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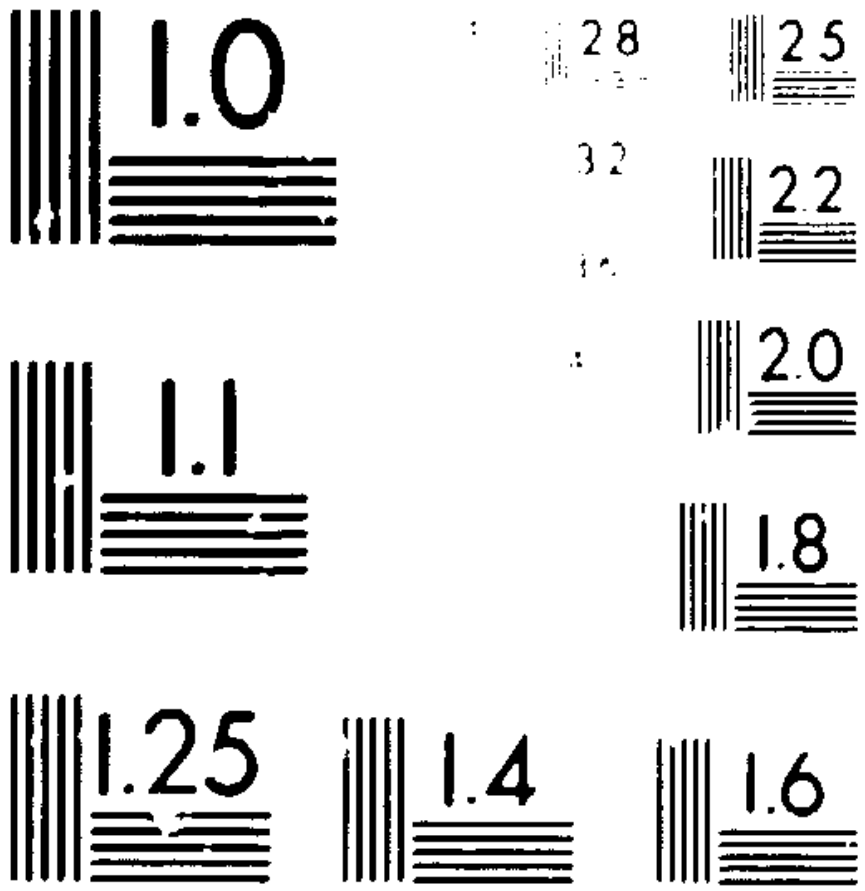

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AIMS AND SCOPE OF *INDUSTRY AND DEVELOPMENT*

Industry and Development attempts to provide a link between practitioners and theorists working on economic and related aspects of industrialization. The focus of the journal is on applied economics, particularly in areas emphasized in the Lima Declaration and Plan of Action on Industrial Development and Co-operation.

The journal is published twice a year, in English, French and Spanish, as an integral part of the work programme of the Division for Industrial Studies of the United Nations Industrial Development Organization. It is prepared under the general guidance of a supervisory panel, composed of staff members from the Division, with the Head of the Global and Conceptual Studies Branch as its chairman. Responsibility for the detailed supervision of a specific issue is rotated among the members of the Panel. The responsible member for this issue was J. Cody.

The Supervisory Panel of *Industry and Development* welcomes readers' opinions and comments.

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Préface

Le présent numéro d'*Industrie et développement*, comme le prochain, est consacré aux problèmes de l'industrialisation des pays en développement en Afrique subsaharienne et des pays les moins avancés.

Ces deux groupes de pays se recoupent largement. Sur les 31 pays considérés par l'Organisation des Nations Unies comme les moins avancés, 21 sont situés en Afrique[1]. Les pays des deux groupes comptent parmi les plus pauvres et les moins industrialisés du monde, manquent en général de savoir-faire, de capitaux et de ressources naturelles, tandis que l'écart qui les sépare des autres pays en développement ne cesse de se creuser. En ce qui concerne les 44 pays en développement subsahariens (dont 19 des pays les moins avancés) et 5 pays parmi les moins avancés, situés ailleurs dans le monde, pour lesquels on dispose de données, les taux de croissance annuelle moyenne du produit national brut (PNB) réel par habitant, pour la période 1970-1979, étaient négatifs dans 20 cas, compris entre 0 et 1 % dans 11 cas et entre 1 et 3 % dans 9 cas, et supérieurs à 3 % dans 9 autres cas[2]. En outre, la situation d'ensemble s'est dégradée au cours des dernières années[3].

De plus en plus, le sort de ces pays constitue une des grandes préoccupations des donneurs d'aide et des organismes multinationaux de développement; de son côté, l'ONUDI leur attribue un rang de priorité plus élevé dans son programme de travail.

Le développement du secteur manufacturier en Afrique pendant la période 1970-1980 est analysé dans l'article "L'évolution du rôle des industries manufacturières dans le développement économique africain : tendances, perspectives et problèmes" — article rédigé à l'occasion d'une conférence consacrée au Plan d'action de Lagos en vue de la mise en œuvre de la Stratégie de Monrovia pour le développement économique de l'Afrique. Cet article montre que : *a)* si quelques pays, en particulier ceux qui exportent du pétrole et certains pays d'Afrique australe, ont obtenu des résultats satisfaisants au cours de la décennie, la croissance industrielle a été en général lente dans les pays les plus pauvres et les moins avancés — ces derniers enregistrant en 1980 une valeur ajoutée du secteur manufacturier (VAM) par habitant en fait inférieure,

[1]Le Conseil économique et social, dans sa résolution 1982/41 du 27 juillet 1982, a recommandé à l'Assemblée générale d'ajouter cinq pays africains à la liste des pays les moins avancés.

[2]Dans le reste du monde en développement, des taux de croissance aussi bas n'ont été enregistrés que dans certaines parties de la région des Caraïbes, mais là le PNB était, au départ, beaucoup plus élevé (voir l'*Atlas 1981* de la Banque mondiale).

[3]La Conférence des Nations Unies sur le commerce et le développement a calculé que, dans les pays les moins avancés, la croissance de la production réelle (non par habitant) a ralenti, passant d'un taux annuel moyen de 3,9 % pendant la période 1975-1980 à un taux estimé de 2,8 % en 1981 (voir *Trade and Development Report, 1982*, annexe, tableau A).

en moyenne, à celle de 1970; *b)* dans de nombreux pays, la croissance du secteur manufacturier a souvent été moindre que la croissance du produit intérieur brut (PIB), notamment pendant la deuxième moitié de la décennie, *c)* pour de nombreux pays, l'évolution des prix et des taux de change a fâcheusement réduit leur part, en prix courants, de la production manufacturière africaine; *d)* par rapport à l'ensemble des produits manufacturés, la proportion des produits agricoles transformés, des textiles et des articles d'habillement a baissé, tandis que celle de la métallurgie de base, des ouvrages en métal et des produits chimiques a augmenté.

Dans cet article, on examine quels sont les liens entre les industries manufacturières et quelques phénomènes caractéristiques des années 70 — déclin de l'agriculture, aggravation du déficit commercial des pays importateurs de pétrole et augmentation rapide des dépenses publiques — et l'on tente d'évaluer l'effet dissuasif de la faiblesse des prix agricoles, les politiques commerciales extrêmement restrictives, fondées sur des contrôles quantitatifs, et la prolifération des entreprises publiques. Il y est indiqué qu'il conviendrait d'accorder davantage d'attention aux relations verticales entre l'industrie et l'agriculture - en particulier les petites exploitations - et d'encourager plus vigoureusement, d'une part, la production de biens de consommation de première nécessité et de produits permettant d'obtenir ou d'économiser des devises, et, d'autre part, le développement de technologies adaptées aux ressources locales.

L'article intitulé "Les pauvres se laissent distancer : l'industrie des pays les moins avancés" a été rédigé pour la Conférence des Nations Unies sur les pays les moins avancés qui s'est tenue à Paris, du 1er au 14 septembre 1981. Des données qu'il fournit sur les années 60 et 70, il ressort que presque tous ces pays ont vu leur situation économique s'aggraver au cours des années 70 et que leur secteur manufacturier a connu une croissance moins rapide que celui des autres pays en développement. Cette tendance risque de se poursuivre, à moins que l'aide internationale n'augmente sensiblement et que les gouvernements intéressés ne parviennent à intégrer les investissements manufacturiers à des programmes de développement permettant de mieux exploiter l'infrastructure existante et les ressources naturelles, agricoles notamment, d'encourager l'épargne, d'accroître les réserves de devises et de favoriser la production de biens de consommation de première nécessité, la création d'emplois et la formation professionnelle. Les pays les moins avancés ont besoin non seulement que les pays riches et les organismes multilatéraux augmentent leurs flux d'aide assortie de conditions favorables et que l'on amende les modalités du financement (par exemple l'allégement de la dette), mais aussi qu'on les aide à absorber un financement extérieur supplémentaire, en développant les compétences et la technologie, et en renforçant les moyens des pouvoirs publics, notamment dans les domaines suivants : planification et élaboration des politiques, établissement de statistiques et modalités de l'investissement dans des projets.

L'article "Stratégie de développement industriel pour les petits pays les moins avancés dépourvus de ressources" a pour thème principal les diverses options qui s'offrent en matière de politique commerciale. Il oppose en particulier les politiques d'industrialisation tournées vers le marché intérieur et celles orientées vers l'exportation; les auteurs estiment que les petits pays ont intérêt à adopter le plus tôt possible cette deuxième option. Les problèmes que

pose la transition de la substitution des importations à la promotion des exportations sont examinés et rattachés à des questions comme le transfert des techniques et le rôle de l'Etat. L'article se termine sur une série de recommandations pratiques. La balance des paiements des pays les moins avancés, comme celle de la plupart des autres pays importateurs de pétrole, a gravement pâti du fort renchérissement de l'énergie dans les années 70. Naturellement la différence principale entre les pays les moins avancés et les autres est que les premiers ont beaucoup plus de difficultés à supporter cette charge supplémentaire. Les effets de ce renchérissement sont analysés dans l'article intitulé "L'incidence de la hausse des prix de l'énergie sur l'industrialisation des pays en développement, notamment des pays les moins avancés". Tous les pays importateurs de pétrole ont connu une détérioration des termes de l'échange à la suite des hausses du prix du pétrole en 1973-1974 et en 1979-1980, mais les pays les moins avancés ont accusé le choc plus rudement que les pays en développement à revenu moyen qui, confrontés à la même situation, ont fortement augmenté le volume de leurs exportations, alors que cette réaction était beaucoup plus lente chez les pays les moins avancés, dont les exportations consistent essentiellement en quelques produits de base à demande inélastique. Afin de financer le déficit croissant de leur balance des paiements et leurs nouveaux investissements, les pays importateurs de pétrole à revenu moyen ont largement emprunté auprès du système bancaire international, mais les pays les moins avancés, n'offrant pas les mêmes garanties à leurs créanciers, ont dû recourir à l'aide publique au développement (APD), qui n'augmente pas rapidement. L'article donne, en conclusion, quelques estimations sur les besoins en capitaux de divers groupes de pays pour les années 80.

"Le développement industriel au Zimbabwe" s'inscrit dans une série d'études par pays rédigées par le secrétariat de l'ONUDI[4]. Parce qu'il est le pays africain ayant accédé le plus récemment à l'indépendance et parce qu'il est riche en ressources, mais confronté à de multiples problèmes de transition, le Zimbabwe constitue un cas intéressant. En 1965, année où la minorité blanche déclara unilatéralement l'indépendance, le Zimbabwe était l'un des pays les plus industrialisés d'Afrique. La croissance rapide de l'économie se poursuivit jusqu'en 1975 environ, puis la guérilla et les sanctions économiques provoquèrent une rupture brutale. L'article analyse le développement du secteur manufacturier de 1970 à l'indépendance, acquise en 1980. Quant aux perspectives de ce secteur, il s'agit essentiellement de savoir si l'on pourra concilier des objectifs contradictoires : répartir équitablement le revenu et instaurer un rapport de forces plus équilibré entre les partenaires sociaux, d'une part, et conserver les compétences de la minorité blanche ainsi que les ressources en capital, dont l'économie dépend si fortement, d'autre part. La politique industrielle devra viser à renouveler le matériel désuet ou usé, former une nouvelle main-d'œuvre qualifiée et de nouveaux cadres, réserver d'importants montants en devises pour financer les importations destinées à l'industrie, consolider les petites entreprises et éliminer les branches non concurrentielles que l'on a laissé se développer sur un marché protégé, avant l'indépendance.

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[4]Ces études sont consacrées essentiellement à l'analyse de statistiques économiques récentes, notamment industrielles. La série couvre la plupart des pays africains et des pays les moins avancés. On peut se procurer ces documents en s'adressant à l'ONUDI.

Prefacio

Tanto en el presente como en el próximo número de *Industria y Desarrollo* el interés está centrado en los problemas de industrialización de los países en desarrollo de Africa subsahariana y de los países menos adelantados.

Los países incluidos en estos grupos coinciden en gran medida. De los 31 países designados por las Naciones Unidas como menos adelantados, 21 son africanos[1]. Los países de ambos grupos figuran entre los más pobres y menos industrializados del mundo, generalmente carecen de conocimientos especializados, de capital y de recursos naturales, y las distancias entre ellos y otros países en desarrollo han aumentado. Por lo que respecta a 44 países en desarrollo subsaharianos (de ellos, 19 países menos adelantados) y cinco países menos adelantados de otras zonas para los que existen datos, las tasas medias de crecimiento anual del producto nacional bruto real (PNB) *per capita* durante el período 1970-1979 fueron claramente negativas en 20 casos, entre 0 y 1 por ciento en 11 casos, entre 1 y 3 por ciento en 9 casos, y mayores del 3 por ciento en otros 9 casos[2]. Además la situación ha empeorado en términos generales en los últimos años[3]

Esos países atraen cada vez más el interés de los donantes de ayuda y de las organizaciones multinacionales para el desarrollo y, en consecuencia, ha aumentado la prioridad que se les concede en el programa de trabajo de la ONUDI.

En el artículo titulado "Evolución del papel de las manufacturas en el desarrollo económico de Africa: tendencias, perspectivas y problemas", preparado para una conferencia de examen del Plan de Acción de Lagos para la Estrategia de Monrovia para el Desarrollo Económico de Africa, se analiza el desarrollo del sector manufacturero en Africa durante el período 1970-1980. El artículo muestra que: *a)* si bien algunos países, especialmente los países exportadores de petróleo y algunos países de Africa meridional, obtuvieron buenos resultados durante el decenio, el crecimiento industrial en los países más pobres y menos adelantados fue en general lento, y en los países menos adelantados el valor agregado industrial (VAI) *per capita* en 1980 fue, por

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[1]El Consejo Económico y Social, en su Resolución 1982/41, de 27 de julio de 1982, ha recomendado a la Asamblea General la inclusión de otros cinco países africanos en la lista de países menos adelantados.

[2]En el resto del mundo en desarrollo unas tasas de crecimiento tan bajas sólo se registraron en partes de la zona del Caribe, pero referidas a un PNB mucho más elevado (véase *1981 World Bank Atlas*).

[3]La Conferencia de las Naciones Unidas sobre Comercio y Desarrollo ha calculado que el crecimiento del producto real (no *per capita*) en los países menos adelantados disminuyó de una tasa media anual del 3,9 por ciento durante el período 1975-1980 a una tasa estimada del 2,8 por ciento en 1981. (Véase *Informe sobre el Comercio y el Desarrollo, 1982*, anexo, cuadro A.1).

término medio, bastante inferior al de 1970; *b)* en muchos países, el crecimiento del sector manufacturero fue con frecuencia inferior al del producto nacional bruto (PNB), especialmente durante la segunda mitad del decenio; *c)* los cambios en los precios y en los tipos de cambio han afectado considerablemente a la participación a precios corrientes de muchos países en el total de las manufacturas africanas; y *d)* las participaciones de productos agrícolas elaborados y textiles y vestido en el total de productos manufacturados han disminuido, mientras que las participaciones de metales, productos basados en metales y productos químicos han aumentado.

Se examina la relación entre producción manufacturera y varios fenómenos característicos del decenio de 1970 tales como el declive del sector agrícola, el incremento de los déficit comerciales de los países importadores de petróleo y el rápido crecimiento del gasto público, y se evalúan los efectos desalentadores de los bajos precios de los productos agrícolas, las políticas comerciales altamente restrictivas basadas en controles cuantitativos y la proliferación de empresas públicas. Se sugiere que se conceda mayor prioridad a las concatenaciones regresivas y progresivas entre la industria y la agricultura, especialmente los cultivos a pequeña escala, y que es necesario hacer mayor hincapié en la producción de bienes de consumo básicos y productos generadores o ahorradores de moneda extranjera así como en el desarrollo de tecnologías apropiadas a los recursos locales.

El artículo titulado "Los pobres se quedan rezagados: evaluación de la industria en los países menos adelantados" fue preparado para la Conferencia de las Naciones Unidas sobre los Países Menos Adelantados, celebrada en París del 1 al 14 de septiembre de 1981. Contiene datos relativos a los decenios de 1960 y 1970, que indican que en casi todos los países menos adelantados la situación económica ha empeorado durante el decenio de 1970 y que el sector manufacturero creció menos rápidamente que en otros países en desarrollo. Se sostiene que esta tendencia probablemente se mantenga a menos que se reciba mucha más ayuda internacional y que se formulen políticas internas para integrar las inversiones en el sector manufacturero dentro de programas de desarrollo que mejoren la utilización de recursos agrícolas y otros recursos naturales, así como la infraestructura, incrementen los ahorros y la disponibilidad de divisas y proporcionen más productos de consumo básicos, empleo y capacitación. Aparte de la necesidad de obtener mayores corrientes de ayuda en condiciones concesionarias de los países más ricos y de los organismos multilaterales y la consecuente mejora de las condiciones de financiación (por ejemplo, alivio de la carga de la deuda), los países menos adelantados necesitarán ayuda para incrementar su capacidad para absorber una mayor financiación externa a través del desarrollo de conocimientos especializados y tecnología así como del reforzamiento de la administración gubernamental, especialmente en las esferas de la planificación y de la adopción de decisiones, de estadísticas y de procedimientos para las inversiones en proyectos.

"La estrategia de desarrollo industrial para los países pequeños, de escasos recursos y menos adelantados" hace especial hincapié en la diversidad de políticas comerciales. En particular, se distingue entre industrialización orientada al mercado interno e industrialización destinada a la exportación, y se sostiene que, especialmente en el caso de pequeños países, conviene optar lo

antes posible por la segunda alternativa. Se examinan los problemas de la transición de la sustitución de importaciones a la promoción de exportaciones y se ponen en relación con cuestiones tales como la transferencia de tecnología y el papel del gobierno. El artículo concluye con una serie de recomendaciones en materia de políticas.

La balanza de pagos de los países menos adelantados, al igual que la de la mayoría de los demás países importadores de petróleo, se ha visto gravemente afectada por los grandes incrementos de los precios energéticos en el decenio de 1970. La principal diferencia entre los países menos adelantados y los otros países es, lógicamente, que los primeros están en peores condiciones para soportar esta carga adicional. Los efectos de esos incrementos se analizan en el artículo titulado "Las repercusiones del aumento de los precios de la energía en la industrialización de los países en desarrollo, con especial referencia a los menos adelantados". En él se muestra que aunque todos los países importadores de petróleo sufrieron un deterioro en sus relaciones de intercambio como resultado de los incrementos del precio del petróleo en 1973-1974 y 1979-1980, las consecuencias para los países menos adelantados fueron comparativamente mayores que para los países en desarrollo de ingresos intermedios. Para equilibrar las deterioradas relaciones de intercambio, los países en desarrollo de ingresos intermedios incrementaron fuertemente sus exportaciones, mientras que las exportaciones de los países menos adelantados, al estar concentradas en unos pocos bienes de demanda inelástica, aumentaron de forma mucho más lenta. Para financiar los déficit cada vez mayores de sus balanzas de pago, así como las nuevas inversiones, los países importadores de petróleo de ingresos intermedios tomaron prestado en grandes cantidades de fuentes comerciales internacionales, pero los países menos adelantados, carentes de clasificaciones crediticias adecuadas, tuvieron que depender de la ayuda oficial al desarrollo, que sólo aumenta lentamente. El artículo concluye con algunas estimaciones sobre las necesidades de capital de varios grupos de países durante el decenio de 1980.

El artículo "El desarrollo industrial de Zimbabwe" es parte de una serie de resúmenes por países preparada por la Secretaría de la ONUDI[4]. En su calidad de país africano que más recientemente ha obtenido la independencia, rico en recursos, pero hostigado por los problemas de la transición, Zimbabwe representa un caso interesante de estudio. En el momento de la declaración unilateral de independencia efectuada por la minoría blanca en 1965, Zimbabwe era uno de los países más industrializados de Africa. La economía continuó creciendo rápidamente hasta aproximadamente 1975, fecha a partir de la cual las operaciones militares de la guerrilla y las sanciones económicas causaron profundas perturbaciones. En el artículo se analiza el desarrollo del sector manufacturero desde 1970 a la fecha de la independencia, 1980. Se sostiene que las perspectivas del sector en el decenio de 1980 dependerán en gran medida de la posibilidad de conciliar los objetivos contrapuestos de conseguir una mayor igualdad en la distribución de ingresos y el poder de negociación y de conservar los conocimientos especializados y los recursos de

[4]Esos resúmenes hacen hincapié en el análisis de recientes estadísticas industriales y otras estadísticas económicas. La serie abarca la mayoría de los países africanos y menos adelantados. Pueden obtenerse ejemplares de la ONUDI si se solicita.

capital de la minoría blanca, de la que depende en gran medida la economía. Las políticas industriales necesitarán centrarse en la sustitución de maquinaria obsoleta y gastada, en la capacitación de nueva mano de obra especializada y de directores, la consecución de mayores cantidades de divisas para pagar los suministros industriales, el reforzamiento de la industria a pequeña escala y la eliminación de industrias no competitivas, a las que se permitió desarrollarse durante la fase de protección del mercado anterior a la independencia.

Preface

In this and the next issue of *Industry and Development* the focus is on industrialization problems of developing countries in sub-Saharan Africa and the least developed countries.

The countries included in these groups overlap to a considerable extent. Of the 31 countries designated by the United Nations as least developed, 21 are African.[1] Countries in both groups are among the world's poorest and least industrialized, generally lacking skills, capital and natural resources, and the gap between them and other developing countries has been increasing. For the 44 sub-Saharan developing countries (including 19 least developed countries) and five least developed countries in other areas for which data are available, average annual growth rates in real gross national product (GNP) per capita during the period 1970-1979 were actually negative in 20 cases, between 0 and 1 per cent in 11 cases, between 1 and 3 per cent in 9 cases, and greater than 3 per cent in another 9 cases.[2] Moreover, the situation has generally worsened in the last few years.[3]

These countries have increasingly become the focus of concern of aid donors and the multinational development organizations, and the priority accorded them in the work programme of UNIDO has risen accordingly.

In the article entitled "The changing role of manufacturing in African economic development: trends, prospects and issues", prepared for a conference reviewing the Lagos Plan of Action for the Implementation of the Monrovia Strategy for the Economic Development of Africa, the development of the manufacturing sector in Africa during the period 1970-1980 is analysed. The article shows that: *(a)* while a few countries, particularly the oil exporters and some Southern African countries, did well during the decade, industrial growth in the poorest and least developed countries was generally slow, and in the least developed countries manufacturing value added (MVA) per capita in 1980 was actually below that in 1970 on average; *(b)* in many countries, growth in manufacturing was often less than growth in gross domestic product (GDP), especially during the second half of the decade; *(c)* changes in price and exchange rates greatly affected the current price shares of many countries in total African manufacturing; and *(d)* the shares of processed agricultural

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[1]The Economic and Social Council, in its resolution 1982/41 of 27 July 1982, has recommended to the General Assembly the addition of five more African countries to the list of least developed countries.

[2]In the rest of the developing world growth rates as low as these were recorded only in parts of the Caribbean area, but from a much higher level of GNP. (See the *1981 World Bank Atlas.*)

[3]The United Nations Conference on Trade and Development has calculated that growth of real output (not per capita) in the least developed countries slowed from an average annual rate of 3.9 per cent during the period 1975-1980 to an estimated 2.8 per cent in 1981. (See *Trade and Development Report 1982*, annex table A.1.)

products and textiles and clothing in total manufacturing have been declining, while the shares of metals, metal-based products and chemicals have been increasing.

The links between manufacturing and several major features of the 1970s, i.e. agricultural decline, increasing trade deficits in the oil-importing countries and rapid growth of public expenditure, are discussed and the disincentive effects of low prices for farm products, highly restrictionist trade policies based on quantitative controls and the proliferation of public enterprises are assessed. It is suggested that greater priority should be given to backward and forward linkages between industry and agriculture, especially small-scale farming, and that more emphasis is needed on the production of basic consumer goods and products that earn or save foreign exchange and on the development of technologies appropriate to local resources.

The article entitled "The poor fall behind: an assessment of industry in the least developed countries" was prepared for the United Nations Conference on the Least Developed Countries, held in Paris from 1 to 14 September 1981. It provides data for the 1960s and 1970s, showing that in almost all of the least developed countries the economic situation worsened during the 1970s and the manufacturing sector grew less rapidly than in other developing countries. It is argued that this trend is likely to continue unless much greater international help is received and internal policies are designed to provide manufacturing investment integrated within development programmes that would improve the utilization of agricultural and other natural resources, as well as infrastructure, increase saving and the availability of foreign exchange and provide more basic consumer products, employment and training. Apart from the need for greater flows of concessional aid from richer countries and multilateral agencies and related improvements in financing (for example debt relief), the least developed countries will need help in increasing their capacity to absorb greater external financing through the development of skills and technology and the strengthening of government administration, particularly in the areas of planning and policy-making, statistics and project investment procedures.

The main emphasis in "A strategy of industrial development for the small, resource-poor, least developed countries" is on trade policy alternatives. In particular, inward-looking and export-led industrialization policies are contrasted, and it is argued that, especially for small countries, the sooner the export alternative is adopted the better. Problems of transition from import substitution to export promotion are discussed and related to such issues as the transfer of technology and the role of Government. The article concludes with a set of policy recommendations.

The balance of payments of the least developed countries, like that of most other oil-importing countries, has been hard hit by the large increases in energy prices in the 1970s. The major difference between least developed countries and others is, of course, that the former can least afford this additional burden. The effects of these increases are analysed in the article entitled "The impact of higher energy prices on the industrialization of developing countries, with special reference to the least developed countries". All oil-importing countries suffered losses in their terms of trade as a result of the 1973-1974 and 1979-1980 oil price increases, but it is shown that the impact on the least developed countries was relatively greater than it was on the middle-income developing

countries. To offset declining terms of trade, the middle-income developing countries greatly increased their volume of exports, whereas the volume of exports by least developed countries, being concentrated on a few demand-inelastic commodities, expanded much more slowly. To finance their growing balance-of-payments deficits, as well as new investments, the middle-income oil-importing countries borrowed heavily from international commercial sources, but the least developed countries, lacking adequate credit ratings, had to rely on slow growing sources of official development assistance (ODA). The article concludes with some estimates of capital requirements for various country groups during the 1980s.

The article "Industrial development in Zimbabwe" is one of a series of country briefs prepared by the UNIDO secretariat.[4] As the most recently independent African country, rich in resources, but beset by problems of transition, Zimbabwe is an interesting case study. At the time of the unilateral declaration of independence by the white minority in 1965, Zimbabwe was one of the most industrialized countries in Africa. The economy continued to grow rapidly until about 1975, after which guerrilla warfare and economic sanctions caused severe disruption The development of the manufacturing sector from 1970 to independence in 1980 is analysed in the article. It is argued that prospects for manufacturing in the 1980s will depend largely on whether the conflicting aims of increased equity in the distribution of incomes and bargaining power and maintenance of the skills and capital resources of the white minority, upon which the economy is so dependent, can be reconciled. Industrial policy will need to focus on the replacement of obsolete and worn-out machinery, the training of new skilled labour and managers, the provision of larger amounts of foreign exchange to pay for industrial supplies, the strengthening of small-scale industry and the elimination of uncompetitive industries, which had been allowed to grow during the protected market prior to independence.

[4]The emphasis in these briefs is on the analysis of recent industrial and other economic statistics. The series covers most African and least developed countries. Copies are available from UNIDO upon request.

EXPLANATORY NOTES

References to dollars ($) are to United States dollars, unless otherwise stated.

References to tons are to metric tons unless otherwise stated.

A slash between dates (e.g. 1970/71) indicates a financial or academic year.

The use of a hyphen between dates (e.g. 1960-1964) indicates the full period involved, including the beginning and end years.

The following forms have been used in tables:

Three dots (. . .) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A blank indicates that the item is not applicable.

Columns do not necessarily add to the totals because of rounding.

The following abbreviations are used in this publication:

ACP	African, Caribbean and Pacific States
API	American Petroleum Institute
c.i.f.	cost, insurance, freight
DAC	Development Assistance Committee
ECA	Economic Commission for Africa
EEC	European Economic Community
f.o.b.	free on board
GDP	gross domestic product
GNP	gross national product
ICOR	incremental capital output ratio
IIASA	International Institute of Applied Systems Analysis
ISIC	International Standard Industrial Classification
LIBOR	London Inter-branch offer rate
MVA	manufacturing value added
OAU	Organization of African Unity
ODA	official development assistance
OPEC	Organization of Petroleum Exporting Countries
SADCC	Southern African Development Co-ordination Conference
SITC	Standard International Trade Classification
UDI	Unilateral Declaration of Independence
UNCTAD	United Nations Conference on Trade and Development
ZANU	Zimbabwe African National Union
ZAPU	Zimbabwe African People's Union

The changing role of manufacturing in African economic development: trends, prospects and issues*

Secretariat of UNIDO

Introduction

"Industrialization is the main hope of most poor countries trying to increase their levels of income" [1]. This view, expressed over a quarter of a century ago, is still widely accepted among development economists and policy-makers in the developing countries. Since then, manufacturing has transformed some developing countries, notably several in east Asia. In most of Africa,[1] however, industrialization remains more a hope than a reality, for even though considerable progress has been made, levels of industrialization are low in comparison with other regions and the contribution of manufacturing to the economies of most African countries is still quite small. Moreover, critical views are increasingly being expressed regarding the structure of industrialization in Africa and the relationship of manufacturing to other economic sectors, especially agriculture.

This questioning of the role of manufacturing is part of a more general economic reappraisal, reflected in the Lagos Plan of Action for the Implementation of the Monrovia Strategy for the Economic Development of Africa (A/S-11/14, annex) and elsewhere, for it is perhaps no exaggeration to refer to the beginning of the Third United Nations Development Decade as a time of crisis in Africa. To overcome the crisis, strong national and international policy actions, some of them painful, will be required.

This article contributes to an analysis of the situation upon which policy actions should be based. In the following section, the development of the manufacturing sector from 1970 to 1980 is reviewed and certain trends are discussed. Some key macro-economic problems are then identified and related to possible changes in the role of manufacturing which would help improve Africa's economic situation. The article concludes with some brief general policy recommendations.[2]

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*Prepared for the Conference of Directors of Social Science Research Institutes and Policy Makers on the Third United Nations Development Decade, the Monrovia Strategy and the Lagos Plan of Action, held at Addis Ababa from 1 to 6 March 1982.

[1]In this article, the term "Africa" is used to denote the developing countries of Africa, i.e. excluding the Republic of South Africa.

[2]The recommendations correspond closely to those set out recently in greater detail (although not specifically relating to manufacturing) by the World Bank [2]. See also J. Cody, H. Hughes and D. Wall [3].

Development of the manufacturing sector, 1970-1980

The significance of manufacturing varies greatly from country to country in Africa. Table 1 shows three key manufacturing indicators—manufacturing value added (MVA) per capita, the share of MVA in GDP and the country share in total African GDP—for all countries in 1970 and 1980. For inter-country comparison, MVA per capita has the advantage that it does not reflect variation caused by the development of other sectors. The discovery of oil, for example, will raise a country's GDP and thus lower the ratio of MVA to GDP without necessarily affecting the level of MVA or MVA per capita.[3] The ratio of MVA to GDP, expressed in current prices, is more useful for showing the relative importance of manufacturing within a country at a given time, whereas the country share in regional MVA reflects its population size.

In 1970, MVA per capita averaged about $8 for the 21 least developed countries, $14 for the four African oil exporters, members of the Organization of Petroleum Exporting Countries (OPEC), $23 for the 27 other countries and $16 for all developing Africa. Per capita MVA ranged from as little as $1-$2 for Guinea-Bissau, Lesotho and Rwanda to $55 for Zimbabwe and Namibia. In 1980, the variation among countries was even greater. In the oil-exporting countries, average MVA per capita almost doubled in real terms (constant 1970 prices) to $26, whereas it declined slightly in the least developed countries and increased by about 20 per cent in other countries. Thus, the average change for all developing Africa, about 30 per cent, conceals the great difference in the performance of the oil exporters, especially the Libyan Arab Jamahiriya and Gabon, and the remaining African developing countries, especially the poorest. Whereas in 10 of the least developed countries and in 11 of the "other countries" group MVA per capita at constant prices actually declined, considerable increases occurred only in three of the least developed countries (Botswana, Malawi and Rwanda), from low 1970 levels, and in eight other countries (Egypt, the Ivory Coast, Kenya, Mauritius, Seychelles, Swaziland, Tunisia and Zambia). In current prices (and exchange rates), the picture for 1980 was very different from that for 1970. MVA per capita in 1980 averaged about $92 for the oil exporters, $25 for the least developed countries, $66 for other countries and $59 for all developing Africa. Among countries it ranged from $4 for Guinea-Bissau to $456 for Gabon; in 24 countries MVA per capita was below $30 and in 11 countries it was above $100.

In 1970, the share of MVA in GDP averaged 5.2 per cent for the oil exporters, 8.7 per cent for the least developed countries, 12.7 per cent for other developing countries and 9.5 per cent for all developing Africa. Countries with the lowest MVA share (less than 2 per cent) were Guinea-Bissau and Seychelles (reflecting underdevelopment) and the Libyan Arab Jamahiriya (reflecting oil wealth), whereas Egypt and Zimbabwe had the highest MVA shares (19.6 and 21.3 per cent). At constant prices, the MVA share rose to an average in 1980 of 6.4 per cent in the oil-exporting countries, 13.7 per cent in other countries and 9.8 per cent in total developing Africa, but declined to 8.1 per cent in the least developed countries. Particularly large relative increases in the MVA share

[3] The discovery may, of course, cause resources to shift out of manufacturing and into oil production, which would result in a decline in MVA per capita. On the other hand, the additional oil production could be achieved through the use of idle or foreign resources, or resources drawn from sectors other than manufacturing.

Table 1. MVA per capita and share of MVA in GDP, African developing countries and country share in MVA of African countries, by country or territory and by economic grouping, 1970 and 1980[a]

Country or territory and economic grouping	MVA per capita (dollars)			Share, MVA in GDP at factor cost (percentage)			Country share in MVA of African developing countries (percentage)		
	1970	1980 (constant)	1980 (current)	1970	1980 (constant)	1980 (current)	1970	1980 (constant)	1980 (current)
Main oil-exporting countries	14	26	92	5.2	6.4	5.0	15.46	38.34	35.09
Algeria	30	43	135	11.2	11.1	8.1	7.48	8.57	9.53
Gabon	23	121	456	4.1	10.2	7.7	2.21	3.72	0.97
Libyan Arab Jamahiriya	32	144	271	1.8	5.6	2.2	1.91	4.60	3.10
Nigeria	9	17	72	4.4	5.2	5.0	9.58	4.46	21.49
Least developed countries	8	7	25	8.7	8.1	7.3	15.16	11.24	13.74
Benin	7	6	14	8.4	6.3	5.2	0.35	0.19	0.19
Botswana	10	6	68	7.8	10.3	6.9	0.11	0.22	0.21
Burundi	4	6	19	6.8	7.8	11.6	0.28	0.26	0.32
Cape Verde	5	5	17	5.2	5.9	5.6	0.02	0.02	0.02
Central African Republic	13	13	41	13.1	14.0	14.0	0.44	0.30	0.36
Chad	4	4	19	5.5	5.2	9.1	0.30	0.18	0.34
Comoros	6	2	10	6.7	4.7	5.3	0.03	0.02	0.02
Ethiopia	7	7	13	9.6	9.7	10.6	3.11	2.43	1.63
Gambia	6	3	9	5.1	2.6	2.6	0.05	0.02	0.02
Guinea	5	5	10	2.9	3.0	3.1	0.33	0.25	0.20
Guinea-Bissau	1	1	4	1.1	1.1	1.8	0.01	0.01	0.01
Lesotho	2	5	11	2.7	5.0	4.9	0.03	0.07	0.06
Malawi	10	16	36	15.4	16.1	15.7	0.85	1.04	0.85
Mali	5	5	22	10.5	10.8	13.2	0.50	0.34	0.57
Niger	6	6	21	6.0	5.7	5.3	0.43	0.33	0.44
Rwanda	2	10	28	3.5	12.2	12.8	0.13	0.53	0.52
Somalia	5	7	29	6.5	8.2	8.6	0.26	0.27	0.41
Sudan	14	10	32	10.2	7.1	7.0	3.56	2.02	2.29
Uganda	9	4	57	7.5	4.8	4.8	1.05	0.63	3.03
United Republic of Tanzania	9	8	25	10.1	7.8	7.9	2.14	1.59	1.70
Upper Volta	6	7	21	10.9	14.6	13.9	0.58	0.51	0.55

Table 1 *(continued)*

Country or territory and economic grouping	MVA per capita (dollars)			Share, MVA in GDP at factor cost (percentage)			Country share in MVA of African developing countries (percentage)		
	1970	1980 (constant)	1980 (current)	1970	1980 (constant)	1980 (current)	1970	1980 (constant)	1980 (current)
Other countries	23	28	66	12.7	13.7	12.1	66.39	60.42	51.18
Angola	14	7	12	5.2	4.9	2.6	1.47	0.48	0.31
Congo	13	12	40	6.6	5.2	4.6	0.29	0.20	0.24
Djibouti	24	20	72	6.1	8.5	8.6	0.07	0.07	0.09
Egypt	36	47	67	19.6	17.7	14.0	21.90	21.34	10.80
Equatorial Guinea	10	2	9	3.8	4.2	5.2	0.05	0 01	0.01
Ghana	29	21	105	12.2	12.5	9.7	4.68	2.27	5.00
Ivory Coast	24	36	118	11.4	13.5	10.4	2.11	3.13	3 67
Kenya	15	23	48	12.1	16.0	12.5	3.22	4.00	3.03
Liberia	11	15	33	4.0	5.6	5.0	0.28	0.29	0.23
Madagascar	13	12	42	11.5	12.0	11.5	1.67	1.15	1.38
Mauritania	8	9	27	4.9	6.2	6.3	0.17	0.14	0.16
Mauritius	32	66	155	16.0	21.3	18.0	0.49	0.68	0.57
Morocco	36	42	123	15.9	15.5	17.5	9.84	9.18	9.51
Mozambique	13	10	23	5.9	6.1	8.6	1.92	1.05	0.89
Namibia	55	57	85	9.4	8.3	4.8	0.78	0.60	0.32
Réunion	39	39	153	4.9	3.3	3.7	0.32	0.23	0.32
Sao Tome and Principe	8	8	21	4.8	5.4	4.7	0.01	0.01	0.01
Senegal	28	26	67	15.9	18.2	16.9	2.26	1.59	1.46
Seychelles	6	20	98	1.6	4.2	6.2	0.01	0.02	0.03
Sierra Leone	9	10	27	6.4	7.3	7.2	0.45	0.36	0.36
Swaziland	30	68	177	12.4	18.3	23.5	0.24	0.40	0.37
Togo	13	7	23	10.2	6.2	5.7	0.45	0.21	0.22
Tunisia	23	49	111	9.2	11.2	10.0	2.13	3.29	2.69
United Republic of Cameroon	15	18	68	10.0	9.1	9.6	1.90	1.66	2.25
Zaire	5	4	8	7.6	6.5	8.4	2.05	1.13	0.91
Zambia	23	31	87	6.5	10.0	14.9	1.81	1.96	1.38
Zimbabwe	55	56	150	21.3	23.3	23.8	5.41	4.49	4.37
Total, developing Africa	16	21	59	9.5	9.8	7.6	5 408[b]	9 258[b]	25 811[b]

Source: Computer print-outs supplied by the Statistics Division of the Economic Commission for Africa, with calculations by the UNIDO secretariat.

[a] 1970 data in 1970 prices and 1980 data in current and constant 1970 prices.

[b] Value in millions of dollars.

occurred in Botswana, Gabon, Kenya, Lesotho, the Libyan Arab Jamahiriya, Mauritius, Rwanda, Swaziland, the Upper Volta and Zambia, but in 17 countries the MVA share was less than in 1970. At current prices, the share of MVA in 1980 GDP was below that for 1970 in all the country groupings (it was down in 22 countries). Swaziland and Zimbabwe had the highest MVA shares in 1980 current prices (23.5 and 23.8 per cent) and Guinea-Bissau had the lowest (1.8 per cent).

In 1970, the oil exporters accounted for 18.46 per cent of African MVA, the least developed countries accounted for 15.18 per cent and other countries for 66.39 per cent. The largest manufacturing countries were Egypt (21.90 per cent of the total), Morocco (9.84 per cent), Nigeria (9.58 per cent), Algeria (7.48 per cent) and Zimbabwe (5.41 per cent). Together these five countries accounted for about 54 per cent of the total, whereas 31 countries had shares of less than 1 per cent each (as little as 0.01 per cent in the case of Seychelles). The share of the oil exporters increased in constant prices to 28.34 per cent in 1980, and the shares of the least developed and other countries fell to 11.24 and 60.42 per cent. The share of the five main manufacturing countries increased to 58 per cent, Nigeria's share increasing to 14.46 per cent, and Zimbabwe now slightly behind the Libyan Arab Jamahiriya. In current prices the share of the oil exporters was even greater, 35.09 per cent, and the share of the least developed countries was 13.74 per cent (largely owing to the difference in Uganda's share in constant and current prices, a reflection of high inflation). The current price share of the other countries was only 51.18 per cent (resulting from the difference in Egypt's share in constant and current prices, a reflection of low inflation and currency devaluation). In 1980, the five largest manufacturing countries, in current prices, were Nigeria (21.49 per cent of the total), Egypt (10.80 per cent), Algeria and Morocco (both slightly over 9.5 per cent) and Ghana (5 per cent). Together they accounted for 56 per cent of the total. The most significant change from 1970 for the main producers is the large increase in Nigeria's share and the large decline in Egypt's share. Compared with 1970, the 1980 current-price shares of all the oil exporters were higher whereas this was so in only nine of the least developed countries and in 10 of the other countries.

Table 2 shows that average real growth in MVA during the period 1970-1980 was high in the oil-exporting countries (10.4 per cent), with a range of 7.7 per cent in Algeria to 21.4 per cent in the Libyan Arab Jamahiriya. In the least developed countries, average growth during the period (2.6 per cent) was only one quarter of the rate in the oil exporters; growth ranged from −4.0 per cent in Uganda to 37.3 per cent in Rwanda. In the other countries, growth averaged 4.6 per cent, with a range from −10.5 per cent in Equatorial Guinea to 19.5 per cent in Seychelles. In terms of regional "growth poles", it may be seen that the most rapid expansion of MVA tended to occur in the far north and, with some exceptions, in the south of the continent, whereas in the rest of Africa high average growth (7 per cent or more) was achieved only by Gabon, Nigeria and the Ivory Coast in the west and Rwanda and Kenya in the east. The table also shows that real MVA growth during the second half of the decade was less than in the first half in most countries (with negative growth in 13 countries), with an average of 9.1 per cent for the oil exporters, 2.1 per cent for the least developed countries and 3.9 per cent for other countries.

Table 2. Real growth rates of MVA and difference between growth of MVA and GDP averages for 1970-1975, 1975-1980 and 1970-1980, with 1980 price deflator for manufacturing and ratio of manufacturing to GDP price deflators, African developing countries

Country or territory and economic grouping	Real growth rate of MVA (percentage)[a]			Real growth rate of MVA less real growth rate of GDP (percentage)[a]			MVA price deflator, 1980 (1970=100)[b]	Deflator corrected for change in dollar value of local currency[b]	Ratio of MVA price deflator 1980 to GDP price deflator 1980 (1970=100)[b] (percentage)
	1970-1975	1975-1980	1970-1980	1970-1975	1975-1980	1970-1980			
Main oil-exporting countries	11.6	9.1	10.4	4.1	0.7	2.4	250.2	320.6	71.0
Algeria	7.0	8.3	7.7	−1.5	2.6	0.6	240.1	310.1	73.1
Gabon	28.8	11.6	20.2	9.4	8.9	9.2	284.5	378.4	75.4
Libyan Arab Jamahiriya	20.2	22.6	21.4	13.4	13.6	13.5	153.5	187.3	39.3
Nigeria	15.3	7.0	11.2	8.2	2.3	2.9	322.7	414.4	96.0
Least developed countries	3.0	2.1	2.6	0.2	−1.4	−0.6	349.0	393.5	107.7
Benin	5.8	−5.7	0.0	2.5	−6.8	−2.1	211.6	281.5	82.5
Botswana	15.9	14.7	15.3	7.3	1.7	4.5	224.5	262.9	67.2
Burundi	4.4	4.6	4.5	3.3	−0.2	1.5	358.0	348.0	148.8
Cape Verde	1.6	2.0	1.8	3.5	−1.1	1.2	481.9	361.6	94.6
Central African Republic	−0.3	3.9	1.8	−0.7	2.2	0.8	246.6	328.0	100.3
Chad	6.2	−5.3	0.4	3.4	−4.2	−0.4	402.4	455.6	175.6
Comoros	3.7	−6.4	−1.3	1.5	−6.9	−2.7	314.6	411.4	112.0
Ethiopia	1.1	5.0	3.1	−1.2	1.8	0.3	154.5	186.5	109.3
Gambia	21.8	−13.5	4.2	16.5	−14.4	1.2	267.2	319.6	97.9
Guinea	2.6	3.2	2.9	−0.32	1.45	0.6	157.7	222.3	102.8
Guinea-Bissau	0.1	2.6	1.4	−2.1	3.4	0.6	403.9	343.3	155.5
Lesotho	45.7	6.0	25.9	38.4	−2.5	18.0	262.0	241.4	98.2
Malawi	11.2	4.6	7.9	1.8	−0.5	0.6	220.3	227.1	97.2
Mali	3.1	2.8	2.9	0.3	0.8	0.6	320.0	426.7	121.7
Niger	2.5	4.4	3.5	3.1	−3.8	−0.3	279.2	371.4	92.7
Rwanda	68.3	6.3	37.3	58.9	1.4	30.2	256.5	276.2	105.2
Somalia	9.7	2.6	6.1	5.2	0.2	2.7	375.4	291.1	104.4
Sudan	4.0	1.9	2.9	1.1	−2.0	−0.5	455.8	317.4	99.0
Uganda	−2.7	5.4	−4.0	−2.9	−5.4	−4.2	1 213.2	1 344.6	99.1
United Republic of Tanzania	4.8	0.4	2.6	0.3	−5.4	−2.5	342.9	298.4	101.6
Upper Volta	7.9	1.5	4.7	6.8	0.2	3.5	225.1	300.0	95.2

Other countries	5.2	3.9	4.6	1.6	0.1	0.8	359.4	351.8	99.9
Angola	−2.1	−1.6	−1.8	4.3	0.1	2.2	308.8	179.6	52.5
Congo	−1.0	5.0	2.0	−8.2	3.8	−2.2	248.5	330.6	88.2
Djibouti	10.8	0.5	5.6	4.8	2.8	3.8	299.9	360.0	100.8
Egypt	4.1	6.6	5.3	−0.4	−1.8	−1.1	227.2	141.1	79.4
Equatorial Guinea	−2.3	−18.7	−10.5	6.9	−4.8	1.0	371.4	392.4	123.1
Ghana	2.6	−1.5	0.5	1.2	−0.2	0.5	1 356.3	503.2	77.22
Ivory Coast	6.7	9.2	3.0	0.7	3.0	1.9	247.9	327.0	77.0
Kenya	8.2	7.7	8.0	3.5	2.7	3.1	219.5	211.2	78.0
Liberia	12.2	6.0	6.4	8.8	1.0	3.9	223.0	223.0	90.0
Madagascar	2.3	1.2	1.8	1.3	0.4	0.5	251.3	333.6	96.0
Mauritania	0.4	6.9	3.7	−1.8	6.8	2.5	252.1	305.1	101.5
Mauritius	11.4	7.3	9.4	3.9	2.4	3.1	327.7	234.9	84.6
Morocco	6.0	3.1	4.8	1.3	−1.8	0.2	220.7	288.8	112.8
Mozambique	6.2	−3.4	1.4	7.9	−3.4	0.6	407.4	237.1	141.3
Namibia	2.0	3.4	3.0	−0.8	−1.6	1.2	175.0	148.6	58.5
Réunion	−1.2	6.1	2.4	8.0	0.1	4.0	297.3	394.7	112.8
Sao Tome and Principe	0.5	0.4	0.4	5.1	−2.6	1.2	346.4	284.8	87.5
Senegal	4.4	0.2	2.3	1.9	1.2	1.5	192.5	256.1	92.6
Seychelles	25.9	13.0	19.5	21.8	6.2	14.0	647.1	481.6	147.6
Sierra Leone	7.3	−0.1	3.6	5.9	−2.1	1.8	352.4	279.4	98.4
Swaziland	17.1	6.0	11.5	10.0	−0.7	4.6	305.8	259.7	128.6
Togo	−3.0	−0.4	−2.0	−5.7	−3.6	4.7	225.3	299.7	92.2
Tunisia	13.5	7.6	10.6	3.5	1.3	2.4	175.4	228.2	89.4
United Republic of Cameroon	2	6.3	4.2	−2.6	0.7	10.0	283.7	378.2	103.4
Zaire	3..	−4.4	−0.3	0.1	−2.8	−1.4	1 175.3	223.6	129.7
Zambia	20.0	−1.1	9.4	14.8	−0.2	7.4	310.6	281.4	149.3
Zimbabwe	6.5	1.0	3.8	0.1	1.8	0.9	253.9	271.1	102.1

Source: Computer print-outs supplied by the Statistics Division of the Economic Commission for Africa, with calculations by the UNIDO secretariat.

[a] 1970 dollar basis.

[b] Deflators for the three country groupings calculated on an unweighted arithmetic basis.

Growth of MVA exceeded that of GDP on average by 2.4 per cent in the oil-exporting countries and by 0.8 per cent in the "other" countries during the period 1970-1980, but the average MVA growth rate in the least developed countries was 0.6 per cent less than that of GDP during the same period. Particularly after 1975, growth of MVA averaged less than that of GDP for 26 countries. Thus, in much of Africa, it seems that manufacturing as the "engine of growth" is faltering. This important phenomenon will be considered more fully in the next section.

Table 2 also shows the difference in 1970 and 1980 prices. The 1980 price deflator for manufactures (local currency, 1970 = 100) varied from less than 200 (Ethiopia, Guinea, the Libyan Arab Jamahiriya, Namibia, Senegal and Tunisia) to over 1,000 per cent (Uganda, Ghana and Zaire). In most cases, these wide differences in inflation were at least partly offset by alterations in the foreign exchange rate. Very high inflation in Zaire, for example, was offset by a drastic currency devaluation. In Uganda, however, the equally high inflation was exacerbated by a slight upward revaluation against the dollar, and devaluation in Egypt and Namibia, both with relatively low inflation rates, resulted in these countries having the lowest 1980 MVA deflators, corrected for exchange-rate changes, in Africa. Calculated on the basis of equal weights for each country, average inflation in manufacturing expressed in dollars was lowest in the oil exporters and highest in the least developed countries. Reflecting the large increases in oil prices, 1980 MVA price deflators were below those for GDP in all four oil-exporting countries. The 1980 MVA deflator exceeded the GDP deflator by more than 10 per cent in five least developed countries and eight other countries, whereas it was more than 10 per cent below it in two least developed countries and 11 other countries.

Space does not permit a detailed examination of inter-country or inter-temporal differences in the distribution of manufacturing, but the average structure of manufacturing in the developing countries of Africa in 1975 is shown in table 3 and for comparison, distribution by subsector for Zimbabwe, one of the most industrially advanced African countries, and the Sudan, one of the least developed countries (with, however, a more diversified structure of manufacturing than many other least developed countries). Food, beverages and tobacco (31 per cent share) and textiles and clothing (21 per cent) are still as a rule the largest components of manufacturing in Africa, although the share of these products is falling. In the Sudan the shares of these sectors were 44 and 37 per cent, but in Zimbabwe they were only 18 and 17 per cent. In the latter, the shares of fabricated metal products and machinery (20 per cent), basic metals (15 per cent) and chemicals etc. (14 per cent) were much higher than in the Sudan, where basic metal production was almost non-existent, the share of fabricated metal products (based on metal imports) was only 4 per cent, and the share of chemicals and related products (mostly petroleum refining) 9 per cent.

The main points brought out above may be summarized as follows:

(a) The great diversity in the level of industrialization among African countries existing at the start of the 1970s increased during the decade: the oil exporters especially, as well as the semi-industrialized countries of north Africa and a few other countries—mainly in southern Africa—did well, while the poorest and least developed countries showed a generally much lower growth in

Table 3. Distribution of manufacturing value added, African developing countries, Zimbabwe and the Sudan, by subsector, 1975

(Percentage)

Subsector (International Standard Industrial Classification of All Economic Activities (ISIC) code, with branch description)	*African developing countries*[a]	*Zimbabwe*	*Sudan*
31 (food, beverages and tobacco products)	31	18	44
32 (textiles, wearing apparel and leather products)	21	17	37
33 (wood products, including furniture)	4	3	0
34 (paper and products, printing and publishing)	5	7	2
35 (chemicals and petroleum, coal, rubber and plastic products)	16	14	9
36 (non-metallic mineral products, except petroleum and coal products)	5	5	4
37 (basic metal industries)	4	15	0
38 (fabricated metal products, machinery and equipment)	13	20	4
39 (other manufactures)	1	1	0

Source: UNIDO data base. Information supplied by the Statistical Office of the United Nations Secretariat; estimates by the UNIDO secretariat.

[a] 45 countries.

manufacturing, with an average 1980 MVA per capita below that of 1970 in real terms in the least developed countries;

(b) In most countries, growth of MVA during the second half of the decade was well below that in the first half;

(c) Particularly in the poorest countries, but also to a large extent in other countries, manufacturing as the "engine of growth" faltered (especially in the second half of the decade), growth in MVA often remaining below growth in GDP;

(d) Price and exchange rate changes, as well as differences in real growth, greatly affected the shares of many countries in total African MVA, Nigeria's share, in particular, increasing from 9.6 to 21.5 per cent and Egypt's decreasing from 21.9 to 10.8 per cent;

(e) The share of processed agricultural products, textiles and clothing, though accounting for about half of total MVA in the developing countries of Africa in 1975 (more in the poorer and less in the richer countries), is declining, while the shares of metals and metal-based products and chemicals is increasing.

Unbalanced growth: linkages and non-linkages between manufacturing and general economic development

National accounts data for 1970-1980 reveal significant changes in agricultural output, trade and public expenditure, which interact with the development of manufacturing.[4] These changes are shown below, and the

[4] Data from computer print-outs supplied by the Statistics Division of the Economic Commission for Africa unless otherwise indicated.

changing role of manufacturing is discussed in the light of these and other factors.

In almost all African countries the rate of growth of agriculture slowed down in the 1970s inasmuch as output per capita was falling and self-sufficiency was declining. The average real rate of growth (1970 prices) from 1970 to 1980 was 1.6 per cent in the four oil-exporting countries (1980 population: 99 million), 1.8 per cent in the least developed countries (1980 population: 139 million) and 0.9 per cent in other countries (1980 population: 202 million), whereas average GDP growth (at factor cost) in the three groups was 7.9, 3.2 and 3.7 per cent. Thus, the share of agriculture in GDP at constant prices dropped from 30.2 per cent (1970) to 16.3 per cent (1980) in the oil-exporting countries, from 50.6 per cent to 44.2 per cent in the least developed countries and from 29.9 per cent to 22.6 per cent in other countries. Within the agricultural sector, according to data supplied by the Food and Agriculture Organization of the United Nations (FAO), the drop in per capita production of food supplies, especially grains, was even greater than the decline for the sector as a whole so that, with the increasing per capita food consumption resulting from higher incomes per capita, the difference between local demand for and supply of food widened greatly. Thus, agricultural exports declined and imports rose, with a negative effect on foreign exchange availability (see below). By 1980, a crisis had therefore been reached, or nearly so, with few prospects for improvement.

In the oil-importing countries, poor agricultural performance, combined with the higher real cost of oil imports and a worsening balance of trade in manufactures, led to a second crisis, in the balance of payments. Net exports as a percentage of GDP is shown in table 4 for the oil exporters, least developing countries and other countries from 1970 to 1980.

Table 4 shows that in the least developed countries, and to a lesser extent in other oil-importing countries, a substantial and rising proportion of GDP was needed to offset the trade deficit, whereas, except in 1978, the oil exporters had a large trade surplus in relation to GDP. This difference was largely the result of changing terms of trade: average rates of growth in exports and imports from 1970 to 1980 at 1970 prices were −1.4 and 10.9 per cent for the oil exporters, 0.8 and 3.2 per cent for the least developed countries and 4.4 per cent for other countries. The share of exports in GDP at 1970 prices dropped from 24.5 per cent in 1970 to 9.4 per cent in 1980 in the oil-exporting countries

Table 4. Net exports as a percentage of GDP (current market prices) in African developing countries, by economic grouping, 1970-1980

Economic grouping	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*
Main oil exporters	4.7	5.9	5.2	5.0	16.2	0.4	2.1	2.6	−3.4	6.8	14.8
Least developed countries	−4.2	−5.3	−3.7	−4.5	−9.6	−10.4	−7.0	−7.3	−10.0	−9.3	−10.4
Other countries	−0.8	−3.7	−2.0	−0.8	−2.3	−8.2	−7.0	−6.7	−8.2	−8.9	−8.0

and from 16.8 to 13.1 per cent in the least developed countries, but increased slightly from 26.5 per cent to 27.4 per cent in other countries. The corresponding share of imports rose from 19.8 to 23.3 per cent in the oil-exporting countries, declined from 21.0 to 20.7 per cent in the least developed countries and rose from 27.3 to 28.4 per cent in other countries (all in 1970 prices).

A third area of concern, in that it may not reflect the best use of resources (see below), is the rapid growth of public expenditure. In the oil-exporting countries, government expenditure on consumption increased in 1970 prices from 1970 to 1980 at an average rate of 16.0 per cent, compared to 6.9 per cent for private consumption expenditure, and the share in GDP of government consumption rose from 10.6 to 20.3 per cent, while the share of private consumption dropped from 66.1 to 59.2 per cent. Public administration and defence spending increased at an average rate of 17.8 per cent (1970 prices), and its share in GDP increased from 8.3 to 19.5 per cent. In the least developed countries, growth rates for government and private consumption were lower, 4.7 and 3.1 per cent, and the share in GDP of government consumption rose from 14.1 to 16.3 per cent. Public administration and defence, however, showed a considerably higher growth rate (6.9 per cent) than other activities (except mining) and their share in GDP rose from 7.0 to 10.1 per cent. In other countries growth of government consumption averaged 5.0 per cent, compared with 3.2 per cent for private consumption, and the share of government consumption rose from 17.4 to 19.4 per cent. Public administration and defence grew at an average rate of 6.8 per cent, well above growth in other activities, and their share in GDP rose from 10.2 to 13.6 per cent.

This rapid increase in public spending may have several undesired effects. First, it reduces the amount of capital resources available for activities that are greatly in need of additional investment, such as small-scale farming. Secondly, it reduces the availability of skilled manpower in sectors such as manufacturing, where such resources are in short supply. Thirdly, it generally adds to price inflation. These negative effects might be outweighed by the contribution of such expenditure to overall economic development, but accumulating evidence suggests that in many countries this has not always been the case [2], [4]. Public spending and administrative resources have, for example, been devoted to the management of complex schemes of trade and price controls and public enterprises; these have tended to keep the prices received by farmers below world prices, thus reducing output, and to distort the pattern of profitability within the manufacturing sector, thereby reducing efficiency and increasing the economic cost of import substitution and exports. Although the extent of these and related effects is still controversial and there is clearly a great deal of variation among countries, the generally disappointing economic performance in the 1970s suggests the need to reassess the extent and structure of public expenditure.

An examination of ways in which the contribution of manufacturing to economic development may be improved in the 1980s, bearing in mind these three macro-economic problems, and the changes in the manufacturing sector in the 1970s, will reveal three major areas of weakness:

(a) There has been an over-emphasis on investment in manufacturing as opposed to investment in agriculture, especially small-scale farming, which, if it

were given higher priority, could help to increase rural employment, improve the trade balance, reduce migration to urban areas and increase effective demand for basic consumer manufactures and farm inputs (e.g. machinery and chemicals);[5]

(b) Instead of being based on domestic resource endowments and linkages with the whole economy, so that a strong industrial structure can be built gradually, manufacturing has tended to be based, in an attempted "great leap forward", on the transfer of often inappropriate ideas, values and technologies from the developed countries;

(c) Within the manufacturing sector, too much emphasis has been placed on import substitution industries (frequently inefficient and badly managed, with little incentive to improve, and limited to small local markets), luxury consumer goods, heavy industry (now tending towards a world-wide decline) and capital-intensive techniques.

A more appropriate manufacturing structure could generally be based on the following model. On the demand side (products), manufacturing would consist of:

(a) Basic consumer goods for domestic use;

(b) Export goods (to pay for imported products of types *(a)* and *(c)*);

(c) Intermediate and capital goods used to produce *(a)* and *(b)* and for use in other sectors, especially agriculture.

On the supply side, within the limits set by demand, manufacturing would consist of:

(a) Labour-intensive techniques and techniques designed to save capital, imports, energy and management costs;

(b) Small-scale manufacturing with rural location (where feasible);

(c) Linkages with (i.e. use of inputs from) domestic primary sectors, especially agriculture.

A manufacturing structure based on this model could provide a more sustainable and more equitable pattern of economic growth. The manufacturing sector would both directly benefit from and contribute to the balanced growth of the rest of the economy. A more detailed specification of the model would vary from country to country, depending upon differences in goals, resources and contraints.[6]

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[5]The discovery of oil may also lead to neglect of agriculture. For example, in Nigeria, formally a food exporter, food imports in 1980 amounted to $2,800 million. In a number of west African countries just starting to produce oil, agriculture is likely to be adversely affected unless appropriate policy measures are adopted [5].

[6]The definition of "basic" consumer goods, for example, will partly depend on a country's level and distribution of income. The role of foreign investment will also differ from country to country, depending on such factors as the degree of emphasis on self-sufficiency etc.

Policy reform

Several important conclusions regarding policy reform can be drawn from the preceding analysis. Essentially, the need is for greater incentives (and fewer disincentives) for productive activities, replacement of quantitative controls by a system of *ad valorem* taxes and subsidies (requiring less administrative capacity) and a reduction in the range of effective protection[7] among activities (thus creating a price structure that more closely reflects producer costs and consumer values).

In many African countries, the government authorities set the prices paid to farmers well below world prices in order to gain public revenue and keep living costs for urban dwellers low. As we have seen, the result has been that local production has failed to keep up with rising population. High priority needs to be given to increasing farm revenue. This could be done if increases in government spending were reduced (see below), and if part of the income gained by farmers were to go back to the urban sector through increased purchases of industrial goods by farmers. Farmers' incomes would also be positively affected by the changes in trade policy outlined below.

Highly overvalued local currencies make imports seem cheap to domestic consumers and exports seem unprofitable to domestic producers, and thus tend to create a trade deficit. To offset this deficit, as well as to provide public revenue and protection for domestic producers competing with imports, taxes on imports are imposed. In many African countries, various administratively complex quota schemes are used instead of taxes (tariffs), and these vary widely from product to product, often without apparent reason (except that some producers of import substitutes are more successful in lobbying than others). The economic costs of such a trade regime have frequently been demonstrated [6]. In many African countries these costs include reduced market opportunities for farmers (exports being mainly agricultural products) and an inefficient protected manufacturing sector able to sell only within a small domestic market. What is needed is a realistically valued local currency combined with, in place of quantitative controls, a structure of *ad valorem* tariffs (and export taxes and subsidies) designed to provide modest and fairly uniform effective protection.[8] Vested interest may make such a change politically difficult, but it should be noted that the effects of currency devaluation on balance of payments and domestic prices and a general reduction in the level of import protection will in many cases tend to cancel each other out.[9]

To implement successfully the policy changes discussed above, certain changes in the role of the public sector may be required. Ways and means of reducing the growth of public spending need to be considered. A shift away from quantitative controls would allow a reduction in administrative costs. A reduction in the proliferation of public enterprises, many of which require substantial government subsidies, would also reduce public expenditure, and relaxation of central government intervention in the operational management of public enterprises would reduce administrative costs (and perhaps improve

[7] Effective protection reflects taxes and subsidies not only on output, but also on inputs.

[8] The concept of and justification for uniform effective protection is discussed by Corden [6].

[9] For a detailed analysis of the recent attempts (some unsuccessful) of several countries to implement such changes in trade policy, see A. O. Krueger [7].

management performance) [8]. Better ways of using scarce administrative capacity need to be investigated.

Clearly these changes cannot be made overnight, but a gradualist approach to policy reform may prove feasible in many countries.

Finally, it is worth repeating some of the basic principles of policy design [9].

1. Policies should be as clear, simple and direct as possible, so that the cost of implementing them will be minimal, time will not be lost in lobbying, tax manipulation and petitioning for licences, and the possibility of corruption will be reduced; the most direct policy intervention should be adopted to achieve a particular goal. At the same time, policies should be flexible; in other words, they should respond to changing circumstances, they should be dynamic and they should not create vested interest groups.

2. Good, but not necessarily perfect, information is needed. When the costs of gathering information seem too high in relation to the benefits, adjustments should be made. Among these, sensitivity analysis and the "range" method of progressively reducing the uncertainty of important variables seem particularly useful.

3. Objectives and their conflicts and complementarities need to be clearly perceived and accounted for through policy trade-offs. For example, a conflict between present and future consumption levels would require a decision on their relative values. This may be reflected in the rate of interest on saving; the higher the rate the greater the relative weight placed on future consumption.

4. Constraints on policy changes should be identified so that practical policy alternatives can be assessed. In the hierarchy of feasible policy instruments, those that come closest to the best should be selected. Unwanted side effects should be reduced to a minimum (as they would be if the best possible policy solution were chosen). The overuse of policies with a cumulative impact that is greater than desired should also be avoided. It should be recognized that constraints on policy change may apply for only a limited period. Efforts to relax constraints should be made when it appears that the benefits of eliminating them exceed the costs.

5. Policy design, national planning and project evaluation should be linked as much as possible. In theory, this link is provided by social cost-benefit analysis and shadow pricing based on welfare economics. In practice, close co-operation between institutions engaged in these activities is required.

6. Good policies require more than just a sound conceptual basis. Well-developed public institutions and administrative skills are extremely important.

7. In designing policy, the development of entrepreneurship and skills should not be neglected. Too much emphasis is often placed on short-term physical output and economic growth rates.

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The poor fall behind: an assessment of industry in the least developed countries*

Secretariat of UNIDO

Introduction

Several rather simple but very important points must be kept in mind when discussing industrial development in the 30 least developed countries.[1] First, underdevelopment may be briefly defined as the prevalence of low ratios per capita of natural resources and human and physical capital.[2] Secondly, it must be recognized that underdevelopment is regional, and is mainly concentrated in two very different geographical areas: sub-Saharan Africa, with 20 least developed countries (1977 population: 128 million), and south Asia, with five least developed countries (1977 population: 112 million). Thirdly, most of the least developed countries suffer not only from small domestic markets, because of low incomes and a generally small population, but also from weak transport and communication links with the major trading nations (20 of them being either land-locked countries or islands). Fourthly, the least developed countries have failed, in relative terms at least, to participate in the acceleration of industrial and economic growth of the developing countries since the end of the Second World War: the "trickle-down" effect has not worked. Fifthly, disastrous economic and social conditions (contributing to the vicious circle) now prevail in many of them and on the basis of present trends the prospects for the 1980s and 1990s are dismal indeed. Sixthly, only a massive and well-conceived programme of assistance, combined with certain internal reforms, seems likely to achieve a significantly more favourable pattern of development in the future. Seventhly, such a programme will need to have a broad base, so as to increase the linkages of key sectors, especially agriculture, manufacturing,

*This article is a slightly revised version of a paper prepared by the UNIDO secretariat for the United Nations Conference on the Least Developed Countries, held in Paris from 1 to 14 September 1981 (A/CONF.104/7/Add.6 (part II)). It is intended to provide, for the manufacturing sector, a substantive analysis by sector or region of the problématique of the least developed countries. It does not cover general economic or social aspects (except where specifically linked to manufacturing), technical assistance or, to any great detail, trade and employment aspects of industrialization. It should be noted that the data base for the least developed countries is particularly weak, so that data presented here, especially for individual countries, tend to be incomplete both in country coverage and over time and are subject to revision.

[1]The Committee for Development Planning at its seventeenth session, held from 23 March to 1 April 1981, recommended that Guinea-Bissau (1977 population 0.5 million) should be added to the list of least developed countries [1]. Statistical data of the type presented here are not available for Guinea-Bissau, however, so further reference to it is omitted.

[2]The combination of these productive factors is important. For example, Japan is relatively weak in natural resources per capita, but this weakness is compensated for by physical and, especially, human capital. Nevertheless, having natural resources is an advantage.

infrastructure (e.g. transport, communication, and energy supply) and education and other productive social services, and to accelerate the development of these sectors.

A statistical review of industrial progress in the 1970s[3]

In this section, the development of the manufacturing sector in the least developed countries (and, for reference, other developing countries) during the period 1970-1977 (and, for reference, the 1960s) is examined, the coverage having been extended to include 1979 for the least developed countries of Africa in certain data series.

In their efforts to develop the manufacturing sector, the least developed countries face serious constraints on both the supply and the demand sides. Internal demand is very much affected by the small market size of these countries (as measured by GDP), which limits the possibility of developing industries that call for large-scale production because of the technology involved. Moreover, the extremely low income per capita in these countries means that only the most basic and cheap industrial products are likely to be purchased, except by the wealthy few, so that production of a diversified range of manufactured goods becomes difficult.

Table 1 reveals the scale of these market limitations in the expansion of manufacturing production. GDP per capita in the least developed countries in 1977 averaged $148 (1975 prices), less than one third of that for other

Table 1. Least developed countries: population, GDP per capita and share in the GDP of all developing countries (by country, other developing countries and all developing countries, 1977), with rates of change, 1960-1970 and 1970-1977

Country or economic grouping	1977			Trend in rate of change (percentage)					
				Population		GDP per capita		Share in GDP of developing countries	
	Population (millions)	GDP per capita (1975 dollars)	Share in GDP of developing countries (percentage)	1960-1970	1970-1977	1960-1970	1970-1977	1960-1970	1970-1977
Afghanistan	20.3	98	0.20	2.14	2.61	−0.13	1.68	−3.49	−1.09
Bangladesh	77.6	129	0.99	2.84	1.84	−0.14	3.54	−2.83	−0.05
Benin	3.2	160	0.05	2.43	2.76	0.84	−0.67	−2.28	−3.25
Bhutan	1.2								
Botswana	0.7	536	0.04	2.00	2.39	4.77	4.16	1.11	1.10
Burundi	4.0	100	0.04	1.37	2.48	−3.86	0.04	−7.79	−2.82
Cape Verde	0.3	300	0.01	2.91	1.88	5.70	−3.41	2.92	−6.72
Central African Republic	1.9	207	0.04	1.98	2.14	0.00	−3.34	−3.51	−6.40
Chad	4.2	168	0.07	2.04	2.04	−2.55	1.68	−5.92	−1.64
Comoros	0.3	196	0.01	2.12	2.55	4.03	−2.94	0.51	−5.65

[3]The emphasis here is on country-level data. For a somewhat more current data set for the total number of least developed countries, the least developed countries of Africa and Bangladesh, see *A Statistical Review of the World Industrial Situation 1981* (UNIDO/IS.292), section II.

Country or economic grouping	1977			Trend in rate of change (percentage)					
				Population		GDP per capita		Share in GDP of developing countries	
	Population (millions)	GDP per capita (1975 dollars)	Share in GDP of developing countries (percentage)	1960-1970	1970-1977	1960-1970	1970-1977	1960-1970	1970-1977
Democratic Yemen	1.8								
Ethiopia	29.3	93	0.27	2.19	2.40	2.25	−0.43	−1.15	−3.35
Gambia	0.5	222	0.01	1.70	1.95	3.83	3.21	−0.10	−0.25
Guinea	4.6	174	0.08	2.11	2.44	−2.08	0.31	−5.40	−2.59
Haiti	4.7	207	0.10	1.55	1.50	−0.54	2.48	−4.44	−1.39
Laos	3.5	65	0.02	2.41	2.27	−5.95	−7.38	−8.87	−10.21
Lesotho	1.2	135	0.02	1.65	2.01	4.23	3.24	0.24	−0.17
Malawi	5.2	138	0.07	2.30	2.45	3.40	4.06	0.08	1.07
Maldives	0.1								
Mali	6.0	93	0.06	2.12	2.48	−2.41	0.38	−5.71	−2.48
Nepal	13.2	109	0.14	2.05	2.26	0.44	0.52	−3.02	−2.56
Niger	4.8	192	0.09	3.29	2.74	3.02	0.35	0.68	−2.27
Rwanda	4.4	141	0.06	3.02	2.74	1.75	1.11	−0.82	−1.53
Samoa	0.1								
Somalia	3.3	157	0.05	2.27	2.66	−1.72	1.52	−4.90	−1.21
Sudan	19.5	265	0.51	2.92	3.11	−1.65	0.63	−4.24	−1.63
Uganda	12.1	255	0.31	2.64	3.01	3.03	−2.52	0.06	−4.81
United Republic of Tanzania	16.4	175	0.28	2.80	3.10	4.16	2.44	1.30	0.11
Upper Volta	6.3	91	0.06	2.05	2.31	2.37	−1.38	−1.17	−4.34
Yemen	5.5								
Least developed countries	256.2	148	3.45	2.52	2.36	0.35	1.27	−2.67	−1.80
Other developing countries[a]	1 778.6	546	96.55	2.60	2.67	3.17	2.89	0.14	0.07
All developing countries[a]	2 035.0	490	100.00	2.59	2.64	3.04	2.85		

Source: UNIDO data base. Information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat, except for population statistics for Bhutan, Democratic Yemen, Maldives, Samoa and Yemen, obtained from World Bank sources. (These countries are omitted from aggregate data for the least developed and developing countries in the table.)

[a] In this and all other references to other or all developing countries, some countries are excluded because of a lack of data, the main omission being China.

developing countries. In the 1960s, the average annual growth rate in GDP per capita in the least developed countries was only 0.35 per cent, compared with a growth rate of 3.17 per cent for other developing countries. During the period 1970-1977, the difference in growth rates between the two groups narrowed, with a rate of 1.27 per cent for least developed countries and 2.89 per cent for other developing countries, so that the decline in the least developed country share in total GDP of the developing countries continued, but more slowly than in the previous decade.

By 1977, the share of the least developed countries in total GDP of the developing countries had fallen to 3.45 per cent. Of this, almost three quarters was accounted for by Afghanistan, Bangladesh, Ethiopia, the Sudan, Uganda and the United Republic of Tanzania. Only Botswana, Malawi and the United Republic of Tanzania increased their share in total GDP of developing countries during the 1960s and in the period 1970-1977, while Cape Verde, the Comoros, Lesotho, the Niger and Uganda showed an increase in the earlier period only. Overall, the share of the least developed countries in total GDP declined at a rate of 2.67 per cent in the 1960s and 1.80 per cent in 1970-1977.

Two widely used general indicators of level of industrial development are the share of MVA in GDP and MVA per capita. For inter-country comparison, the latter has the advantage that it does not reflect variations caused by the level of development of other sectors. The discovery of oil, for example, will raise a country's GDP and thus lower the ratio of MVA to GDP without necessarily affecting the level of MVA or MVA per capita.[4] The ratio of MVA to GDP, expressed in current prices, is more useful in showing the relative importance of manufacturing within a country at a given time.

Table 2 shows the development of MVA per capita up to 1977, in which year the average for the least developed countries was only $12.6 (1975 prices),

Table 2. MVA per capita for least developed countries, other developing countries and all developing countries, 1960 and 1970-1977, with growth rates, 1960-1970 and 1970-1977

Country or economic grouping[a]	MVA (1975 dollars)									Trend in growth rate (percentage)	
	1960	1970	1971	1972	1973	1974	1975	1976	1977	1960-1970	1970-1977
Afghanistan	7.5	12.2	11.0	10.4	10.9	11.4	10.7	11.1	11.1	4.00	-0.56
Bangladesh	5.1	5.5	2.8	4.8	5.5	8.7	9.2	9.6	10.1	2.19	16.27
Benin	6.0	12.2	12.2	12.8	12.3	13.5	15.9	14.5	13.7	10.21	2.93
Botswana	26.4	28.5	27.8	31.3	31.9	34.6	41.3	40.4	41.9	3.05	6.75
Burundi	7.1	13.3	13.9	13.8	13.8	15.4	14.4	16.2	16.9	0.21	3.28
Cape Verde	2.4	4.7	4.1	4.5	5.1	4.0	4.0	3.8	5.1	4.74	-0.40
Central African Republic	14.8	28.4	29.2	24.2	20.4	25.0	23.8	17.7	17.4	5.52	-6.64
Chad	10.5	14.2	16.6	14.2	15.0	16.0	18.3	16.8	16.6	4.55	2.37
Comoros	4.9	17.2	18.0	19.0	17.1	18.6	18.4	17.3	17.4	11.14	-0.11
Ethiopia	5.8	10.3	11.1	10.9	11.0	10.7	10.6	10.0	10.1	6.57	-0.93
Gambia	2.8	5.3	4.5	3.2	6.6	4.0	3.6	3.6	3.5	7.92	-4.92
Guinea	15.0	14.2	15.7	16.6	17.3	17.4	15.1	11.5	11.9	0.01	-3.60
Haiti	18.0	17.0	17.4	18.6	19.0	20.6	19.5	24.2	26.3	-1.28	6.04
Laos	13.1	8.4	8.7	8.3	9.1	8.5	9.4	7.3	5.8	-5.34	-3.66
Lesotho	0.0	4.0	2.6	3.8	4.7	5.3	5.6	5.9	5.9	28.03	10.37
Malawi	3.4	12.5	12.0	12.8	15.4	16.1	17.8	16.4	17.1	14.33	5.85
Mali	8.1	12.3	11.9	13.0	13.2	11.2	12.2	12.2	12.5	6.98	-0.09
Niger	8.2	13.4	12.7	13.9	15.8	12.2	13.0	12.8	12.6	7.38	-1.03
Rwanda	2.9	13.1	13.5	15.1	17.5	16.6	17.1	16.9	17.1	13.50	4.00

[4]The discovery may, of course, cause resources to shift out of manufacturing and into oil production, but this would be reflected by a decline in MVA per capita. On the other hand, the additional oil production could be achieved through the use of idle or foreign resources, or resources drawn from sectors other than manufacturing.

Country or economic grouping[a]	MVA (1975 dollars)									Trend in growth rate (percentage)	
	1960	1970	1971	1972	1973	1974	1975	1976	1977	1960-1970	1970-1977
Somalia	4.4	10.5	12.5	13.6	14.7	14.4	14.8	14.7	15.0	11.12	4.35
Sudan	10.5	16.6	15.2	15.0	19.8	17.5	18.2	20.0	17.7	6.73	2.75
Uganda	15.0	24.1	24.5	23.5	21.0	20.1	17.0	16.0	11.9	5.37	-9.13
United Republic of Tanzania	6.2	14.8	15.6	16.8	17.8	18.0	17.4	18.2	18.5	9.62	2.96
Upper Volta	6.0	11.3	10 6	10.7	10.7	10.2	10.8	10.8	8.8	6.88	-1.87
Least developed countries	7.3	11.1	10.2	10.9	11.8	12.6	12.7	12.8	12.6	4.88	3.16
Other developing countries	49.6	78.2	82.7	88.0	94.6	97.7	98.3	103.5	106.4	4.44	4.43
All developing countries	44.5	70.2	74.1	78.9	84.9	87.7	88.3	92.9	95.4	4.46	4.44

Source: UNIDO data base. Information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat.

[a]Data not available for Bhutan, Democratic Yemen, Maldives, Nepal, Samoa and Yemen.

down slightly from 1976 and only about $5 above the 1960 figure. In comparison, MVA per capita in other developing countries rose from $49.6 in 1960 to $106.4 in 1977. Thus, in the least developed countries, MVA per capita was only just over one tenth of that for other developing countries. During the 1960s, the growth rate in MVA per capita in the least developed countries, 4.88 per cent, was somewhat higher than that for other developing countries (4.44 per cent), but whereas growth in the other developing countries continued at the same rate during the period 1970-1977, growth in the least developed countries dropped to 3.16 per cent.[5] During the 1960s, Benin, the Comoros, Lesotho, Malawi, Rwanda and Somalia all had MVA per capita growth rates of over 10 per cent, and only Laos and Haiti showed negative growth rates. In the period 1970-1977, however, only Bangladesh and Lesotho had MVA growth rates in excess of 10 per cent and 12 countries showed negative growth rates. Thus, it seems clear that only the high weight of Bangladesh in the MVA of the least developed countries (see table 6) prevented an even sharper decline, compared with the 1960s, in the average growth rate of MVA per capita in the least developed countries.

Table 3 shows that the share of MVA in GDP (expressed in current prices) rose from an average for the least developed countries of 5.29 per cent in 1960 to 7.41 per cent in 1970 and to a peak of 8.81 per cent in 1975, after which the MVA share declined to 8.47 in 1977. Of the African least developed countries,[6] the MVA share continued to decline in 13 countries in 1978 and in 10 countries in 1979. For other developing countries, the ratio of MVA to GDP also peaked in 1975 (at 19.99 per cent), as compared with a share of 16.92 per cent in 1960 and 18.98 per cent in 1977 (more than twice the average MVA share in the least developed countries).

[5]For 1970-1980, the estimated growth rate was 2.6 per cent for the least developed countries and 3.8 per cent for other developing countries. (See *A Statistical Review* . . ., table II.2.)

[6]Twenty at the time of writing.

Table 3. Share of MVA in GDP for least developed countries (by country), other developing countries and all developing countries, 1960 and 1970-1977 (1970-1979 for African least developed countries)

(Percentage, based on current prices)

Country or economic grouping[a]	Share of MVA in GDP[b]										
	1960	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*
Afghanistan							11.35	10.65	10.88		
Bangladesh	5.76	5.86	4.26	6.59	6.11	6.72	7.63	8.25	7.79		
Benin	2.70	8.19	8.69	8.25	8.27	9.36	9.28	8.10	(6.70)	(6.52)	(6.39)
Botswana	8.68	5.44	4.87	5.29	5.02	7.17	7.57	7.02	7.39 (7.08)	(6.83)	(6.94)
Burundi	3.01	8.61	9.38	10.94	10.44	13.74	15.54	17.46	8.22 (12.34)	(11.77)	(11.51)
Cape Verde	1.43	1.64	1.55	1.91	2.43	2.01	1.88	1.67	17.67 (6.00)	(5.74)	(5.56)
Central African Republic	5.99	11.16	11.40	10.43	9.01	10.23	10.91	8.25	1.83 (12.61)	(13.95)	(13.88)
Chad	3.17	5.49	6.28	6.08	7.79	8.29	10.59	11.18	1.93 (10.84)	(9.92)	(9.50)
Comoros	2.57	6.70	7.27	7.49	6.21	6.73	8.05	8.75	10.83 (8.72)	(8.62)	(8.61)
Ethiopia	6.10	8.92	9.52	9.96	10.02	9.87	11.16	10.54	8.74 (10.88)	(11.10)	(10.81)
Gambia		(2.18)	(1.71)	(1.43)	(2.51)	(1.61)	(1.73)	(2.30)	9.95 (1.80)	(1.10)	(0.98)
Guinea	6.54	1.94	8.94	10.13	10.86	10.30	9.05	6.54	(6.72)	(6.59)	(6.29)
Haiti	10.16	9.93	9.89	10.64	10.71	11.31	10.80	12.19	6.31 12.70		
Lesotho		2.70	2.79	2.09	2.65	4.16	4.47	4.17	(2.77)	(2.73)	(2.95)
									4.11		

Malawi		13.13	11.41	12.63	13.01	12.05	13.23	13.57	(14.87) 15.10	(15.48)	(15.58)
Mali	5.63	10.54	9.92	10.63	13.86	13.77	13.69	13.06	(13.21) 12.65	(14.17)	(14.13)
Nepal		8.90	9.07	9.51	8.53	9.89	9.76	9.76	10.33		
Niger	4.87	6.04	5.82	5.87	8.22	6.93	8.10	6.09	(5.22) 5.22	(5.23)	(5.34)
Rwanda		(3.47)	(3.87)	(4.05)	(4.01)	(3.74)	(4.24)	(4.62)	(4.17)	(4.57)	(4.58)
Somalia	2.35	6.49	7.74	8.85	9.98	9.95	9.56	8.80	(8.25) 8.26	(7.99)	(8.36)
Sudan	3.34	6.09	6.07	6.00	5.82	6.31	6.52	5.93	(6.17) 6.17	(5.80)	(6.20)
Uganda	9.13	9.16	8.28	7.76	6.79	7.94	6.34	6.11	(4.73) 4.98	(4.71)	(4.76)
United Republic of Tanzania	2.96	10.08	10.69	11.40	10.97	10.58	10.45	10.07	(9.27) 9.61	(9.32)	(9.92)
Upper Volta	6.25	10.57	10.20	10.18	10.42	11.13	10.71	10.89	(13.58) 9.54	(13.10)	(13.82)
Least developed countries	5.29	7.41	7.43	8.01	7.60	7.91	8.81	8.70	8.47		
Other developing countries	16.92	19.25	19.38	19.67	19.93	19.61	19.99	19.53	18.98		
All developing countries	16.38	18.69	18.91	19.71	19.38	19.09	19.56	19.13	18.60		

Source: UNIDO data base. Information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat, except as noted in footnote *b*.

[a]Data not available for Bhutan, Democratic Yemen, Laos, Maldives, Samoa and Yemen.

[b]Data for African countries for 1978 and 1979 (and all years for the Gambia and Rwanda) are based on information supplied by ECA, and thus are not comparable with those for other years; to bridge the two sets, for 1977 both UNIDO and ECA figures are shown (ECA data in parentheses).

The growth of real MVA (at 1975 prices) in the least developed countries declined from an average rate of 7.53 per cent in the 1960s to 5.59 per cent during the period 1970-1977 (see table 4). In comparison, the growth rate for other developing countries was slightly lower in the 1960s and considerably higher during the period 1970-1977 than for the least developed countries. Despite the considerably increased MVA growth rate for Bangladesh in the period 1970-1977 (reflecting mainly results in 1972 and 1974), only four other countries increased their MVA growth rates, whereas growth rates were negative for five countries during the period 1970-1977. MVA growth rates of over 10 per cent were achieved by Bangladesh and Lesotho in the same period; during the 1960s, Benin, the Comoros, Lesotho, Malawi, Niger, Rwanda, Somalia and the United Republic of Tanzania all achieved rates in excess of 10 per cent. On an annual basis, MVA growth for the least developed countries during 1970 and 1971 was negative, whereas growth rates in the three following years were over 9 per cent, falling to over 3 per cent in 1975 and 1976 and to 0.88 per cent in 1977. For the African least developed countries, growth rates for 1978 and 1979 were both below the 1970-1977 average for nine countries and were higher for eight countries. Only Mali had a growth rate above 10 per cent in 1978 and only the Upper Volta surpassed that rate in 1979.

The difference between real growth of MVA and GDP is shown in table 5. In both the least developed and other developing countries, MVA grew more rapidly on average than GDP in the 1960s and in the period 1970-1977, although GDP growth exceeded that for MVA in the least developed countries in 1971 and 1975-1977 and in 1977 in the other developing countries. In 1978, GDP growth exceeded MVA growth in 11 of the 20 African least developed countries and in 1979 GDP grew more rapidly than MVA in seven countries. In the 1960s, the excess of MVA growth over GDP growth exceeded 10 per cent in Lesotho, Malawi, Rwanda and Somalia; in the period 1970-1977, only Bangladesh recorded a difference in excess of 10 per cent.

The shares of the least developed countries in the total MVA of the developing countries, i.e. their weights in total MVA (and MVA growth averages) are shown in table 6. In 1977, the least developed countries accounted for only 1.64 per cent of the total MVA of developing countries, compared with 1.56 per cent in 1960 and 1.87 per cent in 1970.[7] Six countries—Afghanistan, Bangladesh, Ethiopia, the Sudan, Uganda and the United Republic of Tanzania—accounted for 65 per cent of MVA in the least developed countries in 1977. As the table shows, the considerable changes in the share of Bangladesh, still the largest producer of manufactures among the least developed countries as of 1977 but showing a general decline in relative importance, greatly influenced the yearly changes in average MVA growth in the least developed countries.

The process of industrial development depends largely on the size and technological mix of resources made available, as well as the efficiency with which such resources are used. It is sometimes argued that relatively underdeveloped countries should use more labour-intensive technologies than the more developed countries, but this assertion must be qualified where

[7] The figure would be even lower if China (and some other countries not included in the developing country totals because of lack of data) had been included among the other developing countries. The preliminary figure for 1980 is about the same as for 1977. (See *A Statistical Review . . .*, figure III.)

Table 4. MVA growth rates for least developed countries (by country), other developing countries and all developing countries, 1960-1970 and 1970-1977 (1970-1979 for African least developed countries)

(Percentage, based on prices in 1975 dollars)

Country or economic grouping[a]	Trend		Annual change									
	1960-1970	1970-1977	1970	1971	1972	1973	1974	1975	1976	1977	1978[b]	1979[b]
Afghanistan	6.22	2.03	25.30	−7.54	−3.11	8.11	6.68	−3.45	6.46	2.75		
Bangladesh	5.09	18.41	−17.49	−47.07	72.29	15.37	59.31	8.52	6.87	7.37		
Benin	12.89	5.77	−10.98	2.69	7.99	−1.62	13.52	20.52	−5.96	−3.42	3.65	2.20
Botswana	5.12	9.31	−7.62	−0.46	15.11	4.20	11.03	22.41	0.34	6.71	1.94	2.86
Burundi	1.59	5.85	141.69	6.62	1.27	2.95	13.98	−3.76	15.65	7.02	3.24	2.24
Cape Verde	7.79	1.48	25.98	−10.91	12.69	14.27	−18.67	1.45	−3.87	36.31	0.00	7.14
Central African Republic	7.61	−4.64	18.90	5.08	−15.56	−13.73	24.82	−2.45	−24.17	0.70	3.99	0.70
Chad	6.68	4.46	−19.71	19.49	−12.58	7.35	9.14	16.23	−6.29	1.37	−6.88	−7.88
Comoros	13.50	2.44	63.37	7.31	7.78	−7.44	11.38	1.99	−3.63	3.15	0.00	4.55
Ethiopia	8.90	1.45	7.95	9.82	0.26	3.58	−0.66	2.26	−3.53	2.79	4.79	3.05
Gambia	9.75	−3.07	−13.14	−13.74	−26.51	107.91	−38.14	−8.40	2.67	−2.55	−20.00	0.00
Guinea	2.11	−1.25	−7.93	13.07	8.57	6.87	2.61	−11.11	−21.82	6.03	2.90	1.61
Haiti	0.25	7.64	2.57	3.94	8.16	3.73	10.09	−3.89	26.02	10.58		
Laos	−3.06	−1.48	10.41	8.79	−2.05	12.88	−4.94	11.82	−20.24	−18.49		
Lesotho	30.30	12.59	16.62	−33.37	47.63	26.84	16.34	7.70	7.34	2.59	4.17	4.00
Malawi	16.96	8.45	20.18	−1.34	9.02	23.53	6.62	13.46	−5.31	6.41	5.86	6.55
Mali	9.25	2.39	3.66	−0.85	11.94	4.14	−13.13	11.58	2.68	5.43	12.58	3.63
Niger	10.91	1.67	3.45	−2.03	12.08	16.42	−20.19	8.87	1.44	0.68	9.16	8.03
Rwanda	16.93	6.84	18.66	5.50	14.94	18.70	−2.16	5.87	1.19	4.31	8.89	8.16
Somalia	13.65	7.12	23.17	22.06	11.82	10.74	0.55	5.95	2.05	4.60	0.00	1.71
Sudan	9.84	5.95	−14.33	−5.29	1.64	35.76	−8.56	7.03	13.45	−8.82	5.83	4.93
Uganda	8.15	−6.40	3.60	4.67	−1.24	−7.97	−1.08	−13.30	−2.65	−23.17	0.51	1.02
United Republic of Tanzania	12.68	6.14	1.02	8.17	10.99	9.09	4.61	−0.63	8.27	4.74	4.43	5.88
Upper Volta	9.07	0.40	12.19	−3.81	2.78	2.34	−1.84	8.45	2.24	−16.43	4.75	10.74
Least developed countries	7.53	5.59	−0.10	−5.56	9.51	9.94	9.66	3.28	3.75	0.88		
Other developing countries	7.16	7.22	8.57	8.58	9.19	10.39	5.99	3.34	8.16	5.57		
All developing countries	7.17	7.19	8.40	8.32	9.19	10.38	6.05	3.34	8.08	5.50		

Source: UNIDO data base. Information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat, except as noted in footnote *b* for 1978 and 1979.

[a] Excluding Bhutan, Democratic Yemen, Maldives, Nepal, Samoa and Yemen.

[b] Data for 1978 and 1979 based on 1970 dollars (factor cost) supplied by ECA and thus not strictly comparable with other years.

Table 5. Excess of MVA growth rate over GDP growth rate for least developed countries (by country), other developing countries and all developing countries, 1960-1970 and 1970-1977, plus 1978-1979 for African least developed countries

(Percentage, based on prices in 1975 dollars)

Country or economic grouping[a]	Trend		Annual change									
	1960-1970	1970-1977	1970	1971	1972	1973	1974	1975	1976	1977	1978[b]	1979[b]
Afghanistan	4.22	−2.30	23.20	−2.54	−1.23	−3.31	−0.82	−6.33	0.18	−0.39		
Bangladesh	2.39	12.97	−9.15	−31.06	61.25	6.48	58.49	−5.55	2.50	−0.31		
Benin	9.60	3.70	−12.50	−4.30	−1.84	−2.38	3.24	29.67	−4.89	−3.49	−1.71	−1.98
Botswana	−1.76	2.66	−36.93	−25.97	6.78	−2.97	8.85	14.18	−0.56	4.13	−3.12	−5.12
Burundi	4.13	3.33	132.76	0.30	7.89	1.38	6.09	−2.23	8.11	1.22	−5.28	0.34
Cape Verde	−0.99	3.07	13.86	1.48	25.08	15.58	−4.17	−4.89	−10.97	0.98	−2.54	2.59
Central African Republic	5.63	−3.37	14.79	2.95	−8.01	−8.34	10.78	5.77	−20.22	−2.52	3.45	1.04
Chad	7.25	0.71	−10.02	17.63	−5.28	12.51	−5.10	−1.66	−5.11	−1.81	−3.98	−4.26
Comoros	7.27	2.91	60.83	−2.74	6.51	−7.83	−1.70	13.86	7.74	1.61	−1.82	3.12
Ethiopia	4.42	−0.51	5.18	4.72	−0.62	2.19	−2.49	−1.25	−3.62	0.69	1.99	−0.44
Gambia	4.16	−8.29	−26.03	−17.48	−14.59	67.23	−39.64	−7.63	−3.56	3.36	−55.06	−2.96
Guinea	2.13	−4.01	2.02	7.16	8.67	1.16	−4.25	−5.49	−25.96	0.40	−0.63	−1.69
Haiti	−0.75	3.62	0.90	−0.46	7.67	0.94	5.79	−4.87	14.80	4.04		
Laos	0.62	3.80	8.99	−0.58	−0.66	10.39	7.02	11.82	−4.18	−3.74		
Lesotho	24.35	7.28	15.45	−41.36	51.30	17.67	6.26	5.57	0.35	−1.46	0.27	3.65
Malawi	11.18	1.83	19.64	−16.53	4.46	14.81	−0.71	8.08	−8.65	2.22	0.47	0.34
Mali	9.59	−0.48	−4.88	−5.03	8.84	11.25	−13.74	−1.26	−2.33	0.56	6.61	0.00
Niger	4.50	−1.42	−9.44	−3.54	9.54	31.06	−34.29	9.11	−15.71	−7.54	0.91	3.37
Rwanda	12.10	2.97	8.14	0.30	13.57	17.30	−2.87	−3.67	−5.12	0.63	6.24	4.07
Somalia	13.13	2.91	16.24	14.20	5.00	5.92	−1.42	2.34	−0.80	0.85	−2.70	−0.44
Sudan	8.62	2.18	−14.68	−14.34	7.09	12.72	−6.89	8.59	2.90	−0.13	1.83	1.93
Uganda	2.40	−6.81	3.46	0.39	−1.49	−7.99	−1.86	−12.07	−2.45	−24.67	−0.29	2.52
United Republic of Tanzania	5.61	0.54	0.68	5.49	2.56	1.93	0.43	−4.78	1.20	0.27	−1.12	2.99
Upper Volta	4.61	−0.51	16.32	−4.52	−2.45	7.03	−5.08	4.90	−2.37	−6.14	1.60	5.85
Least developed countries	4.65	1.94	1.31	−4.71	6.96	2.92	7.33	−1.26	−1.08	−1.38		
Other developing countries	1.31	1.59	1.10	2.48	2.94	2.96	0.70	0.19	1.99	−0.04		
All developing countries	1.46	1.63	1.31	2.49	3.09	2.97	0.87	0.14	1.97	0.00		

Source: UNIDO data base. Information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat, except as noted in footnote *b* for 1978 and 1979.

[a] Excluding Bhutan, Democratic Yemen, Maldives, Nepal, Samoa and Yemen.

[b] Data for 1978 and 1979 based on 1970 dollars (factor cost) supplied by ECA and thus not strictly comparable with other years.

Table 6. Shares in total MVA of developing countries for least developed countries (by country), other developing countries and all developing countries, 1960 and 1970-1977

(Percentage, based on current prices)

Country or economic grouping[a]	*1960*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*
Afghanistan							0.12	0.16	0.16
Bangladesh	0.66	0.54	0.20	0.44	0.49	0.69	0.40	0.31	0.29
Benin	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
Botswana	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.02
Burundi	0.02	0.03	0.03	0.03	0.02	0.03	0.03	0.04	0.04
Cape Verde	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central African Republic	0.02	0.03	0.03	0.03	0.02	0.02	0.03	0.02	0.02
Chad	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
Comoros	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethiopia	0.19	0.23	0.24	0.24	0.21	0.18	0.18	0.17	0.17
Guinea	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
Haiti	0.09	0.06	0.06	0.06	0.05	0.05	0.05	0.07	0.08
Lesotho	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Malawi		0.06	0.06	0.07	0.06	0.05	0.05	0.05	0.06
Mali	0.02	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04
Nepal		0.11	0.10	0.11	0.07	0.08	0.08	0.07	0.07
Niger	0.04	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.03
Rwanda	0.00	0.01	0.01	0.01	0.01	0.01	0.04	0.05	0.05
Somalia	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Sudan	0.15	0.19	0.20	0.19	0.22	0.18	0.20	0.20	0.19
Uganda	0.17	0.17	0.16	0.14	0.11	0.12	0.11	0.11	0.10
United Republic of Tanzania	0.05	0.19	0.19	0.21	0.18	0.16	0.16	0.15	0.16
Upper Volta	0.04	0.05	0.04	0.04	0.04	0.03	0.04	0.04	0.03
Least developed countries	1.56	1.87	1.53	1.79	1.74	1.82	1.74	1.64	1.64
Other developing countries	98.44	98.13	98.47	98.21	98.26	98.18	98.26	98.36	98.36
All developing countries	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: UNIDO data base. Information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat.

[a]Excluding Bhutan, Democratic Yemen, the Gambia, Laos, Maldives, Samoa and Yemen.

human skills, not widely available in the least developed countries, are required. In general, the arguments are not based on empirical analysis because of the lack of reliable and detailed data on the use of labour and capital in the least developed countries.

An attempt is made in table 7 to provide some indications for 1970 and 1975 of the relation between output and labour and capital inputs in the manufacturing sector of selected least developed countries, comparing them with data for a group of more advanced developing countries. The table is

Table 7. Key structural indicators for the manufacturing sector for selected least developed countries, and comparison with a group of higher income developing countries (unweighted average), 1970 and 1975[a]

Country or economic grouping	MVA per employee (1975 dollars)		Ratio of gross fixed capital formation to MVA, current prices (percentage)		Ratio of gross fixed capital formation to wages and salaries, current prices (percentage)		Average number of employees per establishment		Share of manufacturing employment in total labour force (percentage)		Share of manufacturing gross fixed capital formation in total current prices (percentage)	
	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975	1970	1975
Afghanistan		6 168						215		0.51		
Bangladesh	1 814	2 017					130	137	0.88	1.33		
Burundi	37 369						50		0.07			
Cape Verde		3 836						19		0.41		
Central African Republic		6 106		9.24		29.55		185		0.68		2.29
Ethiopia	5 201	4 952	13.99	6.22	58.25	28.35	103	138	0.45	0.50	7.11	4.63
Haiti	7 693	5 061					12	19	0.44	0.76		
Lesotho		3 274		0.02		0.05		52		0.32		
Malawi	3 084	3 123	27.30	39.56	74.21	97.67	139	244	0.91	1.30	7.85	9.16
Niger	16 248						61		0.25			
Rwanda	9 320						89		0.25			
Somalia	5 519	4 958	5.00	52.98	17.51	134.91	29	33	0.49	0.76	2.06	8.51
United Republic of Tanzania	4 075		19.35		48.77		107		0.86		5.30	
Upper Volta	45 918	18 049					132	362	0.04	0.11		
Other developing countries[b]	7 910	8 978	14.86	17.89	57.71	69.11	54	82	3.44	3.94	9.15	9.53

Source: UNIDO data base. Information supplied by the United Nations Office of Development Research and Policy Analysis and the Department of International Economic and Social Affairs and the Statistical Office of the United Nations Secretariat, with estimates by the UNIDO secretariat.

[a]Because of various problems discussed in the text, the data presented here are purely illustrative. In the first column, MVA is taken from national accounts sources, while for other columns, values are based on data from the *Yearbook of Industrial Statistics*.

[b]Barbados, Bolivia, Chile, Colombia, Dominican Republic, Ecuador, Fiji, Indonesia, Libyan Arab Jamahiriya, Mexico, Panama, Philippines, Republic of Korea, Singapore, Tunisia and Turkey.

intended merely as an illustration, since the data are incomplete and probably not entirely accurate; they are also likely to vary widely from year to year because in many cases, the addition of a single large establishment can greatly affect the data base. One measure of labour productivity is the ratio of MVA to employment in manufacturing. MVA per employee varied widely among the least developed countries for which data are available. In Bangladesh, MVA per employee was only $1,814 in 1970 and $2,017 in 1975, whereas in the Upper Volta the comparable figures were $45,918 and $18,049 (1975 prices). With a few such exceptions, MVA per employee in the least developed countries was well below the average for a group of other developing countries ($7,909 in 1970 and $8,978 in 1975). In the least developed countries, no clear trend towards higher MVA per worker in 1975 compared with 1970 emerges from the data available.

The ratio of manufacturing gross fixed capital formation to MVA was lower than in the group of other developing countries in two out of four least developed countries in 1970 and in three out of five least developed countries in 1975, in other words, investment per unit of output was less in these years than the average for developing countries. Comparisons for two years are not very meaningful, however, since annual fluctuations in gross fixed capital formation tend to be very wide.[8] Data on the ratio of gross fixed capital formation to wages and salaries is similarly poor, but the ratio increased for two of the three least developed countries for which data are available for both years, and the ratio also increased for the group of other developing countries, indicating a tendency towards increasingly capital-intensive technologies (or an increase in the price of capital goods in relation to the price of labour).

The number of employees per establishment provides an indicator of the general economic size of producers. In theory, it might seem that relatively small firms would be expected in the least developed countries, but the data available contradict this. In 1970, seven out of 10 and in 1975 six out of 10 least developed countries had more employees per establishment than the group of other developing countries. There may be several explanations for this: *(a)* the very small establishments are not being picked up as completely in the data collection process in the least developed countries; *(b)* manufacturing in the least developed countries may be limited to a small number of large-scale establishments set up by the public sector or foreign investors; *(c)* manufacturing in the least developed countries may be more inefficient and employ more non-productive labour. In all cases, the number of employees per establishment rose from 1970 to 1975, probably indicating a general trend towards larger-scale production, but possibly reflecting the factors just mentioned.

Employment in manufacturing accounts for a small but increasing proportion of the labour force in the least developed countries. In 1970, manufacturing employment was less than 1 per cent of the total labour force in all least developed countries for which data are available, compared with an average of 3.44 per cent for the group of other developing countries. In 1975, the share of manufacturing rose in each case, and exceeded 1 per cent in Bangladesh and Malawi.

[8] Incremental capital output ratios (ICORs) were also calculated, but wide fluctuations in the basic data (including negative MVA growth rates) negated the significance of the ratios.

In comparison, the share of manufacturing gross fixed capital formation in total gross capital formation in all sectors was much higher than the proportion of the labour force accounted for by manufacturing in the least developed countries for which data are available and in other developing countries, indicating the relative capital intensity of manufacturing activities. In 1975, the share ranged from 2.29 to 9.16 per cent for four least developed countries, compared with an average of 9.53 per cent for the group of other developing countries.

The obvious potential importance for planning and policy-making of data such as those shown in table 7, and their actual poor quality and incompleteness, which greatly reduce its operational usefulness, suggest the need to give immediate priority to strengthening the gathering and analysis of statistics in the least developed countries.

Table 8 shows, by branch, the 1970 and 1975 structure of MVA, gross fixed capital formation in manufacturing and manufacturing employment in 19 least developed countries for all branches accounting for 5 per cent or more of MVA in 1975 and, for comparison, the structure of MVA in the developing

Table 8. Branch shares[a] in MVA, gross fixed capital formation in manufacturing and manufacturing employment, 1970 and 1975

(Percentage)

A. Branches accounting for 5 per cent or more of country MVA in 1975, selected least developed countries

Country	ISIC code No.	Share in MVA		Share in gross fixed capital formation in manufacturing		Share in manufacturing employment		Combination of ISIC branches[b]
		1970	1975	1970	1975	1970	1975	
Bangladesh	311	14.44	13.01			12.79	10.50	
	314	12.47	14.10			2.03	1.64	
	321	45.23	44.41			63.49	61.35	
	352	7.27	10.90			6.54	7.89	
	371	2.16	5.02			1.01	2.51	
Benin	311	48.33	48.95					
	313	12.92	13.33					
	321	10.05	19.05					
Botswana	311	65.50	56.97					
	313	13.67	11.89					
	381		11.07					
	390	20.83	6.15					
Central	311B	27.74	43.75		48.12		15.75	311B: 311, 313, 314
African	321B	36.29	32.41		43.68		73.93	321B: 321, 322, 323
Republic	331	22.38	9.32		0.00		0.00	
Chad	311	22.36	31.53					
	313	72.67	12.24					
	321C		36.49					321C: 321, 322, 323, 324
	369		4.85					
	381D		6.50					381D: 381, 382, 383, 384, 385

Country	ISIC code No.	Share in MVA		Share in gross fixed capital formation in manufacturing		Share in manufacturing employment		Combination of ISIC branches[b]
		1970	1975	1970	1975	1970	1975	
Democratic Yemen	314	0.00	10.09			0.00	1.82	
	322	0.39	5.94			2.91	4.64	
	332	0.15	8.31			1.09	0.50	
	341A	0.39	5.93			50.84	28.64	341A: 341, 342
	353	74.19	38.59					
Ethiopia	311	21.02	14.39	18.31	19.38	16.90	22.40	
	313	5.53	7.09	15.84	6.52	6.15	5.12	
	321A	31.69	34.34	31.38	29.97	43.82	39.60	321A: 321, 322
	331A	6.56	6.28	2.75	1.19	6.76	7.43	331A: 331, 322
	351E	3.60	5.89	8.35	12.30	5.03	6.41	351E: 351, 352, 353, 354, 355, 356
	362A	3.82	6.83	12.55	5.93	8.39	6.59	362A: 362, 369
	371AA	6.34	5.63	7.03	1.68	3.56	2.93	371AA: 371, 372, 381
	390	8.01	9.81	0.00	0.00	0.00	0.00	
Haiti	311	28.52	32.11			36.27	28.61	
	321	12.39	5.69			17.04	9.24	
	322F	14.23	6.45			6.18	12.77	322F: 322, 324
	342	6.95	8.34			0.42	0.37	
	369	4.57	8.60			4.11	2.90	
	381	9.57	12.26			1.97	2.12	
	3900S	9.68	11.69			6.62	18.20	3900S: 390, 382, 383
Lesotho	311	15.00	12.51		9.04		14.42	
	321	20.00	17.87				34.80	
	322B	10.00	7.15		21.45			322B: 322, 323, 324
	332	15.00	12.51		12.06		22.46	
	342	25.00	19.66		53.72		8.85	
	361	5.00	7.95		1.60		2.43	
	369		14.30		0.00		10.07	
	390	10.00	7.15				4.60	
Malawi	311	27.17	31.54	22.00	38.92	32.60	30.65	
	313	19.02	9.03	5.68	21.19	3.28	4.32	
	314	6.17	8.91	5.20	3.38	22.95	19.20	
	321	5.68	6.19	31.93	17.36	11.65	11.35	
	322B	9.38	6.19	2.00	2.99	8.57	8.42	322B: 322, 323, 324
	351A	4.94	9.03	9.09	4.03	4.14	3.64	351A: 351, 352
	369	3.95	5.57	10.31	2.63	1.29	6.18	
	381C	7.66	9.15	5.34	2.92	4.42	6.22	381C: 381, 382, 383, 384
Mali	311B	100.00	22.13					311B: 311, 313, 314
	322B		56.54					322B: 322, 323, 324
	351A		7.04					351A: 351, 352
	381		5.84					
	390		8.45					
Nepal	311	54.46	54.16					
	314	11.88	11.62					
	321	11.88	11.93					
	361B	5.45	5.57					361B: 361, 362, 369
Niger	311	100.00	58.12			10.93		
	321		6.32			44.85		
	322		6.32					
	381		8.48			9.21		

Table 8 *(continued)*

Country	ISIC code No.	Share in MVA		Share in gross fixed capital formation in manufacturing		Share in manufacturing employment		Combination of ISIC branches[b]
		1970	1975	1970	1975	1970	1975	
Rwanda	311B	79.00	60.26			52.55		311B: 311, 313, 314
	321	5.02	9.93			0.00		
	361B	4.11	7.95			0.00		361B: 361, 362, 369
	381C	3.65	6.62			15.41		381C: 381, 382, 383, 384
	3900W	5.94	10.59			7.53		3900W: 390, 322, 324, 342
Somalia	311	89.93	42.16	44.13	27.82	57.54	44.35	
	313A	2.16	5.90	14.57	1.69	3.59	8.53	313A: 313, 314
	321	1.44	9.44	14.43	63.70	15.11	10.85	
	342	3.60	19.39	2.46	4.14	4.74	7.13	
	356		6.07		0.00		2.63	
Sudan	311	30.46	27.66					
	313	8.03	11.96					
	321	23.65	28.58					
	353	6.71	6.95					
Uganda	311	19.87	9.74					
	313	6.29	5.72					
	321	20.68	8.98					
	322	1.41	52.68					
United Republic of Tanzania	311	20.94	19.67	18.96		31.32		
	313	9.44	5.08	7.09		1.41		
	314	8.74	7.12	5.05		5.11		
	321	22.19	16.87	26.71		32.00		
	342	3.62	5.08	1.58		2.58		
	351	0.66	6.54	1.26		0.90		
Upper Volta	311	100.00	71.48					
	322B		12.74			10.37	5.00	322B: 322, 323, 324
	351C		6.27					351C: 351, 352, 353, 354

B. Share in MVA of all branches listed, all developing countries

ISIC code No.		Share in MVA	
		1970	1975
300	(manufacturing)	100.00	100.00
311	(food products)	14.90	13.87
313	(beverages)	4.44	3.29
314	(tobacco)	3.98	2.96
321	(textiles)	12.10	10.13
322	(wearing apparel, except footwear)	3.13	3.31
323	(leather products, except footwear and wearing apparel)	0.77	0.63
324	(footwear, except rubber or plastic)	1.49	0.99
331	(wood products, except furniture)	2.21	2.12
332	(furniture, except metal furniture)	1.16	1.11
341	(paper and products)	2.09	2.11
342	(printing and publishing)	2.67	2.28
351	(industrial chemicals)	3.71	4.25

ISIC code No.		Share in MVA	
		1970	*1975*
352	(other chemicals)	5.30	5.56
353	(petroleum refineries)	6.59	8.58
354	(miscellaneous petroleum and coal products)	0.60	0.69
355	(rubber products)	1.96	1.73
356	(plastic products)	1.39	1.43
361	(pottery, china, earthenware)	0.72	0.71
362	(glass and products)	0.91	0.95
369	(other non-metallic mineral products)	3.63	3.58
371	(iron and steel)	4.32	4.62
372	(non-ferrous metals)	2.37	1.84
381	(fabricated metal products, except machinery and equipment)	4.61	4.62
382	(machinery, except electrical)	3.56	4.90
383	(machinery, electric)	3.89	4.91
384	(transport equipment)	5.36	6.87
385	(professional and scientific equipment n.e.c.)	0.62	0.50
390	(other manufactured products)	1.51	1.46

Source: UNIDO data base. Information supplied by the Statistical Office of the United Nations Secretariat, with estimates by the UNIDO secretariat.

[a]Values in current prices.

[b]As applicable. For short descriptions of ISIC codes, see part B.

countries as a whole. By far the largest components of MVA in the least developed countries are food-processing and textiles, although the share of these branches dropped, in current prices, in most of the least developed countries from 1970 to 1975 (and, on average, in the developing countries as a whole), as diversification increased. Still, food, beverages and tobacco, and textiles and textile products accounted, with one or two exceptions, for at least half of the MVA in 1975 in all least developed countries; the much lower share of these branches in the MVA of the developing countries as a whole is shown in part B of the table. Thus, the least developed countries continue mainly to produce the basic necessities for small local markets on the basis of local supplies and relatively simple technologies.

The data indicate that employment in manufacturing is even more closely based on these major branches, whereas gross fixed capital formation is much more diversified, reflecting the desire of most Governments of least developed countries to reduce their reliance on imported industrial products.

The least developed countries import far more manufactured products than they export, and the imbalance is much greater than in other developing countries. Table 9 shows that the ratio of exports to trade, i.e. the share of exports in the sum of exports plus imports, was only 4.6 per cent for trade in manufactures of the least developed countries for which data are available, down from 8.1 per cent in 1970.[9] This average reflects wide differences among the least developed countries, ranging in 1975 from less than 1 per cent (an almost total import orientation) for the Sudan and the Gambia to 28.4 per cent for Haiti. As expected, the other developing countries had a much higher ratio

[9]In tables 9 and 10, trade in manufactures is defined as Standard International Trade Classification (SITC) 5-8.

Table 9. Ratio of manufactured exports to trade, 1970 and 1975, contribution of manufactured imports and exports to growth of total imports and exports, 1970-1975, and shares in manufactured imports and exports in totals for developing countries, 1970 and 1975, by country and economic grouping

(Percentage, based on current dollar prices)

Country or economic grouping[a]	Ratio of manufactured exports to trade (SITC 5-8)[b]		Contribution of manufacturing trade to growth of total trade 1970-1975		Manufacturing trade shares in total for developing countries			
					Imports		Exports	
	1970	1975	Imports	Exports	1970	1975	1970	1975
Afghanistan	13.4	11.6	43.5	8.8	0.22	0.19	0.11	0.09
Central African Republic	34.9	16.8	82.6	−14.5	0.09	0.06	0.16	0.05
Ethiopia	1.3	1.8	63.0	12.3	0.51	0.25	0.02	0.02
Gambia	—	0.1	—	—	—	0.03	—	0.00
Haiti	—	28.4	—	—	—	0.09	—	0.13
Malawi	8.5	3.3	75.0	−0.3	0.23	0.18	0.02	0.02
Mali	12.1	3.7	60.2	78.5	0.09	0.13	0.04	0.02
Niger	2.0	12.4	25.8	11.4	0.16	0.06	0.01	0.03
Samoa	0.7	1.7	51.7	11.8	0.03	0.02	0.00	0.00
Somalia	6.0	2.6	67.6	1.8	0.09	0.11	0.02	0.01
Sudan	0.5	0.5	80.7	2.2	0.76	0.84	0.00	0.00
Uganda	16.2	7.6	138.2	−69.5	0.38	0.13	0.25	0.04
United Republic of Tanzania	11.7	7.7	58.8	10.4	0.82	0.56	0.35	0.17
Upper Volta	2.6	2.6	68.4	7.6	0.11	0.12	0.01	0.01
Least developed countries	8.1	4.6	66.2	3.5	3.49	2.65	0.97	0.46
Other developing countries	24.7	22.0	64.1	18.1	96.51	97.35	99.03	99.54
Total developing countries	24.2	21.6	64.1	18.0	100.00	100.00	100.00	100.00

Source: UNIDO data base. Information supplied by the Statistical Office of the United Nations Secretariat.

[a] Excluding 16 least developed countries.

[b] Share of exports in sum of exports plus imports. Thus 100 indicates a complete export orientation, 50 indicates a balance between exports and imports and 0 indicates a complete import orientation.

of exports to trade than the least developed countries, 22.0 per cent in 1975 and 24.7 per cent in 1970. In both the least developed and other developing countries, manufactured imports accounted for about two thirds of their total growth in imports during the period 1970-1975. Manufactured exports, however, accounted for only 3.5 per cent of the total increase in exports in the least developed countries, compared with a contribution of 18.1 per cent in the other developing countries. The share of the least developed countries for which data are available in manufactured imports and exports of the developing countries fell from 1970 to 1975, with a relatively sharper decrease in the export share (from 0.97 to 0.46 per cent) than in the import share (from 3.49 to 2.65 per cent).

For the same group of least developed countries, manufactured imports accounted for about 73 per cent of total imports in 1970 and 69 per cent in 1975, slightly more in both years than other developing countries, and imports

of manufactures grew at a rate of 19.4 per cent in current prices, at a somewhat lower rate than that for other developing countries (see table 10). Manufactured exports, however, accounted for only about 7 per cent of total exports of these countries in 1970 an 6 per cent in 1975; growth in exports of manufactures over the period averaged only 5.6 per cent. In the other developing countries, the share of manufactures in their total exports was much higher, about 24 per cent in 1970 and 20 per cent in 1975, and manufactured exports grew at a rate of 22.5 per cent.

These data clearly show the central problem that the least developed countries face regarding trade in manufactures: even more so than in other developing countries, large amounts of scarce foreign exchange are being used to import manufactured products but hardly any foreign exchange is being earned through export of manufactures.

Expressing the problem in another way, the least developed countries are largely importing final industrial products, whereas they are exporting non-processed industrial inputs. It may be argued that they should aim at increased local processing of their exports and decreased foreign processing of their imports.

Table 10. Share of manufactured imports and exports in total imports and exports, 1970 and 1975, and growth rates in manufactured imports and exports, 1970-1975, for least developed, other developing and total developing countries, by country and economic grouping

(Percentage, based on current dollar prices)

Country or economic grouping[a]	*Imports*		*Growth rate 1970-1975*[b]	*Exports*		*Growth rate 1970-1975*[b]
	1970	*1975*		*1970*	*1975*	
Afghanistan	54.4	46.9	22.4	10.9	9.6	18.3
Central African Republic	80.1	81.4	17.0	44.3	23.7	−3.7
Ethiopia	80.2	73.1	9.1	1.4	1.8	16.0
Gambia	—	61.9	—	—	0.1	—
Haiti	—	54.5	—	—	37.9	—
Malawi	72.0	73.8	20.9	3.2	3.5	28.9
Mali	55.7	59.2	35.2	9.6	11.7	4.5
Niger	74.3	54.4	4.4	2.7	8.4	54.7
Samoa	58.2	54.1	20.2	1.3	4.8	41.7
Somalia	53.8	63.6	32.3	4.9	2.9	11.0
Sudan	67.1	76.3	28.5	0.1	0.1	22.7
Uganda	86.8	89.7	1.9	8.8	3.6	−15.0
United Republic of Tanzania	82.7	67.8	16.7	12.8	12.1	6.6
Upper Volta	64.9	67.3	27.4	4.5	6.5	28.1
Least developed countries	72.7	68.7	19.4	7.2	5.7	5.6
Other developing countries	70.5	65.9	26.3	23.9	19.9	22.5
Total developing countries	70.6	66.0	26.1	23.4	19.6	22.4

Source: UNIDO data base. Information supplied by the Statistical Office of the United Nations Secretariat.

[a] Excluding 16 least developed countries.

[b] Component growth rate.

Table 11 presents the data on trade according to whether or not the goods are processed and whether or not they are for final use. The categories used are: A—non-processed goods to be processed; B—processed goods to be further processed; C—non-processed goods for final use; D—processed goods for final use. Clearly it would be advantageous, in terms of additional industrial activity, to import type A goods and export type D goods (or, at least, to import and export type B goods).[10] The data indicate just the opposite, however, for the least developed countries. In 1975, about 76 per cent of the imports of least developed countries for which data are available were in category D and only 8 per cent in category A; on the export side, category D accounted for only about 6 per cent and category A accounted for 72 per cent of the total. Haiti and the United Republic of Tanzania show the most advanced trade structure in terms of industrial processing. These two countries had type A shares in imports of about 16 and 20 per cent respectively and type D shares in exports of about 34 and 11 per cent, well above average for the least developed countries. In comparison, for the developing countries as a whole, type A imports in 1975 accounted for about 19 per cent of the total (64 per cent for type D) and type D exports accounted for 27 per cent of the total (56 per cent for type A).

This gloomy picture is modified somewhat by examining the growth rates for the period 1970-1975. Imports of non-processed goods to be processed (type A) increased at a rate, in current prices, of 32.4 per cent, much higher than the rate of increase in other import categories. Mali, Somalia and the United Republic of Tanzania recorded growth rates well above the average, which was slightly below the average growth rate for all developing countries. On the export side, processed goods for final use (type D exports) increased at a rate of 16.5 per cent, higher than in all other categories, with the Niger and the Sudan recording rates well above this average. Thus it appears that the existing structure of trade in manufactures is becoming somewhat less unfavourable to the least developed countries.

Prospects and industrial priorities for the 1980s: an analysis of resources, constraints and markets

In the previous section it was shown that the least developed countries fell behind other developing countries in their industrial and economic growth during the 1960s and 1970s and that even in absolute terms, many of the least developed countries made little or at any rate inconsistent progress during this period. Furthermore, the evidence suggests that this trend will continue throughout the 1980s.

The basic problem, of course, is that the least developed countries have few natural, human, technological or financial resources available to them. Also, they lack the domestic markets upon which to base their industrial development and in most cases they experience unusual difficulties in reaching the major world markets. Thus, the constraints on industrial development are

[10]Type B goods, processed in both exporting and importing countries, combine elements of types A and D, whereas type C goods, involving no industrial processing, are not considered further here.

Table 11. Imports and exports classified according to whether or not processed and whether or not for final use, for least developed countries (by country and total) and developing countries (total), 1975, and growth rates for imports and exports so classified, 1970-1975 (current prices)

(Percentage)

Country or economic grouping	Imports								Exports							
	Class share in total, 1975				Class growth rate, 1970-1975[a]				Class share in total, 1975				Class growth rate, 1970-1975[a]			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Afghanistan	2.1	17.3	9.4	71.2	34.5	26.6	28.8	29.5	38.1	13.3	38.9	9.7	28.3	20.3	22.4	18.7
Central African Republic	3.2	14.9	0.9	81.0	8.9	17.4	4.0	17.1	86.0	12.9	0.0	1.0	7.6	39.1	−20.7	−17.6
Ethiopia	5.1	12.8	1.0	81.2	14.3	10.8	5.8	8.5	70.6	4.0	17.6	7.9	9.1	25.2	29.0	25.8
Gambia	4.0	20.0	1.9	74.1	...	...	...	...	57.2	40.6	2.0	0.2	...	...	...	...
Haiti	16.3	13.6	1.4	68.7	...	...	...	...	41.2	22.5	1.9	34.4	...	...	...	...
Malawi	5.1	12.1	1.0	81.8	1.1	18.5	16.3	22.8	60.6	14.3	21.5	3.6	25.3	80.7	17.5	19.8
Mali	7.8	12.3	0.8	79.1	42.3	34.7	0.6	33.4	71.1	6.3	14.0	8.6	1.2	−8.1	2.1	2.1
Niger	18.0	10.0	0.8	71.3	41.6	−8.2	−2.5	12.4	79.9	8.5	4.5	7.0	24.3	21.3	6.7	42.5
Samoa	0.3	3.5	18.0	78.3	1.2	−7.4	64.9	21.3	93.1	0.0	3.1	3.8	13.4	−62.9	−22.3	−10.2
Somalia	13.0	14.3	1.3	71.4	46.9	17.3	12.1	31.1	75.1	0.0	15.1	9.8	31.9	−10.1	2.9	22.8
Sudan	3.5	16.1	1.6	78.8	8.4	27.1	−2.9	27.4	89.4	5.9	0.7	4.0	7.0	7.9	−0.3	−70.2
Uganda	2.3	12.6	0.1	84.9	−6.4	3.2	−21.1	0.8	89.5	4.2	6.3	0.0	3.3	−16.9	3.6	−46.5
United Republic of Tanzania	19.5	12.9	0.2	67.4	86.7	26.3	8.3	15.4	57.7	3.4	27.5	11.3	5.5	2.9	15.0	7.5
Upper Volta	5.7	12.8	2.4	79.1	16.8	20.0	35.5	28.5	83.3	6.9	4.8	4.9	18.7	47.0	6.9	20.2
Total, least developed countries[b]	8.1	14.1	2.1	75.7	32.4	20.7	13.7	20.1	71.9	6.5	15.3	6.3	9.4	10.0	15.8	16.5
Total, developing countries	18.9	14.9	2.6	63.6	35.3	24.1	24.1	26.8	56.2	11.5	5.1	27.2	18.7	18.3	16.1	27.5

Key: A—Non-processed goods for further processing
B—Processed goods for further processing
C—Non-processed goods for final use
D—Processed goods for final use

Source: UNIDO data base. Information supplied by the Statistical Office of the United Nations Secretariat.

[a]Compound growth rate based on current dollar prices.

[b]Excluding the Gambia and Haiti.

greater than in other developing countries. If they are to be realistic, industrial investment priorities will need to take this situation into account.

A few of the least developed countries do, however, have substantial untapped mineral, forestry, fishery or hydroelectric resources. Development of these resources would provide the necessary inputs for processing or energy-based industries. One or two others, like Bangladesh, have large supplies of unskilled labour, which would permit the expansion of labour-intensive industrial activities. The main resource of most of the least developed countries, however, is agricultural land. In these countries, industrial development will need to be based initially on backward and forward links with agriculture through the establishment of food-processing and natural-fibre textile industries and, in some cases, biomass processing; later, as industrial development advances, the manufacture of machines and chemicals for farm use can also be developed.

The ratio of intermediate to final industrial production will therefore increase; the limited local markets for final products will be supplemented and total agricultural production should rise because of additional industrial demand for agricultural outputs and improved supply of agricultural inputs from the industrial sector. Industry and agriculture will expand together in a linked and mutually reinforcing development pattern, producing the basic necessities for home markets, which in turn will grow because of the additional earnings of a more productive work-force and a greater surplus for export.

An additional advantage of such industries as food-processing and textiles is that they require simple technologies and little skilled manpower. Consequently, they are relatively straightforward to establish and expand when necessary. Thus, in developing countries most grain-based products—crackers, biscuits, macaroni etc.—are manufactured by small-scale domestic producers.

Developing countries have already had some success in raising the level of processing to which foodstuffs are subjected before they are exported, which indicates that distribution networks, trade barriers in other countries and other constraints are not insuperable obstacles. Between 1970 and 1977, for example, the share of processed foodstuffs in exports by least developed countries increased from 3.8 per cent to 5.8 per cent.[11]

This is also true of the textile sector, where, despite the low growth prospects identified for some countries, the least developed countries expect to find a source of employment. This sector is technologically comparable to food-processing in its simpler forms, in that both can be initiated with relatively low-cost equipment and can be located in non-urban areas, which means that the sector can be usefully dispersed.

Manufacturing the world over has been afffected by the change in energy prices in the 1970s. While initially only the prices for crude oil changed, prices of oil products rose shortly thereafter, so that the cost to industries of fuel oil and electricity went up accordingly. Later, largely as a result of policy decisions by Governments, other energy prices, chiefly for coal and gas, were also increased. Since the least developed countries are all net oil-importing countries, they have not escaped the rising costs, and industrial development has been adversely affected.

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[11] *A Statistical Review* . . ., table II.6.

The share of industry in all energy use tends to rise with a country's level of income, at least in the early stages of industrialization. Thus, in the developing countries as a whole, industry is estimated to account for 35 per cent, on average, of all energy consumption. In the least developed countries, the share of industry is likely to be closer to 15-25 per cent, and the share of households correspondingly higher, at around 75 per cent. Transport is estimated to account for 10-20 per cent in the least developed countries [2]. Estimates of energy use in least developed countries indicate that the bulk of energy is non-commercial (e.g. animal dung and firewood). Moreover, estimates of per capita energy use for 1978 suggest that the level of energy use in low-income countries is usually only around 18 per cent of that of middle-income countries and 2.3 per cent of that of the industrialized countries (based on figures expressed in kilograms of coal equivalent) [3]. Nevertheless, manufacturing relies on commercial energy and, in the least developed countries, imported energy, which leads to a scarcity of foreign exchange.

Cheap commercial energy supplies would help to foster industrialization in the least developed countries. There are signs that intensified energy exploration in the least developed countries is increasing. Data as of January 1980 had established that only Bangladesh, among the least developed countries, had proven oil reserves (of some 25 million barrels) and non-associated gas reserves, some 0.8 per cent of all developing countries' energy reserves [4], [5]. No heavy oil or oil-shale reserves have been discovered in any least developed country, but 11 are between them estimated to possess 103,127 million tons of coal equivalent. Of these reserves, the bulk (97 per cent) is held by Botswana [4]. Hydroelectric potential, by contrast, is more equitably distributed, in that 22 least developed countries share 24 per cent of the theoretical potential of the non-oil-exporting developing countries.

If reliance is placed solely on domestic markets and sources of supply, however, the least developed countries are unlikely to achieve any degree of industrial development. Industrialization in these countries will need to be integrated into the system of world trade in manufactures and semi-manufactures. At present the least developed countries are severely handicapped by the physical and economic distance between them and the main world market and supplying countries. Measures have to be taken by the least developed countries themselves to foster an industrial structure capable of taking advantage of world trading patterns, so that the import of final manufactures can be replaced at least partly by the import of semi-manufactures for further local processing; the barriers—and not just tariff barriers—put up by other countries to industrial exports from the least developed countries also need to be reduced. Co-operation between neighbouring countries will prove beneficial in many cases, too, and should therefore be carefully examined.

Perhaps the most important general constraint on industrialization in the least developed countries is the lack of human and physical infrastructure. Greater emphasis must be replaced on education and training so as to develop a more highly skilled work force. This means both improving general levels of education and promoting the development of managerial and technological skills. Governmental planning and policy-making institutions, management of public enterprises and banking, insurance and similar services need to be

strengthened. Physical infrastructure—transport, communication, energy generation—must be improved and expanded to meet the needs of industry and agriculture. Better facilities need to be established for identifying and implementing industrial projects—a weakness that at present greatly limits the absorptive capacity of the least developed countries—and for adopting foreign technologies and developing indigenous ones.

The mix of large, medium and small and public, private and foreign-owned enterprises needs to be carefully considered. A strategy could be developed, for example, which would promote both large-scale modern technology investments by public and foreign enterprises for export (local markets being limited and foreign-exchange requirements great) and small-scale labour-intensive rural investments by local entrepreneurs, who would provide basic needs for local markets and act as subcontractors to larger firms.

It should be noted that, although the least developed countries have many common features, they also differ in many respects. The least developed countries of Africa and south Asia, for example, face somewhat different sets of problems and aspirations. Some of these countries already have or will soon have the capacity to produce, to some extent at least, fairly advanced industrial products, such as machine tools, certain chemicals and electrical products, but for others the basis for producing such products is lacking and will be so for some time to come. Any industrialization strategy for the least developed countries will need to take such differences into account.

In any case, a great deal of additional investment in manufacturing will be required. Estimates based on the United Nations global econometric model illustrate the order of magnitudes involved. These are presented in table 12. The table shows that required annual investment in manufacturing in the least developed countries would increase from 0.3 billion dollars in 1980 to 0.4 billion in 1985 and 2 billion in 2000 if present trends continue (values in

Table 12. Illustrative estimates of investment requirements up to 2000

Year	*Manufacturing investment requirement (billions of dollars[a])*	*Share in investment in all sectors (percentage)*	*Share in total developing country manufacturing investment (percentage)*	*Share of foreign resources in manufacturing investment (percentage)*	*Contribution of foreign resources to manufacturing investment (billions of dollars[a])*
1980	0.3	5.7	0.8	4.3	0.01
Trend scenario					
1985	0.4	6.9	0.7	5.3	0.02
2000	2.0	11.2	1.0	7.3	0.15
Scenario for the Lima target					
1985	0.9	7.3	1.3	12.3	0.11
2000	7.5	15.9	1.8	14.4	1.08

Source: UNIDO, based on major economic indicators showing projected development trends provided by the Department of International Economic and Social Affairs of the United Nations Secretariat.

[a]Values in 1974 prices.

1974 prices). If industrial production is to expand at a rate corresponding to the assumed requirements for meeting the Lima target,[12] however, investment will need to rise to $0.9 billion in 1985 and $7.5 billion in 2000. In this case, the share of investment in manufacturing in total investment would rise from 5.7 per cent in 1980 to 15.9 per cent in 2000. The share of the least developed countries in manufacturing investment in all developing countries would rise from 0.8 per cent in 1980 to 1.8 per cent in 2000, still a very small proportion of the total. The share of foreign resources in manufacturing investment would rise from 4.3 per cent in 1980 to 14.4 per cent in 2000, and the actual contribution of foreign resources would rise from 0.01 billion in 1980 to 1.08 billion in 2000. These figures, being based on many assumptions, should not, of course, be taken as definitive, but they do indicate that transfer to the least developed countries of a very small part of world investment in manufacturing could give a very big boost to the prospects for industrialization in those countries if adequate preparations are made in terms of increasing absorptive capacity.

To sum up, the least developed countries are still generally in a post-colonial situation, reflecting weak political and social institutions and under-developed economies reliant on foreign trade, investment and technology. To break out of this vicious circle, these countries will need to formulate and implement policies aimed at nation-building by increasing the level, growth and distribution of income, self-reliance and human development and participation. More specifically, in terms of economic structure such policies should promote:

(a) Efficiency to provide positive net capital flows (taking future prices into account as much as possible);

(b) Savings and re-investment to provide growth;

(c) An output mix of products fulfilling basic needs, foreign exchange earnings or savings and strengthened forward linkages (intermediate and capital goods for priority sectors);

(d) An input mix based on strengthened backward linkages and appropriate technologies, using, within the available range of choice, abundant resources (unskilled labour) rather than scarce ones (capital, skills, foreign exchange);

(e) Technological skills and entrepreneurial development;

(f) The location of activities in rural and other low-income areas if justified by social-economic gain;

(g) A pattern of ownership (public, small and large private, foreign) corresponding to the maximum socio-economic gain;

(h) A supporting physical and social infrastructure.

[12]The target of increasing the share of the developing countries in world industrial production to 25 per cent by the year 2000 was set in the Lima Declaration and Plan of Action on Industrial Development and Co-operation (ID/CONF.3/31, chap. IV), transmitted to the General Assembly by a note by the Secretary-General (A/10112) and also available as UNIDO public information pamphlet PI/38.

Urgent policy action requirements, national and international

A coherent and effective programme of policy measures requires a development strategy aimed at increasing absorptive capacity in line with national objectives. The preceding analysis suggests, in conjunction with a strengthening of the system of national economic management, a set of linked and mutually reinforcing investments in agriculture (including forestry and fishing where applicable), industry, physical infrastructure (transport, communication, energy production), social infrastructure (education and training, health) and, for the few least developed countries with substantial mineral deposits or other natural resources, their exploitation and processing.[13]

Industrialization could proceed on the basis of integrated large modern and small traditional production, that is, the promotion of large-scale modern technology investments by public and foreign enterprises, mainly for export and for use by local agriculture and industry (machinery, chemicals), along with the promotion of medium-scale and small-scale, labour-intensive (and, where feasible, rural) investments by local entrepreneurs to provide, besides employment, basic needs (food, clothing) for the population, and also to provide industrial inputs through subcontracting arrangements with larger firms. The foreign exchange cost of imports could be reduced and export earnings increased not only by expanding the import-substituting and export industries, but also by shifting from the imports of final products to intermediates requiring further processing and by raising the level of processing of exports.

Industrial investment plans should also reflect expectations of industrial development in other countries. The fact that industrial growth in the least developed countries has tended to be lower than in other developing countries is particularly significant in view of the Lima target for the year 2000. The achievement of this target implies an estimated acceleration in the overall rate of MVA growth in the developing countries, from about 8 per cent based on historical patterns (extrapolation of past trends) to about 10.5 per cent [6].

For the least developed countries, it will be difficult indeed to achieve such growth. Without substantial increases in international assistance, the relative position of the least developed countries seems likely to deteriorate further during the 1980s and 1990s. To avoid, or at least ameliorate, this situation, the international community will need to undertake a massive effort, in comparison with the resources now being provided,[14] to increase industrial growth in the least developed countries while at the same time these countries undertake to increase their absorptive capacity. It seems not unreasonable to suggest that an increase in the rate of MVA growth in the least developed countries to 8 per cent, i.e. to the average rate of growth expected in the developing countries as a whole on the basis of historical trends, should be the minimum target upon which to base assistance efforts.[15]

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[13]With reference to other natural resources, it may be added, for example, that the environment of some of the least developed countries may be conducive to the establishment of tourism.

[14]In relation to the GDP of the richer countries, however, such an undertaking will require only a very small proportion of the resources available.

[15]The International Development Strategy for the Third United Nations Development Decade suggests targets of 7 per cent growth in GDP and 9 per cent growth in manufacturing output for the developing countries as a whole (see General Assembly resolution 35/56, annex, paras. 20 and 29).

A number of policy actions aimed at the development of industry in the least developed countries were proposed at the Third General Conference of UNIDO, in the New Delhi Declaration and Plan of Action on Industrialization of Developing Countries and International Co-operation for their Industrial Development (ID/CONF.4/22 and Corr.1).

Besides these, some other aspects of policy may be of considerable potential importance. Because investment resources are in general fungible, i.e. they can be transferred from one sector to another, the overall level of foreign concessional aid is a significant factor determining the amount of industrial investment, even though most of the aid is for activities other than industry. Thus, industry in the least developed countries will benefit if the richer countries and international organizations can make the effort to increase massively their aid to other sectors of the economies of the least developed countries and improve the terms of such aid.

The richer countries, including the higher-income developing countries in some cases, could also help by expanding industrial export credits and providing guarantees and interest subsidies for commercial loans, which—unlike some of the higher-income developing countries—the least developed countries have great difficulty in obtaining because of their weak financial positions. They could provide substantial relief to the least developed countries by offering debt cancellation, or at least a freeze on repayment.

The richer countries could help by providing freer access to their markets for industrial products, not only by excepting the least developed countries from some of the complications of the existing preferential tariff arrangements, for example, but also by excepting these countries from non-tariff barriers, quotas under the Multi-Fibre Arrangement etc. Ways of reducing transport costs between the least developed countries and major world markets should also be investigated.

The least developed countries will need assistance in obtaining low-cost access to technologies, in training managers and technicians and in exploring for and exploiting natural resources. Increased help in strengthening planning procedures, policy-making and project identification, evaluation and implementation, as well as in improving economic statistics, will also be required if greater social returns to investment and improved absorptive capacity are to be achieved.

Finally, and most importantly, it must be stressed that statements of good intentions are not enough; the situation is extremely serious—deadly serious for millions of people—and the international community has a responsibility to undertake positive policy action, including specific long-term commitments, financial and otherwise.

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A strategy of industrial development for the small, resource-poor, least developed countries

Secretariat of UNIDO

Introduction

Despite the diversity and heterogeneity manifested by the least developed countries in their different approaches to development, different degree of openness, and resource endowments, they all face a common grim reality. Their growth performance has steadily deteriorated and the flows of external resources from the international community have been progressively eroded by apathy, worldwide inflation, and unfavourable terms of trade in the 1970s. Their future prospects are likely to be even more depressing unless urgent measures are taken now to arrest this trend.

Only recently has the international community begun to recognize fully the staggering magnitude of the problems facing the least developed countries and to make special efforts to solve them. In particular, in the International Development Strategy for the Third United Nations Development Decade (resolution 35/56, annex), the General Assembly has formally declared the problems of the least developed countries to be an essential priority within the Strategy, and has adopted a special programme of action for the 1980s. UNIDO has been giving a parallel sense of urgency to its efforts to tackle the problems of industrialization in the least developed countries. These efforts have led to the formulation of a programme of special measures for the least developed countries,[1] which was subsequently reaffirmed by the Industrial Development Board at its fourteenth session [1].

The aim of the present article is to seek a viable strategy of industrial development for small least developed countries. The geographical focus is on Africa, where 21 out of 31 such countries are situated. Attention is concentrated on a subgroup of the least developed countries that is characterized by relatively poor resource endowments and a small population of less than 7 million, and many of the problems they share and the choices they are called upon to make in their drive towards industrialization are here analysed.

While the focus is on the small least developed countries, the problem of the larger ones are not ignored, for they are, indeed, equally serious. The article is selective not because of the relative importance of the problems involved but because of the need to distinguish between small and larger least developed countries on the basis of the size of potential domestic markets, which will in turn circumscribe both development options and industrialization strategies.

The importance of making an analytical distinction between large and small developing countries has been abundantly underscored in the recent

[1] Adopted by the Third General Conference of UNIDO, held at New Delhi from 21 January to 9 February 1980 [2].

literature of economic development. For instance, Kuznets [2] has stressed the need for devising "variants of a theory of economic growth for the many small national units different from those for the few large ones". Demas [3] echoes the view that traditional theory of economic growth based on a large closed economy is not applicable to the problems of small developing countries and hence it is important to "differentiate sharply between the growth process in a large closed economy and in a small open economy". Chenery and Taylor [4] note that large countries tend to industrialize earlier than small ones because of economies of scale that shift their comparative advantage towards industry, although the importance of this effect may diminish as incomes rise, and may ultimately be more than offset by greater exports of manufactured goods from small countries. Kessing and Sherk [5] have underlined the major advantages in manufacturing enjoyed by large countries over small countries and have pinpointed the size effects as a most important determinant in the case of the capital goods industry.

In essence, the differentiation of small and large least developed countries in the formulation of a viable strategy of industrialization has a strong theoretical and empirical validity, since the large countries have a potentially big industrial market, which could make it possible to adopt an inward-looking industrial development strategy, producing a broad range of manufactures predominantly for domestic markets, whereas the small countries may have to rely more on international trade for their industrialization.

There are no generally agreed norms for measuring a country's size. Different sizes of population or usable land areas have been used in previous studies [3], [5], [6]. Here, a country's size is measured by its population because of the effect of population on the size of the domestic market, and a population of 7 million in mid-1978 was arbitrarily chosen as the upper limit for denoting small countries (all but seven of the least developed countries are included in this category).

The least developed countries are generally characterized as the poorest and the most vulnerable group in the international community with staggering problems of all kinds.

Against this background, and given the current turbulent state of the world's economy, with all the problems of stagflation, energy crises, rising protectionism and international monetary disequilibrium, a viable strategy of industrialization for these small least developed countries must be sought, which will enable them to break out of their present mass poverty once and for all and to launch a self-sustaining process of development. Needless to say, there is no generally accepted theory of industrial development strategy applicable to the unique circumstances of the small least developed countries. The often quoted success stories of South-East Asian countries may not be repeatable because of the special circumstances of those countries—for example, the exceptional dose of human and physical capital generated within them. Obviously none of the key ingredients for rapid industrialization—physical capital and skilled manpower—are available at the very early stages of industrialization, when it is literally starting from scratch.

This article attempts to evaluate the main options available to small least developed countries, and particularly the resource-poor countries, in terms of industrial development strategy, to suggest a viable strategy, and to specify the

international support measures that would be required. In the next section the problems of industrialization for the domestic market are discussed and in particular the viability of the inward-looking industrialization strategy for the small countries is assessed. The strategy of export-oriented industrialization is then examined, emphasizing in particular its relevance to small least developed countries. The problem of transition from import-substitution to export-led industrialization, and particularly its timing, are analysed in the next section. Other major issues related to the transfer of technology and the role of government in industrialization are discussed and a set of policy recommendations arising from this study is given at the end.

Industrialization for the domestic market

The primacy of industrialization

In the past, the economic policies of most of the developing countries have been greatly influenced by the traditional theory of economic development, based on the labour-surplus and trickle-down arguments. More specifically, they are based on the body of theories developed by leading thinkers of development (e.g. Lewis, Fei and Rains), to the effect that the modern industrial sector would become the leading sector in developing countries, drawing on the unlimited supply of labour, the subsistence cost of labour would permit a rapid accumulation in the industrial sector, the benefits of industrialization would trickle down to the poor segment of the society and rural development would ensue therefrom.

Recent empirical evidence in many developing countries lends little support to the validity of this general theory, and the trickle-down theory, in particular, became only a pious hope. Thus, Vanek and Emmerij [7] observed, "The few who came from the countryside and got well-paying union jobs were turned into inanimate consumers of their industrial products. The majority coming from the countryside, not finding well-paying jobs, formed the infinite slums surrounding all cities. With rapid population growth everywhere and no adequate employment growth in the modern sector, destitution and poverty in the slums and in the countryside for the most part were accentuated."

They further noted that the aniticpated accumulation and saving process had failed to get off the ground, since most of the profits generated in the modern industrial sector were either transferred abroad or appropriated by a small group of the rich, whose propensity to spend on foreign luxury goods was insatiable, constantly bombarded as they were with the demonstration effects of the Western opulence. Even if such an accumulation were to occur, a highly skewed distribution of wealth and a consequent concentration of power in favour of the élite would result.

The small least developed countries may be able to learn a great deal from the past patterns of industrialization among many developing countries. The following common salient features seem to emerge from their diverse experiences:

(a) Growth of employment has been lagging behind expansion of output in the industrial sector, implying a fairly high capital-intensive factor proportion;

(b) As a corollary of the above case, the industrial sector has failed to become a major source of productive employment for the surplus labour in the agricultural sector and as a result, most of the burden of creating employment has been borne by the agricultural sector;

(c) Per capita consumption of industrial output has remained stagnant;

(d) The expansion of industrial output has not been commensurate with the preponderance of resources allocated to industry at the expense of agriculture;

(e) The process of industrialization has exacerbated the maldistribution of income and wealth.

Some of the points raised above, however, although partially valid, are highly debatable. First, too much is expected too soon of the employment-creating capacity of the modern industrial sector. Recent empirical studies in the income and employment multiplier analysis in the industrialized countries point conclusively to the fact that the direct employment effect of industrial investment is small in relation to the secondary effects, namely, the inter-industry effects resulting from the inter-industry purchases of inputs and the income-induced effects of income propagation in the traditional multiplier analysis. These secondary employment effects were not usually taken into account by those criticizing the inability of the industrial sector to create sufficient employment. Undoubtedly, at the initial stages of industrialization, when inter-industry linkage is still weak, the secondary effects may not be significant, but as the industrial base broadens and becomes integrated, both horizontally and vertically, the effect of industrial activities on employment should become increasingly important.

The stagnant per capita consumption of industrial goods stems largely from structural imbalances caused by the lack of agricultural and industrial linkages. Increases in agricultural productivity and incomes are particularly important for the generation of domestic demand for industrial products at the early stages of development. This factor is given added importance by the fact that agriculture dominates the economy—in most least developed countries, over 80 per cent of the employment is still in the agricultural sector. It is therefore essential to ensure not only that agricultural development is not neglected as a result of preoccupation with industrial development but also that the linkage of industry and agriculture becomes an integral part of the industrialization strategy.

Problems in the early stages of industrialization and the need for import-substitution industrialization

In the initial stage of industrialization in which most of the least developed countries find themselves, the problem is to start industrializing from scratch, when the essential ingredients—capital, skilled labour, technical know-how, and a wide range of physical and institutional infrastructures—are virtually non-existent. The choice is further circumscribed by the limited size of the domestic market, which may preclude the production of many industrial products exploiting economies of scale.

Within these formidable constraints, crucial choices have to be made with regard to the sector, scale, and timing of investments—especially the timing and phasing of lump investments in supporting infrastructure and some industrial establishments. Even if the external capital is available, the financing and management of large plants and complex production systems is generally beyond the capacity of both the private and the public sectors at the incipient industrialization stage.

While energetic efforts must be made to mobilize domestic and external resources in order to start the industrialization process in the small least developed countries, there are also difficult decisions to be made regarding the type of manufacturing industries that will be appropriate to the conditions prevailing there at the outset. Given the low level of technology and the small domestic market in those countries, it appears logical that an early development of manufacturing should be predominantly labour-intensive and should concentrate on simple mechanical processes applied to local materials, and on non-durable consumer goods, consumed in the local market, namely, such basic needs as food, clothing and shelter. Industrialization on the basis of simple technology is exemplified by village-blacksmith operations, producing simple tools, local pottery, hand-loom weaving, brick and tile making and any other simple manufacturing activities attuned to the local technical know-how and also efficient at the low level of output.

Apart from the problem of selecting the right products and appropriate modes of production, further difficulties arise in choosing a suitable form of foreign trade regime. In industries competing with imports, a clear-cut industrial policy has to be formulated to decide how and how much they should be protected against foreign competition. The crux of the problem is that too much protection fosters inefficient industries and nurtures vested interests, while too little nips the young industries in the bud.

It is widely accepted among leading development thinkers that import substitution at the early stages of industrialization is a necessary first step towards industrial development, even for the small least developed countries. The encouragement of import substitution has generally secured a rapid expansion in manufacturing, evidenced by the experience of Brazil, Mexico, the Philippines and Turkey. The crucial importance of the period of extensive import substitution that preceded the period of phenomenal growth of manufactured exports in some South-East Asian countries, for example, has been underscored by Kubo and Robinson [8] and the World Bank [9]. It is at this early stage of import substitution that protective measures can be deployed while skills are acquired, the necessary infrastructure established and technological bases underpinned, all contributing to development of domestic industries and the strengthening of their international competitiveness. In fact, without this preparatory stage, the recent success stories in South-East Asia might not have been possible.

Apart from building an export base, the small least developed countries initially have few options other than import substitution, in view of the conditions of poverty besetting them. Manufacturing cannot be nurtured in an environment where the domestic market is small, the infrastructure primitive, capital and entrepreneurial talents scarce, and skilled workers almost non-existent. The easiest way out of this predicament would be to concentrate on

the domestic market that already exists, usually served by imports from abroad and probably developed by importers or trading companies. The old "infant-industry" argument can be justifiably invoked at the initial stages of industrialization. Some of the important justifications for protective measures in the form of import duties, quotas, an outright ban on imports and industrial licensing include limited markets that prevent economies of scale, a higher fixed cost per unit resulting from extra infrastructure requirements, the greater cost of shipping and installing factory equipment, heavy reliance on costly expatriate services, higher prices for the imported raw materials and intermediate goods, and the considerable risk premiums required on capital.

For exactly the same reasons, infant industries sheltered under the umbrella of a strategy of import-substitution industrialization are not expected to show a quick improvement in their productivity growth and competitiveness. They will for a long time be saddled with high original capital costs, higher rates of return, royalties, sizeable technical services and expatriate personnel costs, large cash-flow requirements for servicing debts etc. Of course, all these factors tend to stunt the growth of productivity and hold down competitivity for a long period.

Further complications in industrial policies arise some time after the infant industries are safely anchored and beginning to grow. As the market gradually expands, the balkanization caused by the advent of new firms may preclude economies of scale. Under such circumstances, the Government is faced with the dilemma of restricting entry and granting monopolies to the existing firms, thus perpetuating their inefficiency, or promoting competition and so fragmenting the market. Either way, productive efficiency suffers. The Government may institute a competitive bidding process and grant the exclusive rights to the winning bidder, but this alternative may not be politically feasible.

Previous experiences of a strategy of import-substitution industrialization suggest that the first phase of import substitution usually contains little domestic value added because of the high content of imported intermediate goods and components and foreign capital. If, however, the strategy should proceed without a hitch, in the second stage (usually after a lapse of some 10 years from the beginning of the first phase) a visible shift may be expected in the composition of imports in favour of raw materials, intermediate and capital goods, accompanied by an appreciable decline in the imports of non-durable consumer goods. As the economy gears itself towards the more advanced stage, in which intermediate goods are produced domestically, the early import-substitution industries may reach market saturation because of the relatively small domestic market, particularly in the case of small least developed countries. As a result, they develop an over-capacity. Because these industries are nurtured behind the high walls of protection, they are poorly equipped in terms of structural efficiency to compete effectively abroad. Ironically, export markets may be the only way to increase the rate of utilization and to capture economies of scale.

Therefore, where domestic markets are relatively small, the pursuit of import-substitution policies beyond the early stages of industrialization should be viewed with extreme caution. Further progress becomes extremely difficult once early import-substitution opportunities have been fully exploited. This is because the inward-looking strategy represented by import substitution requires

the development of multiple production lines, each of which will be hampered by economic inefficiency resulting from the limitations of market size, and the production of intermediate and capital goods and consumer durables at the later stages also calls for technologically sophisticated, capital-intensive, and skill-concentrated inputs, organized on a relatively large scale, whose possibilities the small market rules out.

Even for some large developing countries, which pursued a strategy of import-substitution well beyond the early stages, the results have generally been judged to be a failure. The following are some of the major arguments against such a strategy.

First, no significant inter-industry link is developed between large-scale modern industries and small-scale local industries. This lack results from the reluctance of large-scale firms to subcontract with local firms, partly because of quality considerations and even more so because of their unwillingness to lose market control, particularly among large multinational corporations. In some areas of industrial operations, the establishment of large-scale industries is necessary for reasons of technical efficiency. Often, in such cases, the small-scale local industries produce a range of output that is completely unrelated to that of the modern large-scale industries, thus creating an industrial dualism in which each coexists in its own sphere with little, if any, inter-industry transaction.

Secondly, the growth of the modern industrial sector may be attained at the expense of small indigenous industries. In particular, faced with the effective advertising and promotional activities of these modern industries, the extinction of local indigenous industries is a real possibility.

Thirdly, there is a heavy cost in foreign exchange. Especially at the early stages of industrialization, when there is no technological and skill capacity to produce intermediate goods and capital goods, all inputs except cheap labour are imported and the resultant total unit cost might be higher than the c.i.f. costs of the substituted imports. Furthermore, there is the possibility of a disruption in production as a result of the unavailability of foreign exchange. Thus, Little, Scitovsky and Scott [10] underscore that "there is too much capacity at the final and too little at the intermediate stage of production; this disparity calls for the importation of more inputs than anticipated, and when the foreign exchange to pay these imports is not available, it leads to the underutilization of capacity at the final stage of production". The disruption of production and consequent underuse of industrial capacity caused by a lack of foreign exchange are problems that will loom even larger in the coming decade, when oil prices are expected to escalate drastically, claiming an increasingly large share of scarce foreign exchange that could otherwise be used by the least developed countries to pay for the importation of intermediate and capital goods.

Fourthly, import-substitution has failed to create productive employment in sufficient quantity to make a significant dent on the massive unemployment and under-employment in the developing countries. This criticism should be tempered by consideration of the potential for greater expansion of employment at the later stages of industrialization, when links between industries are more firmly established and the indirect effects of inter-industry relations on employment become more important.

Fifthly, import-substitution has been associated with a disparity in industrial location and the consequent spatial maldistribution of incomes, particularly between urban and rural sectors. The choice of industrial location is influenced by many factors, such as the locational advantages of raw materials and energy supplies, economic infrastructure, geographical proximity to markets, and even political expediency. It does not, however, seem too far-fetched to say that an import-substitution strategy *per se* is not the cause of such regional imbalances but is a permissive factor in accentuating the existing inequalities. The spatial maldistribution of industries is more likely to be a consequence of the interplay of the economic and political power groups that shape the basic orientation of the import-substitution strategy.

Sixthly, the imbalance in the choice of products resulting from the pursuit of an import-substitution strategy has been criticized. Such a strategy heavily favours the production of a range of consumer goods catering to the rich urban classes. While the needs of the population are served in urban areas where profit is to be made, the development of basic-needs-oriented industries for a large and poor segment of the population—particularly the rural poor—is totally neglected.

Lastly, an import-substitution strategy distorts the allocation of resources, and consumers pay higher prices than they do for imported goods. This distortion inhibits competition, which in turn stunts learning and productivity growth and adversely affects the stability of long-term industrial structure by encouraging investors to invest in projects with a fast profit potential behind high protection.

In view of the foregoing discussion on some of the severe limitations of an import-substitution industrialization strategy, it comes as no surprise to see an ever-increasing disenchantment with this strategy and even an outright repudiation of its validity. So Landsberg [11] summed the matter up with some justification, saying that, for the third-world countries, the results of import-substitution industrialization were anything but positive: *(a)* greater starvation for the majority of the people; *(b)* limited industrialization; *(c)* growing regional inequalities; and *(d)* larger deficits and debt.

Export-led industrialization

Rationale for an export-led industrialization strategy

In the preceding section, the possibilities and limitations of industrialization oriented to the domestic market, and particularly import-substitution, were analysed in the context of small least developed countries. One of the important conclusions emerging therefrom is that import-substitution may be a necessary first step in the building of an industrial and technological base and in developing skills. If, however, it is pursued beyond this initial preparatory stage, further industrial development is likely to be hampered by many serious endemic limitations.

Recent studies on the patterns of industrial growth [4], [5], [12], [13], [14], [15], [16], [17], have focused much of their attention on the identification of an efficient growth pattern. One of the most commonly accepted paradigms is a

theory of progression through successive stages of comparative advantages. In other words, industrial specialization evolves gradually into a highly sophisticated and complex form, beginning with unskilled, labour-intensive and low-technology industries, moving into more capital-intensive industries and finally culminating in the development of highly skill-intensive and technology-deepening industries. In terms of the growth patterns of individual industries, labour-intensive, non-durable consumer-goods industries such as textiles, clothing and leather goods, correspond to the early stages of industrialization; chemicals, iron and steel are typical of the industries that achieve prominence at the middle stages of industrialization; and basic metals and machinery, and transport equipment characterize some of the important industries at a later stage [4]. The crucial importance of the intermediate stage in the patterns of structural change stems from the fact that increasing amounts of chemical, iron and steel products are being used as intermediate inputs, thus extending the backward and forward industrial linkages.

Given this optimal pattern of industrial development, the question arises, which forms of industrial development strategy and policies are most likely to facilitate the evolutionary process of industrial specialization. It has been amply demonstrated that the inward-looking import-substitution industrialization strategy is not an appropriate choice for small least developed countries, except at the initial stages of industrialization. The logical sequence to such a strategy appears to be a switch to export-led-industrialization. The validity and viability of the latter strategy as a correct industrialization policy for small least developed countries need, however, to be more closely examined. Moreover, it is equally important to specify the types of corrective measures, external supports, and co-operation that are needed to make this strategy work.

Obstacles for small least developed countries

A sharp distinction needs to be made between the manufactured exports of large developing countries and of small developing countries. According to Landsberg's study [11], Argentina, Brazil, India and Mexico together accounted for 55 per cent of all manufacturing production in the third world, but only about 25 per cent of all the third-world manufactured exports (narrowly defined). By contrast, Hong Kong, Malaysia, the Republic of Korea and Singapore together accounted for less than 10 per cent of production but 35 per cent of manufactured exports in the third world (although Malaysia and the Republic of Korea cannot be classed as small countries in terms of population). The implications are clear: given large domestic markets, relatively abundant natural resources and a fairly well-established infrastructure, the large developing countries have developed an industrial base for producing a broad range of traditional resource-based manufactures such as foodstuffs, tobacco, wood, textiles and leathers. These traditional manufactures are produced for both the domestic market and exports, and the larger countries' dependence on exports is less critical than that of the small exporting developing countries. In contrast, the small developing countries are generally distinguished by small internal markets and poor natural resource endowments. They therefore specialize in non-resource-based manufactures primarily intended for exports (e.g. clothing,

engineering goods and light manufactures). Needless to say, the experiences of the latter countries' export drives will be directly pertinent to small least developed countries, while those of the large developing countries will be of limited relevance.

There are thus three salient features of the current structure and patterns of the manufactured exports of developing countries that may have important implications for an export-led industrialization strategy for small least developed countries. First, manufactured exports from all least developed countries in terms of both trade among developing countries and North-South trade are virtually non-existent. Secondly, a small number of developing countries dominate third-world exports of manufactured goods. Thirdly, manufactured exports of developing countries have not yet become sufficiently large in the aggregate to affect adversely manufacturing output and employment as a whole in industrialized countries. Against this background, the question arises how likely small least developed countries are to succeed in launching a new export drive. The answer to this question may call for a realistic assessment of some of the obstacles to the export-led industrialization of small least developed countries.

First, the prospect for opening new export markets, especially markets in industrialized countries, offers little ground for even moderate optimism in the light of the current instability of the global economy, caught in the throes of stagflation and the resultant tightening of markets in developed countries. As a result, developing countries pursuing export-led industrialization will find it increasingly difficult to hold on to the present level of overall production and exports. If the world economy were to continue to grow by 3 or 4 per cent, this process would markedly ease the problem, by generating enough additional markets for new manufactured exports from developing countries. But this could be wishful thinking, since the present gloomy economic picture in the West does not augur a better future. In particular, the lackadaisical economic performance of the Western countries is likely to continue in the coming decade, since the days of cheap raw materials, particularly cheap energy, are over, seriously undermining their competitive position in the world market; the primacy of a highly productive manufacturing sector as an engine of economic growth is a thing of the past and has been superseded by the dominance of the service sector, which does not lend itself to high productivity growth.

Secondly, as a negative response to the current international stagflation, a swelling sentiment of protectionism is sweeping across the industrialized countries. As a result, various forms of trade barriers—quotas, special levies, unofficial cartels, orderly marketing arrangements etc.—are becoming increasingly visible.

Last, but not least, there is the problem of the so-called "late-comers". As noted earlier, the markets for labour-intensive manufactures in the industrialized world had already been pre-empted by a small number of developing countries dominating this field, such as Hong Kong, Singapore and the Republic of Korea. Therefore, the problem of market penetration has to be grappled with first in order to make ready for the export drive. There may be several alternative solutions to this problem. The most obvious one is for the industrialized countries to open additional markets for labour-intensive manufactured exports specifically earmarked for small least developed coun-

tries. Particularly since these "late-comers" have not yet developed the necessary physical and institutional infrastructure to support these export activities, it is highly important to grant some sort of favourable quotas to enable them to secure their initial markets at the inception of their export drive. Another avenue for initiating and expanding the manufactured exports of small least developed countries is through close technical and economic co-operation between rapidly industrializing developing countries and least developed countries. Exploiting the shifting comparative advantages and dynamic international division of labour, these rapidly industrializing countries with a dominant share of the manufactured exports of developing countries move out of the traditional territory of labour-intensive manufactured exports and venture into more technologically advanced and skill-intensive products and product lines and at the same time diversify their markets. This process will entail a shift in the composition of the more advanced developing countries' manufactured exports from traditional labour-intensive goods, such as textiles, garments, electronic assembly and other light manufacturing to more technologically sophisticated and skill-intensive goods, such as engineering goods, machinery, components, consumer durables and transport equipment. The process will also be marked by a shift in the locational incidence of labour-intensive production from more developed developing countries to least developed countries—a form of South-South industrial redeployment—as had occurred earlier in the textile industries, first from Japan to the Republic of Korea and Hong Kong, and then between countries in south-east Asia. Two major potential benefits are expected to accrue from this industrial realignment. In the spirit of collective self-reliance, rapidly industrializing developing countries could help small least developed countries to anchor their initial export markets for labour-intensive manufactures firmly in industrialized countries that they had previously penetrated. Furthermore, rapidly industrializing developing countries could themselves provide expanded market opportunities for small least developed countries as their factor intensity tends towards a greater supply of capital in response to increasing wages, and as their inputs of labour-intensive goods grow.

As a corollary of the above argument, expanded trade among developing countries will tap wider local and regional markets and thus provide increased opportunities for small least developed countries to partake of the benefits of external trade. Of course, trade among developing countries is a cornerstone of collective self-reliance. Despite its ideological appeal, this may entail its own political problems, and past experiences in trade expansion and economic co-operation among developing countries do not give grounds for much optimism. After all, the developing countries themselves may become protectionistic in their efforts at industrialization, and political conflicts among them may often prove an obstacle to the realization of this goal.

Even if profitable export markets for labour-intensive manufactured goods, preferably of low-skill content, are developed for small least developed countries, with or without the active support of the international community, and even if the least developed countries can successfully mobilize both the domestic and external resources to produce them, major difficulties associated with the life-style of these late-comers are by no means over. There is the problem of marketing and promoting an array of manufactured goods. As

stressed earlier, the small least developed countries are utterly lacking in the institutional infrastructure needed for export promotion policies. Given the present volatile conditions of foreign markets and the growing tide of protectionist sentiments, the problem of marketing is becoming increasingly formidable even for a handful of rapidly industrializing countries with an enviable track record of export promotion. An easy way out of this deadlock is to engage foreign firms, usually transnational corporations, who have already established an extensive marketing network throughout the world and are well versed in the complex rules of the game governing international trade. It has been historically established that foreign investors have played an effective part in launching new industries for export markets. A good example is the widespread off-shore production of labour-intensive goods, such as electronics and garments. Transnational corporations are known to be highly skilled in international marketing and in exploiting the profit potential that results from the international division of labour between their national plants scattered in various parts of the world. In sum, despite many serious shortcomings and possible detriment to the host country resulting from direct foreign investments, there appear to be few alternatives to launching export-led industrialization through collaboration with foreign partners in the initial stages of export promotion and later to concentrate on the smooth transfer of marketing know-how from foreign firms to the indigenous entrepreneurial group.

The role of transnational corporations

Given the paucity of domestic capital and scarce entrepreneurial skills, and the virtual non-existence of marketing and promotional know-how, the initial dependence of small least developed countries on foreign investments for launching a successful export drive, despite their potential negative effects, is almost unavoidable, and enlarged flows of such investments will be needed to break the import-substitution shackles. Foreign investments by transnational corporations bring with them capital, technology, management and marketing, in all of which small least developed countries are conspicuously lacking, and they may help to implant a productive culture and pecuniary value system conducive to industrialization in the host country.

Undoubtedly, the Government can play an important role in attracting foreign investments. Government policies to encourage foreign investments cover a broad range of investment incentives, such as tax holidays, subsidized credits, bonus exchange rates, import duty exemptions for capital goods and raw materials, investment allowances and accelerated depreciation etc. In the past, foreign investments and particularly the activities of transnational corporations were characterized by: *(a)* their primary interest in producing for the domestic market of the host country, i.e. import-substitution; *(b)* the use of medium-scale or large-scale assembly operations, exploiting cheap labour; *(c)* the adoption of advanced technologies and consequent minimal creation of employment; *(d)* few interindustry linkages, particularly between the large modern manufacturing sector and the indigenous small-scale industries; *(e)* high import contents; and *(f)* geographical agglomeration of their activities around the capital city.

One of the major objections to the activities of transnational corporations is the foreign economic control that comes with foreign investments. Preoccupied with profit maximization and totally insensitive to the interests of the host country, they focus on projects that yield the quickest and biggest returns on their investment, which are made possible by generous concessions by the host Government and the adroit repatriation of profits.

Damage to the economy caused by the activities of transnational corporations extends to bringing about the demise of native small-scale industries engaged in the production of goods similar to those of the transnational corporations, e.g. textiles, beverages, cigarettes etc. These fledgling native industries are often crushed by the cold efficiency of the transnational corporations, their superior advertisement of branded products and their sales methods. The growth of native industries is further hamstrung by government policies to attract foreign investments, such as import duty privileges, exemption from corporate income taxes, overvalued currency and subsidized credits etc. Where small-scale indigenous enterprises manage to survive, often under the protective umbrella of government policies, foreign investments tend to forge a dual structure of the economy, characterized by the parallel existence of the modern capital-intensive industries and low-technology, labour-intensive local industries, with no links between them.

In the last few years, the nature of foreign investments and the activities of transnational corporations have undergone a significant change. Since the end of the Second World War and until recently, the activities of the transnational corporations, particularly those of the United States of America, were aimed at market expansion in the third world, namely the development of import-substitution industries, and not at the establishment of export bases for supplying home markets. Most direct investments by the United States in Latin American countries with large domestic markets, for example Argentina, Brazil and Mexico, were in this category. Recently, a new type of foreign investment, known as international subcontracting[2] has emerged as a dominant force affecting manufactured exports from the third world.

International subcontracting may be undertaken by transnational foreign affiliates, joint ventures between transnational and domestic enterprises, or independent producers in developing countries. Sharpston's study [18] shows that transnational affiliate production accounts for most third-world production of semi-conductors, electronic memory circuits, engineering products and capital intensive goods. Independent third-world firms, and firms in developed countries working in joint venture with firms in developing countries, specialize in an array of light manufactured goods such as finished electrical consumer products, small machines, sporting goods, toys and wigs etc. The key feature of international subcontracting is the export of developing countries' manufactures to developed countries as part of a complete organizational structure dominated by the headquarters of firms in the developed countries, and the complete control of those firms over research, product design, advertising and marketing.

There appears to have been a prodigious growth of international subcontracting in recent years, although statistics on the volume of inter-

[2]For an illuminating analysis of international subcontracting, see Sharpston [18] and for its implications for industrialization of developing countries see Landsberg [11].

national subcontracting are too fragmentary to provide any firm indication. For instance, according to Sharpston's study [18], the share of the developing countries in total imports allowed under United States tariff items 806.30 and 807.00 (levying import duties on value added abroad if the inputs originated in the United States) grew from 6.4 per cent in 1966 to 21.4 per cent in 1969 and 35.9 per cent in 1973.

Undoubtedly, small developing countries, including the least developed countries, are well suited to international subcontracting. There are fewer industries to compete for cheap labour. The small internal market size of the developing countries is no obstacle, since production is geared to serve the markets of the developed capitalist countries. Furthermore, there is ample room for exploiting scale economies and modern capital-intensive technologies. The locational incidence of international subcontracting is, however, more influenced by the political stability of a country than by economic considerations and is hence concentrated in a handful of countries.

As in the case of other forms of activities by transnational corporations, international subcontracting appears to have failed to deliver the promise of self-sustaining industrialization for the developing countries. It can be faulted for its two main negative effects on the host economy. First, no linkages have developed between domestic consumption and production and subcontracting operations have increased economic dependence on the developed countries. This is because the great majority of the people not engaged in the export industries lack income, so that production is primarily for export only. As a result, investment, resource allocation and the choice of technologies are all designed to meet the demand in developed countries and tend to be unrelated to the needs of the majority of people. The second factor retarding the self-sustaining industrialization process is the fact that subcontracting operations usually specialize in the use of low-skilled labour, producing goods that are highly standardized, technologically simple and requiring little overhead capital (e.g. sporting goods, toys, wigs and plastics). Therefore, subcontracting operations thwart the development of indigenous skills that are urgently needed for industrialization.

In lieu of an outright rejection of foreign investments, and in particular of the activities of transnational corporations, as instruments for industrialization, there might be some scope for industrial policies designed to circumscribe the operations of such corporations so as to make them more sensitive to the needs of the host country. First of all, in order to ensure the viable growth of small native industries, high selectivity can be exercised in choosing foreign investments and particularly stringent measures can be adopted to restrict the growth of large-scale industries directly competing with local industries. For instance, in a scheme akin to that adopted in India, a list of reserved industries might be drawn up for small-scale indigenous enterprises with local technologies, with a view to shielding them from direct foreign competition. If this option is less palatable on grounds of efficiency, various support measures, such as technical assistance and research and development, can be extended to raise the productivity of indigenous industries and hence strengthen their competitive position. Furthermore, it would be of paramount importance to establish linkages between modern large-scale enterprises and native small-scale ventures, which could function as subcontractors. Of course, this is easier said

than done. Apart from the general reluctance of the transnational corporations to relinquish part of their control over the economy, the product quality and productive efficiency of local enterprises may need to be substantially upgraded to meet the subcontracting requirements of modern enterprises.

The operations of transnational corporations need to be more attuned to the real needs of the host country. This is particularly true in the application of technologies, taking fully into account the technological impact on local employment, the use of domestic raw materials, indigenous engineering supplies and services etc.

The proportion of imported contents in the final product should be an important consideration in selecting foreign investments, although such selectivity is rather limited at the early stages of industrialization. Some industries, such as cement and fertilizer production, are likely to contribute to higher value added of the product than others simply because of the ready availability of local materials. Others, such as the automobile, pharmaceutical and electronics industries, and other assembly-type operations with a low local content, are set up because of the overriding interests of transnational corporations in these products. In such cases, there is little choice for small least developed countries but to increase the local content gradually, perhaps over a long period, and primarily to emphasize the importance of skill development and the acquisition of technical know-how through a "learning-by-doing" process.

Moreover, a gradual process whereby the incentive system favouring the capital intensive production of transnational corporations would be reduced, intervention in the choice of technology increased and local participation in the product designs and marketing expanded, may be highly desirable in order to foster the eventual self-reliance of the least developed countries, but the extent to which they can exert such pressure on the transnational corporations depends on the progress of industrialization and the strength of the underlying industrial base being built over time, since any intervention by least developed countries in the activities of the transnational corporations may be construed as thwarting the incentive to invest or expand production.

Above all, it should be recognized that marshalling the resources of the transnational corporations is a temporary measure to boost industrial production at the rudimentary stages of development. It is based on the premise that an industrialization process set in motion with the aid of transnational resources would eventually lead to the development of a self-generative industrial capacity in the least developed countries that would enable them to produce independently for the local market or for direct exports, while at the same time progressive stages of specialization would give the least developed countries increasing leverage in bargaining with the transnational corporations.

The economic miracle of the Republic of Korea is often put forward as a successful example of a country that has weaned itself from economic dependence on the industrialized world. Initially nurtured by a massive and continuous injection of foreign investments, the Republic of Korea has gradually strengthened its industrial base to such an extent that it has successfully developed an extensive domestic network of subcontracting between large-scale enterprises and indigenous small manufactures, and at the same time has

expanded its overseas marketing networks, which have in turn fostered export diversification in many areas, including shipbuilding and steel production. Similarly, the industrial base of Singapore is now such that it can be highly selective in the choice of technology, particularly in favour of advanced technology. Furthermore, once such a solid industrial base is built, it is quite possible for national enterprises to play a dominant role while the international companies participate only as suppliers of technology and know-how.

It should, however, be emphasized that the ability of least developed countries to influence operations by transnational corporations is likely to be significantly weakened in the coming decade by keen competition among developing countries as they strive to expand their export drives. They will compete for foreign investments by offering various incentives such as tax holidays, export subsidies and the establishment of free trade zones. It is, therefore, imperative to regulate excessive competition among developing countries for foreign investments that will be detrimental to the interests of the least developed countries and to facilitate smooth and orderly flows of export business to these countries. A coherent collective policy for promoting the export industries of the small least developed countries, based on close co-operation and principles agreed among developing countries, is urgently needed.

Transition from import-substitution to export-led industrialization

The ideal scenario of an import-substitution industrialization strategy as envisaged by planners and policy-makers is progression through successive phases of specialization, beginning with the production of labour-intensive, technologically simple non-durable consumer goods in the first phase, followed by the production of intermediate goods in the second phase, and climaxing with the production of capital goods and consumer durables in the final stage. It has already been shown, however, that somewhere along this trajectory, often even before reaching the second phase of import-substitution industrialization, the early import-substitution industries will usually encounter the problem of domestic market saturation. At that point, exports are the only way out for such industries, but they are in no position to compete effectively in the international market because of structural ossifications fostered by the protectionistic policies of import-substitution. Therefore, the question of optimal timing of a switch from import-substitution to export-led industrialization warrants serious consideration.

Unfortunately, there is no hard and fast rule for determining an optimal timing of transition. It is, however, commonly recognized that the longer industries are protected from the external competition, the more difficult it becomes to dislodge vested interest groups of protected industries from their grip over industrial policies and foreign trade regime. It is therefore imperative that the transition policy should be planned and implemented well before these vested interests gain political dominance.

Invariably, the transition is Pareto non-optimal, in the sense that some group gains at the expense of others in the transition process. This is particularly true of the redistribution effect of the transition policy: redistribution of income away from some of the existing import-substitution industries towards the newly

favoured export groups. In order to cushion some of the transition shocks of transition, it should ideally be timed to coincide with the prevalence of favourable socio-economic-political conditions, such as relative domestic stability, good harvests, improved terms of trade, adequate foreign exchanges etc.

The typical policy package for initiating a transition to export promotion entails: *(a)* devaluation to adjust for differential rates of domestic and international inflation; *(b)* export inducements; *(c)* removal of tariff and other non-tariff barriers; and *(d)* elimination of some of the distortions in the market price system, such as fiscal incentives favouring capital. Obviously, this is easier said than done. It is undoubtedly difficult to remove policy measures favouring capital imports, since the least developed countries more than ever need capital to accelerate infrastructure investment and industrial development. Further difficulties may arise from frequent foreign exchange shortages caused by the implementation of such a policy. This problem is further exacerbated by a lack of unequivocal national commitment to the export drive and the erosion of competitive edges in the international market due to rampant domestic inflation. Yet, most critical among the problems emerging during the transition is the balance-of-payments crisis. It is, therefore, of paramount importance to ensure adequate external financial support which will help tide the small least developed countries over this difficult transition period. A regional or international machinery is urgently needed to mobilize external resources and provide technical assistance specifically designated to this purpose. The crucial importance of external support during the transition period is further underscored by the fact that, as exports begin to rise, policy measures to liberalize the trade and exchange rate regime often run counter to domestic economic expansion. This is because deflationary monetary and fiscal policies will be needed unless export activities get off to a quick start, rising rapidly enough to give the economy a strong shot in the arm to offset the effects of deflationary policies, and this is very unlikely to occur at the early stages of industrialization.

What happened in the Republic of Korea is particularly noteworthy in this context. First, the overall levels of protection and subsidy in that country were relatively low and the liberalization of the trade regime did not damage its productive efficiency. Secondly, the difficult transition period took place in the early part of the 1960s, when import substitution had not yet progressed to the intermediate stage of industrialization characterized by the development of high-cost intermediate industries and some of the capital goods industries.

Export-oriented industrialization calls, *inter alia*, for a firm commitment from the Government to accord the highest priority to export promotion. Export-promotion measures take various forms. The most common measure is the establishment of export-processing zones near seaports or airports to exempt export industries from duties and other fiscal levies on imported inputs, bureaucratic red tape etc. Various special policies can be adopted to link imports directly to export activities: tariff exemptions on imports of raw materials and other intermediate goods for export production; domestic indirect tax exemptions on both intermediate imports for export production and export sales; preferential direct tax treatments of export earnings; preferential export credits; importers' licences linked to export performance; tariff and tax exemptions granted to domestic suppliers of intermediate goods for export production and so on.

The importance of putting together coherent and consistent policies for export promotion cannot, however, be over-emphasized. Many export-promotion policies often suffer from the chaotic proliferation of regulations and laws governing export activities and their enforcement is hamstrung by the cumbersome bureaucratic procedures erected by government agencies. For instance, the export-promotion policy of exempting taxes on imported inputs for export production is not only unfair to exporters of similar products using domestic inputs but also impedes the development of crucial links between export sectors and local industries.

It has been stressed that the successful launching of an export drive by small least developed countries requires a simultaneous two-pronged assault—the development of an industrial base for manufactured exports and the opening of export markets abroad. It has been further noted that transnational corporations can play this dual role by developing an export industrial capacity and at the same time marketing manufactured products through their own established international networks. There are, nevertheless, some alternatives to involvement by transnational corporations in the tapping of potential overseas markets, especially when the countries concerned have a real or imagined fear of the predatory tactics of the transnational corporations and are therefore reluctant to engage their services. One alternative is to engage the services of foreign trading houses to develop new export markets. Usually these companies have already established an extensive global network and tend to be superb marketers. Another alternative is for the country itself to establish national trading houses with active government support for overseas market development. This possibility is often precluded, however, because of the paucity of technical know-how and the inadequacy of the institutional infrastructure for marketing and promotion development. Perhaps the most attractive alternative may be technical assistance in export promotion from more industrialized developing countries with established overseas markets. For instance, countries like India and the Republic of Korea are in an excellent position to launch joint ventures with least developed countries for export production, equipped with their considerable international marketing experiences and appropriate technology for developing countries. Furthermore, these more advanced developing countries may have to steer the course of industrialization away from traditional labour-intensive, low-technology manufactured exports to skill-intensive high-technology products as steadily rising wage levels adversely affect competitiveness based on cheap labour. As a result, these countries may need to turn to some of the least developed countries as fresh markets for their new industrial products, as new locations for their overseas investments, and as a source of raw materials, while small least developed countries look to the more industrialized developing countries as potential markets for their labour-intensive manufactured goods. Based on the mutuality of interest and common political will, appropriate institutional mechanisms such as preferential trading arrangements and industrial complementation schemes need to be evolved to facilitate trade and joint production between small least developed countries and more advanced developing countries. It should be noted that this co-operative arrangement is somewhat different in nature from the traditional regional economic integration scheme, which fosters economic integration based on regional groupings. This scheme is based not so much on

geographical proximity as on the complementarity arising from different stages of specialization between small least developed countries and more advanced developing countries without geographical constraints.

The international community is currently engaged in a flurry of activities to accelerate the economic development of the developing countries in the context of the establishment of a new international economic order, the International Development Strategy for the Third United Nations Development Decade and global rounds of negotiations, and these may have some positive effects on the efforts of the least developed countries to push their export drives. International support measures can be particularly instrumental in: *(a)* providing better access to the markets of industrialized countries; *(b)* establishing commodity stabilization schemes; *(c)* securing the liberalization of capital markets in favour of the developing countries and particularly the least developed countries; *(d)* marshalling the resources of transnational corporations for the benefit of the developing countries; and *(e)* securing an enlarged flow of capital and technology from the industrialized world. It is beyond the scope of this article to assess how much of the professed goals and objectives enunciated in the Declaration and the Programme of Action on the Establishment of a New International Economic Order (General Assembly resolutions 3201 (S-VI) and 3202 (S-VI)) and in the International Development Strategy for the Third United Nations Development Decade (General Assembly resolution 35/56) are likely to be achieved in the coming decade. Any progress made in this direction as a result of an intensification of international efforts would nonetheless have significant positive effects on the small least developed countries in their industrialization endeavours.

One final word of caution: in practice, there is seldom a sharp dichotomy between import-substitution and export-led industrialization strategies. Of course, both domestic and foreign markets are tapped in the course of industrialization. It is a matter of a shift in priorities and policy measures differentiated accordingly to favour one type of industrialization over another. Since, for some industries, fairly small firms can operate efficiently even within a relatively small domestic market, there is some scope for selectivity in the application of policy instruments, although the major thrust of industrialization strategy may be either outward-looking or inward-looking. When, however, two sets of policy instruments are set up for different purposes, there must be an assurance that one does not run counter to the other. For instance, export industries may not be compelled to purchase intermediate inputs produced by import-substitution industries at prices higher than those prevailing on the world market. This, however, gives rise to the thorny question of when the intermediate goods industries and subsequently the capital goods industries should be developed so as not to negate comparative advantages. In other words, can the country afford to wait for economies of scale to result from the expansion of both domestic and foreign markets? There is no clear-cut answer to this question. In some cases it may pay to start a new industry earlier than would be justified by this strict principle of comparative advantage. The validity of such an argument is further enhanced when small least developed countries encounter strong protectionist trade barriers and export markets for labour-intensive goods are virtually pre-empted by other early arrivals.

Other major issues

Transfer of technology

The methods of transferring technology from developed to developing countries are indeed varied and numerous. Technology can be transferred through such mechanisms as capital-goods imports, direct foreign investment, engineering consultancy, education and training, turnkey projects, licensing agreements, management contracts and informal business contracts etc. At the early stages of industrialization, foreign private direct investment may be one of the few options open to least developed countries, since it combines in one package technology, capital, skills, marketing and management, all of which are conspicuously lacking in these countries. Such investments do, however, incorporate many features that run counter to the interests of least developed countries.

The first question to be raised is that of appropriate technology. The advanced technology of a rich country is simply not suited to the needs of a poor country. The damage resulting from the application of an inappropriate technology has been abundantly documented in economic literature and hence comes as no surprise. Among the many familiar objections raised are the argument that advanced technology is imported mainly to assist the exploitation of the developing countries by the developed countries; that the industrial processes designed for use in the host countries tend to be too capital-intensive to alleviate their unemployment and under-employment problems; and that foreign technology, with its much higher productivity and superior marketing techniques, pushes out the native enterprises, which cannot compete.

The predatory tactics employed by some of the transnational corporations could be prevented if the developing countries evolved the technical know-how and bargaining power to select a more specific, unpackaged form of technology suited to their own technological needs. Unfortunately, the technology market is a sellers' market and the developing countries suffer from the lack of technical competence to assess and select appropriate technology, as evidenced by the lack of discrimination in the choices made. The problem of choosing an appropriate technology is further complicated by the imperfection and complexity of the international market for industrial technology. Buyers of technology in developing countries are often saddled with inflated costs and are burdened with contract clauses that restrict them to particular exports and require them to import inputs from the supplier.

The gravity of the problems points to the urgent need to summon international support measures to overcome the obstacles facing the least developed countries. In particular, concentrated efforts at the global level should be directed at: *(a)* providing ready access to information on profitable alternative technologies by establishing regional institutes for research and dissemination of information on technology; *(b)* helping the least developed countries to establish technology screening centres to sift prospective technology imports; and *(c)* negotiating international codes of conduct for the transfer of technology and the activities of transnational corporations.

One fruitful area of investigation that has tended to be overlooked in the past is the export of technology by the more industrialized developing

countries. In fact, there have been limited examples of this in the sale of capital equipment, the establishment of turnkey plants and the provision of engineering consultancy services. There are obvious major advantages to the transfer of technology between developing countries: in particular, it has an ideological appeal consistent with the concept of collective self-reliance. On the substantive level, least developed countries will benefit from the relatively low costs of highly skilled labour, and technology that is more appropriate to the conditions of least developed countries and at the same time available in an unpackaged form. Very little is known, however, about the experiences of developing countries in this type of technology transfer and there is some danger of assuming that everything will work out well in the name of solidarity and collective self-reliance. More studies are needed on such transfers and the possibility of expanding them.

The role of Government

The Government plays a dominant role in initiating and supporting the early stages of industrialization in all spheres of economic activities, through regulation and direct intervention. In particular, the role of the public sector can be vital in *(a)* planning and financing physical infrastructure, particularly transports and utilities, an undertaking for which the private sector is ill-suited because of the massive capital requirements and risk-taking involved; *(b)* formulating and implementing economy-wide macro-planning; *(c)* mobilizing domestic resources for industrialization; and *(d)* operating public enterprises and promoting the transfer of appropriate technology.

The characteristics of the public sector economy may, however, vary markedly from one country to another. At one extreme there is the central role played by the Government in setting the pace for development and controlling the "commanding heights". India is a case in point, where the public investment share is relatively large, with sizeable State-owned enterprises and many industries reserved for the public sector. At the other end of the spectrum is the orientation of industrial policy towards the expansion of the private sector and market forces with a gradually diminishing importance of the public sector, as evidenced in the recent shift in the industrial policy of Bangladesh. In most cases applicable to small least developed countries, it is likely that the dominance of the public sector is a necessity because of the absence of a native entrepreneurial class, with no option for a viable private sector.

No matter what ultimate objectives the public sector economy attempts to achieve, the crux of the matter is the quality and value of government inputs into the growth process as a driving force of industrialization. It is well known that at the early stages of development the administrative and managerial capacity of the Government tends to be unequipped to implement the detailed State controls and interventions required by an ambitious industrial development strategy. Cumbersome bureaucratic red tape, ineptitude and incompetence are not uncommon, hampering and stunting industrial investments and progress.

It is beyond the scope of this article to examine all aspects of the public sector economy: the vast extent of the subject has been attested to in the ever-growing body of literature in this field. Instead, the role of public enterprises

and their importance for formulating a viable strategy of industrialization for small least developed countries will be assessed. The term "public enterprises" refers here to industrial enterprises owned and operated by the Government.

There are many compelling reasons for setting up public enterprises in the initial phase of industrialization. One of the most plausible arguments in favour of establishing public enterprises is, as has already been emphasized, the virtual non-existence of an indigenous entrepreneurial and managerial cadre. This critical deficiency leaves only two options for the small least developed countries: State enterprises and foreign firms. The former option is, of course, preferred on ideological grounds. The other route to launching an industrialization drive through direct foreign investments, particularly involving transnational corporations, has been extensively discussed already. The major weakness of State enterprises, however, stems from the fact that competent civil servants, highly trained managers, and the skilled manpower required to run State enterprises efficiently are in short supply to begin with. Whether for government enterprises or the private sector, managers and technical manpower need to be trained and their numbers steadily increased, starting from scratch.

It is also often argued that public enterprises constitute an effective countervailing force to the monopoly power of private firms, whose major preoccupation may be the exploitation of monopoly profits and market control. A compelling case can be made for State enterprises when the overriding importance of profit biases private firms towards the consumption habits of the rich, with a callous insensitivity to the needs of the poor. In sum, State enterprises can take the initiative in undertaking basic-needs-oriented production for the neglected majority, thus correcting the imbalance in the composition and distribution of products created by the market. It is, however, one thing to foster public enterprises for the purpose of gaining "commanding heights" and another to rely on State enterprises to produce basic-needs products. In this case, the correct industrial policy would be to promote rural industrialization based on small-scale village and cottage industries involving indigenous people and resources, since most basic needs can be provided by such small-scale establishments, except for certain industrial activities requiring large-scale and capital-intensive productions such as fertilizers, cement, petrochemicals, steel etc., the domain on which State enterprises could conceivably concentrate.[3]

Despite the much-touted virtues of self-reliance and self-management, many countries are disillusioned by the performance of public enterprises to date. Almost invariably, public enterprises in developing countries have been plagued by chronic inefficiency and operating losses, the consequences of which are wreaking havoc with the macro-economic equilibrium of developed countries, with their usually unlimited access to credits and scarce foreign exchanges of the central bank. Numerous factors contribute to the productive

[3]The industrial policy of promoting cottage and village industries imposes a conflict between efficiency and equity. It may be justifiable to promote small-scale and village industries at the expense of the modern industrial enterprises, especially in industrial activities where their competitiveness and self-sufficiency are known to be eroding (e.g. clothing). Obviously, village and cottage industries suffer from a lack of product development and quality control, marketing and promotional activities, limited managerial capacity and inadequate procurement procedures.

inefficiency of public enterprises in developing countries. For instance, the World Bank study [19] lists, among many other things, monopolistic practices sheltered behind high protective walls of trade restrictions, political patronage, cumbersome and ineffectual personnel policy, and overstaffing caused by politically expedient practices of making public enterprises as a major source of employment, the use of enterprises as a policy instrument to advance social objectives such as equity, basic needs, and regional balance, and difficult ventures requiring a long learning period. The fundamental issue, however, which goes right to the heart of the public enterprise, is the malfunctioning of incentive systems endemic to the public sector. The disincentive factor permeates all aspects of public enterprise operations. Because of inadequate personnel and administrative policies, workers do not see any direct link between work and reward, and this erodes the work ethic. Managers tend to be less motivated to strive for excellence and are often, even, frustrated because of the lack of managerial autonomy in such important decision-making areas as pricing, financing, employment and investment decisions. The practical difficulty of establishing accountability for performance exacerbates this problem of sluggish productivity in the public enterprise. In addition, there is some danger that the public sector in general and public enterprises in particular may become a political instrument controlled by the rich and industrial class, militating against the interests of the majority of the poor whom they purport to serve.

Policy recommendations

The following paragraphs summarize the major policy recommendations put forward in this article and indicate ways in which they may be carried out.

First, in order to overcome the problems of small least developed countries that are late-comers in launching their initial export drive, industrialized countries should open additional markets for labour-intensive manufactured exports specifically earmarked for small least developed countries, preferably by granting some sort of favourable quotas to enable them to secure a foothold in the industrialized countries' markets.

In the same vein, rapidly industrializing countries with a dominant share of developing countries' manufactured exports should move out of the traditional territory of labour-intensive manufactured exports and venture into more technologically advanced and skill-intensive products and product lines, and at the same time help small least developed countries to anchor their initial export markets for labour-intensive manufactures firmly in the industrialized countries they have already penetrated.

In addition, the resources of transnational corporations may be mobilized for the industrialization of small least developed countries, showing due sensitivity to the interests of the host country. In this regard, appropriate industrial policies must be formulated to harness the resources of transnational corporations to the mutual benefit of host countries and corporations. In particular:

(a) Provision must be made to ensure that the growth of native industries is not hampered by government policies to attract foreign investments;

(b) In some cases, the growth of large-scale industries directly competing with local industries needs to be curbed, and a list of reserved industries drawn up for small-scale indigenous enterprises with local technologies;

(c) Alternatively, various support measures, such as technical assistance and research and development should be extended to raise the productivity of the indigenous industries and hence strengthen their competitive position;

(d) A link should be established between modern large-scale enterprises and native small-scale ventures in the form of subcontracting: in order to do so, the international community must on the other hand create pressure to force transnational corporations to relinquish part of their control over the economies of developing countries, and on the other hand the product quality and productive efficiency of local enterprises must be substantially upgraded to meet the subcontracting requirements of modern enterprises;

(e) When possible, the proportion of imported contents in the final product should be an important consideration in selecting foreign investments, although such selectivity is rather limited at the early stages of industrialization; if such options are not available, a conscious effort must be made to increase the local content gradually, perhaps over a long period, primarily emphasizing the importance of skill development and the acquisition of technical know-how by "learning-by-doing";

(f) Effective policy measures must be formulated and implemented to facilitate a gradual policy of reducing the incentive system favouring the capital-intensive production of transnational corporations, to increase intervention in the choice of technology and to expand local participation in product designs, promotion, marketing, insurance, financing and other distribution-related service activities.

Most important of all, it is imperative to regulate excessive competition for foreign investments, and to ensure smooth and orderly flows of export business to the least developed countries, and a coherent collective policy for promoting the export industries of the small least developed countries based on close co-operation and agreed principles is therefore urgently needed.

The crucial importance of optimal timing in a switch from an import-substitution to an export-led industrialization strategy is amply underscored. Since the larger industries are protected from external competition, it becomes more difficult to loosen the grip of these vested-interest groups over industrial policies and the foreign trade regime, so the transition policy must be planned and implemented before they can gain political dominance.

The most critical of the many problems emerging during this transition period is the balance-of-payments crisis. It is therefore of paramount importance to provide adequate external financial support that will help to tide the small least developed countries over their difficulties. In this context, the international community could effectively aid the small least developed countries by establishing regional or international machinery to mobilize external resources and provide technical assistance for this specific purpose.

One of the promising avenues of export-led industrialization for small least developed countries is economic and technical assistance from more industrialized developing countries with established overseas markets. In view of

shifting comparative advantages and the resultant complementarity arising from different stages of specialization between small least developed countries and more advanced developing countries, economic co-operation must be fostered between the two groups. More advanced developing countries, with their extensive international marketing experiences and appropriate technology, should launch joint ventures with small least developed countries for export production and turn to the least developed countries as new markets for their new industrial products, as new locations for their overseas investments, and as a source of raw materials; the small least developed countries would in the meantime look to the more industrialized developing countries as potential markets for their labour-intensive manufactured goods. Furthermore, appropriate institutional mechanisms, such as preferential trading arrangements and industrial complementation schemes, should be evolved in order to facilitate trade and joint production between small least developed countries and more advanced developing countries.

With respect to technology, concentrated efforts at the global level should be directed at: *(a)* providing ready access to information on profitable alternative technologies by establishing regional institutes for research and the dissemination of technological information; *(b)* helping least developed countries to establish technology screening centres to sift prospective technology imports; and *(c)* negotiating international codes of conduct for the transfer of technology and the activities of transnational corporations.

Concrete policy measures to promote the transfer of technology to small least developed countries from the more industrialized developing countries must be formulated and implemented. Since, however, very little is known about this type of technology transfer, further research should be undertaken on the subject.

The major thrust of industrial policies relating to the public enterprise system should be directed towards a gradual exposure to the rigours of the market place in order to make public enterprises more incentive-conscious and efficient. In this context, the following policy recommendations by the World Bank [19] are highly relevant:

(a) A thorough pre-investment screening of large industrial projects, because of the limited possibilities for remedying mistakes by permitting bankruptcies;

(b) Narrower and more specific limitations on the non-commercial objectives of a public enterprise, which are often used as a blanket justification for poor performance;

(c) Encouragement of competition between public and private firms;

(d) Use of liberal import policies to exert competitive pressures on public monopolies;

(e) Allowance of greater scope for managerial decision-making;

(f) Undertaking of joint ventures by private domestic and foreign firms;

(g) Auctioning of public enterprises to the private sector once the Government's primary objective of underpinning an industrial base has been accomplished.

Finally, there are a number of ways in which the policy recommendations set out above may be translated into a programme of action. A set of recommendations related to economic and technical co-operation between least developed countries and more advanced developing countries in launching export drives in the former may be introduced as specific agenda items at solidarity meetings of ministers of industry on technical co-operation among developing countries, since the purpose of these meetings is to find out how the more advanced developing countries can assist the least developed countries. Also, the major findings and policy implications of the present article may be further evaluated and elaborated, with a view to formulating specific policy measures to accelerate the industrialization of least developed countries at various international and regional forums, and at regional meetings organized by ECA and the Organization of African Unity (OAU).

On matters related to North-South co-operation, the UNIDO System of Consultations can in its present form serve as an effective vehicle for the dialogue on industrial co-operation between developed countries and least developed countries. Through this important medium of industrial co-operation, developed countries can be urged to take decisive steps to commit an enlarged flow of external resources, both public and private, to the industrialization of least developed countries. One such step has been taken by the Federal Republic of Germany, which has developed a number of instruments, such as tax deductions, investment credits, financing of professional training and consultancy services etc. to further private foreign investment in developing countries and direct co-operation between enterprises in developing and developed countries, while stressing the importance of providing investors with the necessary guarantees. In addition, a development corporation has been created for the specific purpose of co-financing joint ventures between enterprises in the Federal Republic and in developing countries.

Such private joint ventures may prove to be a catalyst for the industrialization of small least developed countries at each progressive stage of specialization outlined in the strategy, starting from the development of labour-intensive import-substitution industries at the initial stage to a switch to export-oriented industrialization at a later stage; not only should private investors participate actively in such joint endeavours throughout the entire industrialized world but the highest priority should be accorded to solving the problems of the least developed countries. In the meantime, the small least developed countries themselves should make conscious efforts to create a favourable investment climate for private foreign capital. A direct dialogue between enterprises on both sides could fruitfully be established through the UNIDO System of Consultations or any other appropriate machinery, and the strategy mapped out in the present article, as well as the policy recommendations arising therefrom, should provide a proper framework for extra-national North-South negotiations and industrial development co-operation.

Concluding note

Throughout this lengthy discussion it has been assumed that small least developed countries have relatively poor natural resource endowments. It goes

without saying that, when the resources are available, a resource-based industrialization should take precedence over everything else; at the same time full exploitation of resources will provide desperately needed, internally generated revenue to finance the programme of industrialization envisioned in this article. The natural resource endowment would therefore substantially ease the financing problems of an industrialization strategy, although it would not alter the fundamental nature of the questions raised in this article with respect to a strategy for small least developed countries.

It is important to note that the strategy is not so much guided by any political ideology or narrowly defined development doctrine as by pragmatic and eclectic approaches to solving the problems of small least developed countries. Any of the various industrial development strategies and policies for small least developed countries that appears appropriate and feasible is given close examination, drawing upon the resources of transnational corporations as well as on elements of self-reliance and South-South co-operation as important instruments of industrialization. The idea of marshalling the resources of transnational corporations, may, however, be unpalatable or even totally unacceptable to a self-reliance ideologue or collective self-reliance purist. In this regard, the strategy outlined here claims no conceptual superiority over the many variants of the self-reliance scheme, collective or otherwise, nor does it involve any substantive disagreements with them, except regarding the means to achieve the end. For instance, the proposed strategy can be readily dovetailed into a framework for South-South co-operation, based on the organization of countervailing power by the South on a political, economic and intellectual front to accelerate the process of change in the international order in favour of the developing countries [20] or a strategy of fostering third-world multinational enterprises as an indispensable instrument of self-reliant development [21]. Undoubtedly, most of these proposals have an ideological appeal for the third world, and even conceptual elegance. But the core of the problem is realism. The question of whether these proposals stand much of a chance of success has yet to be answered. Ultimately, successful industrialization strictly based on the South-South co-operation scheme depends on the creation of the political will for governmental negotiations to bring about convergence in the development policies of third-world countries. Until these self-reliant strategies are sufficiently tested and proven as a workable and viable framework, the strategy suggested in the present article warrants serious consideration as a subject for further study.

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The impact of higher energy prices on the industrialization of developing countries, with special reference to the least developed countries

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Introduction

The impact of higher energy prices on the growth, trade and industrialization of the developing countries is, in many respects, too broad a subject to be studied satisfactorily within a purely conceptual framework, and for this reason the present article relies to a great extent on analysis of supporting data. On the other hand, the topic is too narrow in other respects to provide a reliable basis for policy prescription. As a result, any direct discussion of energy and trade policies and industrialization strategies is avoided as far as possible; instead, the article draws freely on the global analysis of these issues undertaken by the World Bank [1]. This approach is not without its limitations and can surely only be justified by the lack of an appropriate model. The development of a large-scale analytical model for policy purposes would be an indispensable asset to future investigations in energy research.[1]

The research has been focused on world economy in its broadest sense. Because of the highly interrelated nature of world trade and growth, it would be naive to proceed otherwise. Tables 1, 2 and 3 provide a variety of basic data for developed and developing countries in the world. Because the emphasis here is on the least developed countries, data for them have been listed separately. Moreover, detailed socio-economic, energy and resource data have been provided on all the least developed countries (see annex, tables A.1, A.2 and A.3). While the text and annex tables probably require little elaboration, two general observations concerning the least developed countries are worth mentioning. First, the wide disparities between the least developed countries and other developing countries (and, *a fortiori*, the developed countries) in the economic sphere also exist perforce in the energy area. Electricity consumption per capita, for example, which is frequently suggested as an index of industrialization, is more than 12 times smaller in the least developed countries than in the developing countries in general, and it is well over 200 times smaller compared with the developed countries. Secondly, as shown in the annex tables, there are also wide economic and energy-related disparities within the least developed countries. Nominal GDP per capita in 1978, for instance, was over five times greater in Samoa than in Bangladesh, and primary energy consumption per capita was over six times greater.

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[1] The model underlying the energy study by the International Institute of Applied Systems Analysis (IIASA) [2] is exemplary, but its emphasis on long-term technical options obscures the more immediate problems of adjustment confronting policy-makers in the developing countries.

Table 1. Socio-economic indicators for the world economy

Economic grouping	Population		Area (billions of square kilometres)	Gross domestic product			Annual average growth rates				Share of world's exports (percentage)		
							Exports		Imports				
	Total, 1977 (billions)	Average annual growth rate 1970-1977		Per capita 1977 (dollars)	Real growth rates[a] 1960-1970	1970-1979	1960-1970	1970-1979	1960-1970	1970-1979	1960	1970	1979
Developed countries	769	0.8	33	6 471	5.1	3.3	10.0	19.0	10.2	19.5	66.8	71.3	65.8
Developing countries	2 055	2.6	66	573	5.3	5.7	7.3	26.0	6.4	24.1	21.5	18.1	25.0
Oil-exporting countries	318	2.9	15	1 158	6.2	7.6	8.1	32.6	6.5	33.3	6.8	6.2	13.4
Oil-importing countries	1 738	2.5	52	466	5.1	5.4	6.7	20.9	6.4	20.9	14.9	11.7	11.6
Least developed countries	260	2.5	13	165	3.4	4.0	4.6	12.1	5.8	17.5	1.1	0.7	0.1

Source: United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, Supplement 1980.*

[a] Annual averages in 1970 dollars.

Table 2. Comparative energy consumption per capita, by economic grouping

Economic grouping	Primary energy (kilograms of coal equivalent)			Electricity (kilowatt hours)		
	1960	*1970*	*1979*	*1960*	*1970*	*1979*
World	1 368	1 781	2 019	772	1 355	1 849
Developed market economies	3 810	5 739	6 317	2 596	4 805	6 673
Developing market economies	211	302	437	97	204	360
Centrally planned economies	1 308	1 500	1 027	487	915	1 418
African developing countries	77	129	193	60	119	164
Median least developed countries	22	42	52	5	21	28

Source: World Energy Supplies, 1950-1974, Statistical Papers, series J, No. 19 (United Nations publication, Sales No. E.76.XVII.5) and *1979 Yearbook of World Energy Statistics* (United Nations publication, Sales No. E/F.80.XVII.7).

Another important emphasis in this article is on the future growth and industrialization of the developing countries, especially in the 1980s. In this connection, two conclusions can be drawn from the data in the accompanying tables. First, the evidence on growth rates in table 1 indicates that the disparities between the oil-exporting and oil-importing developing countries are widening. Such disparities are especially pronounced for the 1970s, when oil prices escalated drastically on world markets. This matter will be discussed more fully in the following section. Secondly, and of even greater concern in the long run, there are great disparities within the developing world in the distribution of energy resources. Table 4 shows that the net oil-exporting countries have a preponderant share of the low-cost resources (conventional and heavy oil and natural gas), except for coal. The net oil-importing countries have larger shares only in costlier, capital-intensive oil shale and hydroelectric power. With a few exceptions (Afghanistan, Bangladesh and Botswana), the least developed countries' only alternative to a reduction of oil imports in the 1980s is the costly development of their hydroelectric potential (see annex, table A.3). The rising cost of oil is a particularly acute problem for them, since most must rely on outside refining.[2]

It would seem imperative for the least developed countries to begin shortly to develop their energy potential. Traditional fuels, such as wood, animal wastes and crop residues, currently account for more than 90 per cent of their total energy consumption, and these are becoming scarce. As the prices of conventional fuels rise and the raw-material needs of construction and manufacturing intensify, the present localized shortages of wood could become widespread within many of the least developed countries. As forests are

[2]Only six of the 30 least developed countries currently have a petroleum refinery capacity. These are Bangladesh, Democratic Yemen, Ethiopia, Somalia, the Sudan, and the United Republic of Tanzania.

Table 3. Basic indicators of commercial energy use in the world, by economic grouping

Economic grouping	Average annual growth rates								Share of liquid fuel in total energy consumption (percentage)			Share of net imports in energy consumption (percentage)		
	Production		Consumption		Consumption per capita		Refinery capacity							
	1960-1973	1973-1978	1960-1973	1973-1978	1960-1973	1973-1978	1960-1973	1973-1978	1960	1973	1978	1960	1973	1978
Developed countries	3.0	0.2	4.8	0.5	3.7	−0.2	7.4	3.1	38.3	52.4	51.7	17.4	37.8	37.0
Developing countries	9.5	0.8	6.9	6.6	4.3	4.0	7.9	3.6	58.9	67.2	66.8	63.8	73.3	64.1
Oil-exporting countries	10.3	−0.2	8.4	10.9	5.6	7.9	4.3	2.4	65.4	60.5	62.4	91.3	93.7	88.7
Oil-importing countries	5.5	7.6	6.6	5.5	4.0	2.9	11.2	4.2	57.6	68.9	68.2	34.8	46.5	40.0
Least developed countries	32.8	1.2	11.9	3.0	6.0	0.4	6.5	1.2	95.1	83.0	81.8	102.3	59.5	63.2

Source: United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, Supplement 1980* (United Nations publication, Sales No. E/F.80.II.D.10).


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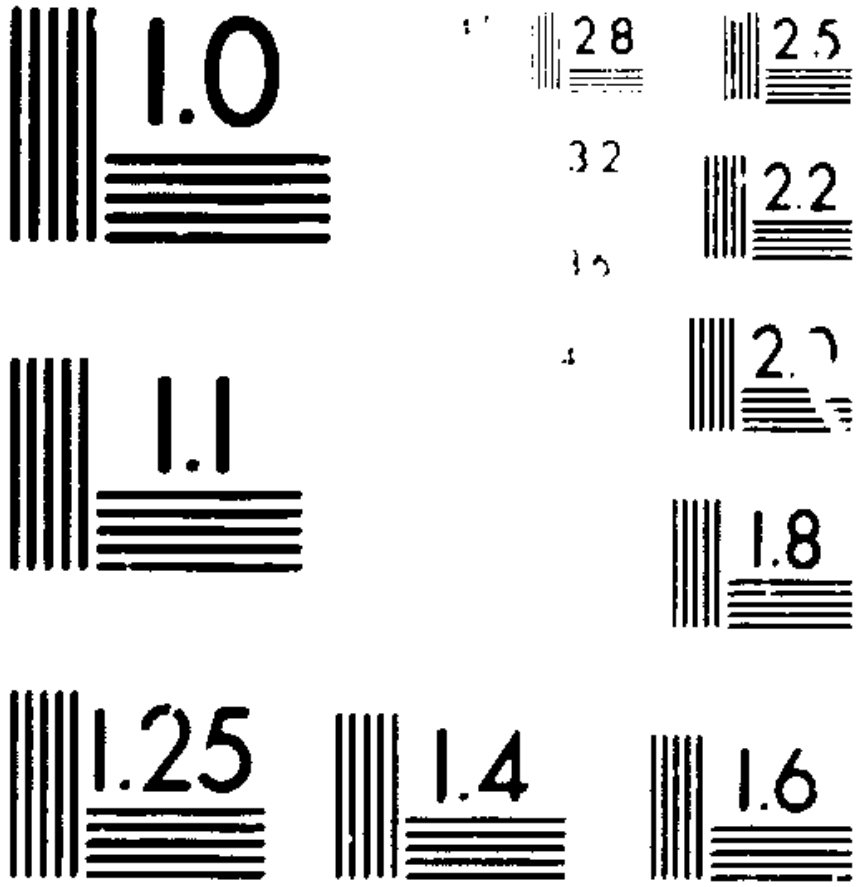


Table 4. World fossil-fuel resources and hydroelectric potential, by economic grouping

Economic grouping	Oil reserves (billions of barrels)[a]			Gas reserves (billions of barrels of oil equivalent)[a]	Coal (billions of tons)[a]		Total hydroelectric capacity (thousands of megawatts)[a]
	Conventional	Heavy	Shale		Resources	Reserves	
World	640.6 (100)	3 010.9 (100)	3 263.8 (100)	460.0 (100)	10 125.3 (100)	636.4 (100)	2 342.6 (100)
Developed countries	58.8 (9.2)	829.0 (27.5)	2 217.5 (67.9)	80.8 (17.6)	3 434.4 (33.9)	324.8 (51.0)	533.1 (22.8)
Centrally planned economies	90.0 (14.0)	0.5 (0.0)	140.7 (4.3)	168.0 (36.5)	6 458.6 (63.8)	245.9 (38.6)	615.2 (26.3)
Developing countries	491.8 (76.8)	2 181.4 (72.5)	905.6 (27.7)	211.1 (45.9)	232.2[b] (2.3)	65.6[c] (10.3)	1 194.4 (51.0)
Net oil-exporting countries	483.0 (75.4)	2 176.4 (72.3)	102.7 (3.1)	196.4 (42.7)	13.5 (0.1)	3.7 (0.6)	379.4 (16.2)
Net oil-importing countries	8.8 (1.4)	5.0 (0.2)	802.9 (24.6)	14.7 (3.2)	217.2 (2.1)	59.4 (9.3)	815.0 (34.8)
Least developed countries	0.03 (0.0)	—	—	1.68 (0.4)	102.1 (1.0)	4.0 (0.6)	196.9 (8.4)

Source: World Bank, *World Development Report, 1980* (Washington, D.C., 1980).

[a] Percentages in parentheses.

[b] Coal resource subtotal for developing countries includes 1.4 billion tons for countries for which individual country data are unavailable.

[c] Coal reserve subtotal for developing countries includes 2.5 billion tons for countries for which individual country data are unavailable.

depleted, rural populations spend more time collecting wood and less time farming, and often divert animal wastes and crop residues from their use as fertilizers. Furthermore, the depletion of trees has adverse effects on the retention of topsoil and flood control, so that the amount of arable land is reduced. As a consequence, less labour, land and fertilizers are available for crop production to feed the growing ranks of the impoverished. This "fuel-famine nexus" is reinforced in the least developed countries by the pitifully inefficient energy use (some 90 per cent of the heat generated in traditional stoves is lost to the atmosphere) and the "public good" character of rural forests, which erodes any private incentive to replant trees. In the short term at least, the energy problem in these countries is the impending fuelwood crisis.

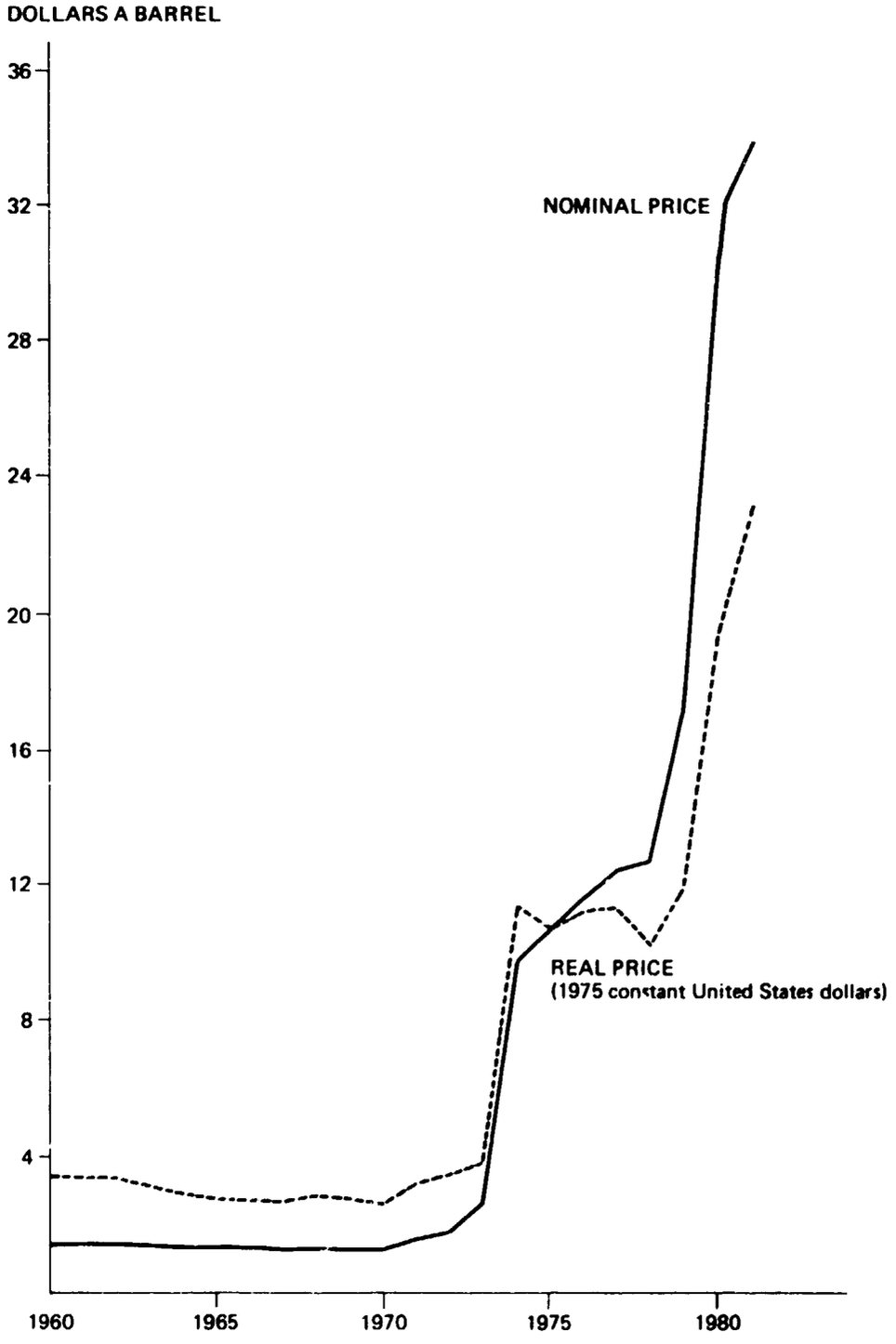
Of course, the development in this decade of the least developed countries' hydroelectrical potential and their limited supplies of conventional fossil fuels will involve sizeable inflows of technical assistance and long-term finance on comparatively easy terms. While no precise figures are available for the least developed countries separately, a rough estimate for the 1980s of the energy investment required by all low-income oil importers (comprised mostly of least developed countries) is 60 billion 1978 dollars in real terms. This will be discussed at greater length in a separate section. Given their extremely limited access to commercial credit (over 90 per cent of the least developed countries' external finance consists of official development assistance (ODA)), most of this requirement will need to be met through bilateral and multilateral aid. Indeed, considering the economic risks involved in the exploration and development of energy, it is very possible that virtually all of the investment will need to be financed by official aid. It is therefore crucial that both the level of ODA, as well as its allocation to the low-income oil importers, should be raised during the 1980s. In the short term, continuing emphasis should be placed on public-assisted reforestation programmes and the introduction of fuel-efficient heating and cooking equipment.

The impacts of higher energy prices

As table 5 vividly illustrates, the relatively stable world oil prices of the 1960s stand in stark contrast to the rapidly rising price levels of the 1970s. In real terms, oil prices declined over the period 1960-1970 at an average annual rate of 1.5 per cent, whereas over the period 1970-1980 they increased at an average annual rate of nearly 20 per cent. The sharp rises in the bienniums 1973-1974 and 1979-1980 became dramatically manifest in figure I. Saudi Arabian light crude oil, which averaged $2.70 per barrel in 1973, averaged $34.00 per barrel at the close of 1981. This represents more than a twelvefold increase in the nominal price of "marker crude" over the last eight years. Whereas it is unlikely that this degree of increase can be duplicated by OPEC in the 1980s, the official consensus is that world oil prices will continue to rise in real terms throughout the decade [3], [4], [5].[3]

[3]It should be noted that the official consensus concerns the secular trend of real oil prices and does not exclude the possibility that, from time to time throughout the decade, real oil prices may fluctuate, perhaps considerably, around this trend. Thus, the current "softening" in world oil prices is not necessarily incompatible with the official consensus.

Figure I. Nominal and real price paths for crude petroleum



Source: Table 5.

[a]Saudi Arabian light crude oil, 34°-34.9° API gravity, f.o.b. Ras Tanura.

Table 5. Realized price of Saudi Arabian light crude oil, 34°-34.9° American Petroleum Institute (API) gravity, f.o.b. Ras Tanura, 1960-1981

Year	Current price (dollars per barrel)	Real price (1975 constant dollars)	Deflator[a]
1960	1.50	3.42	43.9
1961	1.45	3.28	44.2
1962	1.42	3.25	43.7
1963	1.40	3.19	43.9
1964	1.33	2.99	44.5
1965	1.33	2.89	46.0
1966	1.33	2.87	46.4
1967	1.33	2.82	47.1
1968	1.30	2.95	44.1
1969	1.28	2.88	44.5
1970	1.30	2.65	49.1
1971	1.65	3.11	53.1
1972	1.90	3.25	58.4
1973	2.70	3.87	69.8
1974	9.78	11.25	86.9
1975	10.72	10.72	100.0
1976	11.51	11.29	101.9
1977	12.40	11.33	109.4
1978	12.70	10.09	125.9
1979	17.26[b]	11.91	142.7
1980	30.22[b]	19.13	158[b]
1981	34.00[b]	22.67	150[b]

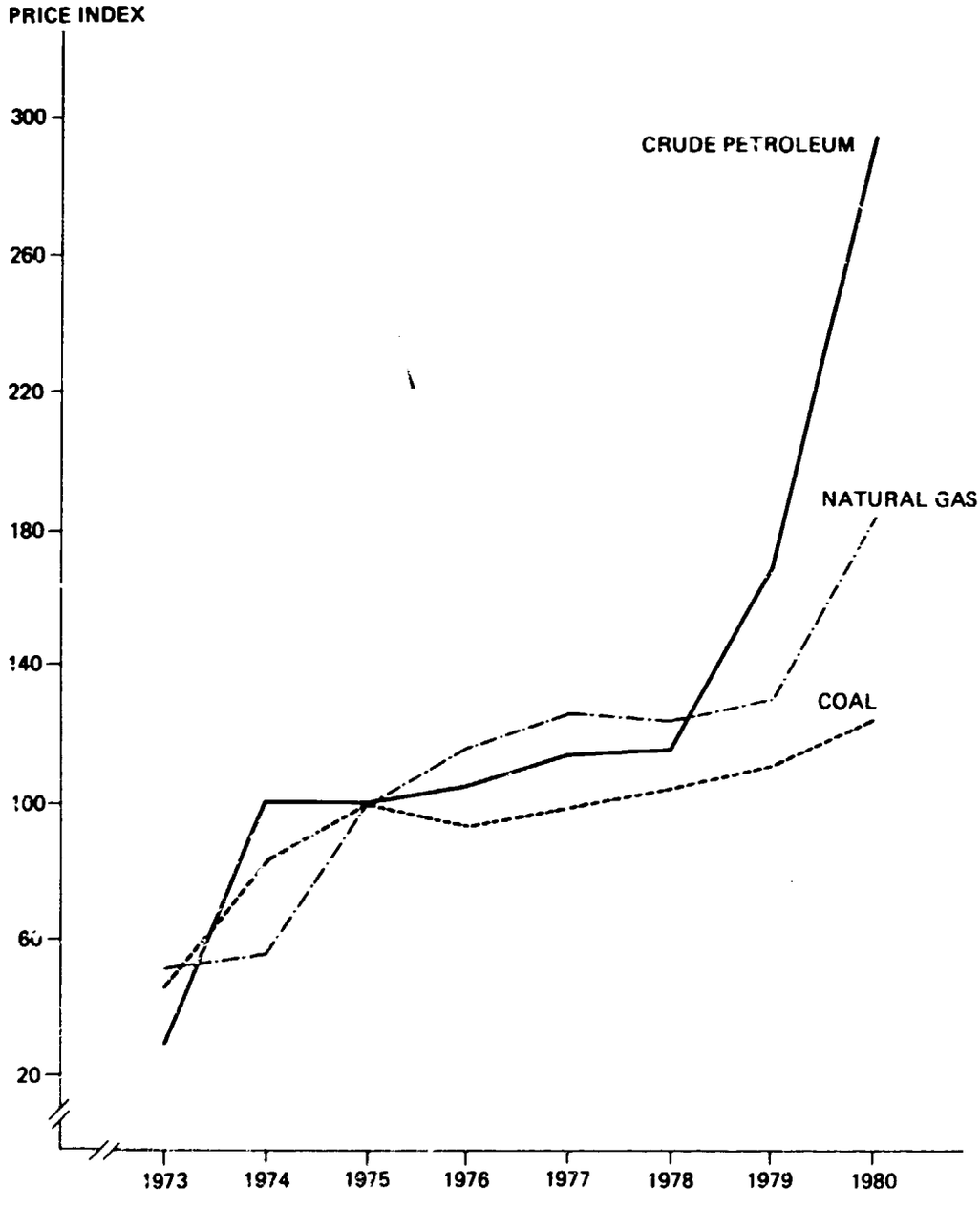
Source: World Bank, *Commodity Trade and Price Trends* (Washington, D.C., August 1980).

[a] International price index, namely, the c.i.f. unit value index of exports of manufactured goods for developed market economies.

[b] Recent or revised data are taken from United Nations, *Monthly Bulletin of Statistics*, vol XXXVI, No. 3 (March 1982).

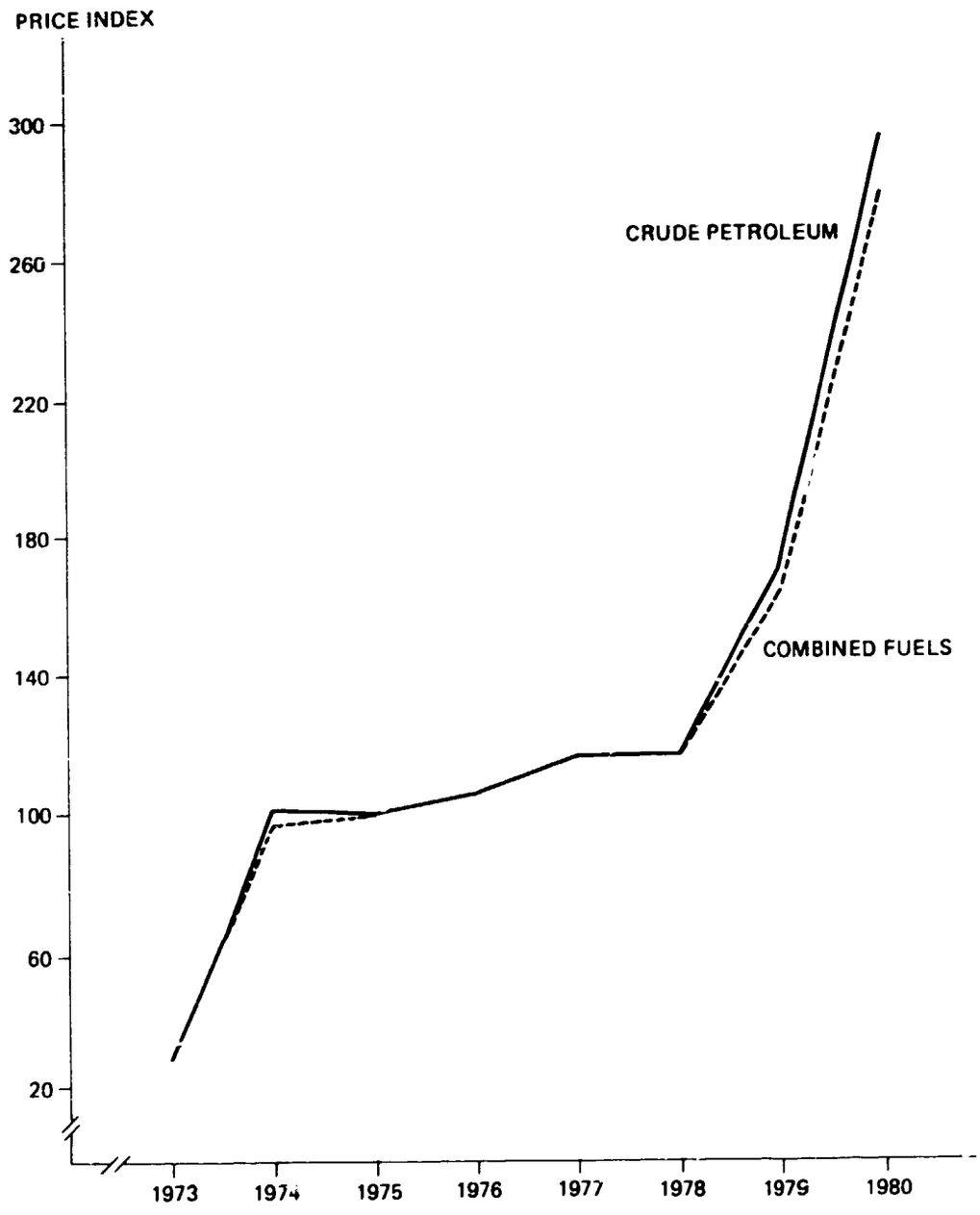
There are several reasons why higher oil prices are tantamount to higher energy prices generally. First, as depicted in figure II, fossil-fuel prices have traditionally moved together, in both direction and degree. Indeed, since 1973, the price path of crude petroleum has been virtually identical to the weighted-average (or combined) fossil-fuel price path in international trade (see figure III). Secondly, the relative importance of oil in total energy imports is not expected to change appreciably over the 1980s. For example, oil-importing developing countries imported 6.1 million barrels of oil equivalent per day in 1976, 6.0 million barrels of which were oil (the balance of 0.1 million barrels was coal). Recent projections by Lambertini [6] indicate that all of their anticipated 10.8 million barrels a day of energy imports for 1990 will be composed of oil. Similarly, the share of imported oil in the total energy consumption of industrialized countries has remained virtually unchanged at approximately 40 per cent since 1973 and thus, in view of the unprecedented oil price experience, this figure would not be expected to change appreciably over the coming decade. Thirdly, the extent to which conventional and non-conventional energy supplies may be substituted for oil appears to be rather limited, especially within the developing countries [7]. Within the industrialized countries, empirical results obtained by Griffin [8] suggest only a moderate

Figure II. World export price indices for selected fuels
(1975 = 100)



Source: United Nations, *Monthly Bulletin of Statistics*, vol. XXXV, No. 4 (April 1981).

Figure III. World export price indices for crude petroleum and combined fuels
(1975 = 100)



Source: United Nations, *Monthly Bulletin of Statistics*, vol. XXXV, No. 4 (April 1981).

degree of inter-fuel substitutability.[4] The use of non-conventional energy forms is not expected to figure predominantly in the industrialized countries in the near future [9].

The higher oil prices in the 1970s have had various, interrelated consequences for the world's economy. Certain aspects of these economic consequences will be examined in more detail below but the general situation is as follows.[5] While the extent to which global stagflation in the 1970s was caused by higher oil prices remains highly uncertain, one impact of the dramatic rise in world oil prices in the period 1973-1974 was the decline in aggregate demand and associated cost-push inflation generated in the industrialized and oil-importing developing countries (see table 6). Among the industrialized countries, real economic growth fell from a 6 per cent rate in 1973 to virtually nil in 1974, only to proceed at a negative 1 per cent growth rate in 1975. Meanwhile, the inflation rate nearly tripled the long-term rate of 4 per cent in 1974, remained at 11 per cent in 1975 and fell to 7 per cent thereafter. A slightly different response is observed for the oil-importing developing countries. Although inflation rose at proportionally the same rates (about 50 per cent) in the biennium 1974-1975 as they did in the industrialized world, the decline in real economic growth rates was much less marked. A plausible explanation for this is that, for the oil-importing developing countries, the problems of higher oil prices centre chiefly on their impact on foreign-exchange earnings and reserves, rather than on aggregate demand. Indeed,

Table 6. Comparative growth and inflation rates, industrialized and non-oil-producing developing countries, 1973-1978

Economic grouping	*1962-1972*[a]	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Industrialized countries							
Inflation rate[b]	4.1	7.3	11.9	11.0	7.1	7.1	7.0
Real growth rate[c]	4.6	6.1	0.2	−0.9	5.4	4.0	4.0
Oil-importing developing countries							
Inflation rate[d]	10.1	22.1	33.0	32.9	29.9	29.7	24.6
Real growth rate[e]	6.1	7.3	5.3	4.1	5.0	5.1	5.2

Source: J. Dunkerley, "Adjustment to higher oil prices in oil-importing developing countries", *Journal of Energy and Development*, vol. V, No. 2 (spring 1980).

[a] Annual average rate of change.

[b] Percentage change in GNP deflator.

[c] Percentage change in real GNP.

[d] Percentage change in GDP deflator.

[e] Percentage change in real GDP.

[4] Griffin obtains cross-price elasticity estimates of 0.25 for gas and 0.48 for coal, in relation to the price of fuel oil, in electricity generation in States members of OECD.

[5] An excellent overview of the impacts on the world economy of the 1973-1974 oil price rise is given by Fried and Schultze, eds. [10].

without their heavy borrowing to finance current-account deficits over the period 1973-1978, there is little doubt that real economic growth rates among the non-oil-producing developing countries would have been much lower.[6]

A second impact of the dramatic rise in oil prices is the transfer of income from consumers to producers of energy. Although producers initially accumulate a large amount of unspent surpluses, these are gradually recycled back to oil consumers in the form of increased export expenditure, development assistance and direct investment. Powelson [1] has estimated that of the additional $63 billion the industrialized countries paid to OPEC for oil imports in 1975 over 1970, $35 billion was returned in the form of increased exports, $4 billion in the form of direct investment, and over $16 billion in the form of reserves held as deposits and securities. The oil-importing developing countries spent an additional $11 billion for oil imports in 1975 over 1970, receiving $5 billion back in the form of additional exports and over $1 billion in foreign aid. Unfortunately, the trade balances of oil-importing developing countries with industrialized countries deteriorated by over $12 billion in 1975 compared with 1970. Thus, in relation to 1970, the oil-importing developing countries were in 1975 in deficit by an additional $17 billion, which was financed largely by loans from Governments and banks in the industrialized world and from international lending agencies, and by the drawing down of reserves. Powelson's analysis demonstrates the importance within the world economy of the indirect as well as the direct effects of the OPEC price increase. His analysis is, however, flawed by his neglect of the terms-of-trade effects induced by the rise in oil prices. For this reason, the income-transfer problem will be more carefully examined in the following section.

A third impact of the rise in world oil prices is the increased debt burden of oil consumers arising from the "unpaid" portion of current oil imports, i.e. the difference between the increase in oil imports and the net change in exports. The corresponding increases in the reserves of oil producers tend to be held in the industrialized countries and, as such, constitute claims against future goods and services produced in the industrialized world. Through inflation and currency devaluation, *inter alia*, the industrialized countries are in a position to defend themselves should these claims be exercised. Unfortunately for the oil-importing developing countries, whose debts are specified in currencies other than their own, such defensive measures are inapplicable and they must rely on borrowing and official finance (inclusive of aid). The worsening current account of those countries aggravates their debt-service capability (and hence their credit-worthiness) so that commercial borrowing is likely to cost more, and more of what is borrowed will be required to repay principal and interest on outstanding debt.[7] For instance, in 1975 more than one half of the $49 billion borrowed by developing countries for a medium or long term was

[6]Excluding official transfers, current account deficits of the oil-importing developing countries amounted, in real terms (1977 constant dollars), to $9.2 billion in 1973, $44.4 billion in 1975, $23.5 billion in 1978, and $43.2 billion in 1980, following the 1979 oil price increase. In terms of GNP, these amounts correspond to 1.1, 5.1, 2.3, and 3.9 per cent respectively [5].

[7]The increased cost of commercial borrowing appears, however, to be largely inflation-induced rather than due to increased risk of insolvency, especially in recent years. For example, in 1976 the London interbank offered rate (LIBOR) was 6.3 per cent with a 1.7 per cent spread for developing countries. In 1979 it stood at 12.1 per cent but the spread for developing countries had dropped to 0.9 per cent.

available for imports and reserves, whereas in 1980 less than one third of the $97 billion in corresponding borrowing was so available.

The evidence strongly suggests that the debt problem presented a greater burden to middle-income oil importers than to low-income oil importers. Over the period 1970-1978, external public debt as a percentage of GNP increased from 18.1 to 21.7 for the low-income countries and from 10.8 to 17.6 for the middle-income group. The interest and principal repayment service on this debt as a percentage of GNP increased, however, from 1.2 to 1.7 for the low-income countries but from 1.5 to 2.9 for the middle-income group. Debt service as a percentage of exports actually declined for the low-income countries from 12.3 to 11.7, whereas it rose for the middle-income group from 9.3 to 13.8. At the end of 1978, reserves among the low-income countries covered 3.5 months of imports, yet reserves among the middle-income group covered only 2.5 months. In 1977 constant dollars, the World Bank reports that over the period 1975-1980 total debt in the low-income countries rose from $30.9 billion to $32.3 billion (an increase of 4.5 per cent), whereas total debt in the middle-income group rose from $115.5 billion to $171.2 billion (an increase of 48.2 per cent) [5]. It is generally agreed that growth prospects in the 1980s for the middle-income oil-importing countries will be favourable only if they can progressively reduce their reliance on external borrowing by means of export expansion [12].[8]

Impact of higher energy prices on trade

Effects of the terms of trade

Increases in world oil prices raise import costs to oil-consuming nations directly, but they also affect them indirectly through the increased cost of other imported commodities. As mentioned earlier, these indirect effects may be quite substantial and, for purposes of analysis, may be taken to result from changes in relative commodity prices induced by the initial rise in oil prices. Since all increases in the cost of imports must ultimately be borne by the oil-consuming nation, the sum of the direct and indirect effects of the oil-price increase is a more meaningful measure of the impact of higher energy prices than the direct effect alone. The present approach to this problem follows the framework developed by Tims [13] for the price increase that took place in the period 1973-1974, but a different country classification has been adopted. In order to stress the position of OPEC in the world economy, the developing countries have simply been divided into two groups, OPEC and non-OPEC. In addition,

[8] A recent unpublished study by UNIDO shows, however, that for the period 1973-1979 the bilateral trade deficits of the least developed countries with the OPEC countries and countries of the OECD Development Assistance Committee (DAC) were covered by bilateral ODA; OPEC bilateral ODA, in particular, covered over 95 per cent of the total import bills of the least developed countries in that period. In the case of the oil-importing developing countries not included in the least developed group, in the same period, ODA covered 39.4 per cent of their bilateral trade deficits with DAC countries, 34.1 per cent of the deficits with the planned economies and 14 per cent of the deficits with OPEC countries. The difference in the relative importance of ODA to the trade deficits of these two groups stems mainly from two different orders of magnitude of their trade deficits. For instance, the trade deficits of the least developed countries were only 10 per cent of those of oil importing developing countries, excluding the least developed countries, in 1979.

developed countries have been included as a group in order to point up their role in the two major increases in world oil prices in the 1970s.

The distribution of exports and imports in five major commodity classes is given in table 7 for each country group in the years 1973 and 1978. These years more or less immediately precede the years in which world oil prices dramatically increased. The commodity distribution percentages, together with the export and import volumes in table 8, give each group's trade balances in each of the major commodity classes: *(a)* all food items; *(b)* agricultural raw materials; *(c)* ores and metals; *(d)* fuels; and *(e)* manufactured goods. It should be noted that this commodity classification covers over 95 per cent of each group's international trade, so that virtually all trade is being included. Export price indices for each commodity group are also given in table 8 for the periods 1973-1975 and 1978-1980. It is therefore possible to ascertain terms-of-trade effects induced by the two major oil-price increases by expressing 1973 commodity trade balances in terms of price levels for 1974 and 1975 and 1978 commodity trade balances in terms of price levels for 1979 and 1980.

This approach has its shortcomings, however. First, the impact of changes in the volume of trade between the years 1973 and 1978 is being ignored and

Table 7. Trade distribution of major commodity groups, 1973 and 1978

	Developed countries		Developing countries		OPEC countries		Non-OPEC countries	
Commodity group	*1973*	*1978*	*1973*	*1978*	*1973*	*1978*	*1973*	*1978*
A. Distribution of exports of market economies (percentage)								
All food items[a]	13.7	11.6	21.3	16.4	3.6	2.3	32.7	29.6
Agricultural raw materials[b]	5.1	3.6	9.3	4.8	4.7	1.6	12.3	7.7
Ores and metals[c]	10.8	9.4	8.8	5.4	1.4	0.7	13.6	9.8
Fuels[d]	3.5	4.6	39.6	52.8	88.7	93.5	7.9	15.0
Manufactured goods[e]	65.6	69.2	20.0	20.1	1.4	1.3	32.0	37.6
B. Distribution of imports of market economies (percentage)								
All food items[a]	15.0	12.6	14.7	11.5	13.4	10.9	15.0	11.7
Agricultural raw materials[b]	6.3	4.4	4.6	2.9	2.4	1.3	5.1	3.7
Ores and metals[c]	10.7	8.2	8.2	7.0	10.2	7.5	7.8	6.6
Fuels[d]	12.3	19.2	8.4	13.4	1.4	2.2	10.0	18.6
Manufactured goods[e]	54.6	54.2	59.7	61.2	69.9	73.7	57.3	55.3

Source: United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, 1976* (United Nations publication, Sales No. E/F.76.II.D.3) and United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, Supplement 1980* (United Nations publication, Sales No. E/F.80.II.D.10).

[a] Standard International Trade Classification (SITC) 0, 1, 22, and 4.

[b] SITC 2, excluding 22, 27 and 28.

[c] SITC 27, 28, 67 and 68.

[d] SITC 3.

[e] SITC 5-8, excluding 67 and 68.

Table 8. Trade balances in major commodity groups, 1973 and 1978

Trade category or commodity group	Developed countries		Developing countries		OPEC countries		Non-OPEC countries	
	1973	1978	1973	1978	1973	1978	1973	1978
A. Exports and imports in all categories of products (billions of dollars)								
Exports	406.7	872.0	108.8	300.8	42.7	144.9	66.1	155.9
Imports	408.9	863.5	104.0	303.5	20.2	97.1	83.8	206.4
B. Trade balances in major commodities[a, b] (billions of dollars)								
All food items	(5.6)	(7.6)	7.9	14.4	(1.2)	(7.3)	9.0	22.0
Agricultural raw materials	(5.0)	(6.6)	5.3	5.6	1.5	1.1	3.9	4.4
Ores and metals	0.2	11.2	1.0	(5.0)	(1.5)	(6.3)	2.5	1.2
Fuels	(36.1)	(125.7)	34.3	118.2	37.6	133.4	(3.2)	(15.0)
Manufactured goods	43.5	135.4	(40.2)	(125.3)	(13.5)	(69.7)	(26.9)	(55.5)
Total major commodities	(3.0)	6.7	8.3	7.9	22.9	51.2	(14.7)	(42.9)

C. Export price indices for major commodity groups (1975-1977 = 100)

	1973	1974	1975	1978	1979	1980
All food items	70	104	82	108	117	136
Agricultural raw materials	92	102	85	123	151	168
Ores and metals	91	120	98	111	143	164
Fuels (1975 = 100)	32	97	100	117	165	281
Manufactured goods (1975 = 100)	73	89	100	125	143	155

Source: United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, 1976* (United Nations publication, Sales No. E/F.76.II.D.3).

[a] Figures in parentheses are negative amounts.

[b] OPEC plus non-OPEC entries may not correspond precisely to the combined entry for developing countries because of rounding.

each group's mode of adjustment to higher oil prices during this intervening period is also ignored accordingly. These shortcomings will be rectified in the section below dealing with impacts on the balance of payments. Next, it is assumed here that the export price (namely, the free market price in dollars) for each commodity classification coincides with the import price. This has been unavoidable owing to data limitations. Finally, the effects of the terms of trade reported below certainly exaggerate the true impact of higher energy prices. For example, internal domestic policies, especially within the developed countries, as well as the world-wide crop failures and the final collapse of the post-war system of pegged exchange rates that took place in the early 1970s, no doubt play important roles in these effects.

Data on these effects of the terms of trade are reported in table 9. The $3 billion deficit in all major commodities for developed countries in 1973 was nearly $67 billion greater in 1974 prices and over $61 billion greater in 1975 prices. This difference was principally due to the increased import cost of fuels ($73 billion greater in 1974 and $77 billion greater in 1975), which was only slightly offset by the improvement in the export earnings on manufactured goods ($10 billion greater in 1974 and $16 billion greater in 1975). More strikingly, the nearly $7 billion surplus for developed countries in 1978 deteriorated to a $24 billion deficit in 1979 prices and a huge $136 billion deficit in 1980 prices. Again, this mainly resulted from higher fuel costs ($52 billion greater in 1979 and $176 billion greater in 1980), which were only marginally defrayed by improved earnings on manufactured goods ($20 billion greater in 1979 and $33 billion greater in 1980). As a group, the developing countries' trade surplus of $8 billion in 1973 amounted to $74 billion and $67 billion in 1974 and 1975 prices, respectively. Their $8 billion surplus in 1978 swelled to $40 billion in 1979 prices and, in 1980 prices, exceeded $146 billion. In both 1973 and 1978, the terms-of-trade effects bloated fuel surpluses much more than the deficits on manufactured goods. However, the grouping together of OPEC and non-OPEC countries would seem to conceal more than it reveals.

OPEC countries, unlike their non-OPEC counterparts in the developing world, ran trade surpluses in both 1973 and 1978. The movement of fuel prices in 1974 and 1975 gave rise to large income transfers with respect to their 1973 volume of fuel exports, which caused the quadrupling of their 1973 trade surplus in terms of 1974-1975 price levels. Similarly, the OPEC 1978 trade surplus of $51 billion nearly doubled in 1979 prices and more than quadrupled in 1980 prices. Meanwhile, changes in the terms of trade of major commodities exacerbated the 1973 and 1978 trade deficits of the non-OPEC developing countries. The additional $7 billion paid on 1973 volumes in 1974 jumped to over $15 billion in 1975. This jump was principally due to rising prices on their main import items, fuels and manufactured goods, but was partly due to falling prices on all food items, their main export. Whereas the price of food steadily rose in 1979 and 1980, the 1978 trade deficit of $43 billion for non-OPEC countries deteriorated to $55 billion in 1979 and to $69 billion in 1980, as a result of the even more rapid increases in the prices of manufactured goods and, especially, fuels.

An alternative framework for demonstrating the gains and losses from changes in the terms of trade is by way of an income classification of developing countries. The secretariat of the United Nations Conference on Trade and Development (UNCTAD) has recently published unit-value indices according to such a classification, and these are presented in table 10. Unfortunately, because these indices are unavailable for the year 1980, only the 1973-1974 oil-price increase can be investigated. As before, the large gain to developing countries vis-à-vis developed countries in terms of future prices obscures the fact that oil-exporting countries were huge gainers and the oil-importing developing countries moderate losers with respect to their 1973 balance of trade. The 1974 terms of trade, in particular, which so devastated developed countries, actually improved the trade balances of middle-income and low-income developing countries in contrast to the least developed countries. Subsequent movements in the terms of trade, in 1976 and 1978,

Table 9. Effects of the terms of trade, by major commodities and by economic grouping, 1973-1975[a] and 1978-1980

(Billions of dollars)

Economic grouping and commodity group	1973 volumes			1978 volumes			Net changes in trade balances			
	1973 prices	1974 prices	1975 prices	1978 prices	1979 prices	1980 prices	1974	1975	1979	1980
Developed countries										
All food items	(5.6)	(8.3)	(6.6)	(7.6)	(8.2)	(9.6)	(2.7)	(1.2)	(0.6)	(2.0)
Agricultural raw materials	(5.0)	(5.5)	(4.6)	(6.6)	(8.1)	(9.0)	(0.5)	0.4	(1.5)	(2.4)
Ores and metals	0.2	0.3	0.2	11.2	14.4	16.5	0.1	0.0	3.2	5.3
Fuels	(36.1)	(109.4)	(112.8)	(125.7)	(177.3)	(301.9)	(73.0)	(76.7)	(51.6)	(176.2)
Manufactured goods	43.5	53.0	59.6	135.4	154.9	167.9	9.5	16.1	19.5	32.5
Total major commodities	(3.0)	(69.9)	(64.2)	6.7	(24.3)	(136.1)	(66.9)	(61.2)	(31.0)	(142.8)
Developing countries										
All food items	7.9	11.7	9.3	14.4	15.6	18.1	3.2	1.4	1.2	3.7
Agricultural raw materials	5.3	5.9	4.9	5.6	6.9	7.6	0.6	(0.4)	1.3	2.0
Ores and metals	1.0	1.3	1.1	(5.0)	(6.4)	(7.4)	0.3	0.1	(1.4)	(2.4)
Fuels	34.3	104.0	107.2	118.2	166.7	283.9	69.7	72.9	48.5	165.7
Manufactured goods	(40.2)	(49.0)	(55.1)	(125.3)	(143.3)	(155.4)	(8.8)	(14.9)	(18.0)	(30.1)
Total major commodities	8.3	73.9	67.4	7.9	39.5	146.8	65.0	59.1	31.6	138.9
OPEC countries										
All food items	(1.2)	(1.8)	(1.4)	(7.3)	(7.9)	(9.2)	(0.6)	(0.2)	(0.6)	(1.9)
Agricultural raw materials	1.5	1.7	1.4	1.1	1.4	1.5	0.2	(0.1)	0.3	0.4
Ores and metals	(1.5)	(0.2)	(1.6)	(6.3)	(8.1)	(9.3)	(0.5)	(0.1)	(1.8)	(3.0)
Fuels	37.6	114.0	117.5	133.4	188.1	320.4	76.4	79.9	54.7	187.0
Manufactured goods	(13.5)	(16.5)	(18.5)	(69.7)	(79.7)	(86.4)	(3.0)	(5.0)	(10.0)	(16.7)
Total major commodities	22.9	95.4	97.4	51.2	93.8	217.0	72.5	74.5	42.6	165.8
Non-OPEC countries										
All food items	9.0	13.4	10.5	22.0	23.8	27.7	4.4	1.5	1.8	5.7
Agricultural raw materials	3.9	4.3	3.6	4.4	4.8	6.0	0.4	(0.3)	0.4	1.6
Ores and metals	2.5	3.3	2.7	1.2	1.5	1.8	0.8	0.2	0.3	0.6
Fuels	(3.2)	(9.7)	(10.0)	(15.0)	(21.2)	(36.0)	(6.5)	(6.8)	(6.2)	(21.0)
Manufactured goods	(26.9)	(32.8)	(36.5)	(55.5)	(63.5)	(68.8)	(5.9)	(9.9)	(8.0)	(13.3)
Total major commodities	(14.7)	(21.5)	(30.0)	(42.9)	(54.6)	(69.3)	(6.8)	(15.3)	(11.7)	(26.4)

[a]Figures in parentheses are negative amounts.

Table 10. Gains and losses from terms of trade, 1973-1978[a]

Economic grouping and item	Unit-value indices (1975 = 100)				Trade item	1973 volume (billions of dollars)				1973 balance[b] (billions of dollars)			
	1973	1974	1976	1978		1973 prices	1974 prices	1976 prices	1978 prices	1973	1974	1976	1978
Developed countries													
Export prices	72	89	100	123	Exports, f.o.b.	408.1	504.5	566.8	697.2				
Import prices	65	92	101	122	Imports, c.i.f.	429.9	608.5	668.0	806.9				
Terms of trade	110	97	99	100	Balance of trade	(21.3)	(104.0)	(101.2)	(109.7)	(19.8)	(22.5)	(22.0)	(21.8)
Developing countries													
Export prices	44	101	104	118	Exports, f.o.b.	110.5	253.5	261.2	196.3				
Import prices	68	95	102	122	Imports, c.i.f.	98.9	138.2	148.4	177.4				
Terms of trade	65	106	102	97	Balance of trade	11.6	115.4	112.8	118.9	7.5	12.3	11.8	11.3
Oil-exporting countries[c]													
Export prices	26	93	107	118	Exports, f.o.b.	44.2	158.1	181.3	200.6				
Import prices	73	94	101	125	Imports, c.i.f.	22.4	26.8	31.0	38.4				
Terms of trade	36	99	106	94	Balance of trade	21.8	129.3	150.9	162.2	7.8	21.6	23.1	20.5
Oil-importing countries[d]													
Export prices	71	102	102	119	Exports, f.o.b.	66.0	94.8	94.8	110.6				
Import prices	65	94	103	121	Imports, c.i.f.	76.4	110.5	121.1	142.2				
Terms of trade	109	109	99	98	Balance of trade	(10.3)	(15.7)	(26.3)	(31.6)	(9.4)	(9.4)	(10.4)	(10.5)

Middle-income countries[e]													
Export prices	53	93	101	113	Exports, f.o.b.	17.2	30.2	32.8	36.7				
Import prices	68	94	102	122	Imports, c.i.f.	17.6	24.3	26.4	31.6				
Terms of trade	78	99	99	93	Balance of trade	(0.4)	5.9	6.4	5.1	(0.5)	(0.4)	(0.4)	(0.4)
Low-income countries[f]													
Export prices	66	107	103	127	Exports, f.o.b.	20.8	33.7	32.5	40.0				
Import prices	66	94	102	122	Imports, c.i.f.	22.3	31.8	34.5	41.2				
Terms of trade	100	114	101	104	Balance of trade	(1.5)	1.9	(2.0)	(1.2)	(1.5)	(1.3)	(1.5)	(1.4)
Least developed countries[g]													
Export prices	75	97	114	136	Exports, f.o.b.	2.7	3.5	4.1	4.9				
Import prices	70	95	102	123	Imports, c.i.f.	4.0	5.4	5.8	7.0				
Terms of trade	107	102	112	111	Balance of trade	(1.2)	(1.9)	(1.7)	(2.1)	(1.1)	(1.2)	(1.1)	(1.1)

Source: United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, Supplement 1980* (United Nations publication, Sales No. E/F.80.II.D.10).

[a] Figures in parentheses are negative amounts.

[b] 1973 trade balance deflated by the prevailing terms of trade.

[c] Major petroleum exporters for which petroleum and petroleum products accounted for more than 50 per cent of total exports in 1974. These countries, in addition to members of OPEC, include Angola, Bahrain, Brunei, Oman and Trinidad and Tobago.

[d] Developing countries not classified as major petroleum exporters.

[e] Per capita GDP in 1977 from $500 to $1 000. This income group includes one OPEC member, Ecuador.

[f] Per capita GDP in 1977 under $500. This income group includes Angola and two OPEC members, Indonesia and Nigeria.

[g] Official United Nations list of 30 countries (see annex, table A.1).

slightly favoured developed over developing countries, though the effect on their respective trade balances was inconsequential. Within the group of developing countries, the 1976 terms of trade favoured oil exporters over oil importers, especially those in the low-income classification. The improvement in the 1976 terms of trade for the least developed countries probably resulted largely from the 1975-1977 boom in primary commodities (roughly 90 per cent of their exports). The movement in the 1978 terms of trade was particularly unfavourable for oil exporters and middle-income oil importers, probably as a result of the much higher prices of manufactured goods from the developed countries, which comprised about 70 per cent and 60 per cent, respectively, of their imports.

Effects of export earnings

Movements in a country's terms of trade provide a crude measure of changes in the purchasing power of its exports. It is, however, only a crude measure, since the effects of the volume of exports are ignored. If, in particular, one wanted to assess the impact of higher oil prices on export earnings, one would need to consider changes in the volume of exports as well as changes in relative prices. Moreover, to arrive at the purchasing power of these earnings, one would want to deflate export earnings by some general international price level (excluding oil). This kind of approach was recently taken by the World Bank [5] in order to assess the impact of higher oil prices on what an oil-importing country can purchase with its export earnings (see table 11). The price deflator employed is the industrial countries' export price index of all

Table 11. Purchasing power of exports of all goods and non-factor services, 1970-1980

Item	Oil importers			Oil Exporters	Industrial market economies
	Low income	Middle income	Total		
Percentage change of terms of trade vis-à-vis industrial market economies	−16	+2	0	+247	—
Total export purchasing power (billions of 1978 dollars)					
Level, 1970	17	127	144	65	664
Increase, 1970-1980	3	118	121	245	471
Volume component	7	114	121	21	461
Relative export-price component	−4	4	0	224	—
Increases as percentage of 1970 level					
Total increase	18	93	84	377	71
Volume component	42	90	84	32	71
Relative export-price component	−24	3	0	345	—

Source: World Bank, *World Development Report, 1981* (Washington, D.C., 1981).

goods plus non-factor services. The export-volume component in the table reflects the change in export volume for the period 1970-1980 when the relative export price is fixed at its 1970 level. The price component is the difference between the increase in real export earnings over this period and the export-volume component.

Over the decade of the 1970s, real export earnings (in 1978 dollars) increased by $471 billion (or 71 per cent) for industrial countries, $245 billion (or 377 per cent) for oil-exporting countries, and $121 billion (or 84 per cent) for oil-importing countries. Clearly, oil exporters did well mainly because of higher relative export prices, which accounted for more than 90 per cent of their increase in export purchasing power. For oil importers, the increase in real export earnings resulted essentially from greater export volumes (97 per cent of the increase for the middle-income group and 233 per cent of the increase for the low-income group). Virtually all of the increase in the export purchasing power of the oil importers, however, went to the middle-income group. Countries in this group increased real earnings on their non-fuel primary exports by 32 per cent and on their manufactured exports by 194 per cent over the decade. In both instances, the substantial effect of the volume of exports was only partially offset by falling relative export prices. Indeed, the increase in the group's volume of manufactured exports was almost 300 per cent and led to a substantial change in the composition of its merchandise exports over the decade. As indicated in table 12, manufactured goods of the middle-income countries comprised one third of their exports in 1970 but nearly one half by 1980. The reason seems to have been their increasing penetration of the industrial countries' markets for manufactures and, also, the expansion in trade in manufactures within the developing countries.

By way of contrast, for countries in the low-income group the 1970s witnessed a decline in their share of the real export earnings of the oil-

Table 12. Structure of merchandise, trade, low-income and middle-income oil importers, 1970-1980

(Percentage)

Year, country group and region	Ratio of exports to GDP	Composition of merchandise exports		Composition of merchandise imports		
		Manu-factures	Non-fuel primary	Manu-factures	Food	Fuel
1970						
Low-income oil importers:						
Africa	23	11	86	77	11	9
Asia	7	51	43	64	21	5
Middle-income oil importers	22	33	58	69	12	10
1980						
Low-income oil importers:						
Africa	16	9	80	51	16	31
Asia	9	47	50	38	14	39
Middle-income oil importers	24	46	36	53	11	28

Source: World Bank, *World Development Report, 1981* (Washington, D.C., 1981).

importing countries, from 12 per cent in 1970 to 8 per cent in 1980, resulting from a comparatively greater deterioration in relative export prices and a comparatively smaller expansion in export volume. This group experienced an 18 per cent increase in real earnings on non-fuel primary exports and only 26 per cent on manufactured exports over the decade. As indicated in table 12, non-fuel primary commodities are the principal exports of the low-income African countries. The tendency of these countries to concentrate their primary exports in commodities with slowly growing demand (e.g. metals and minerals), as well as their relative inability to diversify their exports in response to changing prices, in part explains the rather poor purchasing-power performance of the low-income group in its primary exports during the 1970s. The rather poor purchasing-power performance of the low-income group in its manufactured exports mainly resulted from its considerably smaller increase in export volume in comparison with the middle-income group. This is indicated by table 12. For instance, although the low-income Asian countries (including India) have a similar structure of trade to that of the middle-income countries, they enjoyed a much smaller amount of trade (e.g. the ratio of exports to GDP is one third as much).

Finally, it should be noted that the relative composition of fuel imports increased more dramatically for the low-income countries (indeed, nearly eightfold for those in Asia) compared with the middle-income countries. Thus, the low-income oil importers experienced not only comparatively poorer export earnings but also comparatively greater demands on those earnings. In real terms, approximately 5 per cent of their export earnings paid for fuel imports in 1970; in 1980, the figure stood at approximately 55 per cent. Net of fuel imports, the purchasing power of their exports actually declined by about 30 per cent over the decade, which obviously left less to be spent on other imports. On the other hand, approximately 10 per cent of the real earnings of the middle-income oil importers on exports was spent on fuel imports in 1970; in 1980, this figure stood at approximately 27.5 per cent. Thus, in relation to the low-income oil importers, the middle-income countries used proportionally twice as much of their export purchasing power on fuel imports at the beginning of the decade, but proportionally half as much by the end of the decade. Even though somewhat more than one half of their increase in export earnings was absorbed by increased fuel-import costs over the decade, their export purchasing power net of fuel imports still managed to rise by more than 50 per cent, an excess of $60 billion in real terms to be spent on other imports. By way of contrast, for the low-income oil importers the increase in fuel import costs over the decade nearly tripled their increase in real export earnings.

Impacts of higher energy prices on the balance of payments

External shocks and modes of adjustment

A more complete and descriptively richer approach to the impacts of higher energy prices on the trade of the oil-importing developing countries has been described by Balassa [14]. He decomposes the changes in their balance of payments of those countries for the period 1974-1978 into price and volume changes, comparing prices with the levels for the years 1971-1973 and volumes

with the trends established during the decade 1963-1973. In particular, the sum of the effects of international prices (or terms of trade) and of export volume, as discussed earlier, are viewed as the exogenous impacts, or external shocks, of higher oil prices under small-country assumptions for the oil importers. The methods of financing these impacts, or modes of adjustment, are decomposed into structural adjustment (namely, export market penetration plus import substitution), additional real external financing, and slower growth. Thus, one can view the modes of adjustment as the policy strategies of the oil-importing countries to raise funds, and the external shocks as the corresponding uses of those funds (see table 13).

Table 13. Balance of payments effects of external shocks and modes of adjustment in groups of oil-importing developing countries, 1974-1978 averages

(Percentage of GNP)

Item	*Semi-industrial countries*	*Primary producing countries*[a]	*Populous South Asia*	*Least developed countries*
External shocks				
Effects of international prices	0.90	1.65	1.26	0.14
Effects of export prices	−0.83	−3.21	−0.19	−2.07
Effects of import prices	1.73	4.86	1.45	2.21
Effects of volume of exports	0.91	1.99	0.69	1.39
Total	1.81	3.64	1.95	1.53
Modes of adjustment				
Structural adjustment	0.78	0.61	−0.31	−2.03
Export market penetration	0.09	0.30	−0.51	−3.49
Import substitution	0.69	0.31	0.20	1.46
Additional real external financing[b, c]	0.45	2.54	2.35	3.03
Slower growth	0.58	0.49	−0.09	0.53
Total	1.81	3.64	1.95	1.53

Source: World Bank, *World Development Report, 1981* (Washington, D.C., 1981).

[a] Figures for this group are averages for the period 1974-1977.

[b] Nominal external financing deflated by an international price index.

[c] Comprises changes in capital flows, reserves, services and transfers.

"International price effects" in this table reflect the average movement in export and import prices in comparison with world prices (unit-value index of manufactured exports f.o.b. from developed countries) over the period 1974-1978, compared with the 1971-1973 base period. "Effects of export prices" are a pure terms-of-trade effect, calculated on the assumption of balanced trade in base-period prices, whereas "effects of import prices" capture the effect of increased import prices on unbalanced trade.[9] Thus, effects of export prices

[9] Symbolically, international price effects may be denoted by $P^m_{01}M_1 - P^x_{01}X_1$, where M_1 and X_1 stand for the period 1 (or 1974-1978) level of imports and exports, respectively, valued in period 0 (or 1971-1973) prices, and where P^m_{01} and P^x_{01} stand for the percentage changes in import and export prices, respectively, between periods 0 and 1. This expression is then decomposed into a pure terms-of-trade effect, $(P^m_{01} - P^x_{01})X_1$, and an unbalanced trade effect, $(M_1 - X_1)\,P^m_{01}$. The former corresponds to the effects of export prices shown in table 13, whereas the latter corresponds to the effects of import prices.

reflect the extent to which the purchasing power of exports changed as a result of changes in the real terms of trade, whereas "effects of import prices" reflect the extent to which the trade deficit changed as a result of changes in real import prices. "Effects of export volume" on the other hand, attempt to capture the decline in export demand arising from the apparent global recession of the mid-1970s. They are computed as the difference between "trend" exports and "hypothetical" exports. For former it is presumed that the rate of export growth was the same for the period 1971-1973 as for the decade 1963-1973 and, moreover, that the 1971-1973 base period export share in world trade was maintained. For latter, it is the actual rate of export growth starting from 1971-1973 that is taken, under the hypothesis that the 1971-1973 base period export share in world trade was maintained.

Turning to the modes of adjustment, structural adjustments consist of export-market penetration and import substitution. The former is the difference between actual and hypothetical exports, while the latter is the difference between hypothetical and actual imports. Hypothetical imports are determined from the actual rate of growth in GNP starting from the period 1971-1973 on the hypothesis that the income elasticities of import demand over the period 1963-1973 were maintained. Trend imports, on the other hand, not only presume that the 1963-1973 income elasticities of import demand were maintained, but also that the growth of GNP starting from the period 1971-1973 was at the same rate as it had been over the period 1963-1973. The item "slower growth" in table 13, then, is merely the difference between trend and hypothetical imports. The item "additional real external financing" is the difference between the real-resource gap and the trend-resource gap. The former is simply the actual trade balance in real terms; the latter is the trend trade deficit (or trend imports less trend exports) measured in the 1971-1973 base-period prices.

The data in table 13 are averages for the period 1974-1978 expressed as percentages of GNP. The country grouping corresponds to the usage of the World Bank [1] and is not especially useful for present purposes; it suffices, however, to illustrate Balassa's approach in a practical application. The semi-industrial group includes the following middle-income countries: Argentina, Brazil, Colombia, Egypt, Israel, Mexico, the Philippines, Portugal, the Republic of Korea, Singapore, Turkey, Uruguay and Yugoslavia. This group is hardly homogeneous in terms of level of development and trade structure. GNP per capita in 1979 ranged from below $500 for Egypt to above $4,000 for Israel. The ratio of exports to GDP in 1979 ranged from 4 for Turkey to nearly 160 for Singapore. Moreover, Egypt and Mexico are among the world's oil exporters. The primary-producing group includes 17 middle-income countries and six low-income countries. The middle-income countries are: Bolivia, Chile, Costa Rica, Ghana, Honduras, the Ivory Coast, Jamaica, Kenya, Liberia, Malaysia, Morocco, Papua New Guinea, Peru, Thailand, Tunisia, the United Republic of Cameroon and Zambia. The low-income countries are: Burma, Madagascar, Mauritania, Sierra Leone, Sri Lanka and Zaire. Superficially, the primary-producing group would appear to be at least as heterogeneous as the semi-industrial group. Again, the primary producers include several oil exporters, namely, Bolivia, Malaysia, Peru and Tunisia. The "populous South Asia" group consists of Bangladesh, India and Pakistan. This is unfortunate for

present purposes, since Bangladesh is one of the least developed countries. In fact, data in table 13 for the least developed countries are representative of only eight of them: the Central African Republic, Ethiopia, Malawi, Mali, Somalia, the Sudan, Uganda and the United Republic of Tanzania. In summary, it goes without saying that the results in table 13 must be interpreted with extreme care.

Effects of international prices were adverse for every country group, but especially so for the primary producers and populous South Asia, owing to the fact that large unfavourable movements in real import prices swamped smaller favourable movements in real export prices. Similarly, the effects of the volume of exports were adverse for every group, but especially so for populous South Asia and the least developed countries, probably owing to the declining demand for world exports arising from the recession in the OECD countries in the period 1974-1975. External shocks ranged from 1.5 to 2 per cent of GNP during the period 1974-1978 for semi-industrial countries, populous South Asia and the least developed countries, but represented over 3.5 per cent of GNP during the period 1974-1978 for the primary-producing countries. The data indicate that the effects of international prices and volume of export were equally significant external shocks for both the semi-industrial and primary-producing countries. Still, these effects were twice as big for the latter group. The semi-industrial countries, characterized by a high share of manufacturing in production and exports, were considerably more flexible in responding to adverse price changes and considerably less concentrated in slow-growth commodity trade. On the other hand, the primary producers tend to have relatively inflexible production structures (and so are less able to respond to movements in international prices) and relatively concentrated export structures in slow-growth commodities. Whereas the agriculture-based primary producers, such as Ghana, the Ivory Coast and Sri Lanka, suffered more from the adverse effects of volume than of prices during the period 1974-1978, the mineral-based primary producers, such as Mauritania, Zaire and Zambia, suffered more from the effects of prices than of volume. Finally, it should be noted that populous South Asia seemed to suffer much more from adverse international price effects. The apparent explanation for populous South Asia's experience is the increase in fuels as a share of imports, coupled with higher real fuel prices; it will be noted that virtually all of the adverse effect on international prices is an import price effect. For the least developed countries, the adverse effect on volume may be attributed to slower growth in world markets for primary commodities, coupled with the decline in their export market shares. The latter may have been caused by poor productivity and inefficient domestic policies, especially within the agricultural sector.

The modes of adjustment to these external shocks in world trade varied considerably among the country groups in table 13. The semi-industrial countries pursued structural adjustment (notably, import substitution), external financing, and slower growth policies with more or less equal emphasis. It should be remembered, however, that there is a great diversity within this group, so that the particular strategies of individual countries differed markedly. For instance, the Republic of Korea mainly pursued a policy of structural adjustment, Brazil borrowed heavily, and Israel stressed slower growth. The primary producers also used slower growth and structural

adjustment policies but proportionally much less than the semi-industrial countries. Their limited flexibility in production and lack of diversification in exports (especially in the mineral-based economies) forced them to rely on external finance for 70 per cent of their funds. The countries of populous South Asia relied exclusively on external finance over the period 1974-1978. In fact, their loss in export-market share and their reluctance to slow down their growth caused their external finance to exceed external shocks by 20 per cent. While the least developed countries adopted, to some extent, a slower growth policy, their heavy loss in export-market share necessitated considerable external financing (nearly double the size of the 1974-1978 external shocks). Of course, given their pitifully low per capita incomes, a slower growth policy, in any degree, was bound to have very unfortunate consequences. Over the 1970s, GDP per capita had grown at 0.5 per cent or less for one half of the least developed countries and at a negative rate for one third of them (see annex, table A.1). Three of the least developed countries (Cape Verde, the Central African Republic and Mali) registered negative growth rates in GDP per capita for both the 1960s and the 1970s.

External finance and adjustment

In nominal terms, current-account deficits for the non-oil-producing developing countries grew from $9 billion in 1970 to $70 billion in 1980, corresponding to their widening resource gap. As a group, the substantial rise in interest payments, from $1.4 billion in 1970 to $22.5 billion in 1980, was largely offset by workers' remittances.[10] About $50 billion of the 1980 deficit was covered through ODA (one third, equally divided between grants and concessional loans) and medium-term and long-term borrowing (two thirds, mostly from commercial banks). Decreases in reserves and short-term borrowing accounted for $14 billion, and the remainder was covered through private direct investment (almost exclusively in the middle-income countries). As always, a crucial distinction between the low-income and middle-income oil importers lies in the form taken by their long-term financing. Nearly 90 per cent of the net capital flow to the low-income countries in 1980 was in the form of ODA. Unfortunately, their share of ODA in comparison with the middle-income oil importers has fallen from 50 per cent to 40 per cent over the decade. Moreover, during the second half of the decade, total ODA remained the same in real terms. The World Bank [1] notes that in 1979 only one third of the bilateral aid went to the low-income compared with the middle-income countries. While multilateral aid has somewhat compensated for this bias, a redistribution of concessional aid in favour of the low-income oil importers would seem to be a priority in view of their limited access to private loans.

In the 1970s, middle-income oil importers relied much more on commercial borrowing in their long-term financing. Private loans comprised 57 per cent of their net capital flows in 1970, 70 per cent in 1975, and 68 per cent in 1980. In real terms (1978 dollars), outstanding medium-term and long-term

[10]The major beneficiaries of remittances from Europe have been Morocco, Portugal, Turkey and Yugoslavia. The major beneficiaries of remittances from the Gulf States have been mainly Arab countries (especially Egypt, Jordan and Yemen) and Pakistan.

debt for the oil importers stood at $250 billion in 1980, 85 per cent of which belonged to the middle-income countries. This compares with 70 per cent in 1970. Their debt grew at a real rate of 11.4 per cent over the decade, compared with only 2.6 per cent for the low-income countries. In contrast to the low-income countries, which have continued to borrow from traditional sources (i.e. bilateral lenders and multilateral institutions), the middle-income countries mainly turned to private lenders in the 1970s. In nominal terms, their medium-term and long-term debts increased from $33 billion in 1970 to $253 billion in 1980, and 80 per cent of this increase was financed by private creditors. As a result, even though their debt service capability did not appear to have been impaired, the middle-income countries tended to have higher interest rates and shorter maturities on their debt. As a consequence, borrowed funds available for imports and reserves (i.e. after deducting for interest and amortization) fell from around 40 per cent in 1970 to around 20 per cent by 1980.

It scarcely needs to be stressed that long-term financing for the least developed countries differs from that for the low-income oil importers in degree but not in kind. Private flows from DAC (namely, overseas direct investment, export credits, and bilateral portfolio investment) and other international bank loans fell from 12 per cent of their net capital flows in 1970 to around 4 per cent in 1973 and 1974, when the first increase in oil prices took place. Fortunately, substantial increases in both bilateral and multilateral aid allowed the least developed countries to maintain their reserves position (see table 14). Although private finance returned to 10 per cent levels during the period 1975-1977, continued high levels of aid are the main reason for the improvement in their reserves during this period. Unfortunately, the deteriorating trade balance in 1978, coupled with inadequate aid and private finance, resulted in a nearly $1 billion loss in reserves, which was approximately 2 per cent of their GNP. By way of contrast, oil importers as a group maintained their reserves in 1978, largely through increases in private finance. Private finance accounted for more than 60 per cent of the net capital flow for oil importers as a group in 1978, compared with 7 per cent for the least developed countries. When it is realized that barely 40 per cent of the net capital flow for the oil importers was financed privately in 1970, it becomes clear that the general expansion in this type of long-term financing has been inaccessible to the least developed countries throughout the decade. This trend is not expected to change for the 1980s, and so the implications for continued high levels of official finance are rather obvious.

Impacts of higher energy prices on industrialization

Assumptions and projections

The most comprehensive and thorough assessment of the impact of higher energy prices in the 1980s on the growth of developing countries is that of the World Bank [1]. For this reason, as a point of departure, the assumptions and projections of their global model will be used here. Of the two alternative scenarios analysed by the World Bank, the assumptions and projections underlying the "high-case" scenario have been selected. This scenario characterizes a more successful adjustment to the second oil-price increase of

Table 14. Balance-of-payments summaries for oil-importing developing countries, 1973-1978

A. Balance-of-payments summaries for developing countries, 1973-1978

(Billions of dollars)

Balance-of-payments item	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Current-account deficit	10.8	30.8	39.7	27.5	25.6	34.3
Deficit on goods, f.o.b.	5.6	22.9	30.5	17.9	15.2	22.5
Deficit on services, net	7.7	11.2	13.1	14.0	16.2	19.3
Less private transfers	−2.5	−3.4	−3.9	−4.4	−5.8	−7.5
Long-term financing	17.8	31.9	38.7	42.1	43.2	49.4
Bilateral finance	14.6	27.9	33.5	36.6	36.6	42.0
ODA[a]	5.1	7.9	10.3	9.6	8.5	9.1
Other[b]	9.5	20.0	22.8	27.0	28.1	32.9
Multilateral finance	2.4	3.4	4.6	4.8	6.1	6.8
ODA[a]	1.3	1.9	2.5	2.7	3.7	3.9
Other[c]	1.1	1.5	2.1	2.1	2.4	2.9
Socialist countries	0.9	0.7	0.6	0.6	0.6	0.6
Short-term financing	0.8	0.7	−0.7	−4.8	−4.7	−2.0
Changes in reserves and related items[d]	−7.8	−1.8	1.6	−9.8	−13.0	−13.1

B. Balance-of-payments summaries for least developed countries, 1973-1978

(Billions of dollars)

Balance-of-payments item	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Current-account deficit	1.2	2.5	3.3	1.6	1.8	3.7
Deficit on goods, f.o.b.	0.9	2.0	2.8	1.7	2.2	4.0
Deficit on services, net	0.6	0.9	1.1	1.0	1.2	1.5
Less private transfers	−0.3	−0.3	−0.5	−1.1	−1.6	−1.8
Long-term financing	1.5	2.3	3.8	3.1	3.4	3.7
Bilateral finance	1.0	1.5	2.5	2.0	2.2	2.3
ODA[a]	0.7	1.2	2.0	1.6	1.8	1.9
Other[b]	0.3	0.3	0.5	0.4	0.4	0.4
Multilateral finance	0.4	0.7	1.1	1.0	1.1	1.2
ODA[a]	0.4	0.7	1.0	0.9	1.0	1.2
Other[c]	0.0	0.0	0.1	0.1	0.1	0.0
Socialist countries	0.1	0.1	0.2	0.1	0.1	0.1
Short-term financing	−0.2	0.1	−0.4	−0.8	−0.6	−0.1
Changes in reserves and related items[d]	−0.1	0.1	0.0	−0.7	−1.0	−0.1

Source: United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, Supplement 1980* (United Nations publication, Sales No. E/F.80.II.D.10).

[a] ODA from both OPEC and DAC member States.

[b] Including other official flows from OPEC and DAC member States, private flows from DAC members, and other international bank lending.

[c] Including other official flows from OPEC and DAC member States.

[d] Negative amounts are construed as increases and positive amounts as decreases.

1979-1980 in the world economy than does the "low-case" scenario, showing economic growth rates for the developing countries in 1980-1985 compared with those established in the 1970s and the rates in 1985-1990 compared with those established in the 1960s (see table 15). Fundamentally, the low-case

Table 15. Average annual growth rates in GDP

(Percentage)

Economic grouping	*1960-1970*	*1970-1980*	*1980-1985*	*1985-1990*	*1980-1990*
Industrialized countries	5.1	3.3	3.3	4.0	3.6
Developing countries	5.9	5.1	5.3	6.1	5.7
Oil-exporting countries	6.5	5.2	6.2	6.8	6.5
Oil-importing countries	5.7	5.1	5.0	5.8	5.4
Middle-income countries	6.2	5.6	5.2	6.1	5.6
Low-income countries	4.2	3.0	4.0	4.3	4.1

Source: World Bank, *World Development Report, 1981* (Washington, D.C., 1981).

scenario differs from the high-case scenario in that it is less optimistic about the rate of economic recovery in the early 1980s among the industrialized nations. The concomitant slow-down in their import demand and possible increased protectionism would lead to smaller export shares and growth rates (especially in manufactures) for the developing countries. Moreover, under strained economic conditions domestically, the industrial countries may be inclined to reduce their flow of loans and investments to the developing countries, as well as their percentage ODA. These considerations translate into a 4.5 per cent growth rate for the developing economies in the 1980s instead of the projected 5.7 per cent under the high-case scenario.[11]

In the high-case scenario, the annual average growth in exports in the 1980s is projected at 4.8 per cent for the industrial countries (compared with 4.3 per cent in the 1970s) and 7.2 per cent for the developing countries (compared with 4.7 per cent in the 1970s). Within the developing countries, the exports of the oil importers are projected to grow at an annual average rate of 8.2 per cent (compared with 6.3 per cent in the 1970s), while the exports of the oil exporters are projected to grow at an annual average rate of 3.8 per cent (compared with 1.6 per cent in the 1970s). Thus, exports are projected to grow proportionally more for the oil exporters than for the oil importers over this decade compared with the last one, and this is so because only fuel exports are projected to grow at a significantly higher rate in the 1980s.[12] The economic performance of the oil importers depends, *inter alia*, on their ability to maintain current rates of

[11] In the final analysis, the particular scenario chosen is a matter of preference. While the capital requirements reported in the next section could vary considerably, the choice of scenario will not detract from the analysis as a conceptual exercise.

[12] In real terms (1978 dollars), the annual average growth rate for fuels is supposed to be 3.7 per cent in the 1980s compared with its zero growth in the 1970s. Manufactured exports and non-fuel primary exports of the developing countries are supposed to grow in the 1980s at real annual rates of 12.2 per cent and 5.3 per cent, respectively, which compare closely to corresponding rates for the 1970s.

domestic savings (arcund 22 per cent of GDP) and to restructure their trade. Exports currently amount to 22 per cent of their GDP, and the high-case scenario assumes that this figure can be raised to 28 per cent by 1990. But, just as importantly, the oil-importing developing countries will need to reduce their dependence on oil in the 1980s to achieve the economic growth rates set out in table 15. In real terms, their fuel imports are projected to fall from 2.7 per cent of GDP in 1980 to 2.3 per cent by 1990, which would increase the purchasing power of their export earnings, net of fuels, from $11 billion a year (in 1980) to over $12 billion a year by 1990. The ultimate reward for these achievements would be a higher average income. The 1980 per capita GNP was $220 in the low-income countries and $1,710 in the middle-income countries. The high-case scenario projects a growth of 1.8 per cent and 3.4 per cent a year, respectively, in the 1980s, whereas the low-case scenario projects a growth of only 0.7 per cent and 2.1 per cent a year, respectively.

Oil prices, in particular, are projected to grow at 3 per cent a year in constant (1980) dollars. This is expected to elicit greater energy conservation, especially in the industrial market economies, as well as greater energy supplies, especially of coal. The World Bank [1] estimates that this projected price trend will lead to a savings by 1990 of 44 million barrels a day of oil equivalent over a zero-growth price trend, and more than two thirds of this saving will take place in the industrial market economies. This group used 53 per cent of the world's energy in 1980 and 58 per cent of the 60 million barrels of oil consumed daily throughout the world. Whereas their daily import of 22 million barrels of oil equivalent is not expected to change in the 1980s, their relative shares in total energy and oil are expected to decline over the decade—from 53 per cent to 47 per cent and from 58 per cent to 51 per cent, respectively. Correspondingly, the oil-importing developing countries' relative shares of total energy and oil are projected to rise—from 10 per cent to 13 per cent and from 12 per cent to 15 per cent, respectively. Virtually all of their projected increase of 10 million barrels of oil equivalent a day will be non-traditional fuels (oil, coal, natural gas and electricity). Overall, world energy demand will fall from a 4 per cent annual growth rate to less than 3 per cent by 1990 under the high-case scenario. Needless to say, it is crucial for the realization of this scenario that the industrial market economies should continue to pursue policies that do not cushion the impact of higher energy prices on the final users.[13]

The annual growth in world energy supplies in this decade is expected to mimic the 3 per cent growth rate established in the 1970s. Relative shares of particular fuels, however, are expected to change. Petroleum's 25 per cent share in 1980 is supposed to decline to 5 per cent by 1990, a decline made possible chiefly by the development of natural gas reserves in the oil-importing developing countries and greater use of coal in the industrial countries. Primary production of electricity is expected to maintain its 20 per cent share of world energy supplies in the 1980s, largely owing to the anticipated expansion of

[13] If the industrial market economies (i.e. the United States of America) adopt policies that cushion the impact of higher energy prices on final users, world oil prices could grow at an even faster average rate throughout the decade, which would have severe consequences for the oil-importing developing countries. For the middle-income countries, in particular, the World Bank [1] calculates that an additional 2 per cent increase in the growth rate of real oil prices could reduce their real economic growth rates by 0.5 per cent in the 1980s.

nuclear power in the industrial countries and hydroelectric power in the oil-importing developing countries. Two bottlenecks arise, however, in this scenario of future world energy supplies. Within the industrial countries, there are many familiar technical problems and environmental constraints for the order of magnitude contemplated for the expansion of coal and nuclear power. Within the oil-importing developing countries, the large-scale development of their oil and natural gas reserves and hydroelectric potential involves considerable amounts of technical expertise and finance that are simply unavailable internally. Because of the economic risks entailed, such development projects are generally unattractive to energy companies and private lenders in the industrial countries, and so multilateral assistance seems especially crucial.

Capital requirements

Reliable estimates of the net investment needed in the 1980s to support the industrial development of the oil-importing countries are not possible. The projected distribution of output for 1990, taken from *World Development Report, 1979,* appears in table 16. The 1979 distribution published by the World Bank [1], is used as a proxy for 1980, and the 1985 distribution had to be interpolated. These sets of distribution figures, together with the high-case scenario projections in table 15, make it possible to determine the distribution in real output (in 1978 dollars) by major product sector: agriculture, industry (inclusive of manufacturing), manufacturing, and services. Ratios of capital (plant and equipment plus inventories) to output are taken from Stern [15] for the $200 (low-income) and $1,550 (middle-income) per capita GNP levels. The total ratios differ from the direct ratios in that the former include both the direct and the indirect capital requirements (or capital "multiplier" effects) associated with the activity. Unfortunately, Stern's sectoral classification is relatively disaggregated (30 sectors) and is not directly applicable. Particular sectors, considered to be indicative of their more highly aggregated counterparts, were chosen as a compromise solution to this problem (see table 16, footnote *d*). The resulting direct and total investment figures are therefore highly tentative and possibly misleading.

The results may be summarized as follows. In order to achieve the additional $283 billion in real output projected for 1985, the middle-income oil importers will require $243 billion in direct investment and $421 billion in total investment. The additional $435 billion in real output projected for the second half of the decade will call for another $376 billion in direct investment and another $650 billion in total investment. The total projected increase of $718 billion in real output for the middle-income countries in the 1980s necessitates $619 billion in direct investment and $1,071 billion in total investment. Industrial growth alone will consume over half of these sums, requiring $319 billion in direct investment and $566 billion in total investment over the decade. For the low-income oil importers, the additional $43 billion in real output projected for 1985 will require $42 billion in direct investment and $57 billion in total investment. The additional $56 billion in real output projected for the second half of the decade will call for another $54 billion in direct investment and another $74 billion in total investment. The total

Table 16. Oil-importing developing countries: distribution of output, direct and total capital requirements

A. Distribution of output

Economic grouping	Agriculture (percentage)			Industry (percentage)			Manufacturing[a] (percentage)			Services (percentage)			Real output (billions of 1978 dollars)		
	1980	1985	1990	1980	1985	1990	1980	1985	1990	1980	1985	1990	1980	1985	1990
Middle-income countries	14	12	10	36	38	41	26	28	30	50	50	49	983	1 266	1 701
Low-income countries	38	34	30	24	26	28	13	14	15	38	40	42	198	241	297

B. Ratio of capital to output and increase in real output and direct and total investment requirements, 1985 and 1990

Sector[b]	Ratio of capital to output				Increase in real output[c]				Direct investment[c]				Total investment[c]			
	Middle-income countries		Low-income countries		Middle-income countries		Low-income countries		Middle-income countries		Low-income countries		Middle-income countries		Low-income countries	
	Direct	Total	Direct	Total	1985	1990	1985	1990	1985	1990	1985	1990	1985	1990	1985	1990
Agriculture	1.20	1.85	0.83	1.69	14	18	7	7	17	22	6	6	26	33	12	12
Industry	0.93	1.65	1.22	2.02	127	216	15	20	118	201	18	24	210	356	30	40
Manufacturing	0.86	1.35	1.05	1.76	98	156	8	11	84	134	8	12	132	211	14	20
Services	0.76	1.30	0.84	1.46	142	201	21	29	108	153	18	24	185	261	31	42

Source: World Bank.

[a]Manufacturing is part of the industrial sector.

[b]Corresponding to the former ISIC definitions as follows: agriculture, other than livestock, oil crops, grains, and roots; industry (393-395, 399); manufacturing (37); services (852-854).

[c]Billions of dollars over the corresponding figures for 1980.

projected increase of $99 billion in real output for the low-income countries in the 1980s necessitates $96 billion in direct investment and $131 billion in total investment. Industrial growth will consume over 43 per cent of their direct investment, or $42 billion, and over 53 per cent of their total investment, or $70 billion.

In addition to the capital requirements for industrialization, the oil-importing developing countries will also need investment funds for energy development. The uses of these funds were briefly described in the previous section. The World Bank [1] estimates that the annual capital requirements in constant (1980) dollars will run to $40 billion for energy development during the period 1980-1985 and $50 billion during the period 1985-1990, or a total of $450 billion for the decade. Unfortunately, the allocation of these amounts between the low-income and middle-income countries is not known. Assuming that they may be allocated between these groups on the basis of their respective shares in total GDP for all oil importers, real investment (in 1978 dollars) for energy development will amount to $133 billion during the period 1980-1985 for the middle-income countries and will rise to $165 billion during the period 1985-1990. For the low-income countries, the corresponding sums will be $26 billion and $33 billion. Thus, total capital requirements for industrialization plus capital requirements for energy development amount to $554 billion during the period 1980-1985 for the middle-income countries and will rise to $815 billion during the period 1985-1990. For the low-income countries, the corresponding sums are $83 billion and $107 billion. At the projected 22 per cent domestic savings rate for these groups, these investment outlays amount to nearly one half of the middle-income countries' domestic savings in the 1980s and more than one third of the low-income countries' domestic savings.

Finally, the oil-importing developing countries will require capital throughout the decade to finance their current account deficits. This capital flow is related to their industrialization in that loans and grants used to finance trade imbalances tend to leave less external capital for financing economic growth. In real terms (1978 dollars) the current account deficit of the low-income countries is expected to increase from $9 billion in 1980 to $15 billion by 1990, whereas for the middle-income countries the current account deficit is projected to remain at $45 billion. As a group, the oil-importing countries are expected to finance these deficits as a result of higher levels of bilateral and multilateral aid, private direct investment, and commercial borrowing. The level and allocation of ODA is especially important in the World Bank's high-case scenario. In particular, it is assumed that DAC donors will continue to contribute 0.37 per cent of their combined GNP and that 50 per cent of ODA will be allocated to the low-income countries. If these targets are not met, then the 1980s could be more strained for the low-income oil importers, since ODA covers around 14 per cent of their investment and 20 per cent of their imports.

Summary and conclusions

The above review of the major impacts of the two energy crises of the 1970s has shown that these impacts took the form of: *(a)* export-volume effects, principally brought about by the recession-induced contraction in the developed countries' markets for imports; *(b)* terms-of-trade effects caused by the

reallocation of resources induced by higher oil prices; and *(c)* debt-burden effects arising from the oil-importing developing countries' deterioration in current-account balances, as well as their additional capital requirements for industrialization and energy development.

With respect to the terms-of-trade effects, in both the 1973-1974 and 1979-1980 oil-price increases, subsequent movements in the terms of trade greatly favoured developing countries over developed countries and, among the developing countries, oil exporters (i.e. OPEC) over oil importers. The latter group, in particular, suffered both from much higher prices on their fuel and manufactured imports and from relatively stable prices on their agricultural and primary exports (see table 9): middle-income countries fared relatively better than low-income countries and, not surprisingly, the least developed countries fared worst of all (see table 10). In the discussion of the effects of the volume of exports in terms of purchasing power, it has been seen that, over the decade of the 1970s, virtually all of the increase in real export earnings within the oil-importing countries went to the middle-income countries, because their large expansion in exports had only been partially offset by falling relative export prices (see table 12). Their comparatively undiversified exports, concentrated in slow-growth commodities, seemed to account for the rather poor earnings performance of the low-income countries.

In the analysis of the balance of payments for the oil-importing developing countries, Balassa's innovative "shock-adjustment" model [14] was applied to the period 1974-1978, following the first energy crisis. Having been adapted from the World Bank's global model [1] the country coverage is not particularly accommodating to the framework selected for the study. The model reveals, however, that the policies chosen by the oil importers varied considerably in response to the adverse effects of the terms of trade and volume of exports induced by the dramatic surge in world oil prices (see table 13). Whereas semi-industrial countries pursued structural adjustment (especially, import substitution), external financing, and slower growth policies with equal stress, the countries of populous South Asia relied exclusively on external finance. Primary producing countries also depended heavily on external finance, though they were able to adopt slower growth and structural adjustment policies to a limited extent. The least developed countries made considerable use of external finance and, sadly, to some extent employed a slower growth policy. Throughout the 1970s, the low-income oil importers—*a fortiori* the least developed countries—had obtained virtually all of their long-term financing in the form of ODA (see table 14). On the other hand, the middle-income oil importers had obtained three fourths of their external finance in the form of commercial borrowing.

Finally, in the discussion of the long-term implications of higher energy prices for the oil-importing developing countries the basic assumptions made and the various projections employed in the analysis had been adapted from the high-case scenario of the World Bank's global model [1], and were used to ascertain the capital requirements for industrialization of the oil-importing countries. Although the results are very tentative (see table 16), it has been shown that the level of industrialization implied in the high-case scenario warrants a total investment in real terms of $1,071 billion over the 1980s for the middle-income countries. A total investment in real terms of $131 billion over

the 1980s will be required of the low-income countries to achieve the high-case level of industrialization. Industrial growth alone accounts for over one half of these amounts in both country groups. Adding in the capital requirements associated with energy development over the decade, the figures swell to $1,369 billion for the middle-income countries and $190 billion for the low-income countries. The capability of the oil importers to finance these sums out of domestic savings may not be possible, so that the priority for the middle-income countries is to continue to achieve adequate commercial credit and for the low-income countries to obtain greater amounts of ODA throughout the decade.

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Annex

STATISTICAL TABLES

Table A.1. Socio-economic indicators for the least developed countries[a]

Country	Population		Area	GDP per capita			Distribution of GDP (percentage)				Distribution of labour (percentage)			
					Average annual growth (in 1970 dollars) (percentage)		Agriculture		Industry		Agriculture		Industry	
	Mid-1978 (millions)	Average annual growth rate 1970-1978 (percentage)	(square kilometres)	1978 (current dollars)	1960-1970	1970-1979	1960	1978	1960	1978	1960	1978	1960	1978
Afghanistan[b]	14.6	2.2	647	240	0.2	2.0	57	49	10	25	85	79	6	9
Bangladesh	84.7	2.7	144	90	0.8	2.8	61	57	8	13	87	74	3	11
Benin	3.3	2.8	113	230	1.3	0.3	55	31	8	13	54	46	9	15
Bhutan	1.2	2.1	47	100	—	—	—	—	—	—	95	93	2	2
Botswana[b]	0.8	3.0[c]	600	230	3.7	3.1	—	24	—	31	—	—	—	—
Burundi[d]	4.5	2.0	28	140	−4.9	1.2	76	47	8	24	90	85	3	5
Cape Verde[d]	0.3	1.9[c]	4	150	−1.7	−2.0	13	35	1	7	—	—	—	—
Central African Republic	1.9	2.2	623	250	−0.5	−0.4	51	36	10	18	94	89	2	3
Chad	4.3	2.2	1 284	140	−1.7	0.5	55	52	12	13	95	86	2	6
Comoros[d]	0.4	4.6[c]	2	180	3.7	−3.2	64	47	7	23	—	—	—	—
Democratic Yemen[b]	1.8	1.9	333	420	−4.9	2.5	—	19	—	28	70	60	15	21
Ethiopia	31.0	2.5	1 222	120	1.9	−0.2	65	54	12	13	88	81	5	7
Gambia[d]	0.6	2.6[c]	11	230	0.5	−0.5	58	59	2	5	—	—	—	—
Guinea	5.1	2.9	246	210	−0.8	0.2	56	32	36	41	88	82	6	11

Haiti[b]	4.8	1.7	28	260	-1.2	1.7	49	41	14	19	80	70	6	8
Laos	3.3	1.3	237	90	2.1	2.6	—	60	—	14	83	75	4	7
Lesotho	1.3	2.3	30	280	2.0	0.5	—	36	—	15	93	87	2	4
Malawi	5.7	2.9	118	180	1.9	3.6	58	43	11	19	92	86	3	5
Maldives	0.1	3.8[c]	0.3	150	—	—	—	—	—	—	—	—	—	—
Mali	6.3	2.5	1 240	120	2.1	0.2	55	37	10	18	94	88	3	6
Nepal	13.6	2.2	141	120	0.2	0.3	—	62	—	12	95	93	2	2
Niger	5.0	2.6	1 267	220	1.8	1.8	69	43	9	17	95	91	1	3
Rwanda	4.5	2.9	26	180	2.0	3.0	81	46	7	22	95	91	1	2
Samoa[b]	0.2	1.0[c]	3	455[e]	—	—	—	49	—	7	—	61[f]	—	8[f]
Somalia	3.7	2.3	638	130	-0.6	1.1	67	60	13	11	88	82	4	7
Sudan	17.4	2.6	2 506	320	0.2	0.5	58	43	15	12	86	79	6	9
Uganda	12.4	2.9	236	280	1.5	3.2	52	57	13	7	89	83	4	6
United Republic of Tanzania	16.9	3.0	945	230	5.0	1.9	57	51	11	13	89	83	4	6
Upper Volta	5.6	1.6	274	160	2.7	-1.0	62	38	14	20	92	83	5	12
Yemen	5.6	1.9	195	520	2.3	3.4	—	35	—	14	83	76	7	11

Source: World Bank, *World Development Report, 1980* (Washington, D.C., 1980), unless otherwise noted.

[a]The agricultural sector comprises agriculture, forestry, hunting and fishing. The industrial sector comprises mining, manufacturing, construction, and electricity, water and gas. All other branches of economic activity are ordinarily categorized as services, which is a residual item in this table.

[b]Data on the distribution of GDP are from *Statistical Yearbook, 1978*, for the latest year available: Afghanistan (1977), Botswana (1976), Democratic Yemen (1970), Haiti (1976), Samoa (1972).

[c]Average annual population growth rate for the period 1970-1977 (*Statistical Yearbook, 1978* (United Nations publication, Sales No. E/F.79.XVII.1)).

[d]Data for Burundi, Cape Verde, Comoros and the Gambia on the distribution of GDP are from United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, 1979* (United Nations publication, Sales No. E/F.79.II.D.2). The latest available information is for 1977.

[e]Samoa's nominal GDP per capita for 1977 (United Nations Conference on Trade and Development, *Handbook of International Trade and Development Statistics, Supplement 1980* (United Nations publication, Sales No. E/F.80.II.D.10).

[f]Distribution of Samoa's labour force for 1976 (International Labour Office, *Yearbook of Labour Statistics, 1980* (Geneva, 1980)).

Table A.2. Production and consumption of commercial energy in the least developed countries, 1960[a]-1979

Country[b]	Year	Production				Consumption			Electricity		
		Total[c] (thousands of tons of coal equivalent)	Coal (percentage)	Gas (percentage)	Hydro (percentage)	Total (thousands of tons of coal equivalent)	Per capita (kilograms of coal equivalent)	Ratio of production + consumption (percentage)[c]	Production (millions of kilowatt hours)	Thermal (percentage)	Consumption per capita (kilowatt hours)
Afghanistan	1960	62	77		23	208	15	30	119	5	9
	1970	3 443	5	94	1	690	46	499	396	4	27
	1979	3 335	7	90	3	1 203	78	277	880	26	57
Bangladesh	1972	636		94	6	1 729	24	37	1 235	76	17
	1979	1 301		94	6	3 276	38	40	2 355	74	27
Benin	1960	0				82	39	0	10	100	5
	1970	0				136	50	0	33	100	12
	1979	0				199	57	0	5	100	25
Botswana	1970	...				...			30	100	...
	1979	...				...			420	100	...
Burundi	1962	0				30	10	0	0	100	5
	1973	3	100			33	9	9	1	100	6
	1979	10	100			58	13	17	1	100	8
Cape Verde	1960	0				9	45	0	1	100	5
	1970	0				13	49	0	7	100	26
	1979	0				48	150	0	9	100	28
Central African Republic	1960	1			100	47	37	1	8	0	6
	1970	5			100	102	57	5	47	6	26
	1979	7			100	88	41	7	62	6	29
Chad	1960	0				35	12	0	8	100	3
	1970	0				60	16	0	42	100	12
	1979	0				97	22	0	63	100	14
Comoros	1962	0				5	22	0	1	100	5
	1970	0				12	44	0	2	100	7
	1979	0				19	58	0	4	100	12
Democratic Yemen	1960	0				296	299	0	144	100	146
	1970	0				388	270	0	192	100	134
	1979	0				956	520	0	245	100	133

Ethiopia	1960	6		100	173	8	3	102	55	5
	1970	32		100	675	27	5	502	50	21
	1979	48		100	501	16	10	720	46	24
Gambia	1960	0			9	24	0	5	100	13
	1970	0			22	48	0	13	100	28
	1979	0			69	118	0	35	100	60
Guinea	1961	1		100	308	97	0	134	93	42
	1970	3		100	361	92	1	388	94	99
	1979	10		100	414	85	2	495	84	101
Haiti	1960	0			132	36	0	90	100	25
	1972	9		100	178	41	5	118	47	28
	1979	26		100	256	52	10	280	23	57
Laos	1960	0			41	18	0	13	100	6
	1971	1		100	204	42	0	16	38	29
	1979	71		100	239	52	30	600	4	102
Malawi	1964	1		100	139	37	1	57	82	15
	1970	16		100	184	41	9	145	10	32
	1979	71		100	317	54	22	340	10	58
Maldives	1970	...			...			1	100	9
	1979	...			...			3	100	21
Mali	1960	0			63	15	0	15	100	4
	1970	3		100	100	20	3	57	51	11
	1979	6		100	179	28	4	100	55	15
Nepal	1960	1		100	42	5	2	11	36	1
	1970	7		100	155	14	5	76	29	7
	1979	18		100	144	11	13	195	26	15
Niger	1960	0			16	5	0	8	100	3
	1970	0			97	24	0	35	100	10
	1979	0			227	44	0	46	100	15
Rwanda	1962	1		100	43	15	2	10	0	3
	1970	11	9	91	39	11	28	31	1	21
	1979	21	5	95	95	20	22	160	2	39
Samoa	1962	1		100	11	87	9	6	17	51
	1970	1		100	16	113	6	11	45	77
	1979	1		100	39	250	3	30	77	192

Table A.2 *(continued)*

Country[b]	Year	Production				Consumption			Electricity		
		Total[c] (thousands of tons of coal equivalent)	Coal (percentage)	Gas (percentage)	Hydro (percentage)	Total (thousands of tons of coal equivalent)	Per capita (kilograms of coal equivalent)	Ratio of production + consumption (percentage)[c]	Production (millions of kilowatt hours)	Thermal (percentage)	Consumption per capita (kilowatt hours)
Somalia	1960	0				42	19	0	11	100	5
	1970	0				103	37	0	28	100	10
	1979	0				284	80	0	72	100	20
Sudan	1963	3			100	759	59	0	163	85	13
	1970	12			100	2 088	148	1	392	74	28
	1979	61			100	2 279	128	3	900	44	50
Uganda	1960	49			100	224	30	22	420	57	34
	1970	94			100	694	71	14	778	2	54
	1979	79			100	362	27	22	650	2	34
United Republic of Tanzania[d]	1960	14	14		86	423	...	3	166	43	...
	1970	41	7		93	762	57	5	479	36	36
	1979	67	3		97	778	43	9	700	25	39
Upper Volta	1960	0				24	5	0	8	100	2
	1970	0				69	13	0	27	100	5
	1979	0				156	23	0	90	100	13
Yemen	1961	0				38	8	0	7	100	2
	1970	0				81	17	0	18	100	4
	1979	0				396	68	0	72	100	12

Source: See table 2 of this chapter.

[a] Or year for which data are available.

[b] Data unavailable for Bhutan and Lesotho.

[c] "0" indicates less than 0.5.

[d] Data for Tanganyika and Zanzibar are used for the United Republic of Tanzania in 1960.

Table A.3. Fossil fuel, nuclear and hydroelectric resources in the least developed countries

A. Oil and gas resources, 1979

Country	Proven resources (millions of tons of coal equivalent)	Production (thousands of tons of coal equivalent)[a]	Ratio of reserves to production
Afghanistar	...	3.0	...
Bangladesh	337.2[b]	1.2	281
Rwanda	...	0	...

B. Coal resources, 1977

Country	Resources (millions of tons of coal equivalent)	Reserves (millions of tons of coal equivalent)	Production (thousands of tons of coal equivalent)[a]	Ratio of reserves to production
Afghanistan	85	...	250	...
Bangladesh	1 614	591	0	...
Botswana	100 000	3 500	330	10 600
Burundi	...	...	10	...
Haiti	7	...	0	...
Malawi	14	...	0	...
United Republic of Tanzania	360	...	2	...

C. Uranium resources, 1979

Country	Resources (tons)	Reserves (tons)	Production (tons)[a]	Ratio of reserves to production
Central African Republic	18	18	0	...
Niger	213	160	2.3	70

D. Hydroelectric power capacity, 1977

Country	Total (thousands of kilowatts)	Operating	Under construction[a]	Planned[a]
Afghanistan	245	245	0	0
Bangladesh	756	80	50	100
Central African Republic	16	16	...	...
Ethiopia	468	205	0	262
Guinea	50	50	...	...
Haiti	47	47	...	...
Laos	47	47	...	...
Malawi	667	67	90	510
Mali	6	6	...	...
Nepal	36	36	...	...
Rwanda	165	34	0	128
Samoa	1	1	0	0
Sudan	110	110	0	0

Table A.3 *(continued)*

D. Hydroelectric power capacity, 1977 (continued)

Country	*Total (thousands of kilowatts)*	*Operating*	*Under construction*[a]	*Planned*[a]
Uganda	156	156	...	...
United Republic of Tanzania	188	188	...	...

Source: For production data and data on uranium resources and hydroelectric power, *1979 Yearbook of World Energy Statistics* (United Nations publication, Sales No. E/F.80.XVII.10); for fossil fuel resources and reserves, World Bank, *Energy in the Developing Countries* (Washington, D.C., August 1980).

[a] "0" indicates less than 0.5.

[b] Comprising 4.9 million tons as oil and 332.3 million tons as non-associated gas.

Industrial development in Zimbabwe*

Secretariat of UNIDO

General economic background

Attracted by gold and other national resources, Europeans (mainly of British origin) started settling Zimbabwe in the late nineteenth century, moving north from South Africa. The country was ruled by the British South Africa Company until 1923, when it became the British colony (self-governing in most respects) of Southern Rhodesia. In 1953, the colony was merged with Northern Rhodesia and Nyasaland (now Zambia and Malawi) to become the Federation of Rhodesia and Nyasaland. Following the break-up of the Federation in 1963, a dispute concerning conditions for independence between the minority white-controlled administration (the Rhodesian Front) of Rhodesia (as it came to be known) and the British Government (the former committed to racial segregation, the latter to majority rule) led to a unilateral declaration of independence (UDI) in 1965. UDI was accepted neither by the world community nor by the black majority of Rhodesia, represented by the Zimbabwe African People's Union (ZAPU) and the Zimbabwe African National Union (ZANU). Economic sanctions, only partly successful, were applied by the United Nations, and ZANU and ZAPU (organized as the Patriotic Front and supported by neighbouring black-controlled Governments) took up arms in a guerrilla war. In 1978, an internal settlement, based on power-sharing, was reached between the Rhodesian Front and two black political groups not associated with the Patriotic Front. The guerrilla war and economic sanctions continued, however, and the Rhodesian administration was faced with an increasingly difficult military, political and economic situation. Settlement (the Lancaster House Agreement) was finally reached late in 1979 with the Patriotic Front and the United Kingdom Government. The right to hold "free-and-fair" elections and the creation of a new constitution, allowing for minority rights, were agreed. The elections resulted in a majority for ZANU-Patriotic Front (ZANU-PF), headed by Robert Mugabe, and on 18 April 1980 Zimbabwe gained international recognized independence with Mr. Mugabe as Prime Minister and head of a coalition of ZANU-PF and the Patriotic Front. Economic sanctions were lifted.

*In this article, values are expressed in current or constant United States dollars or in current Zimbabwe dollars ($Zim) as appropriate. The exchange rate of Zimbabwe dollars to United States dollars was 0.7194 as of late September 1981. Different sources of information have been used, and there may therefore be some inconsistencies in the tables. For example, manufacturing value added reported in national accounts statistics varies from that reported in industrial statistics owing to a difference in definition. Several different sets of data on trade exist, and the national accounts data shown (ECA basis) differ from those supplied by the United Nations Secretariat.

The period covered is mainly 1970-1980. Data covering the 1960s is provided in a previous UNIDO study, "Southern Rhodesia (Zimbabwe): statistical review of industrial development, 1960-1976" (available from the UNIDO secretariat, Regional and Country Studies Branch). All growth rates are given on a per annum basis, and those covering several years are calculated on an unweighted arithmetic average basis (equal rights for each year) unless otherwise indicated.

Zimbabwe is a land-locked country of 390,580 km², surrounded by Mozambique on the east, Zambia on the north, Botswana and Namibia (Caprivi Strip) on the west and South Africa on the south. The population in 1980 was 7.36 million (19 per km²), of which about 223,000 (3 per cent) were European and 37,000 (0.5 per cent) were Asians and others. Harare (formerly Salisbury), the capital, and Bulawayo are the main cities (accounting for 8.8 and 5.1 per cent of the population).

Before independence, Zimbabwe relied largely on South Africa for trade and transportation links to the rest of the world. Since then, Zimbabwe has attempted to reduce its dependence on South Africa while maintaining good relations. Railway links to the sea through Mozambique are being improved and Zimbabwe has joined the Southern African Development Co-ordination Conference (SADCC), consisting of nine member States,[1] and the African, Caribbean and Pacific States and the European Economic Community (ACP-EEC group).

Zimbabwe is fortunate in having an abundant supply of mineral resources (except oil) and relatively well developed commercial, agricultural and industrial sectors. Until independence, the technical, managerial and entrepreneurial skills that have been the basis for the country's relatively advanced state of development were largely provided by the European minority. One of the most important and difficult problems facing the new regime is that of retaining these skills while improving the economic conditions and increasing the skills of the black majority.

An overview of the economy is presented in tables 1, 2 and 3. Population grew at an average annual rate of 3.32 per cent between 1970 and 1980, somewhat faster than the average for developing Africa (2.89 per cent), so that Zimbabwe's share in the total population of developing Africa rose from 1.61 per cent in 1970 to 1.67 per cent in 1980 (table 1). Growth of the labour force during the period averaged 2.61 per cent, which was below the population growth but higher than the labour force growth of developing Africa (2.34 per cent).

GDP at market prices grew, in real terms (1970 prices), at an average rate of 3.19 per cent from 1970 to 1980, compared with a rate of 5.29 per cent for developing Africa, but a negative GDP growth, reflecting the guerrilla war and sanctions, as well as less favourable international terms of trade, was recorded during the period 1975-1978. There was a recovery in 1980 (7.99 per cent growth), but various difficulties (which will be discussed later) will probably result in a reduction in real GDP growth in 1981 to about 4 per cent [1]. The share of Zimbabwe in total GDP of developing Africa dropped from 2.31 per cent in 1970 to 1.35 per cent in 1980. Average growth of GDP per capita over the period was −0.24 per cent, compared with a growth rate of 2.31 per cent for developing Africa. GDP per capita in Zimbabwe was 44 per cent higher than the average for developing Africa in 1970, 55 per cent higher in 1975, but only 11 per cent higher in 1980.

Gross capital formation in constant prices declined sharply during the period 1975-1979, and declined on average by 1.47 per cent during the period 1970-1980, compared with an increase of 9.65 per cent for developing Africa.

[1] Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, the United Republic of Tanzania, Zambia and Zimbabwe.

Table 1. Zimbabwe: main economic indicators: absolute figures, 1970, 1975 and 1980; comparisons with developing Africa; and real growth rates

Period	Population	Labour force	GDP (at market prices)	Gross capital formation	Exports	Imports	GDP per capita
	(Millions)		(Millions of current United States dollars)				(1970 United States dollars)
1970	5.31	1.87	1 467	311	456	441	276
1975	6.25	2.13	2 689	798	807	879	328
1980	7.36	2.42	5 057	727	1 391	1 626	267
	Zimbabwe share in total for developing Africa (percentage)						Ratio of GDP per capita to that of developing Africa
1970	1.61	1.44	2.31	2.82	2.97	2.92	1.44
1975	1.65	1.47	1.77	1.99	1.89	1.76	1.55
1980	1.67	1.48	1.35	0.77	1.29	1.73	1.11
	Real growth rates, Zimbabwe[a] (percentage)						
1970-1971	3.37	2.72	14.89	12.61	7.98	12.36	11.23
1971-1972	3.30	2.60	9.63	0.00	18.47	2.83	6.19
1972-1973	3.28	2.53	3.03	30.40	3.60	9.09	−0.31
1973-1974	3.28	2.52	9.34	27.61	−4.40	4.04	5.85
1974-1975	3.32	2.55	−1.41	−8.89	−6.54	−4.85	−4.65
1975-1976	3.39	2.63	−1.43	−29.55	4.92	−27.04	−4.57
1976-1977	3.42	2.61	−7.40	−10.49	−7.65	−8.04	−10.54
1977-1978	3.46	2.63	−3.14	−25.11	6.42	−9.13	−6.07
1978-1979	3.33	2.63	0.39	−21.23	−1.01	0.00	−3.04
1979-1980	3.08	2.63	7.99	9.93	1.78	37.66	4.71
1970-1975	3.31	2.58	7.10	12.35	3.82	4.63	3.66
1975-1980	3.34	2.63	−0.72	−15.29	0.89	−1.31	−3.90
1970-1980	3.32	2.61	3.19	−1.47	2.36	1.66	−0.24
	Real growth rates, developing Africa[a] (percentage)						
1970-1975	2.79	2.27	4.86	13.27	0.56	9.14	1.99
1975-1980	3.00	2.41	5.73	6.03	4.02	3.08	2.62
1970-1980	2.89	2.34	5.29	9.65	2.29	6.11	2.31

Source: ECA computer print-outs with calculations by the UNIDO Secretariat; 1960-1978 population and labour-force data taken from UNIDO data base, information supplied by the Department of International Economic and Social Affairs of the United Nations Secretariat; 1979-1980 labour-force growth rates are assumed to equal the 1978 growth rate; 1979-1980 population growth rate derived from *Population and Vital Statistics Report* (United Nations publication, ST/ESA/STAT/SER.A/132 (1980) and ST/ESA/STAT/SER.A/137 (1981)).

[a]All rates based on values derived from data in 1970 United States dollars, with multiple-year rates calculated on an unweighted (arithmetic) average basis (equal weighting for each year).

Zimbabwe's share in total gross capital formation of developing Africa declined from 2.82 per cent in 1970 to 0.77 per cent in 1980.

Exports grew in constant prices at an average rate of 2.36 per cent during the period 1970-1980, whereas imports grew at an average rate of 1.66 per cent, but imports exceeded exports in 1980, largely owing to a 37.66 per cent import

increase in that year. Zimbabwe's share in the total exports of developing Africa dropped from 2.97 per cent in 1970 to 1.29 per cent in 1980, and its import share dropped less sharply, from 2.92 per cent to 1.73 per cent. Zimbabwe's imports are expected to continue to grow rapidly during the period 1981-1983, helped by pledged foreign aid amounting to $US 2,000 million, but export growth will depend on fluctuations in world commodity prices and internal factors (see the following section).

The share of government final consumption expenditure in GDP rose from 12.0 per cent in 1970 to 20.2 per cent in 1980 and private final consumption expenditure rose from 65.7 per cent to 70.0 per cent, whereas the share of gross capital formation declined from 21.2 per cent to 14.4 per cent; in developing Africa the capital formation share rose from 17.4 per cent in 1970 to 25.3 per cent in 1980 (see table 2). Real gross capital formation per worker rose from $US 166 in 1970 to $US 249 in 1975, but declined sharply to $US 90 in 1980, whereas the figure for developing Africa rose from $US 85 in 1970 to $US 167 in 1980. The labour force population ratio fell from 35.2 per cent in 1970 to 32.9 per cent in 1980, in line with a decline for developing Africa from 39.2 per cent to 37.1 per cent.

The share of exports in GDP dropped from 31.1 per cent in 1970 to 27.5 per cent in 1980, whereas for developing Africa the export share rose from 24.2 per cent to 28.9 per cent. The share of net exports (exports minus imports) in GDP fell from 1.0 per cent (surplus) in 1970 to −4.6 per cent (deficit) in 1980, and the ratio of exports to trade (i.e. the ratio of exports to exports plus imports) declined from 50.9 per cent in 1970 to 46.1 per cent in 1980. For

Table 2. Selected comparative indicators, 1970, 1975, 1980, Zimbabwe and developing Africa[a]

Indicator	*1970*		*1975*		*1980*	
			Percentage			
Distribution of GDP by expenditure						
Government final consumption expenditure	12.0	(14.6)	12.6	(16.2)	20.2	(15.2)
Private final consumption expenditure	65.7	(67.5)	60.4	(62.4)	70.0	(55.7)
Gross capital formation	21.2	(17.4)	29.7	(26.3)	14.4	(25.3)
Net exports	1.0	(0.4)	−2.6	(−4.9)	−4.6	(3.8)
Share of exports of goods and services in GDP	31.1	(24.2)	30.0	(28.0)	27.5	(28.9)
Share of exports in total trade	50.9	(50.5)	47.9	(46.0)	46.1	(53.5)
			1970 United States dollars			
Exports per capita	86	(47)	86	(42)	76	(43)
Gross capital formation per worker	166	(85)	249	(141)	90	(167)
			Percentage			
Labour force as percentage of total population	35.2	(39.2)	34.1	(38.2)	32.9	(37.1)

Source: ECA computer print-outs with calculations by the UNIDO secretariat; population and labour-force data as noted in table 1.

[a]Data for developing Africa shown in parentheses. Based on current United States dollar prices except for exports per capita and gross capital formation per worker.

developing Africa the ratio declined from 50.5 per cent in 1970 to 46.0 per cent in 1975, but rose to 53.5 per cent in 1980. Exports per capita declined in real terms from $US 86 in 1970 to $US 76 in 1980 (for developing Africa the decline was from $US 47 in 1970 to $US 43 in 1980).

Table 3 shows the distribution of GDP by economic sector and the ratio of sector shares for Zimbabwe to those for developing Africa in 1970, 1975 and 1980, as well as real rates of sector growth for Zimbabwe and developing Africa. The shares of agriculture, manufacturing, construction and public administration and defence rose from 1970 to 1975, while the share of other sectors declined. From 1975 to 1980, the shares of mining, commerce and public administration and defence rose, the largest increase having been recorded in the last sector (from 10.72 per cent to 15.85 per cent). The shares in Zimbabwe's GDP of manufacturing and utilities especially, but also transport and communications and public administration and defence, were considerably higher in 1980 than those for developing Africa, whereas the shares of agriculture, mining and construction were well below the average for developing Africa. In comparison with 1970, the ratio to the share in GDP of Zimbabwe to that of developing Africa rose considerably in 1980 in manufacturing, utilities and public administration and defence and declined considerably in mining and construction.

Manufacturing, which accounted in 1980 for nearly 24 per cent of GDP, grew on average by 3.78 per cent in real terms during the period 1970-1980, compared with an average growth of GDP (at factor cost) of 2.84 per cent, although declines in MVA occurred in the period 1975-1978. Real MVA in developing Africa grew at an average rate of 5.54 per cent in the period 1970-1980, slightly more than the growth rate of GDP (5.23 per cent). Other services (at 8.30 per cent), mining (at 7.23 per cent), public administration and defence (at 6.71 per cent), transport and communication (at 3.37 per cent) and agriculture (at 3.30 per cent) in Zimbabwe also grew on average more rapidly than GDP in the period 1970-1980, whereas growth rates for commerce, utilities and construction average 1.18, 0.5 and −0.78 per cent respectively.

Main factors and policies affecting manufacturing production and trade

At the time of UDI, in 1965, Zimbabwe had one of the most highly developed industrial sectors in developing Africa, and this situation continued during the late 1960s and early 1970s. Much of this lead was lost during the period 1975-1978, however, and reconstruction of the economy is only just beginning.

Manufacturing in Zimbabwe is predominantly based on exploitation of rich agricultural and mineral resources by private enterprises possessing technical and managerial skills and capital resources well above the average for developing Africa and supported by a well-developed infrastructure base. The supply situation for each of these factors is briefly examined below.

Products based on agriculture and forestry accounted for half of MVA in 1979.[2] Until independence, commercial agricultural output had been almost entirely in the hands of a relatively small number of European farmers using

[2]Food products, beverages, tobacco products, textiles and wearing apparel, wood products, paper, printing and publishing.

Table 3. GDP by sector of origin, 1970, 1975 and 1980; comparisons of Zimbabwe with developing Africa; and real growth rates

Period	Agriculture, forestry, hunting, fishing	Mining, quarrying	Manufacturing	Electricity, gas, water	Construction	Commerce	Transport, communications	Public administration, defence	Other services	GDP at factor cost
	Shares in GDP[a] (percentage)									Millions of current United States dollars
1970	15.60	7.24	21.30	3.26	5.61	22.53	8.97	10.50	7.14	1 373.37
1975	16.56	6.75	24.28	2.95	6.06	20.85	8.52	10.72	6.11	2 549.53
1980	13.54	8.56	23.80	2.90	3.95	20.99	7.64	15.85	5.46	4 735.43
	Ratio of Zimbabwe sector shares in GDP to developing Africa sector shares in GDP									
1970	0.47	0.74	2.24	2.76	1.07	1.12	1.73	1.16	1.07	1.00
1975	0.61	0.42	2.57	3.04	0.82	1.08	1.65	1.15	1.13	1.00
1980	0.55	0.40	3.12	3.49	0.48	1.10	1.61	1.62	1.37	1.00
	Real growth rates, Zimbabwe[b] (percentage)									
1970-1971	26.79	22.54	3.35	0.00	−3.64	5.43	13.64	−33.01	104.29	12.64
1971-1972	13.92	5.75	14.82	6.25	22.64	11.16	8.00	7.25	−4.90	9.41
1972-1973	−10.86	−14.13	8.06	20.59	−1.54	2.70	2.78	14.86	19.85	2.90
1973-1974	37.06	11.39	7.46	−19.51	−10.94	17.67	6.31	10.59	19.02	9.08
1974-1975	−6.67	35.23	−1.04	3.03	1.75	−7.03	5.08	8.51	−17.42	−1.69
1975-1976	7.14	−3.36	−5.97	−9.88	1.72	−0.69	−1.61	1.96	−11.93	−2.02
1976-1977	−4.44	−2.61	−5.22	−29.03	−13.56	−16.61	−2.46	−5.77	3.13	−7.12
1977-1978	−25.58	15.18	−1.18	13.64	−43.14	1.66	−8.40	39.80	−1.01	−3.13
1978-1979	−11.46	1.55	8.77	8.00	31.03	−10.20	−1.83	7.30	8.16	0.34
1979-1980	7.05	0.76	8.79	7.41	7.89	7.73	12.15	15.65	1.89	7.97
1970-1975	12.05	12.16	6.53	2.07	1.65	5.99	7.16	1.64	16.56	6.47
1975-1980	−5.46	2.30	1.04	−1.97	−3.21	−3.62	−0.43	11.79	0.05	−0.79
1970-1980	3.30	7.23	3.78	0.05	−0.78	1.18	3.37	6.71	8.30	2.84
	Real growth rates, developing Africa[b] (percentage)									
1970-1975	1.39	−1.69	6.11	6.33	13.20	6.13	9.32	10.62	4.88	4.87
1975-1980	1.21	4.45	4.97	6.94	9.78	5.62	7.38	11.93	4.81	5.59
1970-1980	1.30	1.38	5.54	6.64	11.49	5.88	8.35	11.28	4.84	5.23

Source: ECA computer print-outs, with calculations by the UNIDO secretariat.

[a]Based on data in current United States dollars. The sum of the shares is greater than 100 per cent because the data include implicit bank charges, which are deducted from GDP at factor cost.

[b]All rates based on values derived from data in 1970 United States dollars; rates for multiple years calculated on an unweighted average basis.

modern techniques (machinery, fertilizers etc.). Prices paid to farmers were generally below market prices, but wages of hired labour were also low. Tobacco was the principal cash crop, although beef, cotton and maize were also important. About half the agricultural land was held in tribal trust, but output in these areas was low (mostly at the subsistence level).

This structure is now changing. A main government objective is to increase agricultural output, especially in the Tribal Trust Lands, and to increase the incomes of black farmers. To this end, prices paid to farmers for most products and minimal wage levels for farm labourers have been raised considerably (corresponding more closely to world prices).[3] Land abandoned by European farmers during the guerrilla war is being distributed to black farmers. With the decline in world prices for tobacco, land use is being shifted from tobacco growing to other crops, especially maize, for which a record 1981 output is predicted. Substantial exports of maize and wheat to other African countries, as well as additional inputs to Zimbabwe's processing industries (except tobacco), seem feasible over the next few years provided that output levels of European farmers, whose production decisions will depend largely on relative changes in product prices and wage costs and on their feelings of security, can be maintained.

Mining, largely in the hands of transnational corporations, accounts for a large proportion of Zimbabwe's exports and provides the main raw materials for its basic metals, metal-working and engineering industries (which accounted for more than 30 per cent of MVA in 1979). The country's mineral resources are rich and provide a good basis for the development of mineral-processing industries. Gold, asbestos, nickel, copper and coal were the main products by value in 1979. New investments in the production of all these minerals are under way, and further reserves are expected to be discovered within the next few years. Thus, prospects are good, although partly dependent on government policy on investments by the transnationals and fluctuations in world prices.

One of the most important issues facing the Government is the need to maintain skills and capital of white workers and entrepreneurs while developing the potential of black workers and entrepreneurs and creating opportunities for their greater participation in the economy. This will not be an easy task, but it is one that is essential for future development. So far, government policy in this respect has been relatively successful.

Zimbabwe's infrastructure is well developed, but additional investment is required to compensate for low investment levels during the period of internal disturbance. Improvement of the railway system is particularly important. Because of a deterioration in political relations with South Africa, the rail link with that country can no longer be considered secure. The rail connection with Mozambique is therefore being improved.

Prospects for the manufacturing sector will depend on general economic, social and political policies, as well as on specific industrial policies. In formulating the former set of policies, particular attention will need to be given to the following basic requirements for success:

(a) Maintenance of internal peace, i.e. continuing acceptable relations between the racial and tribal groups, control of armed groups, resettlement of

[3] A further increase of 66 per cent in the minimum wage for farm labourers for 1982 has recently been anounced.

those dislocated during the guerrilla war and reduction of unemployment (which is reported to be running at as much as 40 per cent [2]);

(b) Reduction of the outflow of whites;

(c) Tighter economic administration, especially control of imports, inflation, the government deficit and the money supply, all of which have been increasing sharply since 1980;

(d) Maintenance of confidence by private foreign investors and aid donors;

(e) Maintenance of economic links with South Africa while expanding ties with other Southern African countries, especially the SADCC group;

(f) Sustained growth of the agricultural, mining, transport, energy and construction sectors.

Although largely beyond national policy control, economic success will also depend in part on stability in the country's international terms of trade.

Industrial policy will need to aim in particular at the following:

(a) Replacement of obsolete and worn-out machinery;

(b) Training of new skilled labour and managers;

(c) Strengthening of small-scale industry;

(d) Elimination of uncompetitive industries promoted within the protected market of the UDI period;

(e) Provision of larger amounts of foreign exchange for industry to allow increased purchases of imported inputs (reduction or elimination of import quotas would help considerably to alleviate the serious bottleneck existing at present in this respect, especially as it affects availability of spare parts and materials consumed in the production process).

Development and structural change in manufacturing production

In this sector, an analysis of various key indicators related to manufacturing in Zimbabwe is presented. The focus is on the period 1970-1980.

Real MVA per capita (in 1970 prices) rose steadily from $US 55.10 in 1970 to $US 66.64 in 1974, declined thereafter to $US 50.85 in 1978, and rose to $US 56.49 in 1980 (table 4). The average annual increase during the period 1970-1980 was only 0.05 per cent. MVA per capita was 3.37 times greater than the average for developing Africa in 1970 and 3.51 times greater in 1974, but was only 2.53 times greater in 1978 and 2.68 times greater in 1980. Zimbabwe's share in MVA of developing Africa (in current prices) rose to 5.90 per cent in 1972, but by 1978 its share had declined to 3.05 per cent (4.37 per cent in 1980).

Food, beverages and tobacco products accounted for 18.2 per cent of Zimbabwe's MVA in 1975; textiles, wearing apparel and leather products accounted for 16.9 per cent; wood products, paper and printing and publishing for 10.0 per cent; chemicals and related products for 14.1 per cent; iron and steel for 13.5 per cent; and fabricated metal products, including machinery and

Table 4. Zimbabwe: real MVA per capita and its annual growth rate; ratio of MVA per capita to MVA per capita of developing Africa; and share in MVA of developing Africa 1970-1980

Year	*Real MVA per capita (1970 United States dollars)*	*Annual growth rate real MVA per capita (percentage)*[a]	*Ratio of Zimbabwe MVA per capita to developing Africa MVA per capita*	*Share of Zimbabwe in MVA of developing Africa (percentage)*[b]
1970	55.10	—	3.37	5.41
1971	55.08	−0.03	3.26	5.81
1972	61.23	11.17	3.44	5.90
1973	64.14	4.75	3.41	5.48
1974	66.64	3.90	3.51	5.69
1975	63.84	−4.20	3.33	4.68
1976	58.08	−9.02	3.03	3.88
1977	53.23	−8.35	2.74	3.32
1978	50.85	−4.47	2.53	3.05
1979	53.53	5.27	2.56	3.40
1980	56.49	5.53	2.68	4.37

Source: ECA computer print-outs, with calculations by the UNIDO secretariat; population data from UNIDO data base; information supplied by the Department for International Economic and Social Affairs of the United Nations Secretariat.

[a]Unweighted annual averages are: 3.12 per cent for 1970-1975; −2.21 per cent for 1975-1980; and 0.05 per cent for 1970-1980.

[b]Based on data in current United States dollars.

transport equipment, for 19.8 per cent (table 5).[4] The Zimbabwe shares of iron and steel, non-electrical machinery and non-industrial chemicals were at least twice the average for developing Africa for these branches (4.91 times as great for iron and steel), but the shares for food products, non-footwear leather products, miscellaneous petroleum products and earthenware products were all less than half the average for developing Africa. Zimbabwe accounted for 30.1 per cent of developing Africa's iron and steel production, and also for more than 10 per cent of its production of wearing apparel (excluding footwear), industrial chemicals, plastic products, fabricated metal products (excluding machinery and equipment), non-electrical machinery and professional and scientific equipment.

As shown in table 6, MVA grew at constant prices at rates ranging from 7.2 to 12.3 per cent during the period 1971-1974, declines were recorded from 1975 to 1978, and recovery occurred in 1979 and 1980, with growth rates of 9.6 and 14.8 per cent. Data for the first five months of 1981 (4.1 per cent growth) indicate a slowing down of the growth rate in 1981, but the Government estimates that real average annual growth over the period 1981-1984 will be about 11 per cent. The average rate for the period 1970-1980 was 4.3 per cent (7.5 per cent in 1970-1975 and 1.1 per cent in 1975-1980).

Over the period 1970-1980, the highest average growth (11.6 per cent) was recorded in ISIC branch 390 (other manufactures), with rates of 6.0 to 6.5 per cent recorded in food, beverage and tobacco products and textiles. A low

[4]MVA-related data shown here and in following tables are based on industrial statistics, rather than national accounts, as in previous tables. The two data sets are not strictly comparable.

Table 5. Zimbabwe: distribution of manufacturing value added by branch; comparison with distribution in developing Africa; and shares in branch value added of developing Africa, 1975

ISIC code (with branch description)	*Branch shares in MVA (percentage)*	*Ratio of Zimbabwe branch shares to branch shares of developing Africa[a]*	*Zimbabwe shares in branch value added of developing Africa[a] (percentage)*
311 and 312 (food products)	9.2	0.44	2.7
313 (beverages)	5.9	0.91	5.6
314 (tobacco products)	3.1	0.77	4.7
321 (textiles)	8.7	0.58	3.6
322 (wearing apparel, excluding footwear)	5.8	1.86	11.4
323 (leather products, excluding footwear and wearing apparel)	0.2	0.25	1.5
324 (footwear, excluding rubber or plastic)	2.2	1.34	8.2
331 (wood products, excluding furniture)	1.5	0.52	3.2
332 (furniture, excluding metal)	1.8	1.40	8.6
341 (paper and products)	2.7	1.15	7.1
342 (printing and publishing)	4.0	1.56	9.6
351 (industrial chemicals)	4.9	2.01	12.3
352 (other chemicals)	5.3	1.03	6.3
353 (petroleum refineries)	0.0	0.00	0.0
354 (miscellaneous petroleum and coal products)	0.3	0.29	1.8
355 (rubber products)	1.9	1.25	7.7
356 (plastic products n.e.c.)	1.7	1.85	11.4
361 (pottery, china, earthenware)	0.1	0.28	1.7
362 (glass and products)	0.0	0.00	0.0
369 (other non-metallic mineral products)	4.5	1.13	6.9
371 (iron and steel)	13.5	4.91	30.1
372 (non-ferrous metals)	1.4	1.00	6.1
381 (fabricated metal products, excluding machinery and equipment)	9.1	1.69	10.4
382 (machinery, excluding electrical)	3.8	2.57	15.8
383 (machinery, electrical)	2.9	1.25	7.7
384 (transport equipment)	4.0	1.19	7.3
385 (professional and scientific equipment n.e.c.)	0.1	1.67	10.2
390 (other manufactured products)	1.2	0.93	5.7
Total MVA	$US 844 800[b]	1.00	6.1

Source: UNIDO data base; information supplied by the Statistical Office of the United Nations Secretariat, with calculations of comparative data by the UNIDO secretariat.

[a] There are branch and country omissions in the data for Africa.

[b] 1975 US dollars.

Table 6. Zimbabwe: MVA by ISIC branch—real growth rates, 1970-1980, and projected rates, 1980-1984

(Percentage)

	Real growth rates[b]													
Branch (ISIC code[a])	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80[c]	1970-1975[d]	1975-1980[d]	1970-1980[d]	1980-1984[e]
311 and 312	11.0	7.4	13.8	0.0	1.0	5.0	8.6	-3.4	10.0	6.1	6.6	5.3	6.0	14
313 and 314	6.1	11.4	14.1	7.9	4.2	3.0	5.7	1.0	4.1	18.9	8.7	4.3	6.5	8
321	11.3	15.2	7.7	5.1	-2.8	-8.9	0.0	-1.0	16.7	16.8	7.3	4.7	6.0	11
322 and 324	6.9	8.6	0.0	5.0	-5.6	-4.9	-4.1	-8.7	10.8	18.1	3.0	2.2	2.6	8
323 and 385	11.1	12.5	4.4	7.4	-0.9	-6.9	...	...	—	—	4.6[f]	...	...	...
331 and 332	5.9	7.8	6.2	6.8	-9.0	-7.9	-14.0	-2.4	24.7	25.9	3.5	5.3	4.4	9
341 and 342	6.3	11.9	4.3	11.2	-8.2	-8.9	-5.4	5.8	8.8	16.7	5.1	3.4	4.2	11
351, 352 and 353	8.5	13.0	0.0	9.2	5.3	-10.9	-1.0	0.0	2.3	20.5	7.2	2.2	4.7	12
354	5.6	20.0	-17.7	23.0	9.9	-4.9	...	...	...	...	6.0[f]	...	...	...
355	10.5	19.0	-5.9	-4.2	11.1	-6.9	...	...	...	...	3.9[f]	...	...	...
356	40.0	21.4	16.5	26.3	-19.9	-6.9	...	—	...	...	12.9[f]	...	...	...
361, 362 and 369	15.5	11.0	8.8	10.1	-8.2	-12.9	-19.4	-19.9	19.6	16.6	7.4	3.2	2.1	6
371, 372, 381, 382 and 383	16.4	14.1	14.8	8.6	-0.9	-7.9	-12.9	-1.2	8.9	11.0	10.6	0.4	5.1	11
384	15.7	6.2	-9.7	4.3	4.2	-20.9	-5.0	13.2	13.8	23.0	4.1	0.5	1.8	6
390	1.5	43.9	10.5	2.9	-7.3	0.0	6.0	0.0	8.5	30.5	10.3	9.0	11.6	11
Total manufacturing	11.5	12.3	8.0	7.2	-1.5	-6.5	-10.0[g]	-2.4	9.6	14.8	7.5	1.1	4.3	11

Source. Except where indicated, UNIDO data base; information supplied by the Statistical Office of the United Nations Secretariat, with estimates and calculations of comparative data by the UNIDO secretariat.

[a] For branch descriptions, see table 5.

[b] Except as noted in footnotes *c* and *e*, all rates are based on values derived from data in 1970 United States dollars.

[c] Based on volume indices provided by the Central Statistical Office, Zimbabwe. During the first five months of 1981, manufacturing production averaged 4.1 per cent greater than it did in 1980.

[d] Unweighted arithmetic average.

[e] 1980 Zimbabwe dollar basis: rates rounded to nearest percentage point (see Government of Zimbabwe, *Monthly Digest of Statistics*, July 1981).

[f] 1970-1976.

[g] Slight overestimate of the rate of decline, due to omission of data for 323 and 385, 354, 355 and 356 after 1976 (these accounted for 4.2 per cent of value added in current prices in 1976).

growth of about 2 per cent was recorded in wearing apparel and footwear, non-metallic mineral products and transport equipment. In 1979 and 1980, the period of economic recovery, high growth rates were recorded in almost all sectors. In the period 1981-1984 the highest growth (14 per cent annual average) is expected in food products and the lowest (6 per cent) in transport equipment and non-metallic mineral products.

Unlike the trend in many developing countries, MVA tended to grow slightly more rapidly in current prices than gross output over the period 1963-1980, indicating an increase in the share of MVA in gross output (table 7). MVA increased at an average annual trend rate of 12.2 per cent from 1963 to 1978, and by 20.3 per cent in 1979 and 15.6 per cent in 1980; the comparable figures for gross output were 11.6, 20.5 and 14.2 per cent. Gross fixed capital formation fluctuated widely over the period, from a 36.9 per cent decline in 1976 to a 94.0 per cent increase in 1968. The average annual growth trend over the period 1963-1978 was 13.7 per cent (higher than MVA growth), but calculated on a compound basis growth was only 6.5 per cent. Thus, the long-term relationship between value added and capital formation can not be easily determined from the data. Wages, on the other hand, show a clear downward trend in proportion to value added. Trend growth in wages averaged 10.9 per cent during the period 1963-1978 (lower than MVA growth) and 17.8 per cent in 1979. Less than half the increase in the wage bill was due to increased employment. From 1963 to 1978, employment rose on average (trend) by only 4.9 per cent, although the increases in 1979 (7.0 per cent) and 1980 (10.2 per cent) were somewhat higher.[5] Employment actually declined in 1966 and in the period 1976-1978. The number of establishments increased at a trend rate of 2.8 per cent from 1963 to 1974 (the latest year for which data are available), which indicates that only a small proportion of MVA growth can be attributed to additional establishments, the rest being a result of increased MVA per establishment.

Table 8 shows branch shares in gross output, value added, capital formation, wages, employment and number of establishments for 1963, 1970, 1975 and 1979 (1963, 1970 and 1974 for establishments). In 1979 the most important branches in terms of gross output were food products (23.5 per cent of total), miscellaneous manufactures (12.5 per cent), iron and steel and other metals (12.4 per cent) and textiles (11.2 per cent).[6] The shares of iron and steel and other metals and textiles increased considerably over the period, whereas the share of transport equipment declined from 10.7 per cent in 1963 to only 2.7 per cent in 1979.

As in most developing countries, the share of food products in value added, 13.7 per cent in 1979, as well as the shares of beverages and tobacco products, were much smaller than shares of these branches in gross output. Besides food products, more than 10 per cent of the value added in 1970, 1975 and 1979 was accounted for by iron and steel and other metals, miscellaneous manufactures and fabricated metal products and non-electrical machinery, whereas in 1963 only food products, miscellaneous manufactures and transport equipment accounted for more than 10 per cent each of value added.

[5] Value added per employee increased by the difference between growth in value added and employment.

[6] In table 8, footnote *c* gives a more detailed breakdown of the products for 1979.

Table 7. Zimbabwe: selected indicators of manufacturing structure—growth rates for total manufacturing, 1963-1980

(Percentage)

Period	Growth rates[a]											
	Gross output	Value added	Gross fixed capital formation	Wage bill	Employment	Establishments	Value added per employee	Value added per establishment	Share of wages in value added	Share of gross fixed capital formation in value added	Ratio of investment to surplus[b]	Share of value added in gross output
1963/64	10.0	12.0	−18.8	8.1	1.7	2.3	10.2	9.6	−3.5	−27 6	−30.2	1.9
1964/65	14.7	13.1	−2.0	8.2	3.1	0.1	9.8	13.0	−4.3	−13.5	−16.5	−1.4
1965/66	−6.9	−6.6	10.4	0.9	−0.8	−4.7	−5.8	−2.1	8.2	18.4	27.2	0.3
1966/67	2.7	5.6	14.3	6.9	3.6	1.5	1.9	4.0	1.3	8.2	9.7	2.8
1967/68	11.4	14.6	94.0	9.7	9.2	5.6	5.0	8.5	−4.3	69.3	61.9	2.9
1968/69	19.5	18.0	0.6	13.8	10.5	4.8	6.8	12.6	−3.6	−14.7	−17.5	−1.3
1969/70	17.7	20.8	−5.7	13.8	8.8	3.8	11.0	16.4	−5.8	−22.0	−25.8	2.6
1970/71	14.0	14.5	18.6	9.0	7.0	7.3	7.0	6.7	−4.9	3.6	−0.4	0.4
1971/72	14.5	13.5	10.5	14.3	8.3	3.2	4.8	10.0	0.7	−2.6	−2.2	−0.9
1972/73	15.2	15.2	74.7	13.8	3.9	1.2	10.8	13.7	−1.2	49.9	49.1	0.0
1973/74	23.8	23.0	40.3	18.5	7.4	1.6	14.6	21.1	−3.7	14.0	11.1	−0.8
1974/75	9.9	10.8	23.6	15.7	2.6	. . .	8.0	. . .	4.4	11.6	15.0	0.8
1975/76	2.5	2.5	−36.9	6.5	−3.1	. . .	5.8	. . .	3.9	−38.6	−36.9	0.0
1976/77	1.5	−1.5	−27.8	4.3	−3.8	. . .	2.4	. . .	5.9	−26.8	−23.3	−3.0
1977/78	7.3	12.9	−21.3	6.0	−1.7	. . .	15.0	. . .	−6.1	−30.3	−33.8	5.2
1978/79	20.5	20.3	11.9	17.8	7.0	. . .	13.2	. . .	−2.1	−6.9	−8.2	−0.1
1979/80	14.2	15.6	. . .	—	10.2	. . .[c]	5.0	—[c]	—	—	—	1.2
1963/78 (trend)	11.6	12.2	13.7	10.9	4.9	2.8[c]	7.3	10.3[c]	−1.0	−4.4	−8.4[d]	0.7
1963/78 (compound)	10.2	10.9	6.5	9.9	3.7	2.4[c]	7.0	10.2[e]	−1.0	−3.7	−4.8	0.6

Source: For the period 1963-1978, UNIDO data base; information supplied by the Statistical Office of the United Nations Secretariat; data for 1978/79 derived from Central Statistical Office, *Census of Production 1979/80—Mining, Manufacturing, Construction, Electricity and Water Supply*; data for 1979/80 derived from UNIDO sources; comparative data estimated and calculated by UNIDO secretariat.

[a] All growth rates based on values in current Zimbabwe dollars.

[b] Defined as investment (gross fixed capital formation) divided by operating surplus (value added minus wage bill).

[c] 1963-1974.

[d] Unweighted average.

[e] 1963-1974, unweighted average.

Table 8. Zimbabwe: gross output, value added, gross fixed capital formation, wage values, by ISIC branch,

Branch (ISIC code[b])	Gross output				Value added				Gross capital	
	1963	1970	1975	1979	1963	1970	1975	1979[c]	1963	1970
	Branch shares in									
311 and 312	24.3	22.6	19.7	23.5	13.4	12.2	10.3	13.7	11.7	19.1
313	3.8	4.3	4.9	4.7	5.9	6.2	7.0	6.7	4.8	6.7
314	4.7	2.6	2.1	2.7	7.1	3.8	3.1	4.0	10.7	1.5
321	6.6	8.9	10.4	11.2	6.4	7.1	7.7	9.4	3.1	11.8
322F (= 322 and 324)	7.0	7.0	6.7	6.0	7.1	7.5	8.0	6.9	2.7	4.7
331	1.9	2.1	1.3	1.8	2.2	2.5	1.5	2.2	2.6	3.7
332	1.8	1.6	1.5	1.4	2.1	2.0	1.8	1.4	0.3	4.4
341	2.4	2.4	3.0	2.0	2.6	2.7	2.8	1.7	1.6	2.0
342	3.1	2.9	2.6	2.7	5.3	4.4	4.1	3.9	2.3	1.9
355	2.4	1.7	1.8	2.0	2.8	2.0	2.0	2.2	0.5	4.2
361B (= 361, 362 and 369)	2.7	3.8	3.7	2.6	4.2	5.5	4.6	3.6	1.5	5.8
371A (= 371 and 372)	6.1	8.7	11.7	12.4	6.8	10.5	14.0	15.6	3.9	7.9
381A (= 381 and 382)	6.8	10.3	10.4	9.0	8.2	11.4	12.8	10.8	3.4	10.6
383	2.2	3.2	3.0	2.7	2.4	3.1	2.9	2.6	1.3	1.8
384	10.7	5.5	3.9	2.7	10.4	6.0	3.7	3.1	3.3	3.2
Miscellaneous	13.2	12.1	13.1	12.5	13.1	13.3	13.7	12.3	46.5	10.7
	Values in Zimbabwe dollars									
Total	340 830	643 340	1 317 700	1 771 591	127 020	258 850	528 400	724 654	17 510	32 230

Source: UNIDO data base; information supplied by the Statistical Office of the United Nations *Production, 1979/80—Mining, Manufacturing, Construction, Electricity and Water Supply* (Zimbabwe, 1981).

[a]For establishments, 1963, 1970 and 1974. The number of establishments in total manufacturing in 1979

[b]For branch descriptions see table 5. "Miscellaneous" includes 323, 351, 352, 353, 354, 356, 385 and 390.

[c]Value added for 1979 was broken down as follows: 311—dairy and food products n.e.c. (35.3 per cent cent); 313—alcoholic beverages (75.0 per cent), knitted products, rope, cordage (13.6 per cent), other textiles (16.6 per cent); 384—motor vehicles and reconditioning (61.3 per cent), other transport and repair (38.7 per manufactures (12.3 per cent), basic chemicals and petroleum products (26.0 per cent), meat (22.4 per cent), glass and other non-metallic products (83.4 per cent), soaps, pharmaceuticals (27.7 per cent), fertilizers (7.4 per

Branch shares in capital formation varied widely from year to year. In 1970 and 1979, food products accounted for the largest share of capital formation (19.1 and 24.5 per cent). Iron and steel and other metals accounted for 35.7 per cent of capital formation in 1975, and miscellaneous manufactures accounted for 46.5 per cent in 1963.

The shares in the wage bill of food products, iron and steel and other metals and miscellaneous manufactures rose from 11.1, 8.0 and 8.8 per cent in 1963 to 14.5, 12.9 and 10.9 per cent in 1979. Fabricated metal products and non-electrical machinery accounted for 12.4 per cent of 1979 wages, down somewhat from 1975.

Food products, fabricated metal products and non-electrical machinery, wearing apparel (including footwear) and textiles provided 15.4, 11.9, 11.5 and 10.8 per cent respectively of manufacturing employment in 1979. Food

bill, employment and establishments—branch share in total manufacturing, with total 1963, 1970, 1975 and 1979[a]

fixed formation		*Wage bill*				*Employment*				*Establishments*		
1975	*1979*	*1963*	*1970*	*1975*	*1979*	*1963*	*1970*	*1975*	*1979*	*1963*	*1970*	*1974*
total (percentage)												
14.7	24.5	11.1	12.0	11.7	14.5	13.6	13.9	13.8	15.4	12.3	12.9	10.6
7.4	9.2	3.6	3.9	4.8	5.1	2.9	3.1	4.5	4.2	3.1	3.2	2.6
1.1	2.3	7.9	3.8	3.2	3.5	9.2	3.5	3.3	3.5	1.3	1.1	1.0
14.1	6.3	5.8	7.0	6.9	7.8	9.3	9.7	9.8	10.8	4.2	4.2	4.0
3.4	3.4	7.3	9.1	8.6	7.8	11.7	13.1	12.3	11.5	11.1	11.4	10.7
0.9	2.3	2.3	2.6	1.7	2.6	5.1	5.0	2.9	5.6	4.4	4.3	4.0
0.5	2.7	2.2	2.4	2.4	2.0	3.0	3.9	3.4	3.0	5.8	4.0	4.3
2.1	4.0	2.2	2.3	2.6	1.9	2.1	1.9	1.9	1.4	1.4	1.6	1.4
2.2	2.8	6.5	6.1	5.5	5.6	3.3	3.0	2.9	3.2	6.2	7.1	6.3
0.6	1.8	2.3	1.7	1.5	1.8	1.5	1.1	1.2	1.4	1.5	1.4	1.3
2.4	3.9	3.8	4.5	4.5	3.5	4.4	6.4	5.8	4.4	5.4	5.5	5.6
35.7	5.3	8.0	8.6	12.6	12.9	6.2	6.8	9.7	9.4	2.1	2.1	2.7
6.4	10.7	9.4	13.3	15.5	12.4	8.8	12.1	13.8	11.9	16.9	19.2	23.5
0.9	2.4	2.3	3.0	3.3	3.9	2.5	3.0	3.4	3.4	4.1	3.6	3.9
1.3	2.9	16.5	10.0	4.9	4.2	9.8	5.8	3.7	3.2	11.3	3.8	3.6
6.1	15.5	8.8	9.7	10.4	10.9	6.3	7.8	7.5	7.8	9.1	14.5	14.6
Values in Zimbabwe dollars						*Numbers employed*				*Number of establishments*		
126 600	50 663	64 060	114 840	223 100	309 361	80 850	114 230	151 700	147 423	1 022	1 161	1 323

Secretariat, with estimates by UNIDO; except for 1979 data derived from Central Statistical Office, *Census of*
tables 2 and 8.

was 1,342.

of total), grain products, chocolate and confectionery (2.9 per cent); fruit and vegetable processing (1.5 per
4.7 per cent); 322—wearing apparel (63.3 per cent), footwear (36.7 per cent); 3618—earthenware products
cent; Miscellaneous—insecticides, pesticides (25.1 per cent), plastic products (14.5 per cent), other
bakery products (11.9 per cent), non-alcoholic beverages (25.0 per cent); 321—cotton textiles (81.7 per cent),
cent), chemical products n.e.c. (7.2 per cent), paints (5.7 per cent).

products and wearing apparel also accounted for more than 10 per cent of employment in other years (also fabricated metal products and non-electrical machinery except in 1963). As of 1979, manufacturing employed 147,423 persons (of whom about 8.5 per cent were women), or about 6 per cent of the total labour force.

Fabricated metal products and non-electrical machinery accounted for the largest number of manufacturing establishments in 1963 (16.9 per cent), 1970 (19.2 per cent) and 1974 (23.5 per cent), followed by miscellaneous manufactures in 1970 (14.5 per cent) and 1974 (14.6 per cent) and by food products in 1963 (12.3 per cent).

Table 9 shows manufacturing value added per establishment for 1963, 1970 and 1974, and value added by employee, share of wages in value added, share of gross fixed capital formation in value added, the ratio of investment to

Table 9. Zimbabwe: manufacturing value added per establishment and per employee, to surplus and share of value added on gross output,

Branch (ISIC code[b])	Value added per establishment (thousands of 1975 United States dollars)			Value added per employee (1975 United States dollars)				Share of wage bill in value added (percentage)			
	1963	1970	1974	1963	1970	1975	1979	1963	1970	1975	1979
311 and 312	272	379	551	3 125	3 586	3 727	4 144	42.0	43.7	48.2	45.2
313	830	894	1 415	11 299	9 447	7 368	8 246	30.4	28.0	28.8	32.7
314	1 052	1 310	1 905	1 845	4 257	5 160	5 043	56.2	44.9	43.6	37.5
321	563	1 064	1 426	3 230	4 682	4 926	4 828	45.6	44.1	37.5	35.3
322F (= 322 and 324)	423	444	507	5 080	3 920	3 316	3 673	51.5	54.0	45.0	47.7
331	126	214	262	1 376	1 872	2 749	1 457	52.5	46.6	49.4	49.8
332	114	271	289	2 824	2 878	2 885	3 300	53.8	53.2	57.4	60.0
341	862	1 018	1 405	7 181	8 446	8 000	11 314	42.2	38.0	38.5	46.0
342	281	325	448	6 592	7 947	7 750	7 218	62.2	61.9	57.2	61.8
355	500	774	863	6 354	9 754	9 056	—	40.1	37.2	31.5	36.7
361B (= 361, 362 and 369)	249	434	576	3 877	3 808	4 443	4 080	45.2	36.4	41.2	50.0
371A (= 371 and 372)	1 743	3 208	3 541	7 262	9 920	8 585	7 861	60.2	36.4	37.9	35.4
381A (= 381 and 382)	182	298	353	4 401	4 799	5 181	5 354	57.7	51.5	51.2	48.9
383	171	360	491	3 596	4 423	4 863	4 300	49.5	43.0	47.1	64.5
384	224	639	678	3 245	4 276	6 054	5 305	79.7	73.9	56.1	57.8
Miscellaneous	493	467	611	4 130	8 844	10 104	—	34.0	32.4	32.0	37.8
Total manufacturing	349	510	649	4 415	5 183	5 569	5 350[d]	50.4	44.4	42.2	42.7

Source: UNIDO data base; information supplied by the Statistical Office of the United Nations than constant price value added are derived from Central Statistical Office, *Census of Production,*

[a]Except 1963, 1970 and 1974 for value added per establishment. Value added per establishment in total per employee are based on current prices in Zimbabwe dollars.

[b]For branch descriptions see table 5. "Miscellaneous" includes 323, 351, 352, 353, 354, 356, 385 and 390.

[c]Defined as investment (gross fixed capital formation) divided by operating surplus (value added minus

[d]Based on a 4 per cent upward adjustment of reported value added to correct for missing value-added added in 1976, the last year for which data for these are available.

surplus and the share of value added in gross output for 1963, 1970, 1975 and 1979. Value added per establishment, in 1975 prices, rose from $US 349,000 in 1963 to $US 649,000 in 1974, falling to about $US 565,000 in 1979. Value added per establishment in iron and steel and other metals was almost five times the figure for overall manufacturing in 1974, in tobacco products it was more than three times the 1974 average and in beverages, textiles and paper (and paper products) it was more than twice the average. The lowest 1974 value added per establishment was in wood-products manufacture, and the figure for fabricated metal products (excluding electrical machinery) was not much higher, indicating the relatively small scale of firms in these sectors.

Value added per employee, one measure of labour productivity (or capital intensity),[7] rose from $US 4,415 in 1963 to $US 5,569 in 1975, declining to

[7]This and similar measures may have several different interpretations. For a good discussion of the subject, see A. S. Bhalla (ed.) [3].

share of wage bill and gross fixed capital formation in value added, ratio of investment by ISIC branch, 1963, 1970, 1975 and 1979[a]

Share of gross fixed capital formation in value added (percentage)				*Ratio of investment to surplus[c]*				*Share of value added in gross output (percentage)*			
1963	*1970*	*1975*	*1979*	*1963*	*1970*	*1975*	*1979*	*1963*	*1970*	*1975*	*1979*
12.0	19.5	34.3	12.6	20.7	34.7	66.2	22.9	20.5	21.6	20.8	23.8
11.2	13.5	25.5	9.6	16.0	18.7	35.9	14.3	57.4	57.9	57.3	59.6
20.8	5.0	8.5	4.0	47.5	9.0	15.1	6.4	56.1	58.6	58.9	59.5
6.6	20.7	43.9	4.7	12.1	37.0	70.2	7.2	36.5	31.9	29.9	34.4
5.3	7.7	10.4	3.4	11.0	16.8	19.0	6.6	37.7	43.0	47.5	46.8
16.3	18.9	15.2	7.4	34.3	35.4	30.0	14.7	44.3	46.8	47.6	51.4
1.9	27.8	6.4	13.3	4.1	59.4	15.0	33.2	41.9	48.4	47.7	42.2
8.4	9.2	17.6	15.9	14.5	14.8	28.6	29.5	40.6	44.6	36.9	35.8
5.9	5.5	13.0	5.0	15.7	14.4	30.4	13.1	63.1	60.7	62.0	58.3
2.5	26.4	6.5	5.8	4.1	42.0	9.5	9.2	43.5	48.3	45.2	44.7
7.2	13.2	12.7	7.6	8.9	20.8	21.5	12.8	57.1	57.7	50.6	56.6
7.8	9.3	61.2	2.4	19.6	14.6	98.7	3.7	41.4	48.8	47.8	51.3
5.7	11.5	12.0	7.0	13.4	22.4	24.6	13.6	44.4	44.6	49.1	18.8
7.6	7.3	7.7	6.5	15.0	12.7	14.6	18.2	39.9	38.9	40.0	40.1
4.3	6.6	3.6	6.5	21.2	25.4	19.8	15.3	36.2	43.7	37.7	46.6
49.0	10.1	10.6	8.8	74.3	15.0	15.6	14.2	36.8	43.7	41.8	39.9
13.8	12.5	24.0	7.0	27.8	22.4	41.5	12.2	37.3	40.2	40.1	40.9

Secretariat, with estimates and calculations of comparative data by the UNIDO secretariat; 1979 data other *1979/80—Mining, Manufacturing, Construction, Electricity and Water Supply* (Zimbabwe, 1981), tables 2 and 8.

manufacturing was $US 565,096 in 1979 (at 1975 prices). Data other than value added per establishment and

wage bill).

data for 355 and part "miscellaneous" (323, 354, 356 and 385), which accounted for 4.2 per cent of total value

$US 5,350 in 1979 (1975 prices) [3]. Value added per employee in paper and paper products in 1979 was more than twice the manufacturing average, but in wood products other than furniture it was only about a quarter of the average value. On the basis of data for previous years, miscellaneous manufactures and rubber products were probably among the branches with highest value added per employee in 1979 (data are not yet available for that year).

The share of wages in MVA dropped from 50.4 per cent in 1963 to 44.4 per cent in 1970 and 42.2 per cent in 1975. The 1979 share was 42.7 per cent. The highest wage shares in value added in 1979 were in electrical machinery (a sharp rise from 1975), printing and publishing (also in 1975) and non-metal furniture (also in 1975), and the lowest wage shares were in beverages (also in 1963, 1970 and 1975), textiles and iron and steel and other metals. The wage share in transport equipment was highest in 1963 and 1970, and among the highest in 1975.

The share of capital formation in MVA dropped from 13.8 per cent in 1963 to 12.5 per cent in 1970, rose to 24.0 per cent in 1975 and dropped to 7.0 per cent in 1979. The highest shares of capital formation in value added in 1979 were in paper and paper products and non-metal furniture, the lowest in iron and steel and other metals and wearing apparel (including footwear). In 1975, the highest shares were in iron and steel and other metals and textiles and the lowest in transport equipment; in 1970 the highest shares were in non-metal furniture and rubber products and the lowest in tobacco products and paper and paper products.

The ratio of investment to surplus, i.e. capital formation divided by value added minus wages, provides a rough indicator of costs and benefits.[8] The higher the ratio, the more costly, in terms of investment, is the production of surplus value added. The ratio for total manufacturing dropped from 27.8 in 1963 to 22.4 in 1970, rising to 41.5 in 1975 and falling to 12.2 in 1979. The ratio for wearing apparel, including footwear, was among the lowest in all four years, as was that for tobacco products (except 1963). Iron and steel and other metals had the lowest ratio in 1979, but the highest in 1975.

The share of MVA in gross output rose from 37.3 per cent in 1963 to 40.2 per cent in 1970, remained almost constant in 1975 and rose slightly in 1979 to 40.9 per cent. The share of value added in gross output in 1979 was highest in tobacco products, beverages and earthenware products, and lowest in food products.

Another rough efficiency indicator is the incremental capital-output ratio (ICOR), defined as the increase in fixed capital divided by the increase in value added. The lower the ICOR, the greater the net output per unit of investment.[9] Table 10 shows ICORs calculated on a three-year moving average basis for manufacturing by ISIC branch, 1963 to 1978. The table shows a cyclical trend in the ICOR for total manufacturing, the highest ICORs having been reached in the periods 1964-1966 (2.68) and 1974-1976 (5.48).

With the exception of the years 1974-1976 and 1975-1977, ICORs for wearing apparel and footwear were among the lowest over the whole period. Relatively low ICORs were also recorded over most of the period 1963-1978 in beverages, printing and publishing, fabricated metal products and machinery (electrical and non-electrical) and, except for the mid 1960s, miscellaneous manufactures. ICORs for rubber products were high in the mid 1960s but low in the 1970s, whereas the opposite was true for earthenware products. ICORs were particularly variable for transport equipment, but they tended to be high (or negative, indicating a decrease in value added).

Most manufacturing takes place at Salisbury, which accounted for 46.4 per cent of MVA and 44.0 per cent of manufacturing employment in 1979, and Bulawayo, which accounted for 23.2 per cent of MVA and 28.7 per cent of employment in 1979 (table 11). Other manufacturing centres are Que Que and Redcliff, Gwelo and Umtali. MVA per employee was highest at Que Que and

[8] It is only a rough indicator because the many adjustments made in social cost-benefit analysis are not included. A time-stream based on price discounting rather than single years should be used.

[9] Like the ratio of investment to surplus ratio, ICOR suffers from various conceptual and computational difficulties; the calculations should thus be taken as only rough general indicators.

Table 10. Zimbabwe: ICORs in manufacturing, by branch, 1963-1979

(Three-year moving averages)[a]

Branch ISIC code[b]	1963-1965	1964-1966	1965-1967	1966-1968	1967-1969	1968-1970	1969-1971	1970-1972	1971-1973	1972-1974	1973-1975	1974-1976	1975-1977	1976-1978
311 and 312	1.55	1.99	2.41	1.20	1.02	1.75	1.73	1.66	1.46	1.98	1.94	1.74	1.25	0.84
313	0.80	0.46	0.52	0.77	0.96	0.60	0.53	0.59	0.61	0.24	1.52	2.70	1.44	1.29
314	(—)	(—)	(—)	0.30	0.77	0.45	1.26	1.19	0.43	0.55	0.60	1.44	0.86	1.43
321	1.75	2.01	1.83	1.58	1.19	1.11	0.77	0.69	0.48	1.08	2.29	4.29	2.74	0.76
322F (= 322 and 324)	0.40	0.42	0.46	0.47	0.50	0.36	0.41	0.37	0.32	0.41	1.07	(—)	(—)	0.42
331	1.04	1.62	2.90	1.64	0.82	1.35	2.05	2.63	0.67	1.39	2.07	(—)	2.50	0.13
332	3.38	0.50	(—)	0.42	0.53	0.96	1.02	0.94	0.37	0.43	2.17	(—)	(—)	0.56
341	0.57	1.14	1.87	1.54	0.81	0.80	1.18	0.78	0.37	0.34	2.26	(—)	(—)	6.43
342	2.67	0.96	0.83	0.47	0.50	0.45	0.43	0.41	0.32	0.45	1.21	5.50	10.00	0.57
355	(—)	(—)	(—)	0.73	0.93	0.73	1.47	1.44	0.84	0.78	1.05	1.33	5.00	0.33
361B (= 361, 362 and 369)	0.31	0.47	0.29	0.36	0.47	0.73	0.64	0.93	1.01	1.96	6.29	(—)	(—)	7.96
371A (= 371 and 372)	1.52	192.00	(—)	1.91	1.10	0.74	1.09	1.03	1.87	2.17	3.65	(—)	4.95	1.17
381A (= 381 and 382)	0.57	0.77	1.05	0.57	0.41	0.39	0.55	0.61	0.60	0.63	1.33	(—)	(—)	1.11
383	0.29	6.00	0.90	0.61	0.50	0.31	0.46	0.50	0.42	0.51	0.89	1.46	2.22	1.12
384	(—)	(—)	(—)	0.68	0.61	26.50	(—)	6.74	0.74	0.84	1.02	1.79	(—)	2.12
Miscellaneous	11.56	(—)	1.39	1.20	0.90	1.37	0.78	1.08	0.68	0.70	0.80	2.03	2.45	1.06
Total manufacturing	1.97	2.68	2.26	1.04	0.85	0.87	0.85	0.88	0.85	1.13	1.96	5.48	3.58	1.00

Source: UNIDO secretariat, based on information supplied by the Statistical Office of the United Nations Secretariat; 1979 value added derived from Central Statistical Office, *Census of Production 1979/80—Mining, Manufacturing, Construction, Electricity and Water Supply* (Zimbabwe, 1981), table 2.

[a]Based on values in current Zimbabwe dollars. ICOR is defined as the increase in gross fixed capital in period 0 divided by the increase in output (value added) in the following period. Three-year moving averages are used to smooth results and reduce the number of cases where the change in output is negative (in which case the ICOR becomes meaningless). Cases where the change in three-year output is negative are shown as "(—)" in the table. Since output change is lagged one year compared with investment change (net total investment should be measured but data are not available), a three-year moving average actually includes one additional data year (e.g. 1975-1977 ICOR reflects 1978 output change). The lower the (positive) ICOR, the more favourable the ratio of investment to output, in other words more output is achieved with less investment.

[b]For branch descriptions see table 5. "Miscellaneous" includes codes 323, 351, 352, 354, 356, 385 and 390.

Table 11. Zimbabwe: regional shares in MVA and employment, and value added per employee, by region or town, 1967 and 1979

Region or town	Shares in total MVA (percentage)		Shares in total manufacturing employment (percentage)		Manufacturing value added per employee (Zimbabwe dollars)	
	1967	1979	1967	1979	1967	1979
Salisbury	50.6	46.4	42.3	44.0	2 205	5 188
Bulawayo	28.4	23.2	33.7	28.7	1 552	3 977
Que Que and Redcliff	5.6	12.9	4.9	5.9	2 103	10 723
Gwelo	4.9	5.9	4.9	4.6	1 824	6 351
Umtali	2.8	3.0	4.1	5.9	1 247	2 524
Gatooma	2.4	1.9	3.2	2.6	1 382	3 718
Fort Victoria	0.4	0.8	0.8	0.9	964	4 363
Other	5.0	5.8	6.1	7.5	1 844	4 915
Total	100.1	99.9	100.0	100.1		

Source: Compiled by the UNIDO secretariat from *Census of Production, 1979/80—Mining, Manufacturing, Construction, Electricity and Water Supply* (Zimbabwe, Central Statistical Office, 1981), table 10.

Redcliff and at Gwelo in 1979, whereas in 1967 Salisbury had the highest MVA per employee.

As of 1979, manufacturing establishments employing up to 10 workers accounted for 17.7 per cent of the establishments but only 0.9 per cent of manufacturing employment and value added (table 12). In comparison,

Table 12. Zimbabwe: MVA, employment and establishments and value added per employee—distribution by size of establishment, 1979

Distribution of establishments by numbers employed	Proportion of total manufacturing establishments (percentage)	Proportion of total manufacturing employment (percentage)	Proportion of total MVA (percentage)	Value added per employee (Zimbabwe dollars)
10 or less	17.7	0.9	0.9	4 846
11—20	16.3	2.2	1.8	3 950
21—50	22.1	6.5	5.8	4 442
51—100	14.3	8.5	7.4	4 291
101—200	9.6	10.6	8.8	4 072
201—300	4.5	7.1	6.4	4 449
301—400	3.4	8.6	8.2	4 712
401—500	1.9	6.1	5.0	4 034
501—750	3.5	9.6	10.7	5 449
751—1 000	2.8	10.9	11.3	5 106
More than 1 000	3.9	28.9	33.6	5 711
Total manufacturing	100.0 (1 342)[a]	99.9 (147 338)[a]	99.9 (724 654)[a]	4 918

Source: Central Statistical Office, *Census of Production, 1979/80—Mining, Manufacturing, Construction, Electricity and Water Supply*, (Zimbabwe, 1981), table 8, with additional calculations by UNIDO secretariat.

[a] Absolute figures shown in parentheses.

establishments employing more than 1,000 workers accounted for only 3.9 per cent of the establishments (i.e. 52 establishments) but provided 28.9 per cent of the employment and 33.6 per cent of MVA. Value added per employee tended to be highest in establishments employing more than 500 workers.

Pattern of trade in manufactures

Zimbabwe's international trade suffered considerably during the mid and late 1970s from the effects of war and economic sanctions. The country's export volume index rose from 113 in 1970 to 123 in 1974 but declined to 118 in 1979 (1964 = 100). More significantly, the terms of trade declined from 86 in 1970 to 84 in 1974 and 56 in 1979, and the import volume declined from 115 in 1974 (91 in 1970) to 67 in 1979 (1964=100) [4]. Thus the availability of foreign exchange declined sharply and economic expansion was severely curtailed.

The value of commodity exports in 1979, in terms of current Zimbabwe dollars, was 144 per cent greater than in 1970 (table 13). Metal products accounted for 27.4 per cent of the total in 1979, crude materials accounted for 24.2 per cent, food and food products for 18.3 per cent and beverages, tobacco and tobacco products for 13.6 per cent. The shares of edible oils and fats and beverages, tobacco and tobacco products tended to increase during the period 1970-1979 (the highest share having occurred in 1978 in both cases), whereas the shares of machinery and transport equipment and chemicals tended to decline. The 1970 share of food and food products tended to increase until 1975. The shares of foods, crude materials and metal products were significantly higher than in 1965, whereas the 1970 shares of beverages and tobacco, chemicals and miscellaneous manufactures were well below 1965 levels.

The value of commodity imports in 1979 was 133.9 per cent greater (in current Zimbabwe dollars) than in 1970 (table 14). In comparison with export shares, 1979 import shares of foods, beverages and tobacco, crude materials and oils and fats were very low. The main import items in that year were fuels and electricity (29.5 per cent of total), material-based and miscellaneous manufactures (27.5 per cent), machinery and transport equipment (23.2 per cent) and chemicals (13.9 per cent). In terms of structural change, the table shows that the main feature has been the rapidly increasing import share of fuels and electricity, whereas the shares of material-based and miscellaneous manufactures and machinery and transport equipment has tended to decline since the early 1970s.

The ratios of export to trade, a rough indicator of international competitiveness, are shown in table 15. The ratios in 1979 were very high, approaching complete export dominance (=1.0), for foods, beverages and tobacco and crude materials. Moreover, they tended to increase somewhat during the 1970s. On the other hand, the 1979 ratios for fuels and electricity, chemicals and machinery and transport equipment were very low, approaching complete import dominance (=0.0), and were tending to fall somewhat (especially fuels and electricity up to 1974). The ratio for material-based and miscellaneous manufactures reflected moderate export dominance (0.6) in 1979 and showed a slightly upward trend over the period covered.

Table 13. Zimbabwe: structure of commodity exports, with indices for total commodity exports, Zimbabwe, 1965 and 1970-1979[a]

Commodity group and Standard International Trade Classification (SITC) code	*1965*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979[b]*	
						Group shares in total (percentage)						
Food (0)	10.6	18.7	21.8	26.0	22.9	25.1	28.5	18.3	19.6	19.4	18.3	(239.2)
Beverages and tobacco (1)	35.8	10.7	12.2	13.5	16.2	15.6	14.8	15.9	15.2	17.9	13.6	(309.9)
Crude materials (2)	13.6	23.5	22.6	21.4	20.5	20.5	19.4	23.2	25.6	23.0	24.2	(250.9)
Fuels and electricity (3)	4.5	3.2	2.1	1.0	0.6	0.6	0.9	1.2	1.5	1.4	1.6	(121.8)
Edible oils and fats (4)	0.2	0.1	0.2	0.2	0.3	0.5	0.2	0.6	1.0	1.1	1.0	(3 050.0)
Chemicals (5)	3.3	1.3	1.6	1.3	1.2	1.1	1.0	1.1	0.9	0.8	0.9	(151.5)
Metal products (6)	11.2	26.7	23.5	22.5	24.5	21.9	21.3	26.7	24.3	24.1	27.4	(249.8)
Machinery and transport equipment (7)	6.2	5.2	3.9	3.5	2.7	3.2	3.4	2.5	2.4	2.6	2.5	(114.8)
Manufactures, miscellaneous (8)	14.7	10.6	12.0	10.5	11.2	11.5	10.5	10.4	9.6	9.6	10.6	(244.0)
Subtotal, manufactures (5-8)	35.4	43.8	41.0	37.8	39.6	37.7	36.2	40.7	37.2	37.1	41.4	(229.9)
						Indices (1970 = 100)						
Total	113.3	100.0	109.9	126.3	153.9	189.5	189.1	210.3	199.6	221.7	244.0	

Source: Government of Zimbabwe, Treasury (export values).

[a]Based on f.o.b. values in current Zimbabwe dollars. Totals differ from those reported in national accounts data.

[b]Group indices are shown in parentheses for 1979 (approximately equal to the 1979 index for the total times the ratio of 1979 to 1970 group shares).

Table 14. Zimbabwe: structure of commodity imports, with indices for total commodity imports, 1965 and 1970-1979[a]

Commodity group and SITC code	*1965*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979[b]*	
						Group shares in total (percentage)						
Food (0)	7.8	5.2	4.6	3.5	4.2	3.3	3.1	1.9	1.7	1.1	1.8	(79.5)
Beverages and tobacco (1)	2.9	0.6	0.4	0.4	0.6	0.3	0.3	0.3	0.3	0.3	0.4	(140.0)
Crude materials (2)	4.1	5.3	4.1	4.4	4.5	4.9	3.7	3.7	3.1	3.3	3.4	(148.0)
Fuels and electricity (3)	4.9	6.9	6.5	7.5	7.6	10.3	14.7	20.0	22.6	22.3	29.5	(1 000.6)
Edible oils and fats (4)	1.1	0.4	0.5	0.3	0.2	0.7	0.5	0.5	0.5	0.1	0.4	(220.0)
Chemicals (5)	11.2	11.4	11.5	11.8	11.2	15.6	13.4	12.8	14.0	15.1	13.9	(285.1)
Manufactures material-based and miscellaneous (6 and 8)	36.2	38.2	34.3	35.3	33.9	33.9	28.2	29.4	29.5	32 3[c]	27.5	(167.9)
Machinery and transport equipment (7)	31.7	31.9	38.0	36.7	37.8	31.1	36.1	31.4	28.3	25.5	23.2	(170.2)
Subtotal, manufactures (5-8)	79.1	81.5	83.8	83.8	82.9	80.6	77.7	73.6	71.8	72.9[c]	64.6	(185.2)
						Indices (1970 = 100)						
Total	102.0	100.0	120.3	117.0	131.3	186.6	196.6	163.0	165.0	170.5[c]	233.9	

Source: Government of Zimbabwe, Treasury (import values).

[a]Based on values in current Zimbabwe dollars. Totals differ from those reported in national accounts data.

[b]Group indices are shown in parentheses for 1979 (approximately equal to the 1979 index for the total times the ratio of 1979 to 1970 group shares).

[c]Data for codes and 6 and 8 (and also subtotal and total) for 1978 adjusted by UNIDO.

Table 15. Zimbabwe: ratio of exports to trade, by commodity groups, and comparison with developing Africa, 1965 and 1970-1979[a]

Commodity group and SITC code	*1965*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*
Food (0)	0.61	0.79	0.82	0.90	0.87	0.90	0.90	0.93	0.94	0.96	0.92
Beverages and tobacco (1)	0.93	0.95	0.96	0.97	0.97	0.98	0.98	0.99	0.98	0.99	0.97
Crude materials (2)	0.79	0.82	0.84	0.85	0.85	0.82	0.84	0.89	0.91	0.91	0.89
Fuels and electricity (3)	0.51	0.33	0.24	0.14	0.08	0.05	0.06	0.07	0.08	0.08	0.06
Edible oils and fats (4)	0.19	0.17	0.30	0.44	0.61	0.45	0.34	0.61	0.71	0.94	0.73
Chemicals (5)	0.25	0.11	0.11	0.12	0.12	0.07	0.07	0.10	0.07	0.07	0.07
Manufactures material-based and miscellaneous (6 and 8)	0.45	0.51	0.50	0.52	0.56	0.51	0.53	0.63	0.59	0.59[b]	0.60
Machinery and transport equipment (7)	0.18	0.15	0.09	0.10	0.08	0.10	0.09	0.10	0.10	0.12	0.10
Subtotal, manufactures (5-8)[c]	0.34	0.34	0.36	0.32	0.35	0.33	0.32	0.43	0.40	0.41[b]	0.41
	(0.19)	(0.19)	(0.22)	(0.18)	(0.17)	(0.16)	(0.10)	(0.09)	(0.08)	(0.08)	(0.09)
Total[c]	0.54	0.51	0.49	0.54	0.55	0.52	0.50	0.57	0.56	0.58[b]	0.52
	(0.48)	(0.50)	(0.48)	(0.49)	(0.50)	(0.54)	(0.45)	(0.49)	(0.47)	(0.43)	(0.50)

Source: Government of Zimbabwe, Treasury (export and import values in current Zimbabwe dollars), except as noted in footnote *c*.

[a]Ratio of exports to trade equals export value divided by value of exports plus imports. Thus, 0 indicates complete import dominance, 1.00 equals complete export dominance and 0.5 equals an export-import balance.

[b]Import data for SITC 6 and 8 (and also subtotal and total) for 1978 adjusted by UNIDO.

[c]Comparative data for developing Africa are shown in parentheses for manufactures and total (including SITC 9) (see *Cambridge Economic Policy Review*, vol. III, No. 6 (December 1980)).

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