.7
1963	778	2,558.4	165,000	54,282	3,288.4	69.8	0.33	155.1	7.9**
1964	850	2,586.3	165,000	71,524	3,042.7	84.1	0.43	156.7	20.5**
1965	991	2,650.4	165,000	N.A.	2,674.5	N.A.	N.A.	160.6	42.2**
1966	949	N.A.	165,000	120,000	N.A.	N.A.	0.73	N.A.	N.A.

* In 1955–1956, an expansion was undertaken.

** Includes profit of the Universal Asbestos Manufacturing Company (E.A.) Ltd.

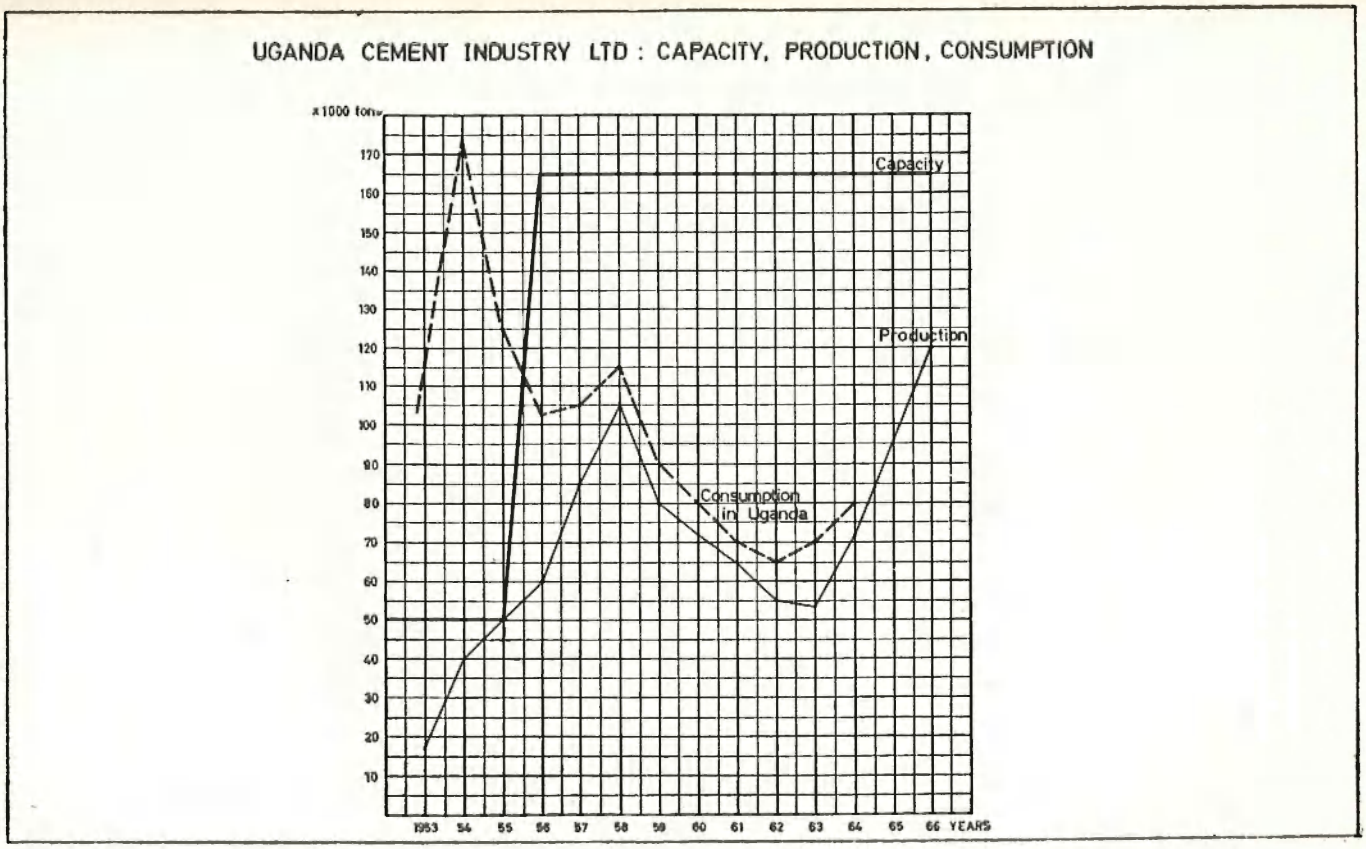


Figure 3

integrated textile plant in East Africa. At the time Nytil was established, a clothing industry existed in East Africa, which produced piece goods from imported yarn. Moreover, in the middle of 1954, a company undertook the dyeing and bleaching of imported grey cloth in Tanganyika. These two activities satisfied only a small proportion of total demand in East Africa, and all other textile products were imported. In view of Uganda's raw material position it was, therefore, a logical decision to establish a textile industry there.

Nytil was started in 1954 by Calico Printers' Association (Manchester) Ltd. Due to heavy competition from Eastern producers, mainly China, Japan and Pakistan, the first years of the company were far from favourable, and it operated at a loss until 1957. In that year, Calico Printers sold out to the Uganda Government, and in 1958 Nytil became a wholly owned subsidiary of UDC by the acquisition of the Uganda Government's 58½ per cent share and loan holding. Calico Printers were appointed as managing agents. Shortly after Calico Printers had sold out, Kenya and Tanzania agreed to raise the duty on imported cotton cloth to 30 per cent *ad valorem*, combined with some specific duties. From that time onwards, the position of the company improved, and in 1959 the balance sheets show for the first time a profit, which has since then increased very rapidly. In fact, Nytil must at present be considered as one of the most successful ventures in East Africa.

The expansion which Nytil has undergone since 1958 can be shown by the growth of employment and the fixed assets at cost. Employment increased from about 1,200 in 1958 to 3,560 in 1966, or by 14.6 per cent per annum. Over the same period, fixed assets at cost grew at a rate of 17.7 per cent per annum, thus implying a slight increase of the capital-intensity. The employment effects of increases in capital-intensity and productivity at Nytil have been examined by Baryaruha[7]. He distinguishes three phases in the company's economic history; the period prior to 1960, in which the plant was installed and the labour force gradually built up, the period 1960-1963, in which a major expansion of about 70 per cent in fixed assets took place, and the period from 1965 onwards, in which again important additions were made to the fixed assets. His analysis of employment concerns mainly the first and second phase, and they show distinctly different patterns. Until 1960, employment grew slightly faster than output, and both approximately doubled. From 1960 to 1963, the labour force increased by about 40 per cent, while the fixed assets grew by 70 per cent, and output doubled.

In tables 13 and 14 the balance sheets and the growth of the fixed assets have been summarized, for the period 1958 to 1965. Table 15 gives a number of the most significant ratios for the company. The issued and paid share capital of Nytil increased from £1,250,000 in 1958 to £2,000,000 in 1965, while the revenue reserves increased from minus £393,900 to a positive amount of £622,300. In 1965, total external liabilities were almost as large as the sum total of paid share capital and revenue reserves.

Profits have increased very rapidly over the period. Column 9 in table 15 illustrates this quite clearly; net profits (before taxation) have there been expressed as a percentage of total own capital employed by the company (share capital plus revenue reserves) and the profit rate is shown to be around 30 per cent for the years 1962-1965.

For the years on which information is available, the rate of utilization has been given in column 7 of table 15. As can be seen, it is in all those years close to one, and this confirms the statements in the annual reports that as soon as capacity was increased, production and sales reacted immediately, and the firm worked at full capacity during the whole period.

The fixed assets per labourer are low, compared to the Tororo Cement factory, thus confirming the generally accepted view that the textile industry is relatively labour-intensive.

The information on capital investment per unit of capacity is too scattered to allow a conclusion regarding economies of scale, such as were very apparent in the case of cement production. One gets, however, the impression that they are not very important in the case of textile production.

The market for textile products in East Africa is large, and the sector is the one for which most import-substituting expansion is expected in the Uganda Plan. Nytil produces unbleached calico, dyed cotton sheeting, khaki drill, white drill, dyed drill and dyed satin drill, and the distribution of total sales is approximately 40 per cent to Uganda, 30 per cent to Kenya and 30 per cent to Tanzania. No exports take place outside East Africa. As far as Uganda alone is concerned, Nytil satisfies a considerable proportion of the demand for khaki drill and dyed cotton sheeting (around 80 per cent of total demand), but only about 10 per cent of the demand for unbleached calico, which can, on the basis of import statistics be estimated at about 10 million square yards per annum. The import substitution potential in this area seems therefore very important and Nytil and its main Ugandan competitor, Mulco Textiles Ltd., both plan a rapid expansion of the production of this commodity.

Table 13

SUMMARY BALANCE SHEETS OF NYANZA TEXTILE INDUSTRIES LTD., JINJA

£'000

	1958	1959	1960	1961	1962	1963	1964	1965
Share capital (issued and paid)	1,250.0	1,250.0	1,500.0	1,500.0	1,500.0	1,500.0	2,000.0	2,000.0
Revenue reserves (−is loss)	−393.9	−176.5	107.7	139.1	101.3	230.6	406.5	622.3
Fixed Assets	1,647.7	1,839.3	2,119.6	2,806.7	3,106.4	3,169.2	3,515.6	5,158.0
Depreciation	294.9	425.8	577.6	746.3	981.8	1,250.0	1,509.2	1,698.7
Book value	1,352.8	1,413.5	1,542.0	2,060.4	2,124.6	1,919.2	2,006.4	3,459.3
Trade investments	6.2	6.5	1.8	—	—	—	—	—
Current Assets	333.4	516.0	752.8	1,049.8	1,439.5	1,395.2	1,562.6	1,748.1
Intangible Assets	7.8	—	0.1	0.1	1.5	..	..	..
Liabilities	843.9	862.5	689.0	1,471.3	1,964.4	1,583.9	1,162.5	2,585.1
— Deferred	7.9	16.9	3.1	1.2	1.3	11.1	29.4	870.3
Loan Holding Co.	703.7	700.0	450.0	450.0	450.0	450.0	300.0	650.0
— Current	132.3	145.5	235.9	1,020.1	1,513.0	1,122.8	833.1	1,064.8
Profit (+) or loss (−)	−28.0	+217.4	+284.1	+286.1	+433.6	+615.5	+717.7	+846.8

.. means smaller than £50.

Table 14

NYANZA TEXTILE INDUSTRIES LTD.: FIXED ASSETS

£'000

	1958	1959	1960	1961	1962	1963	1964	1965
Fixed Assets at Cost	*1,647.7*	*1,839.3*	*2,119.6*	*2,806.7*	*3,106.4*	*3,169.2*	*3,515.6*	*5,158.0*
a. Land and buildings	731.4	789.1	957.4	1,088.1	1,146.4	1,149.9	1,136.8	1,723.9
b. Plant and Machinery	870.2	998.7	1,102.8	1,648.7	1,882.7	1,933.6	1,977.4	3,236.6
c. Furniture and fittings	34.4	38.5	46.4	56.5	58.3	59.8	61.0	61.6
d. Motor vehicles	11.0	13.0	13.0	13.4	19.0	19.0	19.1	33.4
e. Assets in transit	—	—	—	—	—	7.0	221.2	102.5
Depreciation (accum.)	*294.9*	*424.9*	*577.6*	*746.3*	*981.8*	*1,250.0*	*1,509.2*	*1,698.7*
a. Land and buildings	49.4	66.3	85.9	109.7	136.7	165.1	194.4	223.9
b. Plant and Machinery	223.3	331.6	455.6	593.2	797.8	1,029.5	1,253.5	1,406.3
c. Furniture and fittings	15.5	20.6	26.6	33.5	39.5	44.6	48.6	51.9
d. Motor vehicles	6.7	7.4	9.5	9.9	7.8	10.9	12.7	16.6

Table 15

NYTIL: SELECTED ECONOMIC INDICATORS

£'000

Year	*Employment*	*Fixed Assets at cost £'000*	*Capacity in million yards*	*Production in million yards*	*Fixed Assets per labourer (2:1)*	*Production per labourer in yards (4:1)*	*Rate of utilization (4:3)*	*Investment per 1,000 yards of capacity in £ (2:3)*	*Net profit before taxation as a percentage of total capital*
	1	2	3	4	5	6	7	8	9
1958	1,200*	1,647.7	N.A.	12.5	1,373.1	10.4	N.A.	N.A.	-3.3
1959	1,519	1,839.3	13.0	12.9	1,210.9	8.5	1.00	141.5	20.3
1960	1,930	2,119.6	N.A.	14.7	1,098.2	7.6	N.A.	N.A.	17.7
1961	2,350	2,806.7	N.A.	18.5	1,194.3	7.9	N.A.	N.A.	17.5
1962	2,605	3,106.4	31.0	25.7	1,192.5	9.9	0.83	100.2	27.1
1963	2,650	3,169.2	31.0	30.1	1,195.9	11.4	0.97	102.2	35.6
1964	2,700	3,515.6	31.0	30.2	1,302.1	11.2	0.97	113.4	29.8
1965	2,925	5,158.0	31.0**	31.0	1,763.4	10.6	1.00**	166.4**	32.3
1966	3,560	N.A.	44.0	N.A.	N.A.	N.A.	N.A.	120.0*	N.A.

* Estimate.

** The expansion in 1965 did not affect capacity until 1966.

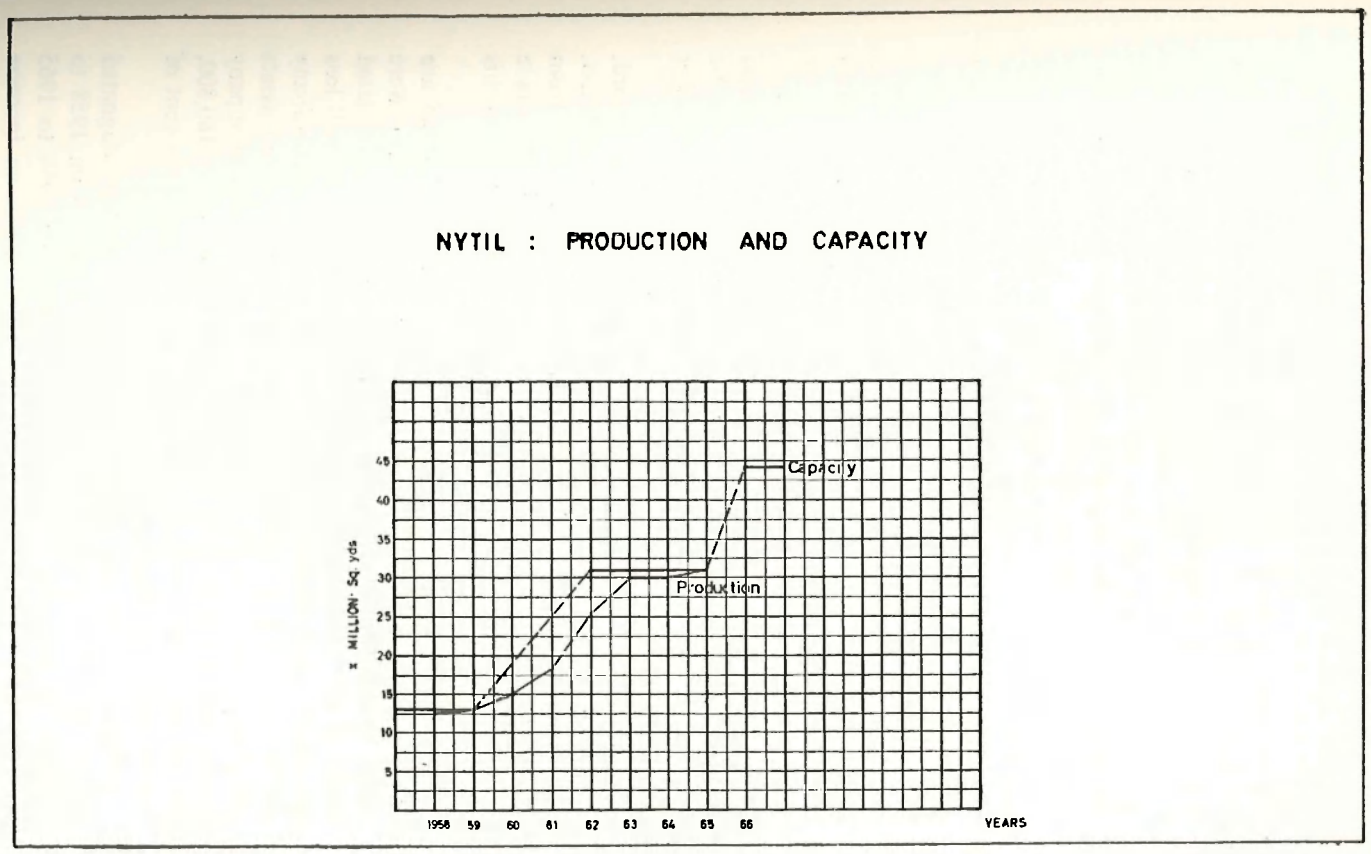


Figure 4

(d) The Uganda Metal Products and Enamelling Company Ltd., Kampala

The Uganda Metal Products and Enamelling Company Ltd. (hereafter TUMPECO) commenced production in 1958. Initially, it produced mainly enamel holloware, and various metal products such as beds. In 1959, the latter department was expanded, and the company branched out into the manufacture of hospital equipment, steel tables, shelving and other lines. In 1960, it undertook the production of metal furniture.

The company must be regarded as one of the least successful ventures of UDC, and with the exception of a few years, it operated at a loss. Various reasons have been given for this situation. From the beginning the enamelware department faced strong competition of Far Eastern producers, who 'dumped' in the East African market. Kenya and Uganda imposed import duties, but these were at an ineffective level until 1960. Moreover, Tanganyika refused to co-operate until 1960 when it introduced import duties at the same level as the increased Kenyan and Ugandan import duties. Due to the fact, that East African traders had protected themselves from the immediate consequences of higher import duties by building up large stocks of cheap imported enamelware, even after 1960, the position of the firm improved only slowly.

The metal products department has a more favourable record, although this was to a large extent due to government contracts. In 1962, for instance, TUMPECO got a substantial order from Mulago Hospital for equipment, and the profit of £17,000 made in that year—the highest in its history—was largely owing to this contract.

The balance sheets of the firm over the period 1956-1965 are summarized in table 16. From 1961 to 1964, marginal profits were made, which were never sufficient to eliminate the accumulated losses of the preceding period. In 1965, another, albeit small loss was made. Practically no expansion has taken place in the company during the period, as is shown in table 17, where the fixed assets are given by category over the period 1956-1965. When the company started production in 1958, the fixed assets at cost were £180,800, in 1965 they had increased to £216,300, and almost 80 per cent of this increase took place in 1965.

Although investment in fixed assets more or less stagnated during the period prior to 1965, employment rose from 1958 to 1964 by 8.5 per cent per annum. Moreover, from 1964 to 1965 employment increased by 55 per cent, compared to an increase in fixed assets of 17 per cent. Thus over the whole period there

Table 16

SUMMARY BALANCE SHEETS OF THE UGANDA METAL PRODUCTS AND ENAMELLING COMPANY LTD., PORT BELL

£'000

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Share capital (issued and paid) ..	16.5	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	225.0
Less: Accumulated loss	—	—	34.4	63.9	82.9	82.9	81.4	52.8	49.8	4.7
Shareholders' Interest	16.5	175.0	140.6	111.1	92.1	93.6	105.2	122.2	125.2	220.3
Fixed Assets	15.6	123.7	180.8	178.5	179.9	186.7	188.0	190.0	185.6	216.3
Depreciation	—	—	7.2	15.6	25.4	35.6	46.0	55.6	60.8	71.7
Book value	15.6	123.7	173.6	162.9	154.5	151.1	142.0	134.4	124.8	144.6
Current assets	29.9	53.9	58.3	50.3	77.1	102.0	92.1	101.8	131.1	165.7
Intangible assets	16.7	19.1	26.0	26.0	26.0	26.0	26.0	26.0	26.0	—
Current Liabilities	45.8	21.7	117.3	128.0	165.4	185.4	155.2	140.1	156.6	90.0
Profit (+) or loss (−)	—	—	−34.4	−29.5	−19.0	+ 1.5	+11.6	+17.0	+ 3.1	− 4.7

Table 17

UGANDA METAL PRODUCTS AND ENAMELLING COMPANY LTD.: FIXED ASSETS

£'000

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Fixed assets at cost	*15.6*	*123.7*	*180.8*	*178.5*	*179.9*	*186.7*	*188.0*	*190.0*	*185.6*	*216.3*
a. Land and buildings	9.5	52.1	72.9	72.9	72.9	77.4	77.4	78.4	80.4	95.4
b. Plant, Machinery and equipment	6.1	68.7	104.0	102.4	104.3	106.4	107.2	107.7	99.0	112.3
c. Office equipment, furniture ..	..	1.3	1.7	1.7	1.9	2.1	1.9	1.9	3.1	3.8
d. Vehicles	—	1.7	2.5	1.5	0.8	0.8	1.5	1.9	3.0	4.7
Depreciation	—	—	*7.2*	*15.6*	*25.4*	*35.6*	*45.8*	*55.6*	*60.8*	*71.7*
a. Land and buildings	—	—	1.4	3.2	5.0	6.8	8.8	10.7	12.7	15.0
b. Plant, Machinery and equipment	—	—	4.0	11.5	19.2	27.1	35.1	43.2	45.7	53.5
c. Office Equipment, furniture ..	—	—	0.2	0.4	0.6	0.8	1.0	1.2	1.5	2.0
d. Vehicles	—	—	1.7	0.6	0.6	0.8	0.8	0.4	0.8	1.3

.. means less than £50.

has been a remarkably rapid increase in labour-intensity. This latter aspect is further illustrated in column 3 of table 18, which also gives the employment figures and the net profit (or loss) in terms of paid share capital plus revenue reserves.

Table 18

TUMPECO: SELECTED ECONOMIC INDICATORS

£'000

	Employment	*Fixed Assets at cost* £'000	*Fixed Assets per labourer* £	*Net profit as a percentage of total capital (——loss)*
1957	74	123.7	1,671.6	—
1958	114	180.8	1,586.0	−24.5
1959	116	178.5	1,538.8	−26.6
1960	151	179.9	1,191.4	−20.6
1961	139	186.7	1,343.2	1.6
1962	184	188.0	1,021.7	11.0
1963	190	190.0	1,000.0	13.9
1964	185	185.6	1,003.2	2.5
1965	287	216.3	753.7	− 2.1
1966	252	N.A.	N.A.	N.A.

(*e*) *Tororo Industrial Chemicals and Fertilizers Limited, Tororo*

The company was incorporated in 1955, but did not commence production until 1962. In 1960, £100,000 of share capital was issued and fully paid, entirely by UDC. The issued share capital was gradually increased to £360,000 in 1962, on which level it has remained since then.

The factory is located at Tororo, a few miles from the border with Kenya and near the Sukulu Hills, which are estimated to contain a 200 million ton deposit of ore carrying phosphate and pyrochlore. Single superphosphate only is produced at present, and the capacity is around 25,000 tons annually. In addition, the firm has a production capacity of 10,000 tons of sulphuric acid, used in the production of phosphate fertilizer.

The production in 1964 was about 13,000 tons of superphosphate, rising to 23,000 in 1965 and 24,000 in 1966. During those last years the company worked thus at nearly full capacity. Most of the sales of Uganda produced fertilizer went to Kenya, 77 per cent in 1964, 63 per cent in 1965 and 72 per cent in 1966. Tanzania's share in total sales has fluctuated around 20-25 per cent during these years, so that only a small proportion of total sales were directed at the domestic market: 3.4 per cent in 1964, 11.3 per cent in 1965 and about 8 per cent in 1966.

Table 19 gives the summarized balance sheet for the company for the period 1960-1965. A considerable expansion has taken

place, shown by a rise of the fixed assets from £371,000 in 1962 to £477,300 in 1965, or by 8.8 per cent per annum. In table 20, the fixed assets are given broken down by category, for the same period.

Employment has remained the same, comparing 1962 and 1965, although for the years in between and for 1966, it was slightly lower; the figures are given in table 21 together with the fixed assets per head and the net profit rate. The latter was negative during the whole period, although marginally so in 1965.

Table 19

SUMMARY BALANCE SHEETS OF TORORO INDUSTRIAL CHEMICALS AND FERTILISERS LIMITED, TORORO

£'000

	1960	1961	1962	1963	1964	1965
1. Issued and paid share capital ..	100.0	130.0	350.0	350.0	355.0	360.0
2. Loss	—	—	—	105.5	96.3	3.3
3. Revenue reserves	—	—	—	105.5*	96.3*	—
4. Fixed Assets ..	0.5	163.1	371.0	408.9	465.3	477.3
5. Depreciation ..	—	—	0.7	20.2	49.7	81.1
6. Book Value ..	0.5	163.1	370.3	388.7	415.6	396.2
7. Current assets ..	93.1	10.1	84.8	131.2	95.9	221.0
8. Intangible assets	6.4	25.1	48.6	47.7	47.7	47.7
9. Liabilities ..	**	68.3	153.7	217.6	204.2	308.2
— Deferred ..	—	—	—	100.0	83.3	66.7
— Current ..	**	68.3	153.7	117.6	120.9	141.5
10. Profit (+) or loss (−) ..	—	—	—	−105.5	−96.3	−3.3

*Subvention from UDC
** means smaller than £50

Table 20

TORORO INDUSTRIAL CHEMICALS AND FERTILISERS LIMITED: FIXED ASSETS

£'000

	1960	1961	1962	1963	1964	1965
Assets at cost ..	*81.0*	*163.1*	*371.0*	*408.9*	*465.3*	*477.3*
Buildings	81.0	48.8	116.0	119.2	150.2	157.2
Plant, Machinery and equipment ..	—	112.8	250.0	277.0	298.4	302.5
Vehicles	—	0.8	1.9	9.6	10.5	10.7
Furniture and Fittings	—	0.7	3.0	3.1	3.8	4.6
Loose tools ..	—	—	—	—	2.4	2.4
Depreciation (accum.)	—	—	*0.7*	*20.2*	*49.7*	*81.1*
Buildings	—	—	—	1.9	4.1	6.4
Plant, Machinery and equipment ..	—	—	—	16.0	42.0	68.5
Vehicles	—	—	0.5	1.8	2.8	5.2
Furniture and fittings	—	—	0.2	0.4	0.7	1.1
Loose tools ..	—	—	—	—	—	—

Table 21

TORORO INDUSTRIAL CHEMICALS AND FERTILISERS LIMITED: SELECTED ECONOMIC INDICATORS

£'000

Year	*Employment*	*Fixed Assets £'000*	*Fixed Assets per labourer £*	*Net profit as a percentage of total capital (——loss)*
1961 ..	N.A.	163.1	N.A.	—
1962 ..	307	371.0	1,208.5	—
1963 ..	287	408.9	1,424.7	−30.1
1964 ..	284	465.3	1,638.4	−27.1
1965 ..	309	477.3	1,544.7	− 0.9
1966 ..	285	N.A.	N.A.	N.A.

(*f*) *East African Distilleries Ltd., Port Bell*

The company was incorporated on 8th August 1963 and established by UDC in conjunction with Messrs. Duncan, Gilbey and Matheson Ltd. No trading took place until 1st July 1965.

The company produces Uganda Waragi, dry gin and whisky; the production of brandy is planned. Of decisive influence on the future prospects of the firm was the report of the Spirituous Liquor Committee, which was accepted by the Uganda Government in 1964, and which recommended the manufacture of a cheap liquor under Government control, to replace the illegally produced enguli. Enguli is now used as the raw material for the triple distilled waragi; a road tanker collects enguli from licensed distillers all over the country. The price paid for enguli of certain specifications regarding strength is Sh. 11/- per gallon. The supply of enguli is

Table 22

SUMMARY BALANCE SHEETS OF EAST AFRICAN DISTILLERIES LIMITED: PORT BELL

£'000

	1963	1964	1965
Issued and paid share capital	4.6	72.2	100.0
Loss	—	—	0.2
Shareholders' interest	4.6	72.2	99.8
Fixed Assets	1.7	107.1	160.2
Depreciation	—	—	5.4
Book Value	1.7	107.1	—
Current Assets	2.1	3.4	83.2
Intangible Assets	1.6	6.0	23.1
Liabilities	0.7	44.4	161.2
— Mortgage Debenture	—	—	92.9
— Current liabilites	0.7	44.4	68.3
Loss	—	—	0.2

much larger than the demand, and the initial hope that the manufacture of waragi using enguli would discourage village consumption of the latter did not come true.

The lifetime of the firm is too short to draw conclusions from the balance sheets, except that the company belongs, with the cement factory, among the most capital intensive ventures of UDC. The total investment in fixed assets of £160,000 did not provide employment to more than 70 people.

Table 23

EAST AFRICAN DISTILLERIES LIMITED
FIXED ASSETS

£'000

	1963	1964	1965
Fixed Assets (at cost)	*1.7*	*107.1*	*160.2*
a. Land and buildings	—	27.6	64.7
b. Plant and Machinery	—	78.8	85.5
c. Motor vehicles	—	0.8	5.0
d. Furniture and fittings	—	—	4.6
e. Laboratory equipment	—	—	0.2
f. Tools	—	—	0.2
Depreciation (accum.)	—	—	*5.4*
a. Land and buildings	—	—	1.4
b. Plant and Machinery	—	—	3.1
c. Motor vehicles	—	—	0.6
d. Furniture and fittings	—	—	0.2
e. Laboratory equipment	—	—	*
f. Tools	—	—	*

* means less than £50.

Table 24

EAST AFRICAN DISTILLERIES LTD.: SELECTED ECONOMIC INDICATORS

	Employment	*Fixed Assets £'000*	*Fixed Assets per labourer*	*Net profit as a percentage of total capital*
1963 ..	—	1.7	—	—
1964 ..	—	107.1	—	—
1965 ..	46	160.2	3,482.6	−0.2
1966 ..	70	N.A.	N.A.	N.A.

References

1. Uganda Government Ministry of Planning and Economic Development (Statistics Division), *Survey of Industrial Production 1963*, Entebbe October, 1965.

   Survey of Industrial Production 1964, Entebbe, December, 1966.

2. Uganda Government Ministry of Planning and Economic Development (Statistics Division), *The Real Growth of the Economy of Uganda 1954-1962*, Entebbe, 1965.

3. Uganda Government, *Second Five-Year Plan 1966-1971 Work for Progress*, Entebbe, 1966.

4. *op. cit.*

5. Uganda Government Ministry of Finance, *Background to the Budget 1966-1967*, Entebbe, 1967.

6. *op. cit.*

7. A. Baryaruha, *Factors Affecting Industrial Employment*, E.A.I.S.R., Oxford University Press 1967, Occasional Paper No. 1.

8. Uganda Government Ministry of Planning and Economic Development (Statistics Division), *Enumeration of Employees*, Entebbe (annually).

9. "The Uganda Development Corporation and Agriculture", *East African Economics Review*, January, 1960.

APPENDICES

I

On statistics in Uganda

Uganda has only recently started the systematic collection of statistical information on the manufacturing sector. The first survey of industrial production was conducted in 1965, covering the year 1963; the second, and latest survey concerns the year 1964. Before 1963, estimates of manufacturing product were made for the annual Gross Domestic Product series, which were in the absence of proper surveys, rough approximations.

Employment figures have been collected for a much longer period, and were published annually in the *Enumeration of Employees*. Comparing the employment figures for the manufacturing sector given there for 1963 and 1964, to the survey figures for those years, showed considerable variations, and threw considerable doubt on the accuracy of earlier estimates of employment in Uganda.

In this study we have confined ourselves as much as possible to the figures given in the 1963 and 1964 Surveys of Industrial Production. If figures for earlier years are used, the period prior to 1963 is always considered separately from the period after 1963.

The Industrial Surveys in Uganda contain information on all industrial establishments employing 10 or more employees. An establishment is defined as the local unit (sometimes over a wide area) directed by a single owning or controlling entity towards the production of a homogeneous group of goods and services, the major activity being mining, quarrying or manufacturing. The establishments are in general classified according to the International Standard Industrial Classification (I.S.I.C.). The Surveys, however, do not always strictly adhere to the I.S.I.C.; processing of agricultural products, for example, belongs according to the I.S.I.C. only partly to the industrial sector. In the case of coffee processing, 'curing' should be included in 'agricultural services', 'roasting' on the other hand is an industrial process. Similar types of distinctions should be made in the case of processing of other agricultural products, such as cotton, tea, sugar and tobacco. In Uganda it was decided to include *all* agricultural processing in the industrial sector, albeit under different headings, simply because it is statistically virtually impossible to separate the two categories of activity. Unfortunately, other countries (e.g. Kenya) exclude agricultural processing from the industrial sector for the same reasons, thus complicating international comparisons.

In the Uganda Surveys, a number of branches of industry in the manufacturing sector had to be combined in order to make the identification of individual companies impossible. For this reason, the sugar industry and the tobacco industry, for example, had to be combined in the Survey, a combination which proved to be unsatisfactory as it was abolished again in the Second Five-Year

Plan, where tobacco manufacturing is included in "other manufacturing".

The fact that the Industrial Surveys use combinations of branches of industry which differ from other official publications, for example, the Five-Year Plan, makes comparisons extremely difficult. In the Survey, cotton ginning and coffee curing are separate entries, and form, together with tea processing, the sub-sector "processing of agricultural products". In the Plan, however, the sub-sector processing of agricultural products consists of cotton ginning, coffee curing and sugar manufacturing, and no separate figures are given for these three activities. Tea processing is included in the manufacture of food products, and tobacco manufacturing, in the Survey combined with sugar manufacturing, is included in miscellaneous manufacturing. It is obvious that these complications could be easily avoided, and it is desirable that a classification of branches of industry is decided upon which on the one hand complies with statistical ordinances, but on the other hand is designed in such a way that the principal users of the information, e.g. the planners, can adhere to it without modifications.

The estimated coverage of the Uganda Surveys of Industrial Production is good, particularly in the case of manufacturing: in 1963, 264 out of 299 known establishments employing 10 or more persons, reported and 1964, 305 out of 322, giving a coverage of 88 per cent in 1963 and 95 per cent in 1964. For processing industries, the coverage was considerably worse, i.e. 69 per cent in 1963 and 77 per cent in 1964.

2

UDC Subsidiaries and associates in the manufacturing sector, 1966

SUBSIDIARIES

The Uganda Cement Industry Ltd., Tororo
The Uganda Metal Products and Enamelling Company Ltd., Kampala
Nyanza Textile Industries Ltd., Jinja
Tororo Industrial Chemicals and Fertilizers Ltd., Tororo
East African Distilleries Ltd., Port Bell
Uganda Meat Packers Ltd., Soroti
Uganda Milk Processing Company Ltd., Kampala
United Garment Industry Ltd., Kampala

ASSOCIATES

Associated Match Company Ltd., Jinja
Associated Paper Industries Ltd., Jinja
Chillington Tool Company (East Africa) Ltd., Jinja
Steel Corporation of East Africa Ltd., Jinja
Uganda Grain Milling Company Ltd., Jinja
Uganda Fishnet Manufacturers Ltd., Kampala

3

UGANDA'S EXTERNAL TRADE IN MANUFACTURES

A. The external trade in processed and manufactured products in 1964

The analysis of foreign trade statistics in terms of national account categories is complicated by the use of different international commodity classifications, i.e. the Standard International Trade Classification (S.I.T.C.) and the International Standard Industrial Classification (I.S.I.C.). The former is designed to meet classification requirements in international trade, the latter was set up in such a way as to conform to existing practices in drawing up of national accounts. One of the consequences of this duality is that it is impossible to derive directly from the trade statistics a sub-total for manufactured products, which are included in virtually every category in the SITC. The most often used approximation of the size of the foreign trade in manufactures is to take the total of the SITC categories 5 to 9, which include chemicals, manufactured goods classified chiefly by material, machinery and transport equipment, miscellaneous manufactured articles, and commodities and transactions not classified according to kind. It is then assumed that products included in this way but which are in fact not manufactures, will cancel out against commodities unduly omitted. This has always been regarded as an unsatisfactory solution, and it is, therefore, a great improvement that in 1966 the United Nations has published a key to both classifications, which makes it possible to rearrange commodities quite easily from one classification to the other.[1]

Before this publication, several attempts have been made in East Africa, to reclassify foreign trade data from the trade classification into the industry classification. One of them was undertaken by Maitra, in his attempt to estimate the import-substitution potential of the East African economies; his figures refer to the year 1963.[2] A more comprehensive reclassification has been made by the Statistics Division of the Uganda Ministry of Planning, in the context of a general revision and elaboration of the national accounts, to be published later in 1967. The two reclassification keys appear to correspond closely. The figures given in this section are a summary of the reclassified foreign trade data for Uganda, for 1964, prepared by the Statistics Division.

The trade figures are summarised in table 25, which gives information on the trade in processed and manufactured goods between Uganda and the other two East African Common Market countries, between Uganda and all other countries, and the overall balance of foreign trade, for the year 1964. Following the practice in the annual survey of industrial production in Uganda, we have given the foreign trade data for processed agricultural products separately from the manufactured commodities. The exports of copper are included in the commodity group basic metals and metal products, and account for virtually the total value of exports in this group. Although the foreign trade figures have been given in this form to facilitate a comparison with domestic production in each of the categories, there are several points to be kept in mind while making this comparison. In the first place, the import values given for trade with countries outside East Africa, do not represent the expenditures in Uganda on imported goods. Most of the imports take place via Mombasa, and the import values are then given c.i.f. Mombasa, which means that they include, apart from the cost of the goods themselves, transport and insurance cost to Mombasa only. In order to find the import value at the Uganda border, transport cost and insurance cost for the distance Mombasa-Uganda border should be added. This underestimate of the value of imports is sometimes very considerable, but due to lack of statistical information on this point at present, it is impossible to correct the import figures for the individual commodity groups in the manufacturing sector. But even if *this* mark-up could be estimated, both imports and domestically produced manufactures would have to be adjusted for duties and domestic trade margins in order to get the total expenditures on manufactured products. These difficulties would be avoided if both imports and domestic production could be given in physical quantities which would enable domestic consumption to be given in those terms also. It is hoped that the revised national accounts being prepared, and referred to earlier, will throw more light on the size of the expenditures on manufactured goods in Uganda.

A second point that has to be mentioned here in the context of a comparison between imports and domestic production, is that the reclassified foreign trade data for a number of branches of industry differ considerably in their content from the survey classification which is based on the I.S.I.C., but adjusted to meet local conditions. For example, the meat and fish industry comprises many more commodities than those mentioned in the industrial survey, and the total turnover there is consequently much lower

than the positive foreign trade balance of this commodity group. In addition to the difference in classification, the omission of all industrial establishments employing less than 10 persons will, of course, also make comparisons here extremely difficult.

Table 25 shows clearly the extreme importance of processed agricultural products in Uganda's exports, particularly in the external trade with countries outside East Africa. Processed coffee occupies the first place, with an export value of more than £35 million in 1964; cotton and tea account for £16 million and £2 million, respectively. The foreign trade in processed agricultural products with the other two Common Market countries, Kenya and Tanzania, is naturally very small, and the same applies to the imports of these commodities from outside East Africa.

The exports of manufactured goods in 1964 were relatively small, in total £18 million; this total includes, however, Uganda's copper exports, worth £6.2 million, to countries outside East Africa. Out of the remaining total of £11.2 million, £8 million was exported to Kenya and Tanzania, thus illustrating the importance to Uganda of the Common Market, to which more than 70 per cent of its exports of manufactured goods (excluding copper) is directed. The most important commodity groups in Uganda's export of manufactured products within the East African Common Market, are textiles and wearing apparel, sugar, oils and fats; and with all other countries, copper, oils and fats, and meat and fish. As far as the latter commodity groups are concerned, it is perhaps well to realise that, with the exception of copper, the ratio of value added over gross output is below 10 per cent, which indicates that all the important export commodities in the manufacturing sector involve relatively simple industrial processes. This applies, however, only to the trade with other than East African countries. Within East Africa, the ratio of value added over gross output in both imports and exports is much higher. The weighted average for Uganda's exports to the other two Common Market countries in 1964 was 0.32; for Uganda's imports of manufactured goods from the rest of East Africa the ratio was slightly lower, i.e. 0.30. Most of Uganda's interterritorial trade is oriented towards Kenya, and from this point of view the ratios are quite significant. As industrialisation has gone further in Kenya than it has in Uganda, one would expect the value added element in Kenya's exports to Uganda to be higher than in Uganda's exports to Kenya. It can even be argued in this context, that the trade deficits within the East African Common Market should be expressed in terms of value added content, thus making the direct contributions to

Table 25

UGANDA'S FOREIGN TRADE IN MANUFACTURES, 1965

£'000

Commodity Group	With Kenya and Tanganyika			With all other Countries			Overall balance
	Net imports —re-exports	Exports	Balance	Net imports —re-exports	Exports	Balance	
A. *PROCESSED GOODS*							
1. Cotton	0.9	16.2	+ 15.3	3.3	15,856.9	+ 15,853.6	+ 15,868.9
2. Coffee	0.9	25.2	+ 24.3	—	35,377.9	+ 35,377.9	+ 35,402.2
3. Tea	82.6	46.7	— 35.9	14.0	2,211.6	+ 2,197.6	+ 2,161.7
Sub-total (A)	84.4	88.1	+ 3.7	17.3	53,446.4	+ 53,429.1	+ 53,432.8
B. *MANUFACTURED GOODS*							
1. Meat and Fish Industry	153.2	117.0	— 36.2	25.6	1,064.9	+ 1,039.3	+ 1,003.1
2. Grain milling	1,098.5	28.3	— 1,070.3	15.5	34.1	+ 18.6	— 1,051.7
3. Bakery Products and Confectionery	69.9	209.7	+ 139.8	104.8	0.4	— 104.4	+ 35.4
4. Miscellaneous Food Products	1,215.1	384.0	— 831.1	535.6	471.0	— 64.6	— 895.7
5. Sugar	108.1	1,980.8	+ 1,872.7	21.6	194.4	+ 172.8	+ 2,045.5
6. Tobacco	995.7	709.7	— 286.0	25.1	2.3	— 22.8	+ 308.8
7. Beverages	193.6	39.6	— 154.0	265.3	0.1	— 265.2	— 419.2
8. Textiles and Wearing apparel 9. Cordage, Rope, Twine	1,860.9	2,356.4	+ 495.5	5,990.5	7.1	— 5,983.4	— 5,487.9
10. Footwear	206.4	28.7	— 177.6	156.7	1.5	— 155.2	— 332.8
11. Saw milling, Plywood	70.1	70.5	+ 0.4	30.0	126.7	+ 96.7	+ 97.1
12. Misc. Wood Products 13. Furniture	96.6	56.5	— 40.4	76.7	48.6	— 28.1	— 68.5
14. Paper and Paper Products	453.9	5.5	— 448.4	531.9	1.4	— 530.5	— 978.9
15. Printing and Publishing	122.6	12.0	— 110.6	307.6	0.1	— 307.5	— 418.1
16. Leather and Leather Products	110.3	4.6	— 105.7	102.6	0.8	— 101.8	— 207.5
17. Rubber Products	634.2	26.9	— 607.3	1,011.2	0.3	— 1,010.9	— 1,618.2
18. Basic Industrial Chemicals	32.9	29.3	— 3.6	1,169.3	3.2	— 1,166.1	— 1,169.7
19. Oils and Fats	282.9	891.7	+ 608.8	325.7	1,722.1	+ 1,396.4	+ 2,005.2
20. Soap and Other Chemicals	1,340.0	496.9	— 843.1	1,662.5	3.3	— 1,659.2	— 2,502.3
21. Petroleum Products	1,070.5	0.3	— 1,070.2	236.8	—	— 236.8	— 1,307.0
22. Structural Clay Products	7.5	22.3	+ 14.8	57.4	75.4	+ 18.0	+ 32.8
23. Glass, Cement, Concrete	237.3	158.4	— 78.9	376.5	6.5	— 370.0	— 448.9
24. Metal Industries 25. Elect. Machinery	2,030.3	425.1	— 1,605.2	9,540.1	6,198.5	— 3,341.6	4,946.8
26. Transport Equipment	162.7	10.0	— 152.7	5,342.6	0.6	— 5,342.0	— 5,494.7
Sub-total (B)	12,553.5	8,064.2	— 4,489.3	27,911.6	9,963.3	— 17,948.3	— 22,437.6
C. *TOTAL (A+B)*	12,637.9	8,152.3	— 4,485.6	27,928.9	63,409.7	+ 35,480.8	+ 30,995.2
D. *ALL FOREIGN TRADE*	13,602.0	9,647.5	— 3,954.5	30,792.1	64,429.9	+ 33,637.8	+ 29,683.3

NOTE: + Denotes a surplus. — Denotes a deficit.

GDP comparable in each of the three countries. It would imply that Uganda's deficit versus the other two East African countries is slightly smaller than the total trade figures indicate.

The imports of manufactured goods into Uganda in 1964, from all sources, amounted to £40 million, of which £28 million originated from countries outside East Africa. Uganda's principal imports from Kenya and Tanzania were metal and engineering products, textiles, chemicals, petroleum products, miscellaneous food products, and grain mill products; these commodities accounted for almost 70 per cent of Uganda's interterritorial imports.

Imports from outside East Africa were heavily dominated by three commodity groups, i.e. metal and engineering products, textile products, and transport equipment, which together accounted for 75 per cent of the total. Another 15 per cent is added by chemicals and rubber products.

The trade balance with Kenya and Tanzania was negative for manufactured goods and forms a well known issue of controversy in recent common market negotiations; we shall come back to this point in the next section when we discuss the development of this deficit over time.

The deficit in 1964 is mainly due to imports of petroleum products, metal and engineering products and grain mill products. The considerable surpluses in Uganda's interterritorial trade in sugar, textiles, and oils and fats, cancel out more or less against other imports of manufactured goods not mentioned above.

The total deficit of foreign trade in manufactures with countries outside East Africa, amounting to £18 million, is mainly attributable to the import balance of textiles, transport equipment, and mental products. Considerable surpluses are noted in meat and fish products, and oils and fats.

Summarising, we can conclude that Uganda's foreign trade in processed agricultural products and manufactured products, is dominated by the surpluses in coffee and cotton, meat and fish products, sugar, and oils and fats, and by the deficits in textiles, chemicals, metal and engineering products, and transport equipment.

In table 26 the percentage distribution is given of the various categories of foreign trade distinguished there.

B. The growth of external trade in processed manufactured products, 1960-1964

In tables 27 and 28, the external trade flows are given for processed and manufactured products, respectively, for the period 1960-1964.

Table 26

COMPOSITION OF UGANDA'S EXTERNAL TRADE
Processed and manufactured goods

(1964) (*Percentages*)

	Interterritorial		*International*	
	Imports	*Exports*	*Imports*	*Exports*
A. Processed Goods	0.7	1.1	0.1	84.3
B. Manufactured Goods ..	99.3	98.9	99.9	15.7
C. Total (A+B)	100.0	100.0	100.0	100.0
D. Total in % of all external trade	92.9	84.5	90.7	98.4

As in the industrial surveys, processed goods include coffee, cotton and tea. The trade figures for manufactures are given both reclassified by industry classification (columns marked '*a*' in table 28) and in SITC categories 5-9 (columns marked '*b*' in table 28). Both tables give the external trade in current values.

To facilitate the comparison of the two classifications with respect to coverage, Uganda's imports from, exports to, and balance of trade with the rest of East Africa have been given in diagrams 5, 6 and 7.

The net imports of processed goods have, of course, been very small throughout the period, particularly from outside East Africa. Within East Africa, the net imports and exports of processed commodities were virtually equal during the period, with the notable exception of 1961, in which year there was an export surplus of £124,000 due to a sharp decrease in the imports of cotton and increases in the exports of coffee and tea.

The exports of processed agricultural products have, in current value, increased extremely rapidly. This was particularly a result of an increase in volume of coffee exports, although rising coffee prices also contributed. Although the quantity index of coffee exports (1954=100) decreased by 30 points between 1960 and 1961 (from 330 to 300), it increased by 100 points between 1961 and 1964 (from 300 to 400). The total value of exports of processed goods increased by 12.4 per cent per annum during the period 1960-1964, from £33.5 million to £53.4 million.

The magnitude of the exports of processed goods becomes particularly striking when it is contrasted with the external trade figures for manufactured goods. The total exports of manufactured products (by ISIC) was £18 million in 1964, having grown steadily from £11.5 million in 1960, i.e. by 11.9 per cent per annum. Noteworthy is the fact that total exports of manufactured goods to East Africa have been approximately as large as exports of manufac-

tures to countries outside East Africa, although the latter group of exports has grown slightly faster.

The imports of manufactures have increased very rapidly, particularly during the last years of the period, from £28 million in 1962 to £40 million in 1964, or by 19.5 per cent per annum. Most remarkable, however, is the change in the source of these imports; in 1960, 26 per cent of total imports of manufactures came from East Africa, in 1964, this share had risen to 45 per cent.

The balance of external trade in manufactures was negative during the whole period, although the deficit was more than counterbalanced in every year by the export surplus in processed goods. The overall surplus even increased from £15.6 million in 1960, to £31 million in 1964, in spite of the rising deficit in trade in manufactures from £18 million in 1960 to £22 million in 1964.

Another feature of table 28 is that it gives information on the accuracy of the often used approximation of trade in manufactures by taking the SITC categories 5-9. For every year during the period 1960 to 1964, both the ISIC and SITC values of imports and exports have been given. For East Africa, the figures have been reproduced in three diagrams.

In the case of imports from other than East African countries, the figures are relatively close; this also applies to the overall balance of trade in manufactures. In all other cases they are highly misleading approximations. This is particularly so for the trade between Uganda and her partners in the East African Common Market. Both the net imports of manufactures and the exports are much larger than the SITC approach suggests, but the growth in imports has been slower, although it is still very considerable: 28 per cent versus 36 per cent per annum during the period 1960-1964. Exports were four times as large in 1960 as the SITC indicates; in 1964 they were twice as large. Exports have, thus, been growing much less fast if classified by ISIC than if classified by SITC, 9.9 per cent per annum, compared to 28 per cent per annum.

The trade balance within East Africa during the whole period has been negative for Uganda, and the ratio between exports and imports of manufactures deteriorated very rapidly if the trade figures are reclassified by industrial origin. From 1960 to 1964, the export-import ratio changed from 0.93 to 0.64. If the SITC categories 5-9 are taken, the coverage of imports by exports was much lower, although it improved slightly, from 0.47 in 1960 to 0.50 in 1964. To be sure, the ISIC re-classification implies a rapidly deterioriating export-import ratio, but throughout the period it has been considerably higher than the SITC categories indicate.

The trade balance with the rest of East Africa was in every year higher by SITC than by ISIC, with the exception of 1964. This implies that Uganda's imports of commodities not included in the SITC categories 5-9 have grown faster than of those which are included there.

The balance of external trade in manufactures with other countries, by SITC categories, during the period is much closer to the ISIC figures than in the case of East African trade. It implies that most of the trade in manufactures with countries outside East Africa is included in the SITC categories 5-9.

Table 27

UGANDA'S EXTERNAL TRADE: 1960—1964;

A—Processed goods (current value)

£'000

	1960	1961	1962	1963	1964
NET IMPORTS	*121.7*	*74.5*	*132.7*	*108.6*	*101.7*
From East Africa	115.4	72.7	126.7	112.8	84.4
From other countries	6.3	1.8	6.0	— 4.2	17.3
EXPORTS	*33,502.8*	*32,363.8*	*29,570.3*	*43,660.3*	*53,534.5*
To East Africa	132.3	196.4	139.6	108.7	88.1
To other countries	33,370.5	32,167.4	29,430.7	43,551.6	53,446.4
BALANCE	*+33,381.1*	*+32,289.3*	*+29,437.6*	*+43,551.7*	*+53,432.8*
East Africa	+ 16.9	+ 123.7	+ 12.9	— 4.1	+ 3.7
Other countries	+33,364.2	+32,165.6	+29,424.7	+43,555.8	+53,429.1

NOTE: + denotes a surplus — denotes a deficit.

Table 28

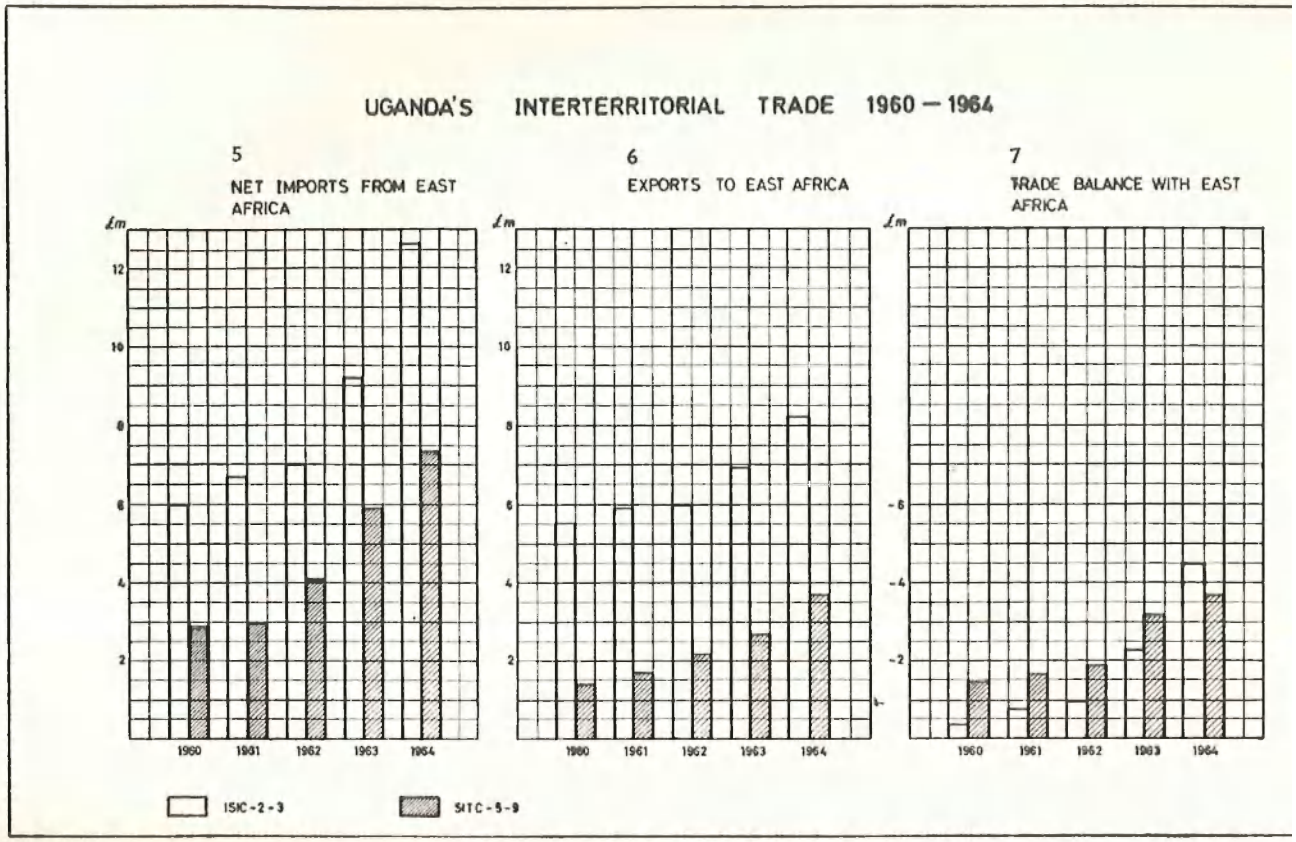
UGANDA'S EXTERNAL TRADE: 1960-1964;

B—Manufactured goods, classified by S.I.T.C. and I.S.I.C. (current value)

£'000

	1960		1961		1962		1963		1964	
	ISIC	*SITC*	*ISIC*	*SITC*	*ISIC*	*SITC*	*ISIC*	*SITC*	*ISIC*	*SITC*
	1*a*	1*b*	2*a*	2*b*	3*a*	3*b*	4*a*	4*b*	5*a*	5*b*
NET IMPORTS .. (minus re-exports)	*29,259.5*	*24,568.6*	*29,795.7*	*25,214.3*	*27,995.5*	*24,112.7*	*35,291.6*	*31,199.8*	*40,465.1*	*35,925.4*
From East Africa ..	5,955.9	2,915.5	6,703.1	3,457.1	7,009.7	4,097.9	9,196.0	5,906.4	12,553.5	7,342.5
From other countries	23,303.6	21,653.1	23,092.6	21,757.2	20,985.8	20,014.8	26,095.6	25,194.4	27,911.6	28,582.9
EXPORTS	*11,456.5*	*5,088.0*	*10,854.2*	*4,790.2*	*11,945.5*	*5,895.6*	*12,913.5*	*6,420.7*	*18,027.5*	*10,028.1*
To East Africa ..	5,525.8	1,371.6	5,863.0	1,726.7	5,970.6	2,170.8	6,879.1	2,701.7	8,064.2	3,659.2
To other countries ..	5,930.7	3,716.4	4,991.2	3,063.5	5,974.9	3,724.8	6,034.4	3,719.0	9,963.3	6,368.9
BALANCE	*−17,803.0*	*−19,480.6*	*−18,941.5*	*−20,424.1*	*−16,050.0*	*−18,217.1*	*−22,378.1*	*−24,680.1*	*−22,437.6*	*−25,897.3*
East Africa	— 430.1	— 1,543.9	— 840.1	— 1,730.4	— 1,039.1	— 1,927.1	— 2,316.9	— 3,204.7	— 4,489.3	— 3,683.3
Other countries ..	−17,372.9	−17,936.9	−18,101.4	−18,693.7	−15,010.9	−16,290.0	−20,061.2	−21,475.4	−17,948.3	−22,214.0

NOTE: + denotes a surplus — denotes a deficit.



Figures 5, 6 and 7

References

1. United Nations, Department of Economic and Social Affairs, Statistical Papers. *Classification of Commodities by Industrial Origin*. Series M No. 43, New York, 1966.
2. P. Maitra, *Import-Substitution Potential in East Africa*, E.A.I.S.R. Occasional Paper No. 2, Oxford University Press, Nairobi, 1967.

4

PROJECTIONS OF UGANDA'S MANUFACTURING SECTOR

A. Introduction

In this chapter, a number of projections are given of the manufacturing sector of Uganda for varying projection periods, ranging from 1971 to 1981. First of all, the Development Plan targets for the branches of industry in the manufacturing sector are given for the year 1971, and the main implications of these targets in terms of value added and investments are indicated.

In the next section, a projection model is applied to Uganda that is based on cross country data, and thus gives a reference pattern of industrial growth and composition of the manufacturing sector. The model, which was first suggested by Professor Chenery, is applied to Uganda for the years 1963, 1971 and 1981, on alternative assumptions regarding the growth of income *per capita*, population and degree of industrialisation, these three terms being the explanatory variables in the model. The result of the application of the model for 1963 has been compared to the observed values for 1963, and the 1971 projection has been compared to the Development Plan targets given in section B.

In the last section, the implications of a large Eastern African common market, as suggested by the Economic Commission for Africa, on the development possibilities of Uganda's manufacturing sector have been briefly summarised, and the required investment outlays are indicated.

B. The manufacturing sector in the Second Five-Year Development Plan

Some general aspects

The structural changes aimed at in the Second Five-Year Development Plan of Uganda are best illustrated by reproducing the targets for the five-year period for the monetary economy (see table 29). The figures illustrate clearly the emphasis placed upon the manufacturing sector as one of the "spearheads" of development; indeed, miscellaneous manufacturing is the fastest growing sub-sector in the economy, while the manufacture of food products ranks

third. It is a matter of controversy whether cotton ginning, coffee curing and sugar manufacturing should be included in the manufacturing sector (and we have earlier already referred to Appendix 1 to chapter 2 where some observations on classification problems have been made) but if these activities are included, the average growth rate for the manufacturing sector as a whole appears to be as much as 10 per cent per annum. Although this is undoubtedly an extremely high rate of growth to be sustained over a reasonably long period, it is perhaps well to realise that due to the smallness of the manufacturing sector at the beginning of the plan period the real structural change over the five years is still very modest. The share of manufacturing in *total* Gross Domestic Product in 1966 was 9.0 per cent; if the rate of growth of 10 per cent per annum is realised, the share of manufacturing will have risen only to 10.8 per cent in 1971. On the other hand, given a continuation of these relative growth rates, the share of manufacturing in total Gross Domestic Product would rise at an increasing rate so that a manufacturing sector of around 30 per cent—which is the average in industrialised countries now—would take until the year 2000.

Table 29

GROSS DOMESTIC PRODUCT: FIVE-YEAR TARGETS
Monetary economy: Constant (1964) prices

£ *million*

Sector	*1966*	*1971*	*Rate of growth% per annum*
Agriculture	74.7	95.9	5.1
Cotton ginning, coffee curing and sugar manufacturing	8.3	10.9	5.6
Forestry, fishing and hunting	3.2	4.3	6.0
Mining and quarrying	5.6	7.7	6.6
Manufacture of food	4.0	6.7	10.8
Miscellaneous manufacturing	11.3	20.5	12.6
Electricity	3.7	5.9	9.8
Construction	5.5	9.4	11.3
Commerce	39.0	54.6	7.0
Transport and Communications	6.9	10.3	8.5
Government administration	6.5	9.6	8.2
Local governments	3.0	4.2	7.0
Miscellaneous services	20.4	31.8	9.3
Rents	5.6	8.0	7.4
TOTAL	197.7	279.7	7.2

Source: Second Five-Year Development Plan, p. 21, Table 9.

The Gross Capital Formation targets for the manufacturing sector during the five-year period are the following:

Table 30

GROSS CAPITAL FORMATION TARGETS
Manufacturing sector, 1966-1971

£ million

Sector	*Government*	*Private, Parastatal and E.A.C.S.O*	*Total*
Cotton ginning, coffee curing, sugar manufacturing	2.0	6.0	8.0
Manufacture of food	—	6.0	6.0
Miscellaneous manufacturing	1.5	29.5	31.0
Total	3.5	41.5	45.0

Source: Second Five-Year Development Plan, p. 21, Table 10.

The gross capital formation figures illustrate again the importance attached to development of the manufacturing sector, gross capital formation in this sector being approximately 20 per cent of the total gross investment effort over the plan period.

Table 31 gives some insight in the sectoral capital-output ratios assumed in the plan. The overall capital-output ratio appears to be 3.1; for cotton ginning, coffee curing and sugar manufacturing it is 3.1; for food manufacture 2.2; and for miscellaneous manufacturing 3.4. There is no indication in the plan whether excess capacities in existing industries have been taken into account, so that the above ratios are purely based on the relation between increased output and gross capital formation.

As elsewhere in East Africa, Uganda faces the problem of growing value added in manufacturing combined with stagnating employment in that sector, and we might refer in this context to the research Baryaruha has carried out into this phenomenon, and which we have discussed earlier. (see p. 25) The plan states that it is hoped that 100,000 new jobs will be created in the monetary sector during the plan period, of which 17,000 will be in the manufacturing sector: 4,000 in the crop processing industries, 13,000 in other manufacturing. These targets imply a growth rate of 3.1 per cent per annum for crop processing and 9.4 per cent per annum for other manufacturing, compared to growth rates of output of 5.6 per cent and 12.2 per cent respectively.

The programme for the manufacturing sector

The growth in output of the various branches of industry and the corresponding capital investments during the plan period are given in table 31. No breakdown is given in the plan for the growth

in output of the processing industries separately, although this has been done for capital investments. In the case of the other two sub-sectors, manufacture of food products and miscellaneous manufacturing, the opposite was sometimes the case.

The investments in the cotton and coffee industry are primarily directed at an improvement of the quality, rather than an expansion of the production of these commodities. The existing wet-processing plants for coffee will be gradually replaced by dry-processing plants.

The bulk of the investments in the processing sector is projected to go to the sugar industry. The planners foresee a substantial expansion of the demand for sugar, both within and outside the East African market, an opinion which is partly supported by—and probably based on—Charles Frank's study of the East African sugar industry, in which the domestic market for sugar in 1970

Table 31

INDUSTRY TARGETS FOR UGANDA'S MANUFACTURING SECTOR, 1971

£ million

Branch of Industry	*Value added target 1971*	*Increase 1966/71*	*Investment target 1966-1971*	C O
Cotton ginning	10.9	2.6	1.0	3.1
Coffee curing			1.0	
Sugar Manufacturing			6.0	
Tea processing	2.0	0.9	2.9	3.2
Meat & fish processing	0.9	0.7	3.1	1.8
Grain milling	0.7	0.2		
Baking & confectionery	0.3	0.1		
Beverages	1.8	0.4		
Miscellaneous food manufacture	0.6	0.3		
Textiles, footwear and wearing apparel	8.2	5.4	8.5	1.6
Rubber products	0.4	0.1		
Saw milling & plywood	1.3	0.7	1.8	2.3
Furniture, wood, cork, paper bags and matches	0.3	0.1		
Printing & publishing	0.6	0.2	0.4	2.0
Basic industrial chemicals	0.5	0.4	6.0	10.0
Oils and fats	0.5	0.1		
Soap & other chemical products	0.3	0.1		
Structural clay products	0.3	0.2	2.0	2.2
Glass, cement, concrete	1.7	0.7		
Metals & engineering	2.9	1.1	9.0	6.9
Motor vehicle & bicycle repairing	0.8	0.2		
Other manufacturing (including tobacco)	3.0	1.3	3.3	2.5

Source: Calculated from tables 23, 24 and 25 of the *Second Five-Year Development Plan*. The figures do not add up exactly to the sector-total given in table 29 due to the fact that there constant prices of 1964 were used, and here most of the targets have been expressed in 1963 constant prices.

is estimated at 120,000 tons, using rates of growth of income *per capita* and population which are slightly lower than those on which the Uganda plan is based.[2]

The projected investment of £6 million is divided over two new sugar factories, the first being the Kinyala project, in Bunyoro, which is to be undertaken jointly by the Uganda Government, the Indian government and private interests; the second being a factory of which the location has not yet been decided, and in which the Uganda government will have a substantial interest. The Kinyala project involves a total investment of £2 million and will produce 55,000 tons of sugar at full capacity, the second project will involve £4 million, and will ultimately have a capacity of over 80,000 tons, of which 40-50,000 tons will be achieved at the end of this plan period. As a result of these expansions Uganda will produce by 1971, 220-240,000 tons of mill white sugar, and if the estimate of 120,000 tons for the domestic market is correct, it is clear that realisation of the export target is crucial to the success of the industry programme.

An industry which should logically be included in the category of processing industries, but in the plan placed among the manufacture of food products, is the manufacturing of tea. Here also substantial expansions are expected, and £2.9 million will be invested in this industry during the plan period.

A total of £3.1 million will be invested in the manufacture of food products, of which the largest single new development is the meat processing plant, being set up at Soroti, and requiring a total investment of £950,000. The factory will have an initial capacity to handle 75,000 head of livestock per annum, and will prepare meat for the export market mainly. Two other new lines of production in this sub-sector will be two milk processing plants, capable of producing 12,000 to 17,000 gallons of milk per day in total, and a fish canning factory in the region of Lake Victoria.

Almost 70 per cent of total investments in the manufacturing sector will be in the category of miscellaneous manufacturing, and within the sector approximately 30 per cent will be invested in the manufacture of textiles, footwear and wearing apparel. This group of industries is the one which traditionally plays a major role in Uganda's industrial strategy. The two existing textile factories, Nyanza Textiles and Mulco Textiles, are expected to increase their combined capacity by approximately 50 per cent, involving an investment of £2-3 million, while another £1 million is planned to be invested in a new cotton textile factory with a capacity of about ten million square yards of fabric per annum. As a result of

these expansions the local textile industry will use as much as 25 per cent of Uganda's total cotton output by 1971. New developments in this industry will be the planned production of synthetic textiles and the manufacture of hessian and hessian bags. About £3 million will be invested in the former, involving three medium-sized factories, producing a total of about 15 million square yards of nylon, rayon, polyester and other synthetic fibres. Over £1 million will be invested in the manufacture of hessian. Finally, about £0.5 million will be invested in the manufacture of wearing apparel.

Important developments are expected in the wood and paper products industry. A paper-bag factory has started production, using imported kraft paper as industrial input; plans exist to extend the industry to a paper mill and a pulp factory involving a total of £2 million, of which £1 million will be invested during this plan period. Other developments in this industry-group are mainly small projects involving saw milling, chipboard, furniture making, etc., in which a total of £800,000 is expected to be invested.

The main project in the printing and publishing industry is the expansion of the Government's printing press in Entebbe, involving about £250,000.

The three heavy industries included in the sector programme are chemicals, non-metallic mineral products, and basic metals and metal products, for which a total investment of £17,000,000—almost 40 per cent of the investment programme for the manufacturing sector—is planned. Due to the relatively high capital-output ratios in this sector (see table 31) the total increase in value added is not expected to amount to more than about £3 million over the five-year period. Among the projects in this sector, two require the larger part of the total planned investments: the production of nitrogenous fertiliser, involving a minimum investment of £5 million, and an integrated iron and steel factory, requiring an initial investment during the plan period of at least £7 million. The nitrogenous fertiliser factory will have a capacity of 100,000 tons of fertiliser per annum; the steel plant will have an *initial* capacity of 100,000 tons of steel per annum.

Two other large projects in the heavy industry sector are the expansion of the existing steel mill (£1 million) and the setting up of a glass factory (£400,000). The remaining £4.5 million are distributed over a large number of medium and small scale expansions of existing units and new factories involving a wide variety of manufactures, such as superphosphate fertiliser, pharmaceutics, sulphuric acid, plastics, polythene products, paints, clay products, cement, asbestos structures, lime, concrete products, industrial

ceramics, bicycle parts, galvanized corrugated iron sheet, and metal boxes. Finally, a considerable expansion is expected in repair and workshop activity.

The category "other manufacturing" involves—apart from the manufacture of tobacco, for which no detailed information is given in the plan—numerous small projects in the framework of the small-scale industry development programme. It includes also provision for projects and plans whose nature was not clearly known at the time the plan was drawn up.

C. The "Normal Pattern of Industrial Growth" applied to Uganda.[3]

Introduction

In 1960 Professor Hollis B. Chenery published an article[4] in which he analysed among other things, the relation between the increasing share of industrial output and increasing national income. In 1963, this analysis was elaborated in a joint study of the United Nations Centre for Industrial Growth and the Research Centre in Economic Growth of Stanford University.[5] Particularly the second study aims at a model that could be used for comparative purposes and projections in individual countries.

In this section we will briefly outline the main characteristics of the model, discuss the general results, and apply the method to Uganda on a number of restrictive assumptions. A detailed mathematical statement of the model is given in the appendix to this chapter.

The model

The method of analysis in the two studies referred to above is essentially the same, but since the U.N. study is the more elaborated and uses more recent data, we will confine ourselves here to a description of the methods and results of that study.

The working hypothesis is that the development of a given country conforms to some pattern which can be quantified in terms of the relationship between the level and changes of manufacturing output on the one hand, and some general economic characteristics in the country on the other hand. If the hypothesis should prove to be valid then this relationship would prove a useful tool in the evaluation of a country's present industrial development and its future projection. If the actual production falls short of what might be expected on the basis of the relation determined, it would give some indication of the potential development of the relevant sectors.

In the study under review, manufacturing industry is taken to include all transforming industries and to exclude mining and power generation. Total manufacturing industry is sub-divided in thirteen industrial sub-sectors, based on the I.S.I.C.—2 digit classification (see the Appendix to this chapter). The quantitative relations referred to above are expressed in the form of a set of equations in which the levels of total manufacturing output and of output in each of the thirteen sub-sectors are 'explained' in terms of a few selected macro-economic variables.

The final analysis is based on the 1953 data for 53 countries plus the 1958 data for 42 countries. The variable to be explained is manufacturing output, measured by value added. The explanatory variables, selected on the basis of preliminary tests, are *per capita* income and population. These proved to form the best combination —in the sense of the minimum number necessary for an adequate explanation of the dependent variable—from among eight candidate variables. The eight candidate variables are: (i) *per capita* income, (ii) population, (iii) rate of economic development, (iv) government policy, (v) natural resources, (vi) trading position, (vii) technological factors and (viii) other factors, such as the availability of entrepreneurial skills. For reasons more fully explained in the appendix to this chapter a third explanatory variable was introduced, the degree of industrialisation, which is measured by the ratio between the actually observed value added in the manufacturing sector and the calculated or 'normal' value added. In other words, if the observed value added in manufacturing at a given moment appears to be 100, but the value added to be expected—given *per capita* income and population—is 200, the degree of industrialisation is 0.50. The effect of introducing this additional variable is that the absolute difference between observed and 'normal' value added in total manufacturing is largely eliminated for the sub-sectors within the manufacturing sector, giving 'normal' outputs in each of the sub-sectors which are closer to the observed outputs that otherwise would have been the case.

The results of the Chenery/U.N. Study

The results of the cross-country analysis are summarised in table 39 of the Appendix, and we will confine ourselves here to a brief verbal summary. *Per capita* income appears to be the most important factor in explaining the variation of manufacturing output between countries. The income elasticity of output of total manufacturing appears to be about 1.37, which means that, other things remaining unchanged, an increase in *per capita* income of one per cent is

accompanied by an increase in the value added of total manufacturing industry of 1.37 per cent. Value added in total manufacturing industry is therefore growing more than proportionately to *per capita* income, population being taken to be constant. This more than proportionate growth in value added applies also to most of the sectors, though not for leather products, and for food, beverages and tobacco taken together. The latter is growing approximately proportionately to *per capita* income. Another interesting result is the changing composition over time of total manufacturing output. For instance, although textiles is growing more than proportionately with income *per capita*, it is growing slower than total manufacturing output, which implies that its share in this total is declining. On the other hand, the paper and paper products sub-sector is not only growing faster than proportionate to *per capita* income, it is also growing faster than total manufacturing output, in other words, its share in total manufacturing rises.

The population elasticity of total manufacturing is 1.12, which means that given a certain *per capita* income, total manufacturing value added varies 12 per cent more than in proportion to the size of the population. The highest elasticities are found in chemicals (1.39) and basic metals (1.65), which is not surprising since economies of scale are well-known characteristics of these industries.

The elasticity of output with respect to the relative degree of industrialisation indicates whether a given deviation from the 'normal' level of total manufacturing output has more or less than proportionate effect on the level of output in the different sectors. So basic metals tend to respond more, rubber products less than proportionately.

The applicability of the model to Uganda

Before discussing matters concerning the interpretation of the results of applying the model, we will pay attention to the statistical complications involved. The values resulting from the model are all in United States dollars, and this implies that the correct exchange rate has to be used to express those values in Uganda currency. The original study was also confronted with this difficulty, of course, as national data had to be converted into the common currency, and in some cases the official exchange rate was adjusted. For Kenya, the only East African included in the U.N. sample, the official exchange rate was used, however, and we have followed this practice for Uganda, giving the Ugandan shilling the value of 14 U.S. cents. A second complication is that the model is given in 1953 constant prices, and the value added figures resulting from

the model are consequently in those prices. Lack of statistical information made it impossible to solve this problem, but there is some indication that for manufacturing as a whole, prices have been remarkably stable over the period 1954-1962 [6], and if it is assumed that this result is not obtained by opposite price movements within the manufacturing sector, the value of our findings should not be distorted too much.

Given these statistical shortcomings, what can be said about the applicability of the model to Uganda? The most important consideration to be kept in mind is that the model provides a reference pattern only, enabling one to identify developments within the economy, and within the manufacturing sector in particular, which are peculiar compared with what is observed on average. Secondly, the degree of industrialisation provides a useful measure of the status of a particular country's industrial development, compared to other countries with similar income *per capita* and population. Thirdly, if one shares the writer's belief that the future development of a country such as Uganda will be more or less similar to what is, on average, observed in other countries, application of the model, using independent estimates of growth of income *per capita* and population, can give a rough indication of the composition of the manufacturing sector at some future date.

The model applied to Uganda

We have applied the model described above to Uganda for three different years, 1963, 1970 and 1980, on varying assumptions regarding income *per capita*, population and degree of industrialisation. The 1963 exercise is a comparison of the 'normal' pattern with the actual composition of the manufacturing sector, as reported in the Census of Industrial Production for 1963.[7] The 1970 and 1980 figures have been given as illustrations of the path of development for Uganda's industrial sector, assuming that it conforms to the 'normal' pattern.

The application of the model requires estimates of income *per capita*, population and size of the manufacturing sector in total; the latter estimate is required to measure the degree of industrialisation. The degree of industrialisation could conceivably be used as a target in industrial planning, so that it is given a certain target value for a specific year, say 0.75 in 1971. In this way, the rate of growth of the manufacturing sector is the dependent variable.

Actual versus 'normal' in 1963, Alternative I

The Census of Industrial Production 1963 for Uganda estimates

the total value added in the manufacturing sector at $45.7 million. Income *per capita* in that year was $75.9 and population 7.19 million, and given these values the 'normal' value added in the manufacturing sector according to the model is $79.4 million, resulting in a degree of industrialisation of 0.5753. Table 32 gives both the actual and 'normal' composition of the manufacturing sector, but due to lack of statistical detail in the Census some sub-sectors had to be combined.

For a number of sub-sectors, the table shows a surprisingly small deviation of the observed and 'normal' composition. The sub-sector food, beverages and tobacco is in both cases approximately 50 per cent of total manufacturing value added, and the absolute difference is $1 million. Such a small discrepancy appears, indeed, in most of the sub-sectors, although textiles, clothing and footwear, and basic metals and metal products show rather large positive deviations, i.e. the actual value added is much higher than observed in the average pattern. In the case of the textiles sub-sector this is clearly due to the relatively favourable position of Uganda with respect to raw materials, particularly cotton.

Table 32

UGANDA, 1963, ALTERNATIVE I

Sector	*Value added 10^6*		*Composition in %*		*Deviation from normal*
	Observed	*Normal*	*Observed*	*Normal*	
1	22.4	23.4	49.1	51.1	−2.0
2	11.8	4.6	25.9	10.1	8.8
3		3.2		7.0	
4	1.6	1.9	3.5	4.2	−0.7
5	—	0.2	—	0.4	−0.4
6	1.0	1.1	2.2	2.4	−0.2
7	—	1.0	—	2.2	−2.2
8	0.6	0.7	1.3	1.5	−0.2
9	1.3	3.2	2.9	7.0	−4.1
10	2.1	3.6	4.7	7.9	−3.2
11	4.8	0.3	10.4	0.7	4.9
12		2.2		4.8	
13	—	0.3	—	0.7	−0.7
TOTAL	45.7	45.7	100.0	100.0	27.4

D=0.5753

Actual versus 'normal' in 1963, Alternative II

Table 33 gives the 'normal' composition of manufacturing output on the assumption that the degree of industrialisation is

unity, in other words, Uganda in 1963 was not behind in industrialisation relative to other countries. The table thus represents the normal composition of the manufacturing sector at the average stage of industrialisation for Uganda's population and *per capita* income in 1963. Although in that case the absolute deviations between observed and 'normal' increase considerably, which is of course to be expected, the sum of the deviations from the normal composition, expressed in percentages disregarding their sign, decreases from 27.4 to 24.2. This implies that the observed composition is closer to the normal composition than it is when the degree of industrialisation is taken into account.

Table 33

UGANDA 1963, ALTERNATIVE II

Sector	*Value added $10^6*		*Composition in %*		*Deviation from Normal*
	Observed	*Normal*	*Observed*	*Normal*	
1	22.4	39.1	49.1	49.2	−0.1
2	11.8	8.0	25.9	10.1	9.3
3		5.2		6.5	
4	1.6	3.3	3.5	4.2	−0.7
5	—	0.7	—	0.9	−0.9
6	1.0	1.8	2.2	2.3	−0.1
7	—	2.0	—	2.5	−2.5
8	0.6	0.8	1.3	1.0	0.3
9	1.3	4.7	2.9	5.9	−3.0
10	2.1	6.8	4.7	8.6	−3.9
11	4.8	0.9	10.4	1.1	2.5
12		5.4		6.8	
13	—	0.7	—	0.9	−0.9
TOTAL	45.7	79.4	100.0	100.0	24.2

D=1.000

Plan versus 'normal' in 1971, Alternative I

On the basis of the projections of income *per capita*, population and total value added in manufacturing in 1971 in the Second Five-Year Plan, the 'normal' pattern model has been applied, and the results are given in table 34. The targets as given in the plan are for income *per capita* $112.6, for total value added in manufacturing $106.7 million, while the population projection is 8.796,000. The resulting degree of industrialisation is 0.6240.

For comparison the plan targets for the sub-sectors in the manufacturing sector are given; in some cases these are approximations: the plan includes 'tobacco manufacturing' in 'other manufacturing', and 'cotton ginning, coffee curing and sugar

manufacturing' are lumped together. By various deductions, we have broken them down as follows:

	1971 targets
Coffee curing	£3.9 million
Cotton ginning	£3.4 „
Sugar manufacturing	£3.6 „
Tobacco manufacturing	£2.5 „

In the case of 'leather products', no separate target could be detected and this sub-sector is included in 'textiles, clothing and footwear'. The same applies to 'wood products' and 'paper products', which are taken together.

Partly because of the greater aggregation, the sum of the deviations is again extremely small, even smaller than in 1963 under Alternative I. The figures appear to support our hypothesis that Uganda is planning to develop industrially closely according to the 'normal' pattern, although again the sector 'textiles, clothing and footwear' (now including all leather products) is a noticeable exception.

Table 34

UGANDA, 1971, ALTERNATIVE I

Sector	*Value added 10^6*		*Composition in %*		*Deviation from normal*
	Plan	*Normal*	*Plan*	*Normal*	
1	45.6	48.1	42.8	45.2	−2.4
2	32.5	11.4	30.5	10.7	10.7
3		7.7		9.1	
4	4.5	5.0	4.2	4.7	−1.2
5		0.8		0.7	
6*	1.7	3.0	1.6	2.8	−1.2
7	—	—	—	—	—
8	1.1	1.6	1.0	1.5	−0.5
9	3.6	8.8	3.4	8.2	−4.8
10	5.6	8.3	5.2	7.8	−2.6
11	10.4	1.2	9.7	7.2	1.4
12		7.7		1.1	
13	1.7	1.1	1.6	1.0	0.6
TOTAL	106.7	106.7	100.0	100.0	25.4

* Included in (2–3); the normal value added in sector 7 is 2 million.

D=0.6240

Plan versus 'normal' in 1971, Alternatives II and III

Assuming the degree of industrialisation in 1971 would be 1.000 instead of 0.6240, but leaving the other variables unchanged, it is seen in table 35 that total value added in manufacturing is $171.0

million. The overall growth rate for manufacturing required to attain this result is 21 per cent per annum during the period 1966-1971.

Aiming at a less ambitious degree of industrialisation in 1971, say 0.7500, would imply that value added in manufacturing has to grow at 14.2 per cent per annum during the period 1966-71 to reach $128.3 million in 1971, compared to the plan target of 10 per cent per annum to reach $106.4 million. The composition of the manufacturing sector on the basis of this assumption is also given in table 35.

Table 35

UGANDA, 1971, ALTERNATIVES II AND III

Sector	*Normal value added 10^6*	
	Alternative II	*Alternative III*
1	73.7	56.8
2	18.1	13.6
3	11.7	9.1
4	8.0	6.0
5	2.0	1.2
6	4.5	3.6
7	3.6	2.5
8	1.9	1.8
9	12.4	10.0
10	14.1	10.3
11	2.9	1.7
12	16.3	10.4
13	1.8	1.3
TOTAL	171.0	128.3
	D=1.000	D=0.7500

The 'normal' manufacturing sector in 1981, Alternatives I to VIII

The 1981 projections, using the 'normal' pattern model is based on various projections regarding income *per capita*, population and manufacturing output. Originally eight alternatives were computed, of which four included projections of manufacturing output—apart from the usual projections of income *per capita* and population—while the remaining four were computed on the basis of the assumption that the degree of industrialisation would be 1.000 in 1981, leaving the income and population projections unchanged.

This led to the following eight alternatives:

I *From Second Five Year Plan* The target for income *per capita* in 1981 is $172.2, and the population projection for that year is 11,407,000.

The value added in manufacturing is found by assuming the growth rate for manufacturing to be the same as for the period 1966-1971, that is 10 per cent per annum, leading to a total value added of $278.6 million. The degree of industrialisation is then 0.6802.

II *From Clark's model*[8] Clark assumes a doubling of total *per capita* income during the period 1966-1981; income *per capita* in 1981 is then $199.4[9]. Population is estimated at 11,305,000 and value added in manufacturing $306.2 million. The resulting degree of industrialisation is 0.6677 in 1981.

III *From Economic Commission for Africa* [10] The Secretariat of E.C.A. has made projections of income *per capita* and population for the Eastern African countries for 1981. For Uganda, income *per capita* is estimated at $187.3[11] and population at 11,496,000. No sector projections are made for 1981, and we have used the extrapolated plan target, resulting in a degree of industrialisation of 0.6010.

IV *Alternative Clark projection* Although Clark's income and population projection have been maintained, we have used here the plan projection of manufacturing output in 1981, giving a degree of industrialisation of 0.6075.

V-VIII *Alternatives to I-IV* The income and population projections of the foregoing four alternatives have been left unchanged but

Table 36

UGANDA, 1981, ALTERNATIVES I, II, V AND VI

	Normal value added 10^6			
	Alternative I	*Alternative II*	*Alternative V*	*Alternative VI*
1	104.2	111.5	145.2	157.6
2	30.8	33.4	44.3	48.8
3	20.1	22.3	28.1	31.5
4	14.3	16.0	21.0	23.9
5	3.4	4.0	6.6	7.9
6	9.3	10.6	13.0	15.0
7	4.3	4.5	6.9	7.4
8	4.8	5.5	5.4	6.1
9	27.4	30.8	35.8	40.8
10	20.6	22.2	31.5	34.6
11	5.0	5.8	10.5	12.4
12	30.5	35.2	55.6	65.8
13	3.9	4.4	5.7	6.8
TOTAL	278.6	306.2	409.6	458.6
	D=0.6802	D=0.6677	D=1.000	D=1.000

the degree of industrialisation has been assumed to be 1.000. The resulting levels of manufacturing output on this assumption would be $409.6 million (for I), $458.6 million (for II), $463.6 million (for III) and $458.6 (for IV).

Out of these alternatives, III and IV are seen to be virtually identical to I, just as VII and VIII are identical to VI, and consequently we have excluded them. Table 36 therefore gives the composition of the manufacturing sector according to the model for alternatives I, II, V and VI, only.

The growth rates of manufacturing required to attain the degree of industrialisation 1.000 in 1981 are 12.9 per cent per annum for alternative V, and 13.8 per cent for alternative VI, for the period 1966-1981.

Comparison with Kenya and Tanzania

A similar exercise as described above has been carried out for Kenya and Tanzania, and for East Africa as a whole. Although a detailed description of the results is outside the scope of this study, the highlights should be indicated here for comparative reasons.

Kenya—The degree of industrialisation in Kenya in 1963 comes out at 0.5519, which is, surprisingly at first, lower than in Uganda. This is in the first place due to the difference in coverage of the industrial surveys in the two countries; coffee and tea processing are excluded from the manufacturing sector in Kenya, but included in Uganda. If both activities would be excluded from Uganda's manufacturing sector, the degree of industrialisation in Uganda in 1963 would be 0.45 only. The second reason why Kenya's degree of industrialisation is not higher than it is, although the value added in manufacturing is considerably larger than in Uganda, relates to its higher income *per capita* and population. Relative to income *per capita* and population, Kenya's industrial development falls short of the 'normal' by about 45 per cent.

In 1971, the degree of industrialisation would be 0.5977, and in 1981, 0.6416, using the current Development Plan[12] targets for growth in manufacturing output extrapolated for 1981; this implies, that if the target growth rates could be attained and maintained in Uganda and Kenya, the two countries will have a manufacturing sector in 1981, which is both in absolute and relative terms equally large.

Tanzania—The degree of industrialisation in Tanzania in 1963 is very low, 0.2155. It should be noted, however, that we have excluded sisal entirely from the manufacturing sector, as does the

current Tanzanian Development Plan[13]. The implied rise in the degree of industrialisation from 0.4753 in 1971 to 0.7203 in 1981, indicates clearly the extremely ambitious growth rate of the manufacturing sector, envisaged in the plan. In other words, if this development of manufacturing were attained, Tanzania will be the most industrialised country in East Africa in 1981, relative to income and population. In absolute terms, the manufacturing sector will still be the smallest, although the margins will then be very small.
East Africa—Regarding East Africa as one economy, the degree of industrialisation grows from 0.3944 in 1963 to 0.4961 in 1971 and 0.5940 in 1981, while total value added in manufacturing grows more than sixfold over the period 1966-1981. These figures are all based on the aggregation of the plan targets for the individual countries. The most interesting conclusion that can be drawn from these figures, concerns, however, the difference between the total 'normal' value added in the three countries taken separately on the one hand, and the 'normal' value added for East Africa as one economy. In 1963, the difference is $41 million, or 14.4 per cent, in 1971 it is $80.6 million or 14.9 per cent and in 1981 it is $173.5 million or 14.2 per cent. In considering these figures, it should be noted that this is a scale comparison based purely on the aggregation of population, and takes no account of the extent to which incomes and therefore the manufacturing sector would be larger as a result of integration than they would be for the separate economies.

D. E.C.A.'s projection of the manufacturing sector of Uganda in 1975

In chapter I, page 0, we have briefly indicated the attempt undertaken by the Economic Commission for Africa to project the consumption and production of manufactured products in the Eastern African countries, assuming that they would form an economic community. The twelve countries included in this free trade area are already specified there. Although there is little chance that such a free trade area will be established within a foreseeable future, the Commission's proposals for Uganda are included in this chapter as an illustration of the effects the partial removal of the market constraint could have on industrial development in Uganda.

The procedure the Commission has followed to assess the implications of the larger market is briefly the following. On the basis of projections of Gross Domestic Product and population, estimates have been made of the prospective consumption of manufactures, which were then translated into production implica-

tions. Using measures of efficient plant sizes, the number of productive units in each branch of industry was determined, and these were allocated to specific countries on the basis of cost-benefit analyses of various degrees of sophistication.

The resulting proposals for Uganda are summarised in table 37. The most substantial developments are expected in the food sector, in cotton textiles, and in iron and steel, which together account for almost 65 per cent of the total investment programme. Of the remaining 35 per cent, the larger part is invested in a nitrogenous fertiliser factory, the expansion of the vegetable and animal oils and fats industry, the non-metallic industries, and the mechanical engineering industries.

The investment programme is clearly based on import-substitution by the region as a whole; export prospects outside the free trade area are considered negligible for Uganda, with a few exceptions. In the case of food, beverages and tobacco, the market served is limited to Uganda only; the same is true for footwear and clothing, wood products, some paper products, oils and fats, pharmaceutical and medical preparations, and motor vehicle assembly and bicycle manufacturing. In all other cases, a larger market is required, most of the time much larger than the traditional East African Common Market countries, Uganda, Kenya and Tanzania. This is particularly so for the expansion of the fertiliser production, and the engineering industries. The advantage from sub-regional co-operation on Uganda's industrial development can be illustrated by table 38, in which the market orientation of a number of industries in Uganda is shown for 1975, provided the ECA recommendations regarding an Eastern African Economic Community are implemented. In most cases, the domestic consumption is only a fraction of total production, and on average 61 per cent of total production is exported, most of which is directed at the region.

Table 37

UGANDA, 1975, E.C.A. PROPOSALS

Branch of Industry	*Value added by 1975 $ millions*	*Fixed Investment outlays $ millions*
Food	35.2	85.5
Beverages	6.7	4.9
Tobacco	4.5	1.7
Textiles	16.5	38.7
Cotton systems		32.2
Rayon weaving		1.0

Table 37—Cont.

Branch of Industry	*Value added by 1975* $ *millions*	*Fixed Investment outlays* $ *millions*
Cordage:		3.5
1 cordage factory		
1 hessian factory		
Wool and synthetics		2.0
Footwear and clothing	7.1	11.8
Wood products	13.6	4.7
1 Veneer plant		
Furniture and fixtures	2.1	1.1
Pulp and paper	2.4	11.5
Bagasse and pulp mill		
Paper mill		
Multi-wall bags plant		
Folding boxes		
Grocery bags		
Miscellaneous		
Leather	0.6	0.5
Rubber industry	2.6	8.9
Tyres and tubes		
Basic chemicals and Fertilisers	7.3	19.8
Nitrogenous fertiliser		18.2
Phosphorus fertiliser		1.4
Oils and fats	6.4	17.0
Pharmaceutical and Medical preparations	1.6	2.2
Non-metallic industries	11.9	11.5
container glass factory		
cement factory		
expansion asbestos-cement		
concrete pre-fabric.		
clay, bricks and tiles		
Iron and steel	23.2	114.2
Integrated iron and steel plant (460,000 tons)		
Non-ferrous metals	—	6.6
Metal Products	5.3	10.6
Steel structures		0.3
Tins and containers		0.3
Wires for ropes		6.0
Wire for fencing		2.7
Cutlery		0.2
Miscellaneous		1.2
Mechanical engineering	2.2	10.8
Steam boilers		2.0
Agricultural machinery		0.1
Tool grinders		0.1
Stone crushers		3.6
Pumps		3.0
Hoisting equipment		2.0
Electrical engineering	2.2	3.5
Domestic equipment		0.2
Refrigerators and air conditioning equipment		0.5
Telecommunication equip. (except radios)		2.6
Batteries and accumulators		0.2
Transport equipment	7.0	7.2
Commercial vehicles (assembly)		4.0
Motor vehicles parts		3.0
Bicycles		0.2
Articles of plastic	0.3	0.6
Total	169.2	366.1

Source: E.C.A. *op. cit.* Table B–5.

Table 38

UGANDA'S EXPORTS: MANUFACTURED PRODUCTS, 1963, 1975

Branch of Industry	*Gross Output $ million*	*% of Total*	*Gross Output Exported*	
			To Region	*To Outside*
Textiles	39.7	72	57	15
Cordage	4.6	80	36	44
Chemicals	19.4	73	73	—
Oils and fats	20.0	32	32	—
Pottery	1.2	75	67	8
Iron and steel	35.6	76	76	—
Metal products	15.1	39	39	—
Mechan. engineering ..	4.5	22	22	—
Electr. engineering ..	4.5	62	62	—
Transport equipment ..	20.0	50	50	—
TOTAL	164.6	61	56	5
% of country's total ..	37.0	62.0	80.0	17.0

Source; E.C.A. *op. cit.* p. 50.

References

1. Uganda Government. *Second Five-Year Plan 1966-1971 Work for Progress*, Entebbe, 1966.
2. Charles F. Frank. *The Sugar Industry in East Africa*, East African Studies No. 20, East African Publishing House, Nairobi, 1965.
3. A preliminary version of this section was presented at the Social Science Conference of the University of East Africa, Kampala, January 1966. I am indebted to Kenya Shell, Nairobi, for allowing me to use their computer facilities, and to Mr. C. Leenders, computer programmer at Kenya Shell, for his help in making a computer a facility to me.
4. Hollis B. Chenery, "Patterns of Industrial Growth", *American Economic Review*, September 1960, Vol. II, No. 4, pp. 624-55.
5. United Nations Department of Economic and Social Affairs, *A Study of Industrial Growth*, New York, 1963.
6. Uganda Government Ministry of Planning and Economic Development (Statistics Division), *The Real Growth of the Economy of Uganda 1954-1962*, Entebbe, 1965.
7. Uganda Government Ministry of Planning and Economic Development (Statistics Division), *Survey of Industrial Production 1963*, Entebbe, October 1965.
8. P. G. Clark, *Development Planning in East Africa*, East African Studies No. 21, East African Publishing House, Nairobi, 1965.
9. This projection is adjusted for incorrect base-year estimates.
10. Economic Commission for Africa. *Working Documents for the Conference on the Harmonisation of Industrial Development Programmes in Eastern Africa*, Lusaka, 1965.
11. Corrected for incorrect base-year estimates.
12. Kenya Government. *Development Plan 1966-1970*, Nairobi, 1966.
13. Tanzania Government. *Development Plan 1965-1970*, Dar es Salaam, 1965.

APPENDIX

The "Norman Pattern" Model of Industrial Growth

The model seeks to explain the level of manufacturing output by the level of income *per capita* and the size of the population, but a statistical test on the basis of the function:

$$V_o = f(y, P)$$

where V_o is value added, y is income *per capita* and P is population, did not prove to be sufficiently satisfactory for practical use. A closer examination of the residuals of the equations for each sub-sector showed that a further improvement was possible. There appeared to be a noticeable degree of correlation among the different sectors within each country, in other words, a deviation of observed and 'normal' manufacturing output on the basis of the preliminary equations was reflected in the output levels of the sectors, showing residuals of the same sign. For this reason, an additional variable was introduced, the relative degree of industrialisation, D. The value of D was obtained as the residual of the regression equation for total manufacturing output; it appears obviously only in the sub-sector equations, as it is derived from the values for total output.

The final regression equations are as follows:

for total manufacturing output:

$$\log V_o = a_o + b_o \log y + c_o \log P$$

and for individual sectors:

$$\log V_i = a_i + b_i \log y + c_i \log P + d_i \log D$$

where:

V is value added, in millions of 1953 US dollars

y is *per capita* income, in 1953 US dollars

P is the size of population, in millions

D is the ratio between the observed value added (V_o) and the calculated value added (V'_o), in other words:

$$\log D = \log V'_o - \log V_o$$

a is a constant

b, c and d are the partial elasticity coefficients on the respective explanatory variables.

The results of the cross-section analysis are summarised in table 39; table 40 gives the correlation coefficients and standard errors.

The sectors distinguished in the U.N. model are the following:

	I.S.I.C. Classification
1. Food, beverages and tobacco	20–22
2. Textiles	23
3. Clothing and footwear	24
4. Wood products	25–26
5. Paper and paper products	27

6.	Printing and publishing	28
7.	Leather products	29
8.	Rubber products	30
9.	Chemicals and petroleum coal products ..	31–32
10.	Non-metallic mineral products	33
11.	Basic metals	34
12.	Metal products	35-38
13.	Other manufacturing	39
	Total manufacturing	20–39

In the tables we will refer to sectors 1, 2 . . . . . etc., only.

Table 39

RESULTS OF THE CROSS-SECTION ANALYSIS: 1953 AND 1958 COMBINED SAMPLE

Manufacturing sector (*ISIC* classification)	*regression equations*
TOTAL MANUFACTURING	$\log V_o = -1.637 + 1.369 \log y + 1.124 \log P$
Food, beverages and tobacco	$\log V_1 = -1.032 + .978 \log y + .862 \log P + .884 \log D$
Textiles	$\log V_2 = -2.549 + 1.205 \log y + 1.329 \log P + .964 \log D$
Clothing and footwear	$\log V_3 = -2.709 + 1.361 \log y + .962 \log P + .877 \log D$
Wood products	$\log V_4 = -3.288 + 1.531 \log y + 1.030 \log P + 1.008 \log D$
Paper and paper products	$\log V_5 = -5.008 + 2.035 \log y + 1.116 \log P + 1.699 \log D$
Printing and publishing	$\log V_6 = -3.926 + 1.718 \log y + 1.041 \log P + .873 \log D$
Leather products	$\log V_7 = -2.160 + .893 \log y + .857 \log P + 1,251 \log D$
Rubber products	$\log V_8 = -4.176 + 1.582 \log y + 1.201 \log P + .281 \log D$
Chemicals and petroleum coal products	$\log V_9 = -3.476 + 1.547 \log y + 1.395 \log P + .712 \log D$
Non-metallic mineral prod	$\log V_{10} = -2.258 + 1.157 \log y + 1.014 \log P + 1.116 \log D$
Basic metals	$\log V_{11} = -5.269 + 1.991 \log y + 1.649 \log P + 1.915 \log D$
Metal products	$\log V_{12} = -4.175 + 1.984 \log y + 1.312 \log P + 1.566 \log D$
Other manufacturing	$\log V_{13} = -4.872 + 1.847 \log y + 1.333 \log P + 1.053 \log D$

Source: U.N., *A study in industrial growth*, p. 7.

Table 40

1953-58 COMBINED CROSS-SECTION REGRESSIONS

Sector	*Number of observations*	b_1	*Standard errors of:* c_1	d_1	$\bar{R}^2$
0	95	.0400	.0303	—	.9659
1	95	.0459	.0348	.1240	.9350
2	95	.0722	.0547	.1952	.9091
3	89	.0551	.0417	.1488	.9296
4	93	.0618	.0468	.1668	.9272
5	85	.0919	.0696	.2482	.8932
6	87	.0432	.0327	.1167	.9671
7	91	.0826	.0626	.2234	.7900
8	85	.0746	.0566	.2017	.9074
9	95	.0609	.0462	.1645	.9460
10	95	.0559	.0424	.1512	.9206
11	76	.1720	.1303	.4648	.7497
12	91	.0518	.0392	.1399	.9680
13	81	.0850	.0644	.2295	.9122

Source: United Nations, *A Study in Industrial Growth*, p. 45.

5

SUMMARY AND CONCLUSIONS

Uganda's overall development strategy is designed to lessen the dependence of the economy on a few export crops, and, although this strategy involves structural changes in virtually every sector of the economy, the planners have identified three spearheads, namely (1) agricultural development, (2) industrialisation, and (3) expansion and improvement of education and health services. This study has dealt with the second spearhead, industrialisation, and in particular, with the development of the manufacturing sector, comprising manufacturing and processing industries.

First of all we have paid attention to the most appropriate path of development for Uganda's manufacturing sector, and it was concluded that Uganda has little choice in this respect. Exports of manufactures to countries overseas are narrowly limited, with the exception of processed agricultural products and copper, and the substitution of imported manufactures by domestically produced goods combined with export of manufactures to adjacent African countries is therefore the only alternative if there is to be industrialisation at all. The scope for import-substitution in the domestic market is, however, very small, and concentration on import-substituting industries can only in the short run form an efficient basis for industrialisation. Very soon Uganda's import-substitution potential will be exhausted—particularly if some strict criteria regarding long run viability are applied—and the growth of manufacturing industry will then depend on the growth of the domestic market and the acquisition of export markets. The latter condition is, in the writer's opinion, vital to Uganda's industrial development in the long run, particularly in view of the small domestic market for manufactures. Efforts in this direction should, in the first place, be aimed at neighbouring African countries, and not only should free access be maintained to the markets of Kenya and Tanzania in the framework of the East African Common Market, but attempts, such as those undertaken by the Economic Commission for Africa, to widen regional co-operation in Eastern Africa, particularly with respect to industrial development programmes, should be actively encouraged. For industrial development in Uganda, the market constraint dominates all other constraints at the moment.

An analysis of the place of manufacturing in the Uganda economy over the last decade suggested that, in relative terms, hardly any industrialisation has taken place in Uganda. This does not mean that the manufacturing sector has not grown during the period, it only implies that it has not grown faster than the rest of the economy. A number of extremely important industries were established, among which Uganda's most successful venture in the manufacturing sector until now has been Nyanza Textile Industries Ltd. A reservation had to be made concerning the conclusion regarding the importance of the manufacturing sector in the economy, namely that the GDP estimates on which it is based are being revised, a revision which has been necessitated by the results of the industrial surveys of 1963 and 1964.

The employment picture for the manufacturing sector is far from favourable. Employment in the sector has decreased steadily in spite of rising output, and the choice of techniques of production in Uganda's manufacturing sector does not appear consistent with its factor endowments. In the writer's opinion, the Uganda planners pay too little attention to this problem, and the laconic statements in the Five-Year Plan we have quoted on page 9, illustrate this. The incentives to private investors are practically always directed at the subsidisation of the use of capital, thus reducing the employment effects of new projects. Subsidisation of the use of labour would, however, be more appropriate in the circumstances, and could have exactly the same effects on the profitability of a specific investment project.

The external trade flows of Uganda are usually given in the Standard International Trade Classification, and to approximate the external trade in manufactures, the Categories 5-9 are taken to represent manufactured products. Thanks to a reclassification of Uganda's external trade data undertaken by the Statistics Division of the Ministry of Planning, we have been able to give the trade data reclassified by industrial origin. The inaccuracy of the approximation referred to above is clearly illustrated in the Diagrams 5, 6 and 7, and it would seem highly desirable that a similar reclassification should be undertaken in Kenya and Tanzania, particularly in order to facilitate discussions on the trade balances in manufactured goods of the three countries in the East African Common Market.

The importance of the East African Common Market to Uganda is clearly illustrated by the figures given in tables 25-28. Virtually all exports of manufactured products, other than processed agricultural products, are directed to the rest of East Africa, although

there is a growing deficit. This is a well-known point of controversy in recent Common Market negotiations, and it is hoped that the report of the Philip Commission will lead to the corrective measures which are required to maintain a viable Common Market in East Africa.

Another aspect clearly illustrated by the tables is the extreme dependence of the Uganda economy on the exports of cotton and coffee, and it is owing to the huge value of exports of these two commodities, that the overall balance of visible trade of Uganda with the rest of the world shows a considerable surplus.

In Chapter 4 a number of projections of Uganda's manufacturing sector have been given. The most authoritative of those is a summary of the sector-targets for the manufacturing sector from the Second Five-Year Plan, currently being implemented. Most of these targets have been arrived at on the basis of already approved projects and projects under consideration. Given the importance of the Uganda Development Corporation and a few large private concerns, such as Madhvani and Mehta, a large part of Uganda's manufacturing sector is, and will be for some time to come, controlled by a few large companies, and the feasibility of the plan target depends thus to a large extent on the profitability and investment policy of existing industry. The records of the larger companies in Uganda in the recent past indicate a hopeful future in this respect. Particularly, the Uganda Development Corporation and Madhvani have expanded at an exceptionally fast rate, financing new projects mainly out of retained profits.

In order to enable a comparison between Uganda's manufacturing sector, both in size and in composition, with what is observed on average in other countries, and to give alternative projections, a model, first suggested by Professor Chenery, has been applied. This is based on cross-country data, and relates the size and composition of the manufacturing sector to three variables, income *per capita*, population and the degree of industrialisation. Application of the model showed a number of interesting aspects of Uganda's manufacturing sector. In the first place, Uganda is heavily underindustrialised compared to other countries with similar income *per capita* and population. In 1963, Uganda's manufacturing sector was only about 58 per cent of the average size of the sector at that income *per capita* and population. As far as the composition of the sector is concerned, Uganda conforms surprisingly closely to the reference pattern, although the comparative advantage with respect to the manufacture of textile products (cotton) is clearly illustrated. The emphasis placed upon industrial development in the

Plan, results in a shift upwards of the degree of industrialisation to more than 62 per cent. If the reference composition, resulting from the model, is compared to the plan targets in 1971, it is seen that again the planned composition of the manufacturing sector is very similar. This has encouraged the writer to apply the model for the year 1981 also, although alternative projections of income *per capita* and population had to be used for this purpose.

The model has also been used to make comparisons between Uganda on the one hand, and Kenya and Tanzania on the other hand, particularly with respect to relative degrees of industrialisation. It is shown, that Kenya is only in absolute terms more industrialised; in relative terms the degree of industrialisation is only marginally higher than in Uganda. In other words, Kenya's manufacturing sector is larger, mainly due to its higher income *per capita* and its larger population. Finally the model has been used to compare the normal size of the industrial sector for the population of East Africa and the sum of the normal sectors associated with the three separate countries.

The effects of the partial removal of the market constraint on the development possibilities of Uganda's manufacturing sector are illustrated by the implications of the E.C.A. proposals in the framework of an Eastern African Common Market, consisting of 12 countries in the sub-region.

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