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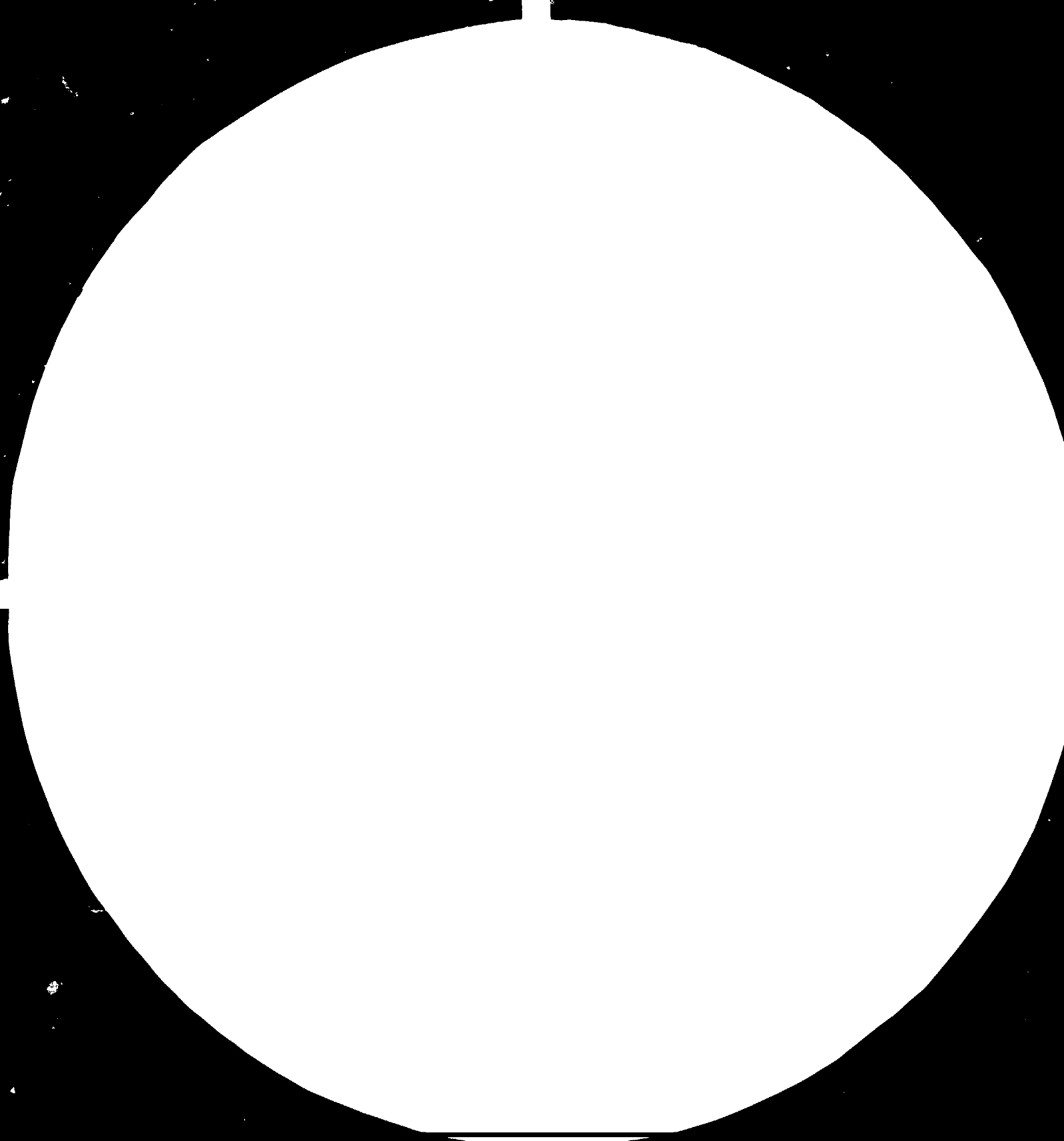
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Role of small scale manufacture in developing economies

In most developing countries structure of the manufacturing industry consists of three components:

- (i) A modern component, comprising large industrial enterprises, using comparatively modern technology and located mainly in urban areas where infrastructure, manpower and skills are available;
- (ii) A modern component, comprising mainly of small to medium sized industrial enterprises, using various intermediate levels of technology and located primarily in urban areas, but also in some rural areas;
- (iii) A non-modern component, comprising small industrial enterprises and artisan workshops, using traditional and upgraded traditional technology, located in both rural and urban areas.

The objective of the present study is to shed light on some specific characteristics of enterprises of component (iii) to be referred to as the informal sector of manufacturing industry.

Specific definitions to distinguish these components for statistical and developmental purposes lack consistency internationally and also within a country. However a close examination of industrial statistics shows that country data generally refer to enterprises above a certain cut-off point which is based either on employment, value of gross output or on total investment or investment in fixed assets of the enterprise. Industrial statistics thus cover mostly components (i) and (ii) and a very small part of component (iii). The last instance include those enterprises which generally use upgraded traditional technology and are relatively of bigger size in terms of employment, gross output or investment than the real traditional ones.

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/UNIDO publ. ~~on the~~ /Expert report/ on the role
of /small scale industry/ in /developing countries/

/employment/ /Manufacturing/ /value added/
/labour productivity/ /informal sector/

There is, therefore, complete lack of regular flow of statistics in respect of the informal sector of the manufacturing industry. Some developing countries have, however, carried out censuses of their manufacturing industry and have tabulated data by size of employment of enterprise. For the present study these censuses constituted the main source of empirical evidence. Generally enterprises with an employment of less than 10 persons (persons engaged or employees) were assumed to represent the informal sector of the present study. For Cyprus, Kenya and Mexico, however, variations in the employment size were made. Enterprises with an employment up to 19 persons in the first two countries and up to 14 persons in the last country were included in the study. Average size of employment in the sample countries is given in table 1. The figures clearly indicate that although the cut-off point was 9 persons employed the average size is very low in almost all the sample countries. In other words, the bulk of employment in the informal sector was provided by very small enterprises.

The informal sector in developing countries has many common characteristics; large number of enterprises geographically widely dispersed; high labour intensity and low labour productivity; product-mix quite often different from that of enterprises of category (1) and (2); low quality of products, mainly meeting local demand; use of local raw materials and skills; use of hand tools rather than engine-powered equipment and therefore low capital output ratio; manufacturing activity quite often carried out on household premises; lack of profit motivation; etc.

During the course of economic growth the composition of manufacturing activity when classified according to scale appear to pass through three

Table 1. Average size of employment of informal and formal sectors of manufacturing in selected countries

Country . territory	Year	Average number of persons engaged/ employees per establishment	
		Informal sector <u>a/</u>	Formal sector
Brazil	1980	3.8 <u>b/</u>	56.4
Colombia	1979	6.9 <u>b/</u>	85.9
Cyprus	1972	2.8 <u>c/</u>	52.5
El Salvador	1977	7.0 <u>d/</u>	94.7
Hong Kong	1981	3.8 <u>b/</u>	48.8
Kenya	1976	2.7 <u>c/</u>	161.7
Mexico	1975	2.6 <u>e/</u>	113.5
Pakistan	1980	6.5 <u>f/</u>	144.2
Puerto Rico	1977	3.9 <u>f/</u>	108.2
Singapore	1978	6.0 <u>g/</u>	83.0
Turkey	1970	1.9 <u>b/</u>	105.9

Source: See annex 5.

a/ If not otherwise specified, informal sector in all tables and annexes has the same coverage of establishments as indicated here and data pertain to the years as shown in column 2 above.

b/ Covers establishments with 1-9 persons engaged.

c/ Covers establishments with 1-19 persons engaged.

d/ Covers establishments with 5-9 persons engaged.

e/ Covers establishments with 1-14 persons engaged.

f/ Covers establishments with 1-9 employees.

g/ Covers establishments with 5-9 workers.

Note: Cross-country differences in average size of employment would arise due to variations in cut-off points as well as incomplete coverage of the informal sector. In their data collection some countries have covered only a small part of the informal sector. Colombia, El Salvador and Pakistan are the countries included in this category.

phases. In the first phase of development household manufacturing is predominant accounting for one-half to three-quarters or more of total manufacturing employment. Two factors weigh heavily in favour of household manufacturing. First is the historical legacy, while the second factor is of an economic nature. Introduction of improved techniques of farming and improved varieties of seeds, expansion of irrigation facilities and extended use of chemical fertilizers raise agricultural output and productivity. This, in turn, increases demand for manufactured goods, both for consumption as well as for capital formation. The increased demand can easily be met by expansion of the informal sector. Due to the fragmented nature of markets coupled with lack of infrastructure large enterprises are not able to make inroads in rural areas. On the other hand, household and cottage enterprises have the characteristic of quick adaptability to local supply and demand factors. Being labour intensive the informal sector bulk of manufacturing labour force as is evident from the figures in table 2.

Two general observations can be made on the basis of the figures. In many developing countries the informal sector accounted for large proportions of manufacturing employment. Seemingly, these countries were still in the first phase of industrial development. Second, large differences in shares of manufacturing employment and value added mean wide gaps in labour productivity of the two sectors, that is, the informal and formal sectors.

In the second phase small workshops and factories using modern technology and equipment emerge comparatively at a rapid rate, and act to displace household manufacturing in several branches of manufacturing industry. And finally, large scale production becomes predominant, displacing the remaining

Table 2 Percentage distribution of manufacturing employment and value added in the very small (VSE) and large scale enterprises (LSE) in selected developing countries (percentage)

Region and country (year)	Employment		Value added	
	VSE	LSE	VSE	LSE
Asia				
Iran (1968)	83	17	44	56
Bangladesh (1976/77)	87	13	45	55
Indonesia (1974/75)	87	13	20	80
Philippines (1969-71)	70	30	6	94
Sri Lanka (1968)	71	29	33	67
Africa				
Sierra Leone (1974/75)	96	4	44	56
Egypt (1966/67)	33	67	16	84
Ghana (1963)	87	13	39	61
Somalia (1974)	50	50	40	60
United Republic of Tanzania (1961/64)	50-80	50-20	30	70
Latin America				
Honduras (1975)	98	2	59	41
Ecuador (1974)	78	22	17	83

Source: M. Allal and E. Chuta, "Cottage industries and handicrafts, some guidelines for employment promotion" (ILO, Geneva, 1982), p. 12.

household manufacturing activity and a great proportion of small scale production. Data in table 3 reveal a declining share of the informal sector is either expanding at a lower rate than the formal sector or its size has started to contract - an indirect indication of the fact that the first phase of industrial growth is in passing stages in many developing countries. Some countries have developed capacity based on modern technology to process their natural resources. Moreover, with rising incomes tastes change in favour of comparatively more sophisticated goods which are manufactured by modern technology. Examples are displacement of demand for jaggery by refined sugar, for food grains by processed food, for natural fibres by synthetics, for earthenware by glass and plastic wares, etc. Thus, in the long run industrial development starts to exercise adverse effects on the informal sector. Ultimately the sector is reduced to enterprises which produce "differentiated products" like specialized foods, garments and handicrafts as it happened in now industrialized countries. These products have low scale economies and cater to a small market.

In the initial stages of industrial growth, however, the informal sector had an important role to play. It contributes largely to employment generation and more equitable distribution of income; expansion of rural industrialization and improvement of rural incomes; local production of goods in accordance with needs, tastes and purchasing power of low income groups of population and optimal use of human and material resources. The sector has considerable multiplier effects on the economy through backward and forward linkages. Rural artesians play an important role in providing inputs to the traditional agriculture sector, rural transport and construction. Backward linkages from these sectors to very small enterprises are also significant.

Table 3 Changes in the shares of the informal sector in manufacturing value added (percentage)

Country	Year	Share of MVA	Year	Change in the share of MVA	Coverage of establishments in the informal sector with employment
Australia	1975	13	1981	3-10	Less than 4 employees
Bangladesh	1975	43	1978	18-25	Less than 5 employees
Belgium	1970	16	1980	14-2	Less than 5 employees
Ethiopia	1971	39	1980	19-20	Less than 10 employees
Greece	1970	33	1977	26-7	Less than 10 persons engaged
Guatemala	1970	39	1978	29-10	Less than 5 persons engaged
Honduras	1971	24	1975	20-4	Less than 5 persons engaged
India	1970	38	1980	37-1	Less than 10 workers when using power or less than 20 workers when not using power
Italy	1970	19	1980	16-3	Less than 20 persons engaged
Kenya	1970	32	1978	14-18	Less than 50 employees
Mauritius	1970	25	1980	21-4	Less than 10 employees
Netherlands	1970	18	1979	14-4	Less than 10 employees
Pakistan	1970	43	1977	50+7	Less than 10 workers
Swaziland	1971	36	1979	31-5	Less than 10 employees
Trinidad and Tobago	1974	25	1977	8-17	Less than 10 persons engaged
United Republic of Tanzania	1970	39	1974	30-9	Less than 10 persons engaged

Source: UNIDO Data Base

Note: Figures for the informal sector were obtained as residuals of value added from national accounts data and value added from industrial statistics. National accounts, in principle, cover the entire manufacturing sector, while industrial statistics pertain to establishments of size above the cut-off point. However, because of differences in concepts, classifications and methods of valuation the figures from the two sources are not strictly comparable. The estimates of shares should therefore be used only as indicators of the direction of trend.

In the urban areas the informal sector exhibits strong backward linkages with the modern sector as the former buys its inputs from the latter. The forward linkages are, however, somewhat weak. For example, in Ghana cane weavers only manage to sell 16 per cent of their output to the modern sector.

For some activities of the informal sector international market is a major component of the total market. Examples are carpet weaving in Iran and straw and wood products manufacturing in Haiti. Such activities are important foreign exchange earners for the respective countries.

A significant characteristic of small production units is the fact that most of their final products cater to the basic needs of the bulk of the population. Since most of the small units utilize indigenous technology, they produce unsophisticated low cost goods that satisfy the food, housing and other basic needs of the poor. Expansion of the informal sector in rural areas also acts as a catalyst in mitigating the trend of flow of population from these areas to urban areas.

Use of traditional technology keeps the labour productivity in the informal sector at a low level as borne by the data in table 4. Productivity levels were generally very low in most of the branches. Low productivity by branches tended to pull down the average for the sector as a whole to a level even 50 per cent lower than the formal sector's productivity. The countries which displayed this feature include Brazil, Colombia, Ecuador, Kenya and Turkey. In those countries more than 50 per cent of the branches in the informal sector operated at a level which was even lower than 50 per cent of the productivity of the corresponding branches of the formal sector. In another three countries, namely, Honk Kong, Kenya and Pakistan, 25 to 35 per cent of the branches displayed this feature. In Turkey the informal sector

Table 4 Labour productivity in the informal sector - selected countries

Branch	ISIC Code	Brazil (000 Cruzeiros)		Cyprus (£)		Colombia (000 Pesos)		El Salvador (000 Coesues)		Hong Kong (000 \$)		Kenya (Pounds)	
		Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal
Food products	311/2	251	773	939	1466	179	492	10	16	28	47	672	2044
Beverages	313	228	878	1581	2884	318	1328	2	42	25	80		
Tobacco	314	151	1088	231	1987	85	1993		99		194	514	3859
Textiles	321	404	670	765	951	151	462	6	11	26	37	1843	622
Wearing apparel	322	199	446	501	809	178	185	7	8	26	31	685	693
Leather products	323	248 ^{a/}	442 ^{a/}	937	958	145	276	4	11	36	28		
Footwear	324			778	899	123	198		7	17	30	603	951
Wood products	331	197	477	840	1123	145	317	6	8	27	39	332	462
Furniture and fixtures	332	184	462	890	995	158	168	8	9	27	36	523	794
Paper and products	341	388	1122	1038	1554	160	735		23	27	35	450	2317
Printing and publishing	342	288	821	1218	1427	139	343	7	24	26	60	1062	1334
Industrial chemicals	351	1636	3607	1467	2783	717	1104		154				
Other chemical products	352	800	1700	1216	1795	147	678	24	33	24	68	835	3891
Petroleum refineries	353				12929		2721		314				
Petroleum and coal products	354						630		30				
Rubber products	355	385	904	1483	1267	134	550	10	13	29	29	433	2435
Plastic products	356	429	834	1310	1337	221	360	14	16	28	33	856	1571
Pottery, china and earthenware	361			659		111	253	1					
Glass products	362	129	685	1333		116	429	6	12	31	93	1333	1090
Non metal products, n.e.c.	369			1092	1823	120	393	7	17			266	2321
Iron and steel	371					146	556		11				
Non-ferrous metals	372	265	901		3000	82	590	24	16	27	56		
Metal products	381			938	1081	148	323	8	12	28	34	815	1400
Machinery n.e.c.	382	428	760	1329	1137	174	347	7	14	27	40	750	2200
Electrical machinery	383	538	1055	989	3077	114	426		28	25	44	730	1415
Transport equipment	384	243	1097	889	2014	219	477		16	38	54	508	608
Professional goods	385			1211		167	196	9	20	20	33		
Other industries	389	319	866	883	784	169	303	9	9	30	40	1363	786
Total		241	885	869	1591	162	511	9	19	27	37	686	1543

Source: See annex 5

a/ Includes ISIC 324.

Table 4 (continued) Labour productivity in the informal sector - selected countries

Branch	ISIC Code	Mexico 1975 (000 Pesos)		Pakistan 1980 (000 Rs.)		Puerto Rico 1977 (000 \$)		Singapore 1978 (000 \$)		Turkey 1970 (000 TL)	
		Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal
Food products	311/2	31	103	74	111	16	16	8	21	14	46
Beverages	313	47	185	125	136	43	52	7	31	18	106
Tobacco	314	26	464	-	291	4	34	-	32	-	80
Textiles	321	37	86	28	27	9	16	8	12	14	30
Wearing apparel	322	37	54	26	60	8	8	6	7	9 _{a/}	7 _{a/}
Leather products	323	36	91	45	67	7	9	6	10	9	30
Footwear	324	24	52	37	45	10	9	6	8	-	-
Wood products	331	29	55	19	45	9	12	9	18	10	30
Furniture and fixtures	332	28	68	18	50	10 _{c/}	11 _{c/}	8	9	12	22
Paper and products	341	57	144	38	51	14 _{d/}	15 _{e/}	7	14	17	61
Printing and publishing	342	55	111	25	26	10	18	10	17	15	54
Industrial chemicals	351	200	202	20	125	9	57	-	-	-	-
Other chemical products	352	10 _{a/}	184	102	96	38	112	9	54	28	61
Petroleum refineries	353	113 _{b/}	418 _{b/}	-	70	72 _{d/}	58 _{e/}	-	-	-	-
Petroleum and coal products	354	187	165	282	182	95 _{d/}	42 _{e/}	-	255	-	2003
Rubber products	355	64	182	18	49	-	-	9	18	13	56
Plastic products	356	64	107	28	44	17	25	-	-	-	-
Pottery, china and earthenware	361	10	73	8	29	-	-	-	-	-	-
Glass products	362	59	109	21	30	-	-	-	-	-	-
Non metal products, n.e.c.	369	24	138	20	145	19	21	10	32	12	40
Iron and steel	371	80	211	18	63	-	-	11	31	-	-
Non ferrous metals	372	168	157	13	26	23	31	12	50	34	97
Metal products	381	37	102	20	30	14	18	11	18	11	37
Machinery n.e.c.	382	57	127	15	37	13	40	11	21	11	56
Electrical machinery	383	64	101	15	60	16	27	8	17	14	39
Transport equipment	384	57	119	20	31	13	25	16	26	11	26
Professional goods	385	69	112	33	30	27	37	8	15	-	-
Other industries	389	38	76	32	36	15	20	8	14	15	52
Total		37	121	36	64	15	28	9	21	12	56

Source: See annex 5

a/ Includes ISIC 324.

b/ Includes only lubricating oils.

c/ Includes metal furniture.

d/ Including establishments with 10 to 19 employees

e/ Establishments with 20 and more employees.

operates at a productivity level which is almost one-fifth of the formal sector. In Indonesia too, the productivity level of the informal sector was as low as in Turkey though the sector in the former country included comparatively larger production units.

Within the informal sector two strikingly large differences in branch productivity are obvious. The branches with low productivity are generally those which produce low cost consumer goods for the poor. The technology followed by most of the enterprises in those branches is traditional and labour intensive.

Comparison of value added - gross output ratio (table 5) presents an entirely different picture. There are large differences in the ratio between branches of the informal sector. For example, in Kenya the ratio ranged between 6.3 (per cent) in "other industries" and 34.5 (per cent) in rubber products branch. In Brazil the range extends over 34.1 per cent in leather and its products and 65.3 per cent in machinery. n.e.c. However, differences reduce very much when a comparison of the ratio is made with the corresponding branches of the formal sector. For many branches the ratio for the informal sector is even higher. Machinery and transport equipment branches in Brazil; leather and its products, furniture and fixtures, industrial chemicals, plastic products, pottery and chinaware; non-metal products, iron and steel, non-ferrous metals, machinery and transport equipment branches in Colombia; wearing apparel, rubber products, and machinery in Kenya are a few examples. Many explanations are plausible. Intensive processing of raw materials explains the existence of a high ratio in many handicrafts and articles of arts such as carpets, embroidery, wood carving, doll making etc. In these activities cost of raw materials constitutes a smaller component of gross

Table 5

Value added gross output ratio in informal sector of the country sample

Branch	ISIC Code	Brazil 1980		Cyprus 1977		Colombia 1979		El Salvador 1977		Hong Kong 1981		Kenya 1976	
		Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal
Food products	311/2	30.3	29.6	23.8	28.3	23.7	25.7	40.1	30.6	39.2	21.8	9.8	17.3
Beverages	313	46.0	47.1	38.2	51.7	52.7	67.4	9.9	69.2	18.2	31.0		
Tobacco	314	41.2	51.4	42.9	38.6	41.3	71.3	-	73.2	-	29.3	19.6	44.9
Textiles	321	35.4	40.9	36.6	46.7	43.6	52.3	33.1	41.2	36.2	21.0	14.5	27.3
Wearing apparel	322	38.8	52.2	42.0	39.9	35.6	45.2	37.1	56.2	45.3	29.3	23.3	22.5
Leather products	323	34.1a/	39.3a/	27.1	38.0	39.6	37.0	42.9	46.1	31.2	19.5		
Footwear	324	-	-	46.1	43.8	43.1	47.6	-	32.7	-	-	14.2	23.9
Wood products	331	56.3	54.1	48.3	33.6	32.2	54.6	49.6	65.6	34.1	33.0	8.7	30.1
Furniture and fixtures	332	50.8	49.6	53.5	52.6	58.6	55.3	56.8	53.2	42.4	33.9	19.8	22.8
Paper and products	341	45.8	46.1	34.3	24.2	50.8	38.8	-	43.2	25.5	22.8	9.8	29.3
Printing and publishing	342	61.5	66.3	58.4	54.7	50.3	53.6	64.3	55.0	39.0	38.8	24.7	30.4
Industrial chemicals	351	36.2	31.1	36.7	62.1	65.6	42.5	-	53.5	24.4	23.7	10.2	31.5
Other chemical products	352	52.6	53.8	42.3	35.9	45.8	48.8	62.5	55.5	-	-		
Petroleum refineries	353	-	-	-	28.0	-	56.2	-	8.7	-	-	10.8	11.4
Petroleum and coal products	354	-	-	-	-	-	24.0	-	12.7	-	-		
Rubber products	355	45.6	34.5	50.1	51.9	37.3	43.7	53.5	54.0	33.4	31.1	34.5	32.7
Plastic products	356	46.4	49.3	41.1	40.4	47.6	38.9	52.4	51.0	30.0	31.4	16.2	27.4
Pottery, china and earthenware	361			85.3	-	60.1	59.4	25.0	-				
Glass products	362	64.7	56.2	80.0	-	54.1	51.4	69.4	63.1	31.1	19.5	9.2	31.0
Non-metal products, n.e.c.	369			58.9	54.3	53.6	49.6	64.1	48.7			10.8	35.8
Iron and steel	371			-	-	53.5	49.1	-	27.9				
Non ferrous metals	372	47.4	34.2	-	22.7	54.2	44.5	59.2	23.6	30.1	18.1	27.9	21.7
Metal products	381			48.1	34.9	37.8	45.3	55.6	49.3	33.8	31.4		
Machinery n.e.c.	382	65.3	54.6	53.4	53.5	48.7	46.9	67.7	52.6	37.3	31.5	24.6	23.1
Electrical machinery	383	51.5	50.1	65.3	45.7	28.3	47.6	-	46.9	29.9	23.4	12.3	33.5
Transport equipment	384	56.5	39.4	56.0	70.9	34.4	32.2	-	60.5	53.0	54.1	7.2	40.8
Professional goods	385			62.2	-	39.7	52.2	80.2	71.2	21.8	16.3		
Other industries	389	57.1	62.0										
				44.2	38.4	50.1	55.5	44.2	53.0	35.6	27.2	6.3	23.1
Total		42.0	40.7	40.9	40.0	35.3	43.7	47.6	42.7	34.7	25.8	13.8	22.0

Source: See annex 5

a/ Includes ISIC 324.

Table 5 (continued)

Value added gross output ratio in informal sector of the country sample

Branch	ISIC Code	Mexico		Pakistan		Puerto Rico		Singapore		Turkey	
		Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal
Food products	311/2	32.1	26.1	23.6	33.0	42.1	24.2	10.0	16.8	21.1	27.1
Beverages	313	37.9	47.3	52.5	52.7	30.8	60.9	20.6	19.6	33.0	65.0
Tobacco	314	51.1	61.5		78.5	10.6	57.0		24.0		53.6
Textiles	321	37.6	41.6	15.0	26.4	45.4	57.0	28.8	32.7	26.0	38.6
Wearing apparel	322	40.5	37.3	28.2	41.9	50.6	47.4	34.0	32.6	39.1a/	29.2a/
Leather products	323	39.7	40.4	22.1	25.6	9.8	50.3	20.4	26.3	31.2	27.6
Footwear	324	52.3	40.8	30.2	40.8	48.2	40.8	26.0	36.3		
Wood products	331	46.7	45.8	31.4	39.4	40.3	45.5	33.4	32.8	30.4	36.0
Furniture and fixtures	332	49.8	39.2	35.5	52.6	52.5c/	54.2c/	31.6	37.5	33.4	34.6
Paper and products	341	37.6	34.3	32.8	38.3	39.6d/	30.7e/	23.1	34.2	21.5	54.7
Printing and publishing	342	48.4	47.0	49.1	38.6	54.6	73.6	46.1	50.8	44.6	53.8
Industrial chemicals	351	28.8	35.8	27.6	48.3	26.9	24.2				
Other chemical products	352	33.9	42.1	43.2	41.8	62.6	74.8	29.3	49.7	18.9	46.5
Petroleum refineries	353	33.0b/	32.9b/		15.8	44.8d/	6.4e/				
Petroleum and coal products	354	49.9	33.4	28.1	30.4	92.6d/	31.2e/		10.5		73.8
Rubber products	355	42.4	46.4	33.3	35.2			28.9	7.5	34.2	43.8
Plastic products	356	39.7	40.6	20.3	39.1	60.4	62.3				
Pottery, china and earthenware	361	63.3	55.0	36.4	54.4			34.9	34.1		
Glass products	362	53.9	27.7	49.3		41.8	44.9	24.3	50.4	31.8	55.7
Non-metal products, n.e.c.	369	51.4	46.4	54.5	62.0			40.8	32.4		
Iron and steel	371	28.5	35.9	22.7	34.6						
Non-ferrous metals	372	46.6	25.8	36.4	24.6	52.0	53.1	32.8	42.3	23.6	49.6
Metal products	381	47.9	44.7	20.2	33.3	46.5	39.2	35.1	35.1	33.2	38.3
Machinery n.e.c.	382	55.5	48.7	30.6	34.6	50.3	53.4	44.0	47.3	36.8	44.8
Electrical machinery	383	41.5	46.0	33.2	37.5	56.1	56.3	47.4	31.9	35.7	38.0
Transport equipment	384	42.9	30.4	34.7	29.2	75.9	59.0	38.1	47.7	52.5	36.7
Professional goods	385	52.7	48.2	50.4	38.0	71.7	62.9	54.9	52.1		
Other industries	389	52.3	50.3	47.1	34.8	39.9	37.9	31.0	29.8	19.3	49.2
Total		38.7	38.1	24.7	34.1	47.1	40.3	34.8	25.4	31.0	44.7

Source: See annex 5

a/ Includes ISIC 324.

b/ Includes only lubricating oils.

c/ Includes metal furniture.

d/ Includes establishments with 10 to 19 employees.

e/ Establishments with 20 and more employees.

output, making value added - gross output ratio high.

There are some other activities where cost of materials is almost negligible. Examples can be cited of earthenware, basket weaving and many straw and wood products. In these branches degree of processing is generally low but the ratio of value added to gross output tends to be high as again cost of raw materials constitutes a small component of gross output.

Sometimes a high ratio may arise from statistical discrepancy. This generally applies to enterprises engaged in subcontracting. In "jobwork" type of subcontracting main raw materials are purchased by the principals and supplier to contractors without transfer of ownership of such materials. In cases like this output of contractor does not include the cost of materials received by him from the principals. Thus, gross output comprises value added to a large extent. Engineering goods and wearing apparel are the branches of this category. In developing countries some activities of the food products branch also are of the nature of "job work". Common examples are flour, rice and oil milling. Saw milling of the wood products branch and many activities of the paper and paper products branch lead to a high value added - gross output ratio even though manufacturing involves simple processing only. The explanation again lies in subcontracting of "jobwork" type.

Among the various factors which have a bearing on the size of the informal sector availability of raw materials from local sources, especially of agricultural origin; size of domestic market; per capita income and income distribution; size of labour force and development strategies followed by the country are the important determinants. Countries with a large population whose main occupation is agriculture where productivity is generally low have large size of informal sector. Examples are India, Indonesia, Pakistan and

Turkey. In these countries 40 to 50 per cent of manufacturing employment is provided by the informal sector though share in manufacturing value added is low.

Not all branches are equally important for their contribution either to employment or value added. The branches of consequence are food products; wearing apparel; leather and its products; footwear; wood products; furniture and other non-metallic mineral products; metal products; machinery n.e.c.; transport equipment and miscellaneous manufactures.^{1/} These branches in the informal sector cater to consumption needs of poor people and also provide capital goods to informal sectors of other industries like agriculture; construction and transport.

Despite some unique characteristics of the informal sector which suit to the socio-economic structure of developing countries most of the countries have concentrated their efforts exclusively on promotion of medium and large scale enterprises based on imported technologies and skills. These enterprises produce goods which cannot be afforded by a large majority of the population. This type of strategy has created socio-economic imbalances. Large scale enterprises are located in a few urban centres, leaving large parts of the country industrially backward with low incomes and increasing unemployment. Heavy influx of population from undeveloped rural areas to industrial centres have raised unprecedented problems in most of the developing countries. The alternative development strategy, that is, industrialization through promotion of small scale and household production

^{1/} Detailed data are provided in Annexes 1-4.

seems to be the most desirable strategy for the developing countries. They should work out programmes to provide technical, financial and management assistance to the informal sector. The programmes to encourage and assist small units to gradually switch over to upgraded and modern technologies. Ultimately the informal sector should get transformed into a component which acts as complementary to medium and large scale enterprises. In the initial stages of development role of small production units should not be judged purely on economic grounds, i.e., optimal use of factors of production; ~~their~~ social aspects should also be considered.

Annex

Nature of data used to compute productivity estimates

Country	Period selected for study	Basis of employment	Value added in	Cut-off point
A. Developing				
1. Argentina	1970-1981	EM	NA	Selected commodities only
2. Chile	1971-1979	EM	PP	50 or more p.e.
3. Cyprus	1974-1980	EM	PP	All establishments
4. Ghana	1970-1977	PE	PP	30 or more p.e.
5. Guatemala	1970-1978	PE	PP	5 or more p.e.
6. Honduras	1970-1975	PE	PP	5 or more p.e.
7. India	1970-1978	PE	FP	100 or more p.e. using power or 20 or more p.e. not using power
8. Iraq	1970-1977	EM(PE1976)	FP	10 or more e.m.
9. Kenya	1970-1980	PE	FP	50 or more e.m.
10. Nicaragua	1973-1978	EM	PP	All establishments
11. Nigeria	1970-1978	EM	PP	10 or more p.e.
12. Panama	1970-1979	EM	PP	5 or more p.e.
13. Turkey	1970-1981	EM(PE'77+'78)	PP	10 or more p.e.
14. Zambia	1970-1975	EM	PP	1 or more e.m.
15. Zimbabwe	1970-1980	EM	FP	All establishments
B. Developed market economies				
1. Australia	1975-1981	EM	FP	4 or more employees
2. Finland	1970-1981	EM	FP	5 or more p.e.
3. France	1970-1981	EM	PP	All establishments
4. Germany	1970-1976	EM	PP	10 or more p.e.
5. Greece	1970-1977	EM	FP	10 or more p.e.
6. Israel	1970-1981	EM	PP	5 or more p.e.
7. Italy	1970-1980	EM	NA	20 or more p.e.
8. Netherlands	1970-1981	EM	FP	10 or more e.m.
9. Norway	1970-1981	EM	NA	5 or more p.e.
10. USA	1970-1980	EM	FP	1 or more e.m.
11. Yugoslavia	1970-1980	PE	NA	All establishments in socialist sector

Notes:

- EM = Employees
- PE = Persons engaged
- FP = Factor prices
- PP = Producers' prices

Annex

Distribution of branches according to productivity size - 1975

A. Developing Countries

Country	Productivity size in \$			
	2500	2.5-5000	5-10000	10000
1. Argentina	331	314, 322, 323, 324, 332, 356, 390	311, 313, 321, 342, 352, 354, 355, 361, 362, 369, 371, 372, 381, 382, 383, 384, 385	341, 351, 353,
2. Chile	-	322, 331, 332, 362	321, 323, 324, 342, 355, 356, 369, 381, 382, 384, 385, 390	311, 313, 314, 341, 351, 352, 353, 354, 361, 371, 372, 383
3. Cyprus	-	321, 322, 323, 324, 331, 332, 356, 384	311, 313, 314, 341, 342, 351, 352, 355, 361, 369, 381, 382, 383, 389	353
4. Ghana	322, 323, 324, 331, 362, 382, 389	321, 332, 341, 342, 369, 371, 384	351, 352, 355, 356, 361, 381, 383, 385	311, 313, 314, 353, 372
5. Guatemala	324, 331, 332, 361, 372	321, 322, 323, 342, 356, 381, 385, 390	311, 341, 352, 355, 362, 369, 371, 382, 383, 384	313, 314, 351, 353, 354
6. Honduras	322, 324, 331, 332, 342, 361, 382, 390	311, 321, 323, 341, 352, 355, 356, 369, 381, 383, 384, 385	314, 351, 353	313
7. India	311, 313, 314, 321, 322, 323, 324, 331, 332, 341, 355, 356, 357, 362, 369, 371, 381, 382, 383, 384, 385, 390	351, 352, 354, 372	-	353

8. Iraq	321, 331, 332, 341, 342, 356, 361, 369, 382	311, 322, 323, 324, 354, 355, 362, 381, 383, 384, 385, 390	313, 351, 371	314, 352, 353
9. Kenya	321, 322, 323, 331, 332, 382, 384, 390	311, 324, 341, 342, 355, 356, 361, 362, 381, 383	313, 314, 351, 352, 369	353
10. Nicaragua	-	322, 341, 355, 371, 372, 382, 383	321, 324, 342, 352, 384, 385	311, 313, 314, 323, 331, 332, 351, 353, 356, 361, 362, 369, 381, 390
11. Nigeria	361	322, 331, 332	311, 321, 323, 341, 342, 355, 356, 362, 369, 381, 382, 383, 390	313, 314, 324, 351, 352, 354, 371, 372, 384
12. Panama	-	322, 331, 390	321, 323, 324, 332, 341, 342, 356, 362, 369, 372, 381, 382	311, 313, 314, 351, 352, 355, 371, 383, 384, 385
13. Turkey	-	322, 323, 324, 332, 390	311, 321, 331, 341, 342, 372, 381, 382	313, 314, 383, 384, 385
14. Zambia	-	311, 321, 322, 331, 332, 342, 361, 362, 369, 381	323, 324, 341, 352, 371, 372, 382, 383, 385, 390	313, 314, 351, 353, 354, 355, 356, 384
15. Zimbabwe	-	311, 321, 322, 324, 331, 332, 361, 362, 369	313, 314, 323, 341, 342, 356, 371, 372, 381, 382, 383, 384, 385, 390	351, 352, 353, 354, 355

B. Developed market economies

Country	Productivity size in \$			
	10000	10-15000	15-20000	20000
1. Australia	322	321, 323, 324, 332, 361, 382, 383, 384, 385, 390	311, 331, 341, 342, 355, 356, 371, 381	313, 314, 351, 352, 353, 354, 362, 369, 372
2. Finland	322, 323, 324, 331	321, 332, 355, 356, 361, 362, 372, 381, 382, 383, 384, 385, 390	311, 314, 341, 342, 352, 369, 371	213, 351, 353, 354
3. France	322, 361	321, 323, 324, 331, 332, 342, 355, 356, 362, 372, 383, 384, 385, 390	314, 341, 352, 353, 369, 371, 381, 382	311, 313, 351, 354
4. Germany, F.R.	361	321, 322, 324, 355, 356, 362, 372, 381	314, 323, 331, 341, 342, 371, 382, 383, 385, 390	311, 313, 332, 369, 384
5. Greece	311, 314, 321, 322, 323, 324, 331, 332, 341, 342, 356, 361, 369, 381, 382, 383, 384, 385, 390	313, 352, 354, 355, 362, 371	-	351, 353, 372
6. Israel	311, 321, 322, 323, 324, 390	331, 332, 342, 355, 361, 381, 383, 384	341, 352, 356, 362, 371, 382, 385	313, 314, 369, 372
7. Italy	314, 321, 322, 324	323, 331, 332, 341, 355, 356, 361, 362, 369, 372, 381, 383, 384, 385, 390	311, 342, 352, 354, 371, 382	313, 351, 353
8. Netherlands	322, 361	321, 323, 324, 332, 341, 354, 355, 371, 390	311, 331, 342, 352, 356, 362, 381, 382, 383, 384	313, 314, 351, 353, 369, 372, 385

9. Norway	311, 322, 324	321, 323, 332, 342, 355, 356, 361, 362, 385, 390	331, 341, 352, 381, 382, 383, 384	313, 314, 351, 353, 354, 369, 371, 372
10. USA	-	321, 322, 324, 332	323, 331, 361, 390	311, 313, 314, 341, 342, 351, 352, 353, 354, 355, 356, 362, 369, 371, 372, 381, 382, 383, 384, 385
11. Yugoslavia	311, 313, 321, 322, 323, 324, 331, 332, 341, 342, 351, 352, 355, 356, 361, 362, 369, 371, 372, 381, 382, 383, 384, 385, 390	354	314	353

Annex

Initial Sample of Countries selected for productivity study

A. Developing countries Period Cut-off point

1. Argentina	1970-1981	Selected commodities
2. Bangladesh	1970-1979	Registered est. with 10 or more workers
3. Bolivia	1975-1979	Enterprises with capital of 50000 pesos or more
4. Brazil	1975-1978	5 or more p.e.
5. Chile	1971-1979	50 or more p.e.
6. Colombia	1971-1980	10 or more p.e.
7. Cyprus	1974-1981	All enterprises
8. Ecuador	1970-1979	7 or more p.e.
9. Egypt	1970-1977	10 or more p.e.
10. El Salvador	1970-1978	5 or more p.e.
11. Ethiopia	1971-1981	10 or more employees
12. Fiji (313, 314, 321, 322, 323)	1970-1979	All est. employing paid workers
13. Ghana	1970-1977	30 or more p.e.
14. Guatemala	1970-1978	5 or more p.e.
15. Honduras	1970-1975	Registered est. with 5 or more p.e.
16. Hong Kong	1973-1981	All establishments
17. India	1970-1978	10 or more workers using power or 20 or more workers not using power
18. Indonesia	1970-1980	10 or more p.e. (1970-1974), 20 or more p.e. (1975-1980)
19. Iraq	1970-1977	10 or more e.m.
20. Kenya (371, 372)	1970-1980	50 or more e.m.
21. Korea, Rep. of	1970-1980	5 or more p.e.
22. Madagascar	1970-1978	All establishments
23. Nicaragua	1973-1978	All establishments
24. Nigeria	1970-1978	10 or more p.e.
25. Panama (353, 354)	1970-1979	5 or more p.e.
26. Singapore (353, 354)	1970-1981	10 or more p.e.
27. Syrian Arab Rep.	1970-1980	All establishments
28. Tunisia (351, 352)	1970-1980	5 or more e.m. (1970-1976), 10 or more e.m. (1977-1980)
29. Turkey	1970-1981	All public ent.+ private ent. with 10 or more p.e.
30. Uruguay	1970-1979	All establishments
31. Venezuela	1970-1979	5 or more p.e.
32. Zambia	1970-1975	1 or more e.m.
33. Zimbabwe	1970-1980	All establishments

B. Developed market economies

1. Australia	1970-1981	All est. (1970-1974), 4 or more e.m. (1975-1981)
2. Austria	1970-1980	20 or more p.e.
3. Finland	1970-1981	5 or more p.e.
4. France	1970-1981	All establishments
5. Germany, FR	1970-1981	10 or more p.e. (1970-1976), 20 or more p.e. (1977-1981)
6. Greece	1970-1977	10 or more p.e.
7. Israel	1971-1981	5 or more p.e.
8. Italy	1970-1980	20 or more p.e.
9. Japan	1970-1980	All establishments
10. Netherlands	1970-1981	10 or more e.m.
11. New Zealand	1970-1980	2 or more p.e.
12. Norway	1970-1981	5 or more p.e.
13. South Africa	1972-1979	All private est.
14. Spain	1970-1977	All establishments
15. Sweden	1970-1981	5 or more p.e.
16. Switzerland	1970-1981	6 or more workers
17. U.K.	1970-1980	All establishments
18. USA	1970-1980	1 or more e.m.
19. Yugoslavia	1970-1980	All est. in socialist sector

Note: p.e. = persons engaged
e.m. = employees

Table : Growth of labour productivity in manufacturing

A. Developing Countries	Period	Growth rates		
		Value added	Employment	
Productivity				
1. Argentina	1970-1974	4.47	3.47	0.96
	1974-1981	-1.79	-5.68	4.13
	1970-1981	0.33	-1.93	2.30
2. Chile ^{1/}	1971-1974	-0.26	1.00	-1.25
	1974-1979	2.82	-2.64	5.61
	1971-1979	-1.22	-2.38	1.9
3. Cyprus ^{2/}	1974-1980	12.51	8.60	3.60
4. Ghana ^{3/}	1970-1974	8.68	6.41	2.13
	1974-1975	-3.63	4.83	-8.07
	1970-1975	7.15	6.50	0.62
5. Guatemala ^{4/}	1971-1974	6.84	3.87	2.85
	1974-1975	0.68	3.51	-2.73
	1971-1975	5.42	4.02	1.35
6. Honduras ^{5/}	1971-1974	4.61	7.09	-2.32
	1974-1975	0.42	7.85	-6.89
	1971-1975	3.45	7.69	-3.94
7. India ^{6/}	1970-1974	2.33	2.95	-0.60
	1974-1978	6.40	4.33	1.98
	1970-1978	4.14	3.78	0.35
8. Iraq ^{7/}	1970-1974	8.96	8.55	0.36
	1974-1975	14.32	8.65	5.22
	1970-1975	9.36	7.79	1.45
9. Kenya ^{8/}	1970-1974	8.90	10.59	-1.53
	1974-1980	14.61	5.22	8.93
	1970-1980	11.30	6.58	4.42

		10.87	14.71	-3.34
10. Nicaragua	1973-1976	6.89	6.09	0.76
	1974-1977	7.58	7.54	0.04
	1973-1977			
		6.86	9.18	-2.12
11. Nigeria ^{9/}	1970-1976	20.65	31.24	-8.07
	1974-1977	7.85	11.99	-3.70
	1970-1977			
		5.47	5.11	0.34
12. Panama	1970-1976	3.37	1.96	1.38
	1974-1977	3.01	2.18	0.81
	1970-1977			
		10.58	7.28	3.08
13. Turkey ^{10/}	1970-1976	5.66	3.86	1.74
	1974-1977	7.86	5.30	2.44
	1970-1977			
		7.29	6.16	1.07
14. Zambia ¹¹	1970-1976	-4.36	3.19	-7.32
	1974-1977	5.62	6.19	-0.53
	1970-1977			
		9.66	7.86	1.67
15. Zimbabwe ^{12/}	1970-1976	0.18	0.33	-0.14
	1974-1977	2.52	2.64	-0.12
	1970-1977			
B. Developed market economies		1.62	-1.24	2.90
1. Australia ^{13/}	1975-1981	6.85	3.25	3.49
	1970-1976	3.84	0.13	3.70
2. Finland	1974-1981	3.70	0.86	2.82
	1970-1981			
		5.39	1.82	3.51
3. France ^{14/}	1970-1976	1.31	-1.49	2.84
	1974-1981	2.01	-0.47	2.50
	1970-1981			

4. Germany, FR	1970-1974	2.33	-1.12	3.49
	1974-1976	0.43	-4.60	5.27
	1970-1976	0.90	-2.37	3.35
5. Greece	1970-1974	8.88	12.52	-3.24
	1974-1977	7.19	-6.07	14.11
	1970-1977	7.14	7.16	-0.02
6. Israel	1970-1974	7.69	5.19	2.38
	1974-1981	4.14	1.22	2.89
	1970-1981	5.06	2.09	2.91
7. Italy ^{5/}	1970-1974	4.76	2.23	2.47
	1974-1980	3.05	-1.18	4.27
	1970-1980	2.89	-0.03	2.92
8. Netherlands ^{16/}	1970-1974	3.50	-2.04	5.66
	1974-1981	1.44	-1.97	3.48
	1970-1981	1.62	-2.09	3.79
9. Norway	1970-1974	4.76	0.80	3.92
	1974-1981	-0.25	-0.67	0.43
	1970-1981	1.10	-0.05	1.15
10. USA	1970-1974	6.13	1.26	4.81
	1974-1980	3.85	1.63	2.18
	1970-1980	3.57	0.79	2.76
11. Yugoslavia	1970-1974	8.60	5.17	3.27
	1974-1980	7.24	5.12	2.02
	1970-1980	7.59	5.10	2.37

Source: UNIDO data base

The following branches are excluded:

- 1/ 356, 385
- 2/ 356, 362
- 3/ 354, 361
- 4/ 354, 356, 361
- 5/ 384
- 6/ 356
- 7/ 371
- 8/ 371, 372, 385
- 9/ 371, 385
- 10/ 332, 356, 361, 385
- 11/ 324, 353, 362, 372, 385
- 12/ 323, 354, 355, 356, 385
- 13/ 323, 356
- 14/ 322, 390
- 15/ 322, 381, 390
- 16/ 385, 390

