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A STATISTICAL ANALYSIS OF THE SOURCES OF CHANGE IN MANUFACTURING VALUE ADDED BY INDUSTRY AND REGION IN 1963-1980:

A Decomposition Approach*

prepared by

Global and Conceptual Studies Branch
Division for Industrial Studies

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I. Introduction: Structural Change and Global Economic Interdependence

In recent years much attention has been focused on two interrelated development issues - the growing interdependence and structural change in the world economy. The accelerating interdependence of the national economies is evident within both developing and developed country groups. Equally important is the North-South economic interdependence which has grown rapidly in the past decades.

Meanwhile, the increasing internationalization of trade, production and finance combined with the intensified development efforts of developing countries has contributed to a significant structural change in many national economies and resulted in the continuously shifting international division of labour.

Structural change is broadly viewed here to include the whole range of interrelated changes in the structure of an economy in the development process. This includes a shift in such variables as the composition of demand, product mixes, sectoral composition of employment, as well as the external structure of trade and capital flow.

While economic growth remains as one of the most important development objectives, structural change that transforms a traditional agrarian economy into a modern industrial economy has been accorded equally high, if not greater, priority by many development thinkers and policy-makers. It reflects a commonly-held view that structural change may not necessarily lead to rapid economic growth in the short run but is a desideratum for developing the productive capacity to expand and sustain output, employment and welfare of an economy in the long run. Recent development experiences in most resource-rich developing economies and particularly capital-surplus oil economies illustrate this point. They attained unprecedented rapid growth rates, primarily relying

on a few primary commodity exports, but delayed or even impeded structural transformation essential for creating the productive capacity to sustain rapid growth and reduce vulnerability to the ups-and-downs of the world economy. No doubt, recent massive capital investments in the infrastructure and energy-intensive downstream industries in the Gulf states mirror their preoccupation with the structural balance and diversification of their economies. In the meantime, some of the resource-poor countries like The Republic of Korea, Taiwan Province of China, Hong Kong and Singapore underwent structural change at fairly early stages of development with relatively low per capita incomes initially, and after the two decades of restructuring and revamping their economies on the basis of an export-oriented growth strategy, they became "the success stories" among the community of the developing countries by establishing firmly a sustainable and diversified economy.

Central to the study of structural change are, among other things, the patterns of sectoral change, namely the change in the sectoral composition of output and employment. For instance, it has been amply documented that the relative share of industry and particularly manufacturing in GDP increases with the rising per capita income. With this perspective in mind, we attempt to examine systematically the patterns of manufacturing value added (MVA) growth of 27 manufacturing industries in various regions of both the North and the South in the period of 1963-1980. The relatively narrow focus of this study on the manufacturing sector may be partly justified, given the pivotal role that industrialization plays in structural change and economic development and given a common perception that the development of manufacturing industries is the most critical element of industrialization.

Going beyond a comparative assessment of the general patterns of MVA changes in different industries of different regions of the world in different periods, we further attempt to decompose the sources of such MVA changes into three elements attributable to the global economic effect, the individual industry effect, and the regional effect. Our main objective is served by the identification of regional growth or decline in the MVA of an industry which is region-specific. Put slightly differently, the regional effect component

would permit us to determine the magnitude of the contribution of endogenous growth factors such as a region's capacity to expand its share of the world MVA growth, independently of the general fluctuations of the world economy. This has an important implication for a South-South industrial co-operation strategy, since the question of whether such a South-South scheme is viable and sustainable depends on the vulnerability of the South's economy to the rise and fall of the world economy.

Likewise, global and industrial components may enable us to gauge the increasing sensitivity of manufacturing activities in various regions, particularly in the North, to the global interdependence factor and the dynamics of shifting comparative advantage. In this context, there is mounting evidence that the traditional manufacturing industries in the North are rapidly losing their comparative advantage to the South and an empirical measurement of the shift in the international division of labour would be useful.

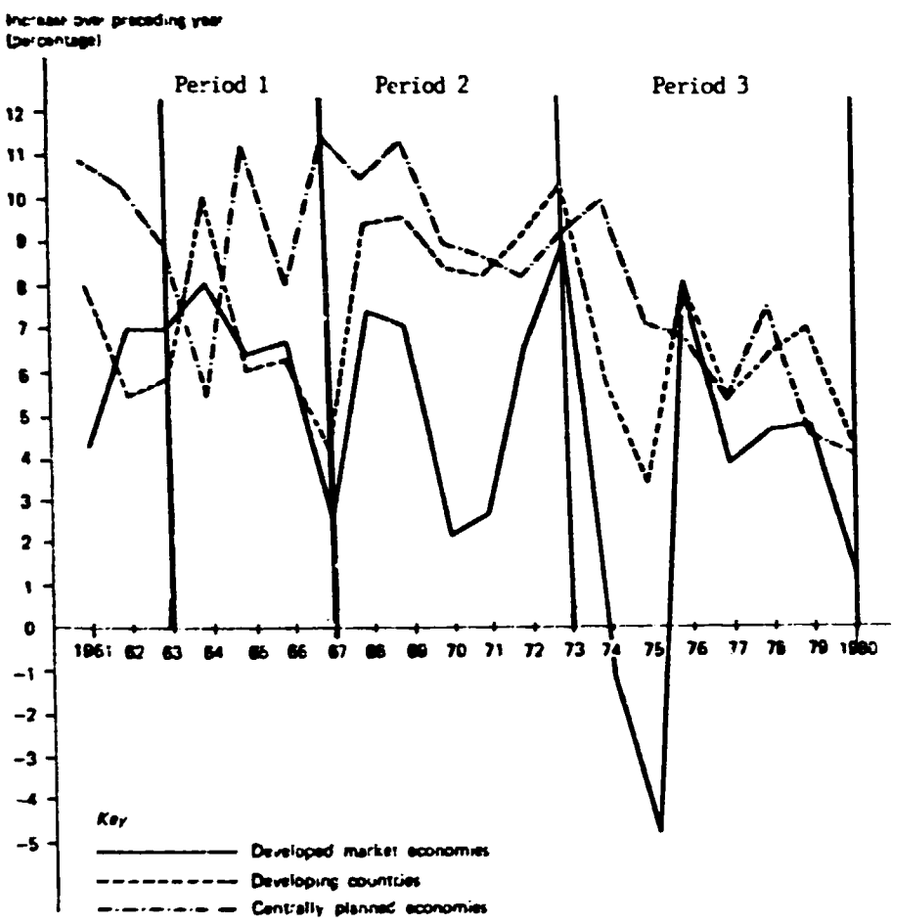
The objective of this paper is to analyse the past growth performance of manufacturing value-added of 27 industries in twelve regions of the world to assess the extent of structural change within the manufacturing sector which occurred between 1963 and 1980 and to quantify and compare the sources of change in MVA among different industries and regions in the same period with the aid of a decomposition analysis.

II. The Patterns of MVA Growth by Industry and Region in 1963-1980

The statistical data used for this study was from UNIDO data base. MVA data for the ISIC 28 three-digit manufacturing industries in 1975 constant prices were examined for three subperiods of 1963-1967 (Period 1), 1967-1973 (Period 2), and 1973-1980 (Period 3). The division of the 1963-1980 period into three subperiods was primarily dictated by a discernible trend in the average annual increase in MVA of both developed market economies and

Figure 1

Annual increase in manufacturing value added, by economic grouping, 1961-1980



Source UNIDO data base, information supplied by the United Nations Office of Development Research and Policy Analysis and the United Nations Statistical Office, United Nations, *Monthly Bulletin of Statistics*, November 1980, and estimates by the UNIDO secretariat

Note Data for 1980 are preliminary estimates

developing countries within each subperiod identified. Figure 1 shows such shifting trends in different periods. More specifically, Period 1 (1963-1967) was dominated by a marked steady decline of the annual MVA growth rates of both developed market economies and developing countries by approximately equal magnitudes, while the MVA growth rate of centrally planned economies showed a firm upward trend during this period. Period 2 (1967-1973) begins

with the onset of a sharp upswing in 1967 and ended with the 1973 watershed year of the first oil price-hike. During this period, the MVA growth rate of developed market economies exhibited a considerable fluctuation, dropping precipitously in 1969-1970 and rising sharply again in the remaining period. Meanwhile, the pattern of MVA growth of developing countries was a healthy upward trend with a mild slowdown around 1970. Period 3 (1973-1980) characterized a continuous slide in the MVA growth of all three economic groups, reflecting the adverse impacts of the two oil price escalations and worldwide stagflation during the period, although the developed market economic group was hit hardest among the three in terms of the declining MVA growth.

It is obvious that the way country data is aggregated would have a significant bearing on statistical results of any empirical analysis. But there are no hard-and-fast rules for country grouping. Usually, country grouping can be done either by the criteria of geographic proximity or by some common country characteristics such as stages of development (proxy by per capita income), country size, natural resource endowments, trade orientation and so on, or a combination of both approaches. This study adopted a hybrid method of country grouping based on both income criteria and geographic proximity. Namely, first, using the 1982 per capita income of $ 300 as a cut-off line, developing countries are divided into two groups - low-income developing countries and middle-income developing countries. Then, within each income group, countries are further grouped according to geographic proximity. As a result, six regional groups for developing countries emerged: for low-income country group, Indian Sub-Continent (LIS) and Africa (LAF); for middle-income country group, Asia (MAS), the Middle East and North Africa (MME), Africa (MAF), and Latin America (MLA). Likewise, among developed countries, Western Europe is divided into two groups, Advanced Western Europe (WE1) and Newly Industrialized Europe (WE2), using the income criteria, and the rest of the grouping consists of North America (NA), Japan (JP), Eastern Europe (EE) and other Developed Countries (DD). A total of 12 regions (six developed, six developing) were covered in the study sample. Countries with a population of less than one million in 1980 were excluded from the sample.

Table 1

	1980 POPULATION[2] (Millions)	1980 PER CAPITA[2] (GNP)	1980 MVA PER CAPITA[3] (1975)
1. DEVELOPING COUNTRIES	1861.6	726.2 W	105.0 W
A. LOW INCOME DEVELOPING COUNTRIES	970.6	233.9 W	25.1 W
(1) INDIAN SUB CONTINENT (LIS)	858.6	234.7 W	26.6 W
1. Bangladesh	88.5	130	11
2. India	673.2	240	27
3. Pakistan	82.2	300	37
4. Sri Lanka	14.7	270	44
(2) AFRICA (LAF)	112	227.2 W	13.7 W
1. Ethiopia	31.1	140	12
2. Madagascar	8.7	350	27
3. Mozambique	12.1	230	19
4. Tanzania	18.7	280	14
5. Uganda	12.6	300	11
6. Zaire	28.3	220	10
B. MIDDLE INCOME DEVELOPING COUNTRIES	891	1262.3 W	192.1 W
(3) ASIA (MAS)	297	739.2 W	100.9 W
1. Indonesia	146.6	430	30
2. Malaysia	13.9	1620	222
3. Philippines	49.0	690	115
4. Singapore	2.4	4430	967
5. South Korea	38.2	1520	262
6. Thailand	47.0	670	96
(4) MIDDLE EAST AND NORTH AFRICA (MME)	149	1194.9 W	114.4 W
1. Algeria	18.9	1870	96
2. Egypt	39.8	580	94
3. Iran	38.8	951	174
4. Iraq	13.1	3020	99
5. Jordan	3.2	1420	63
6. Morocco	20.2	900	91
7. Syria	9.0	1340	59
8. Tunisia	6.4	1310	137
(5) AFRICA (MAF)	135	859.6 W	45.7 W
1. Congo	1.6	900	27
2. Ivory Coast	8.3	1150	109
3. Ghana	11.7	420	50
4. Kenya	15.9	420	35
5. Nigeria	84.7	1010	32
6. Zambia	5.8	560	98
7. Zimbabwe	7.4	630	106
(6) LATIN AMERICA (MLA)	310	1971.4 W	380.4 W
1. Argentina	27.7	2390	799
2. Bolivia	5.6	570	72
3. Brazil	118.7	2050	428
4. Chile	11.1	2150	290
5. Colombia	26.7	1180	139
6. Dominican Republic	5.4	1160	179
7. Ecuador	8.0	1270	126
8. Jamaica	2.2	1040	199
9. Mexico	69.8	2090	349
10. Peru	17.4	930	234
11. Uruguay	2.9	2810	395
12. Venezuela	14.9	3610	393

(continued)

II. DEVELOPED COUNTRIES	1202.4	7683.3[w]	1601.2[w]
(7) NORTH AMERICA (NA)	251.6	11243.2[w]	1871.6[w]
1. USA	227.7	11360	1891
2. Canada	23.9	10130	1689
(8) ADVANCED WESTERN EUROPE (WE1)	281	10327.3[w]	1922.8[w]
1. Austria	7.5	10230	1985
2. Belgium	9.8	12180	1978
3. Denmark	5.1	12950	1988
4. Finland	4.9	9720	1886
5. France	53.5	11730	2139
6. German Federal Republic	60.9	13590	2839
7. Italy	56.9	6480	1448
8. Netherlands	14.1	11470	1992
9. Norway	4.1	12650	1562
10. Sweden	8.3	13520	2492
11. United Kingdom	55.9	7920	1105
(9) NEWLY INDUSTRIALIZED WESTERN EUROPE (WE2)	127	3222.5[w]	532.9[w]
1. Greece	9.6	4380	516
2. Ireland	3.3	4880	642
3. Portugal	9.8	2370	723
4. Spain	37.4	5440	851
5. Turkey	44.9	1470	186
6. Yugoslavia	22.3	2620	598
(10) JAPAN (JP)	116.8	9890	2677
(11) EASTERN EUROPE (EE)	375	4513.3[w]	1295.3[w]
1. Bulgaria	9.0	4150	936
2. Czechoslovakia	15.3	5820	1761
3. German Democratic Republic	16.9	7180	2551
4. Hungary	10.8	4180	1027
5. Poland	35.8	3900	1223
6. Romania	22.2	2340	1174
7. USSR	265.5	4550	1228
(12) OTHER DEVELOPED COUNTRIES (OD)	51	4916.3[w]	941.1[w]
1. Australia	14.5	9820	2146
2. Israel	3.9	4500	834
3. New Zealand	3.3	7090	910
4. South Africa	29.3	2300	363

The letter w indicates a weighted average.

Note: 1. Covers selected countries with a population of more than a million in 1980.
2. Source: World Development Report 1982
3. MVA: UNIDO Data base.

Also conspicuously missing in the sample is centrally planned Asia region, mainly China because of the unavailability of 1980 data. The composition of each region grouped from a sample of 74 countries is summarized in Table 1.

Table 2 reveals an evolution in the pattern of MVA share by regions. First of all, the MVA share of the sample developing countries as a whole shows an unmistakable upward trend growing steadily from 7.35 percent in 1963 to 9.52 in 1980, but at a far slower rate of growth than that required to attain the Lima target of 25 percent.[1/] Moreover, the aggregate figures disguise considerable variations among regions of both the South and the North. It is noteworthy that the MVA share of the low income group, particularly that of low-income Africa (LAF) with a very small base to begin with, has been continuously sliding, while that of the middle-income group, notably the middle-income Asia (MAS) and middle-income Latin America (MLA), increased markedly during the period. Similarly, behind a general slow decline over time in the aggregate MVA share of total developed countries lies substantial regional differences. Eastern Europe (EE) and Newly Industrialized Western Europe (WE2) registered an appreciable gain in their respective MVA share, while the rest of the group showed a downward trend.

Table 3 shows interindustry variations in the MVA shares of the developed and developing country groups for selected years.[2/] The table provides a number of important clues to the patterns of structural change which had taken place within the manufacturing sector between 1963 and 1980.

1/ A trend least-squares fitted to the share data of the developing countries for the period of 1961-1980 was $MVAS = 7.493 + 0.1488t \quad R^2 = 0.86$ $(44.68) \quad (10.63)$

where numbers in parentheses are t-values. A trend projection up to the year 2000 based on the above equation gives only about 13.4 percent, undershooting the 25 percent target by a great margin. See UNIDO/IS. 468, "The Lima Target and the South-South Co-operation: A Statistical Review", 15 May 1984.

2/ A more detailed table for the 12 regions of the world is given in the appendix.

Table 2

Regional Share of World MVA for Selected Years

(percent)

300 Total Manufacturing	196[illegible]	1967	1973	1980
Total value ($M, 1975 prices)	802,310	1,022,987	1,505,288	1,897,032
Total Developing	7.35	7.45	8.07	9.52
Total Low Income	1.40	1.32	1.06	1.04
LIS	1.30	1.20	0.90	1.00
LAF	0.10	0.10	0.10	0.08
Total Middle Income	5.95	6.13	7.01	8.47
MAS	0.70	0.70	0.90	1.40
MME	0.70	0.70	0.80	0.90
MAF	0.20	0.20	0.30	0.30
MLA	4.40	4.60	5.10	5.90
Total Developed	92.65	92.55	91.93	90.48
NA	29.10	29.50	26.30	23.70
WE1	34.10	30.60	28.80	24.60
WE2	2.60	2.90	3.40	3.70
JP	6.50	7.80	9.60	9.30
EE	18.10	19.70	21.80	27.40
OD	2.20	2.10	2.00	1.80

Source: UNIDO Data Base

Table 3
Share of Industry in Total World MVA
for Selected Years
(percent)

ISIC					
300 Total mfg.	1963	1967	1973	1980	1963-80 annual MVA growth rate
Total value ($M in 1975 prices)	802,310	1,022,987	1,505,288	1,879,032	5.13
Developing	7.35	7.45	8.07	9.52	6.74
Developed	92.65	92.55	91.93	90.48	4.99
311 Food Products	11.76	11.06	9.61	9.41	3.77
Developing	10.75	10.68	11.95	13.13	5.00
Developed	89.25	89.32	88.05	86.87	3.60
313 Beverages	2.22	2.16	2.00	2.12	4.85
Developing	10.05	10.21	11.85	16.01	7.76
Developed	89.95	89.79	88.15	83.99	4.42
314 Tobacco	1.17	1.05	0.88	0.86	3.24
Developing	19.19	20.71	21.92	25.90	5.07
Developed	80.81	79.29	78.08	74.10	2.71
321 Textiles	6.65	6.00	5.58	4.92	3.29
Developing	15.48	15.27	15.63	17.43	4.01
Developed	84.52	84.73	84.37	82.57	3.15
322 Wearing Apparel	3.83	3.48	3.18	2.93	3.48
Developing	6.72	7.48	6.87	7.01	3.75
Developed	93.28	92.52	93.13	92.99	3.46
323 Leather & Products	0.73	0.61	0.49	0.44	2.09
Developing	8.50	9.08	9.35	11.93	4.15
Developed	91.50	90.92	90.65	88.07	1.86
324 Footwear	1.25	1.11	0.86	0.79	2.36
Developing	8.79	9.36	9.40	10.35	3.35
Developed	91.21	90.64	90.60	89.65	2.26
331 Wood Products	2.45	2.23	2.06	1.71	2.93
Developing	7.90	7.87	8.22	11.15	5.05
Developed	92.10	92.13	91.78	88.85	2.72

	1963	1967	1973	1980	1963-80 annual MVA growth rate
332 Furniture & Fixtures	1.82	1.79	1.84	1.71	4.73
Developing	5.66	5.76	5.06	6.45	5.55
Developed	94.34	94.24	94.94	93.55	4.68
341 Paper & Products	3.27	3.24	3.15	2.86	4.33
Developing	5.55	5.85	6.30	7.72	6.37
Developed	94.45	94.15	93.70	92.28	4.18
342 Printing & Publications	4.21	4.04	3.44	3.27	3.58
Developing	5.41	5.07	5.78	5.60	3.79
Developed	94.59	94.93	94.22	94.40	3.57
351 Industrial Chemicals	3.67	4.33	5.20	5.38	7.52
Developing	4.34	4.39	5.51	6.71	10.31
Developed	95.66	95.61	94.49	93.29	7.36
352 Other Chemical Products	3.02	3.21	3.33	3.66	6.32
Developing	11.88	13.13	14.63	18.28	9.05
Developed	88.12	86.87	85.37	81.72	5.85
353 Petroleum Refinery	1.78	1.92	2.11	2.01	5.91
Developing	27.21	26.63	27.07	32.50	7.02
Developed	72.79	73.37	72.93	67.50	5.44
354 Petroleum & Coal Products	0.63	0.55	0.45	0.42	2.64
Developing	6.43	8.58	11.96	14.54	7.69
Developed	93.57	91.42	88.04	85.46	2.10
355 Rubber Products	1.41	1.38	1.43	1.34	4.83
Developing	9.31	9.69	11.01	13.98	7.37
Developed	90.69	90.31	88.99	86.02	4.51
356 Plastic Products	0.77	1.04	1.64	1.81	10.57
Developing	9.36	7.84	6.82	7.00	8.70
Developed	90.64	92.16	93.18	93.00	10.74
361 Pottery & China	0.61	0.57	0.56	0.58	4.76
Developing	8.69	9.02	9.62	10.76	6.08
Developed	91.31	90.98	90.38	89.24	4.61

		1963	1967	1973	1980	1963-80 annual MVA growth rate
362	Glass & Products	0.87	0.89	0.92	1.01	6.08
	Developing	6.42	7.12	9.09	10.83	9.40
	Developed	93.58	92.88	90.91	89.17	5.78
369	Non-Metal Products	3.40	3.41	3.47	3.25	4.85
	Developing	6.87	7.12	8.07	11.59	8.13
	Developed	93.13	92.88	91.93	88.41	4.53
371	Iron & Steel	6.78	6.63	6.38	5.31	3.64
	Developing	5.01	5.21	6.37	10.51	8.26
	Developed	94.99	94.79	93.63	89.49	3.28
372	Non-Ferrous Metal	1.88	1.99	2.03	1.96	5.39
	Developing	6.87	7.23	7.45	8.72	6.88
	Developed	93.13	92.77	92.55	91.28	5.26
381	Metal Products	6.68	6.78	6.92	6.92	5.35
	Developing	4.54	5.06	5.39	6.46	7.57
	Developed	95.46	94.94	94.61	93.54	5.23
382	Machinery	9.43	9.87	10.16	10.83	6.00
	Developing	2.23	2.73	4.07	4.80	10.87
	Developed	97.77	97.27	95.93	95.20	5.83
383	Electrical Machinery	6.23	6.86	8.02	9.23	7.59
	Developing	3.79	4.30	4.59	5.98	10.51
	Developed	96.21	95.70	95.41	94.02	7.44
384	Transport Equipment	9.37	9.46	9.72	9.61	5.29
	Developing	4.71	4.86	6.52	7.80	8.46
	Developed	95.29	95.14	93.78	92.20	5.08
385	Professional Goods	2.17	2.42	2.70	3.59	8.29
	Developing	1.21	1.13	1.26	1.22	8.37
	Developed	98.79	98.87	98.74	98.78	8.29
390	Other Industries	1.85	1.84	1.83	2.02	5.70
	Developing	7.38	7.96	6.26	6.83	5.21
	Developed	92.62	92.04	93.74	93.17	5.73

Source: UNIDO Data Base

(1) The dominant industries in terms of their shares of the total world MVA in 1963 and 1980, say around 5 percent or over, ranked in order of importance are:

	1963			1980		
1.	311	Food products	(11.76%)	382	Machinery	(10.83%)
2.	382	Machinery	(9.43%)	384	Transport equipment	(9.61%)
3.	384	Transport equipment	(9.37%)	311	Food products	(9.41%)
4.	371	Iron and steel	(6.78%)	383	Electrical machinery	(9.23%)
5.	381	Metal products	(6.68%)	381	Metal products	(6.92%)
6.	321	Textiles	(6.65%)	351	Industrial chemicals	(5.38%)
7.	383	Electrical machinery	(6.23%)	371	Iron and steel	(5.31%)

It is apparent that capital goods industries and heavy industries excepting foods and textiles, claim the lion's share of value added generated in the manufacturing sector in both 1963 and 1980, although the relative ranking changed in favour of capital goods industries during the period.

(2) In terms of the direction of change in the industries' share of the world MVA between 1963 and 1980 and the annual MVA growth rate relative to the world average, each industry can be dichotomized into the two groups: growth industry and declining industry.

Growth Industry		Declining Industry	
351	Industrial chemicals	311	Food products
352	Other chemical products	313	Beverages
353	Petroleum refinery	314	Tobacco
356	Plastic products	321	Textiles
362	Glass products	322	Wearing apparel
372	Nonferrous metal	323	Leather & products
381	Metal products	324	Footwear
382	Machinery	331	Wood products
383	Electrical Machinery	332	Furniture & fixture
384	Transport equipment	341	Paper & products
385	Professional goods	342	Printing & publications
390	Other industries	354	Petroleum & coal products
		355	Rubber products
		361	Pottery & china
		369	Non-metal products
		371	Iron & steel

Such growth industries and declining industries are graphically summarized in Figure 2. The dotted line indicates a percent share of a given declining industry in the world MVA and the rectangular shaded area and blackened area at the top of the line represent the share losses by the North and the South respectively between 1963 and 1980. Likewise, the bold black line represents a percent share of a growth industry with the shaded and blackened boxes at the top showing respective gains of the North and the South.

It is again worth noting that the growth industries are concentrated in most capital goods industries and heavy industries producing industrial intermediate goods with a few minor exceptions. It is particularly important to observe that some of the fastest growing industries are electrical machinery, machinery, industrial chemicals and professional goods, while among the rapidly declining industries are food products, wearing apparel, iron and steel, and wood products.

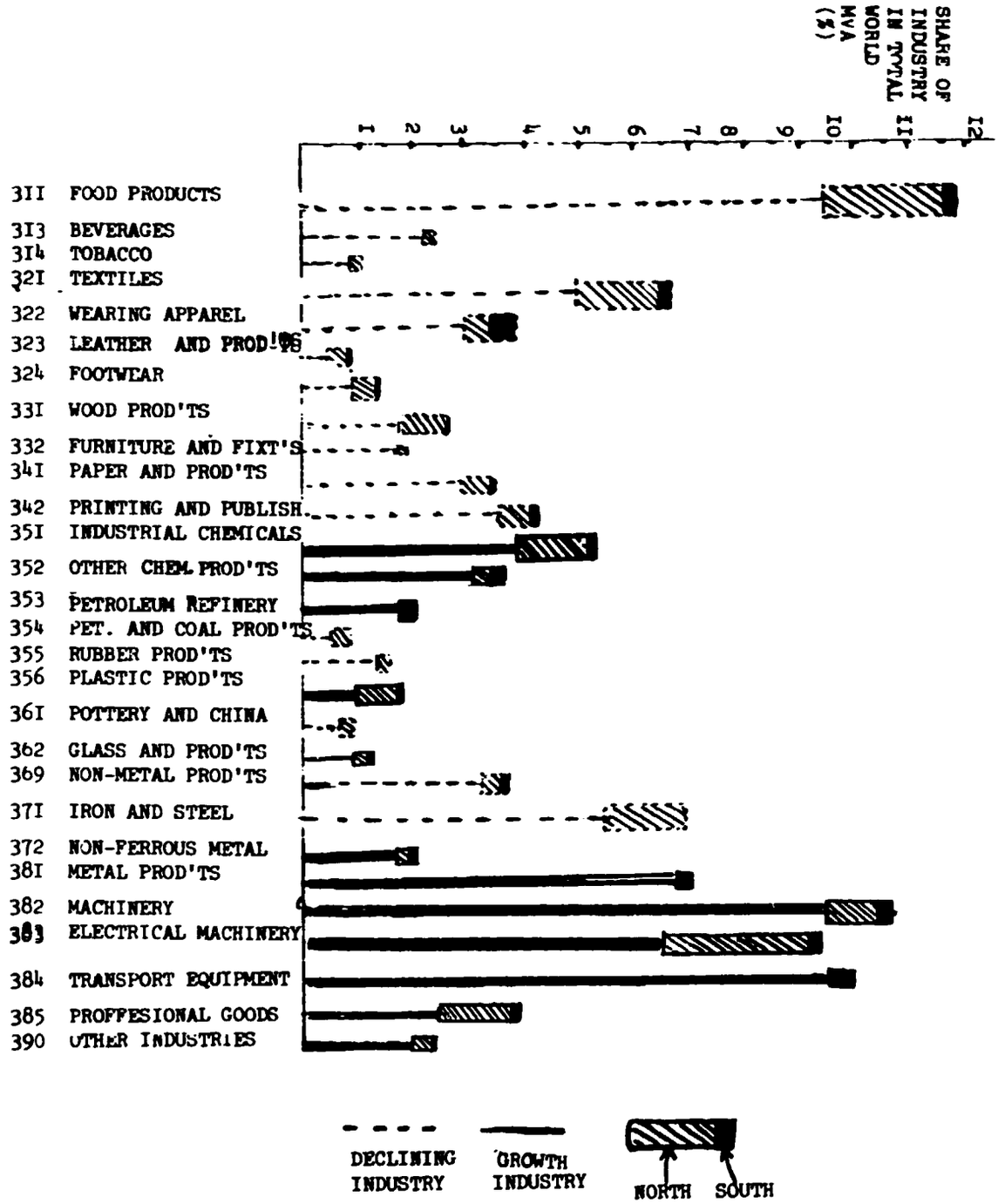
(3) The developing country group share of the world MVA increased in all manufacturing industries but plastic products (356) and other industries (390) during the same period. In other words, the developing countries had made a tangible headway in both so-called "sunrise" and "sunset" industries. In particular, the industries with the developing countries' share of around 10 percent or more, ranked in the descending order in 1980 are:

1. 353	Petroleum refinery	(32.50%)	9. 369	Non-metal products	(11.59%)
2. 314	Tobacco	(25.90%)	10. 331	Wood products	(11.15%)
3. 352	Other chemical products	(18.28%)	11. 362	Glass & products	(10.83%)
4. 321	Textiles	(17.43%)	12. 361	Pottery & china	(10.76%)
5. 313	Beverages	(16.01%)	13. 354	Petroleum & coal products	(14.54%)
6. 355	Rubber products	(13.98%)			
7. 311	Food products	(13.13%)	14. 371	Iron & steel	(10.51%)
8. 323	Leather & products	(11.93%)	15. 324	Footwear	(10.35%)

It is clear that the competitive advantage of the developing country group seems to lie in the light industry and some of the resource-based industries, particularly petroleum. The developing countries as a whole are yet to make a significant penetration into the domain of high-tech and skill intensive industries such as capital goods and certain heavy industries.

FIGURE: 2

CHANGES IN THE SHARE OF INDUSTRY IN TOTAL WORLD MVA



SOURCE: UNIDO DATA BASE

III. Changes in the Composition and Regional Shares of World MVA, 1963-1980

Figure 3 describes the regional distribution of changes in the total world MVA for three subperiods, 1964-1967, 1967-1973 and 1973-1980. Some of the salient features of the patterns of changes in the world MVA observed in these periods are:

(1) An overwhelming proportion of the world MVA changes are concentrated in the North, particularly North America, Eastern Eurpoe and Advanced Western Europe, while the South's share of the total pie is still distressingly small.

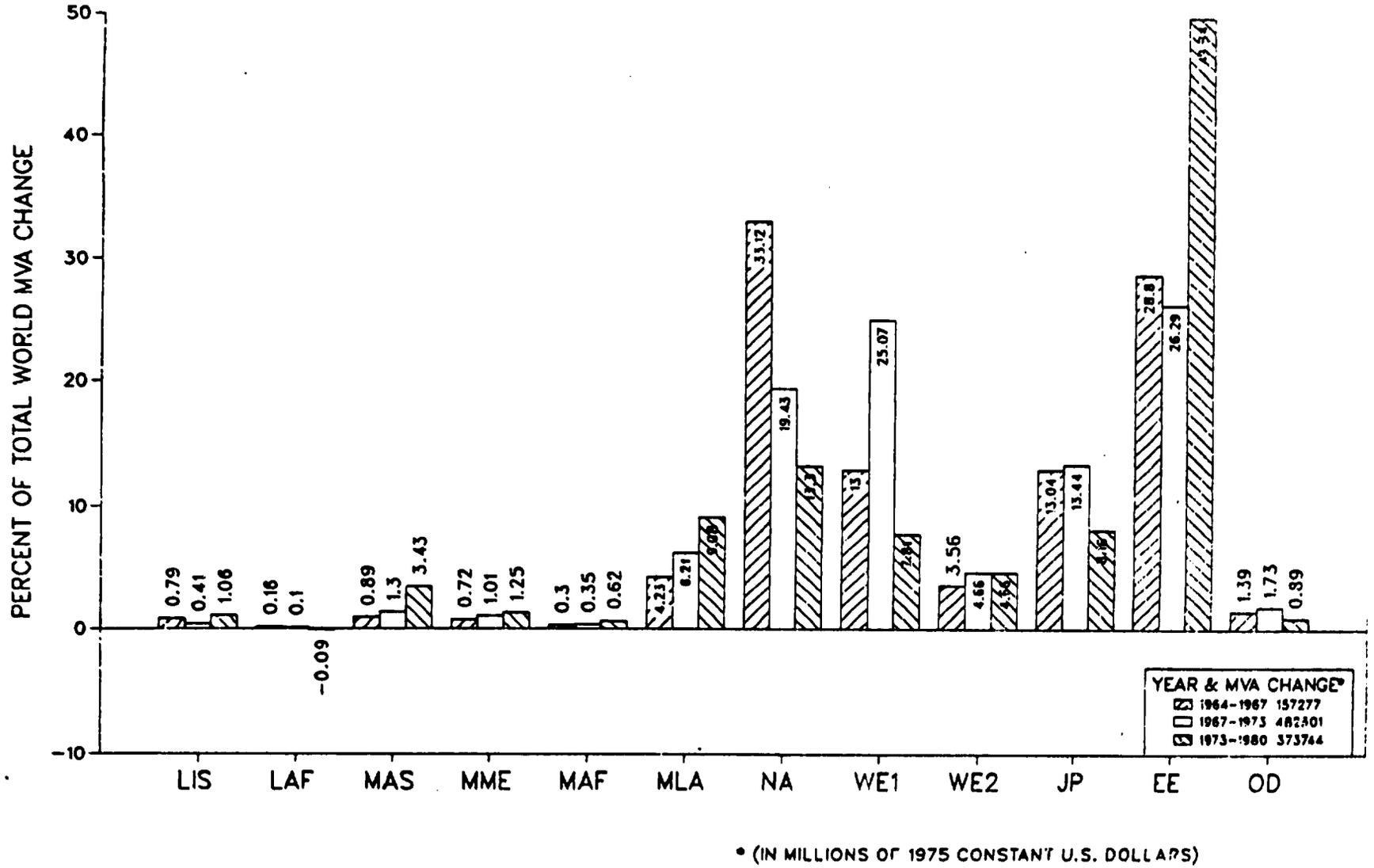
(2) The shares of North America and Advanced Western Europe are quite sizable but rapidly declining over the three periods in sharp contrast to significant gains made by Eastern Europe over the same periods, reaching nearly the 50 percent share of total world MVA change in the last period.

(3) The worst performance was noted in Africa. The share of the low-income Africa (LAF) was virtually nil and that of the middle-income Africa (MAF) was not much better, hovering around a meagre half of one percent of the total share.

(4) There are signs of some isolated burgeoning growth poles. Not surprisingly, such dynamic growth is most notable in the middle-income Latin America and to a lesser extent observed in the middle-income Asia. It is well known that these two regions together constitute the core of so-called "NICS" (Newly Industrializing Countries).

Figure 3

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
300 TOTAL MANUFACTURING



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Changes in the composition of MVA by industry for 12 regions between 1963 and 1980 are summarized in Table 4. Table 5 shows percentage point changes calculated from the above table, which reveal some clues to the extent of structural change which took place within the manufacturing sector between the two periods. At the global level, as described earlier, notable percentage point gains were observed in the following industries:

351	Industrial chemicals	(1.71)
352	Other chemical products	(0.64)
356	Plastic products	(1.04)
382	Machinery	(1.40)
383	Electrical machinery	(3.00)
385	Professional goods	(1.42)

Similarly, among major decling industries are:

311	Food products	(-2.35)
321	Textile	(-1.73)
322	Wearing Apparel	(-0.90)
331	Wood products	(-0.74)
342	Printing and publishing	(-0.94)
355	Rubber products	(-0.70)
371	Iron and steel	(-1.41)

Against this global trend for structural change in the manufacturing sector, we shall summarize the most salient features of the patterns of structural change in each region during the period.

Low-Income Indian Subcontinent (LIS)

The Indian Subcontinent registered a substantial gain in certain capital goods industries, i.e., machinery (3.80), electrical machinery (3.14), and industrial chemicals (3.40), along with a modest increase in non-metal products (1.13) and metal products (1.26). The share gains in machinery and industrial chemicals represent the greatest in the two industries among all regions in both the North and the South. The result is consistent with vastly expanding technological capacity of the region, and particularly India as a

Table 4 Changes in the Composition of MVA 1963 and 1980 (per cent)

	TDG	LIS	LAF	MAS	MME	MAF	MLA	TDD	NA	WE1	WE2	JP	EE	OD
311 Food Products														
1963	17.19	10.03	40.77	25.12	18.94	17.43	17.06	11.32	10.46	10.04	11.86	9.57	15.21	15.23
1980	12.98	11.55	21.67	15.91	12.95	14.20	12.35	9.04	8.86	9.46	10.18	5.56	9.54	13.51
313 Beverages														
1963	3.04	0.64	6.32	2.91	2.66	4.80	3.63	2.16	1.39	2.40	2.59	2.69	2.66	2.27
1980	3.57	0.91	10.08	3.55	2.16	11.00	3.71	1.97	1.76	2.36	2.66	1.20	1.20	2.97
314 Tobacco														
1963	3.07	4.04	4.50	6.96	6.39	3.05	1.65	1.02	1.12	0.85	3.50	0.67	0.97	0.92
1980	2.35	5.21	5.25	4.32	3.68	1.86	1.20	0.71	0.74	0.76	2.12	0.40	0.55	0.70
321 Textiles														
1963	14.00	23.72	12.15	7.96	15.97	10.24	12.05	6.06	3.32	6.46	13.53	6.27	8.75	4.68
1980	9.01	14.60	17.05	10.68	14.05	12.12	6.66	4.49	3.07	4.21	7.88	3.39	5.90	4.30
322 Wearing Apparel														
1963	3.50	7.12	2.68	2.00	2.23	4.28	2.88	3.86	3.55	3.18	7.63	3.17	5.34	3.75
1980	2.16	3.00	4.21	2.89	3.00	2.24	1.69	3.01	2.66	2.21	4.25	1.71	4.26	3.75
323 Leather & Products														
1963	0.84	1.35	0.19	0.33	0.63	0.52	0.84	0.72	0.41	0.81	1.86	0.37	1.01	0.77
1980	0.55	0.47	0.90	0.65	0.73	0.79	0.50	0.43	0.22	0.45	0.97	0.20	0.60	0.44
324 Footwear														
1963	1.49	1.20	1.82	0.89	1.27	1.17	1.70	1.23	0.83	1.24	2.24	0.20	2.09	1.10
1980	0.86	0.64	2.00	1.09	1.09	1.38	0.77	0.78	0.32	0.69	3.15	0.15	1.30	0.87
331 Wood Products														
1963	2.63	1.94	4.88	4.81	1.60	4.47	2.50	2.43	2.35	1.86	3.32	4.21	2.64	4.25
1980	2.00	3.21	1.86	3.25	1.34	2.90	1.56	1.68	1.79	1.66	2.33	1.51	1.47	3.10
332 Furniture & Fixtures														
1963	1.40	0.39	1.24	1.20	0.91	2.27	1.76	1.86	1.29	2.10	2.76	4.11	1.38	1.71
1980	1.16	0.68	0.90	0.44	0.89	1.70	1.42	1.77	1.25	2.64	2.80	1.48	1.37	1.94

		TDG	LIS	LAF	MAS	MME	MAF	MLA	TDD	NA	WE1	WE2	JP	EE	OD
341	Paper & Products														
	1963	2.46	1.65	0.38	3.41	1.95	1.75	2.72	3.33	4.86	3.22	2.52	3.53	1.17	2.80
	1980	2.32	2.22	1.31	1.78	2.21	2.11	2.51	2.92	4.73	4.73	3.46	2.88	0.92	3.60
342	Printing & Publishing														
	1963	3.10	1.29	1.34	2.46	3.26	3.37	3.73	4.30	5.79	4.00	3.94	8.50	1.04	3.97
	1980	1.92	1.45	2.35	2.24	1.55	3.66	1.88	3.41	5.48	4.00	3.30	3.79	0.85	5.29
351	Industrial Chemicals														
	1963	2.17	2.33	1.82	2.02	1.12	2.53	2.30	3.79	3.81	4.17	3.05	2.55	3.76	2.32
	1980	3.79	5.73	2.42	4.51	1.84	1.99	3.71	5.54	6.26	5.66	5.42	3.05	5.75	4.37
352	Other Chemical Products														
	1963	4.88	6.70	2.11	3.68	2.87	6.74	4.85	2.87	3.67	3.19	3.91	2.70	0.86	3.14
	1980	7.02	6.98	3.04	4.24	5.01	6.38	8.08	3.30	5.07	3.25	4.99	4.80	1.05	3.92
353	Petroleum Refinery														
	1963	6.57	0.75	2.20	13.18	18.04	0.39	5.90	1.40	2.11	1.27	1.80	0.37	0.88	0.63
	1980	6.87	1.27	2.07	8.89	19.22	1.57	5.84	1.50	1.66	1.71	2.90	0.49	1.34	1.27
354	Petroleum & Coal Products														
	1963	0.55	0.70	0.00	0.26	0.47	3.56	0.45	0.64	0.40	0.60	0.52	0.36	1.23	0.32
	1980	0.64	0.67	0.00	0.42	1.31	1.73	0.54	0.40	0.32	0.21	0.34	0.40	0.64	0.33
355	Rubber Products														
	1963	1.79	1.09	0.29	3.22	2.03	2.33	1.75	1.38	1.46	1.42	1.17	1.54	1.12	1.54
	1980	1.98	1.55	1.10	2.63	1.25	3.81	1.91	1.28	1.22	1.49	1.39	1.39	1.08	1.42
356	Plastic Products														
	1963	0.98	0.16	0.00	0.30	0.61	0.45	1.45	0.75	0.56	0.96	0.70	1.60	0.34	1.09
	1980	1.33	0.43	0.69	1.19	0.45	1.33	1.66	1.86	2.42	2.26	1.57	2.67	0.77	2.06
361	Pottery, China, etc.														
	1963	0.73	1.27	0.10	0.39	0.13	0.32	0.75	0.57	0.19	0.90	0.50	0.64	0.78	0.19
	1980	0.65	0.71	0.55	0.23	0.18	0.29	0.84	0.57	0.14	0.72	0.52	0.46	0.87	0.20
362	Glass & Products														
	1963	0.76	0.53	0.48	0.93	0.60	0.32	0.85	0.88	0.89	0.84	1.02	1.24	0.78	0.83
	1980	1.15	0.59	0.97	0.76	2.52	0.65	1.16	1.00	0.94	1.10	1.14	0.75	1.03	0.85

		TDC	LIS	LAF	MAS	MME	MAF	MLA	TDD	NA	WE1	WE2	JP	EE	OD
369	Non-Metal Products														
	1963	3.18	2.40	2.20	3.13	4.17	3.24	3.29	3.42	2.78	2.91	4.00	3.37	5.27	3.93
	1980	3.96	3.53	2.62	3.93	6.61	2.51	3.74	3.17	2.26	2.72	4.83	3.04	4.15	3.83
371	Iron & Steel														
	1963	4.62	6.87	1.82	1.02	2.35	3.56	5.00	6.95	6.49	7.40	3.90	6.67	7.48	6.08
	1980	5.87	6.14	1.59	4.07	2.22	3.31	6.99	5.25	3.89	6.09	6.26	7.77	4.61	6.64
372	Non-Ferrous Metals														
	1963	1.76	0.76	1.53	0.67	2.66	1.56	2.09	1.89	2.17	1.31	1.66	1.74	2.58	2.25
	1980	1.80	0.93	0.69	0.85	1.06	1.70	2.29	1.98	1.79	1.35	1.70	2.02	2.64	3.34
381	Metal Products														
	1963	4.12	2.68	2.20	2.52	3.28	5.51	4.90	6.88	7.48	7.14	6.89	5.87	5.46	9.41
	1980	4.70	3.94	4.28	2.79	3.88	5.88	5.34	7.15	6.86	6.60	8.00	7.01	7.75	8.67
382	Machinery														
	1963	2.86	3.12	0.96	1.37	1.25	1.17	3.39	9.95	9.17	12.32	3.48	9.38	7.89	9.62
	1980	5.46	6.92	1.10	2.25	2.02	0.92	6.80	11.39	11.96	12.64	3.66	12.80	10.64	6.80
383	Electrical Machinery														
	1963	3.22	2.53	0.67	1.94	1.23	2.53	4.02	6.47	6.83	7.00	4.28	5.20	5.79	5.60
	1980	5.80	5.67	1.31	8.61	4.58	2.56	5.59	9.59	9.33	9.58	6.02	14.31	8.98	5.26
384	Transport Equipment														
	1963	6.01	7.23	1.34	4.20	1.34	5.64	6.80	9.64	12.74	9.90	5.26	5.13	6.42	9.68
	1980	7.88	4.69	2.21	5.90	3.07	8.91	9.60	9.79	10.38	10.14	7.07	9.55	9.53	8.03
385	Professional Goods														
	1963	0.36	0.53	0.00	0.33	0.02	0.00	0.39	2.31	2.31	1.35	0.59	1.48	4.89	0.45
	1980	0.46	0.59	0.00	0.69	0.02	0.02	0.48	3.92	3.14	1.53	0.53	3.96	7.37	0.84
390	Other Industries														
	1963	1.86	6.47	0.96	1.35	0.20	1.43	0.90	1.85	1.57	1.08	1.15	6.85	2.12	1.16
	1980	1.45	5.44	3.04	0.96	0.49	1.12	1.05	2.08	1.48	1.20	1.47	3.24	3.13	1.56

Source: UNIDO Data Base

Table 5

Percentage Point Changes in the Industry Share of total MVA between 1963 and 1980 by Region

	World	TDC	LIS	LAP	HAS	MNE	NAF	NLA	TDO	NA	WE1	WE2	JP	EE	OO
311 Food Products	-2.35	-4.21	1.52	-19.10	-9.21	-5.99	-3.23	-4.71	-2.28	-1.60	-0.58	-1.68	-4.01	-5.67	-1.72
313 Beverages	-0.10	0.53	0.27	3.76	0.64	-0.50	4.70	0.08	-0.19	0.37	-0.04	0.07	-1.49	-1.46	0.70
314 Tobacco	-0.31	-0.72	1.[illegible]	0.75	-2.64	-2.71	-1.19	-0.45	-0.31	-0.38	-0.09	-1.38	-0.27	-0.42	-0.22
321 Textiles	-1.73	-4.99	-9.12	4.90	2.72	-1.92	1.88	-5.39	-1.57	-0.25	-2.25	-5.65	-2.88	-2.85	-6.38
322 Wearing Apparel	-0.90	-1.34	-4.12	1.53	0.89	0.77	-2.04	-1.19	-0.85	-0.89	-0.97	-3.38	-1.46	-1.08	-0.00
323 Leather & Products	-0.29	-0.29	-0.88	0.71	0.32	0.10	0.27	-0.34	-0.29	-0.19	-0.36	-0.[illegible]	-0.17	-0.41	-0.33
324 Footwear	-0.46	-0.63	-0.56	0.18	0.20	-0.18	0.21	-0.93	-0.45	-0.51	-0.55	0.91	-0.05	-0.79	-0.23
331 Wood Products	-0.74	-0.63	1.27	-3.02	-1.56	-0.26	-1.57	-0.94	-0.75	-0.56	-0.20	-0.99	-2.70	-1.[illegible]	-1.15
332 Furniture & Fixtures	-0.11	-0.24	0.29	-0.34	0.24	-0.02	-0.57	-0.34	-0.09	-0.04	0.54	0.04	-2.63	-0.01	0.23
341 Paper & Products	-0.41	-0.14	0.57	0.93	-1.63	0.26	0.36	-0.21	-0.41	0.13	1.51	0.94	-0.65	-0.25	0.80
342 Printing & Publishing	-0.94	-1.18	0.16	1.01	-0.22	-1.71	0.29	-1.85	-0.89	-0.31	0.00	-0.64	-4.71	-0.19	1.32
351 Industrial Chemicals	1.71	1.62	3.40	0.60	2.49	0.72	-0.54	1.[illegible]	1.75	2.45	1.49	2.37	0.50	1.99	2.05
352 Other Chemical Products	0.64	2.14	0.78	0.93	0.56	2.14	-0.36	3.23	0.43	1.40	0.06	1.08	2.10	0.19	0.78
353 Petroleum Refineries	0.23	0.30	0.52	-0.13	-4.29	1.18	1.18	-0.06	0.10	-0.45	0.44	1.10	0.12	0.46	0.64
354 Petroleum & Coal Products	-0.21	0.09	-0.03	0.00	0.16	0.84	-1.83	0.09	-0.24	-0.08	-0.39	-0.18	0.04	-0.59	0.01
355 Rubber Products	-0.07	0.19	0.46	0.81	-0.59	-0.78	1.48	0.16	-0.10	-0.24	0.07	0.22	-0.15	-0.04	-0.12
356 Plastic Products	1.04	0.35	0.27	0.69	0.89	-0.16	0.88	0.23	1.11	1.86	1.30	0.87	1.07	0.43	0.97
361 Pottery, China, etc.	-0.03	-0.08	-0.56	0.45	-0.16	0.05	-0.03	0.09	0.00	-0.05	-0.18	0.02	-0.18	0.09	0.01
362 Glass & Products	0.14	0.39	0.06	0.49	-0.17	1.92	0.33	0.31	0.12	0.05	0.26	0.12	-0.49	0.25	0.02
369 Non-Metal Products	-0.15	0.78	1.13	0.42	0.80	2.44	-0.73	0.45	-0.25	-0.52	-0.19	0.83	-0.33	-1.12	-0.10
371 Iron & Steel	-1.47	1.25	-0.73	-0.23	3.05	-0.13	-0.25	1.99	-1.70	-2.60	-1.31	2.36	1.10	-2.87	0.56
372 Non-Ferrous Metals	0.08	0.04	0.17	-0.84	0.18	-1.60	0.14	0.20	0.09	-0.38	0.04	0.04	0.28	0.06	1.09
381 Metal Products	0.24	0.58	1.26	2.08	0.27	0.60	0.37	0.44	0.27	-0.62	-0.54	1.11	1.14	2.29	-0.74
382 Machinery	1.40	2.60	3.80	0.14	0.88	0.77	-0.25	3.41	1.44	2.79	0.32	0.18	3.42	2.75	-2.82
383 Electrical Machinery	3.00	2.58	3.14	0.64	6.67	3.35	0.03	1.57	3.12	2.50	2.58	1.74	9.11	3.19	-0.34
384 Transport Equipment	0.24	1.87	-2.54	0.87	1.70	1.73	3.27	2.80	0.15	-2.36	0.24	1.81	4.42	3.11	-1.65
385 Professional Goods	1.42	0.10	0.06	0.00	0.36	0.00	0.02	0.09	1.61	0.83	0.18	-0.06	2.48	2.48	0.39
390 Other Industries	0.17	-0.41	-1.03	2.08	-0.39	0.29	-0.31	0.15	0.23	-0.09	0.12	0.32	-3.61	1.01	0.40

Source: Calculated from Table 4

major third world exporter of capital goods and other relatively skill-intensive manufactures. In the areas of light manufacturing, the results are mixed: a sharp decline in textiles (-9.12) and wearing apparel (-4.12) accompanied by a notable increase in food products (1.52), tobacco (1.17) and wood products (1.27). The region seems to be moving into the stages of industrialization characterized by technologically sophisticated and skill-intensive manufacturing activities.

Low-Income Africa (LAF)

In the region dominated by the least developed countries (LDCs), the results are not surprising. Over the period of 1963-1980, the MVA share increased markedly in textiles (4.9), beverages (3.76), wood products (3.02), and wearing apparel (1.53), but a drastic drop in food products (-19.1). Other than that, nothing much changed in terms of structural change. Simply, the region remained stagnant.

Middle-Income Asia (MAS)

MAS witnessed the most rapid expansion in iron and steel (3.05) and the second largest increase in electrical machinery (6.67), only behind Japan in all the regions of the world. A modest gain was also observed in industrial chemicals (2.49) and transport equipment (1.70), and a rather unexpectedly low gain in machinery (0.88). However, these gains were partly offset by a sharp drop in petroleum refining (-4.29). In the areas of light industry, the region registered the biggest share increase in food products (9.21) in sharp contrast to generally downward trends elsewhere. However, the MVA shares of other light industries diminished appreciably over the period: tobacco (-2.64), paper and paper products (-1.63) and wood products (-1.56), while the textile industry increased its share considerably (2.72). On the whole, empirical evidence seems to suggest that the region's economy became more balanced and diversified, and reflected its increasing export competitiveness in traditional manufactures such as foods, textiles, iron and steel, consumer electronics and transport equipment.

Middle-Income Middle East and North Africa (MME)

MME is the region dominated by oil-exporting countries. It is expected, therefore, that the region's comparative advantage lies in oil-based products and other energy-intensive manufactures. Consistent with the expectations, the region's expanding industries in terms of the MVA share are found in petroleum refining (1.18), other chemicals (2.14), glass products (1.92) and petroleum and coal products (0.84), which is unexpectedly too low. Also somewhat surprisingly unexplicable gains are noted in electrical machinery (3.35) and transport equipment (1.70). Otherwise, the region's structure of production changed little, with the exception of a considerable decline in some light industries: food products (-5.99), tobacco (-2.71), textiles (-1.92) and publishing and printing (-1.71). All in all, it seems clear that albeit the region's relatively high per capita income ($ 1200 in 1980), a narrow industrial base and structural imbalance has been and continues to be the major development issue confronting MME.

Middle-Income Africa (MAF)

The dominance of Nigeria in terms of the area, population and GNP must be taken into account in analyzing the structural change in this group of middle income African countries. In general, the MVA shares of most industries remained nearly constant. Notable exceptions are beverages (6.2), textiles (1.88), rubber products (1.48), and transport equipment (3.27) on the plus side; and food products (-3.23), tobacco (-1.19), wearing apparel (-2.04), wood products (-1.57), petroleum and cool products (-1.83) on the minus side. As compared with the low-income African group, the middle income African group shows definitely some signs of structural transformation in the manufacturing sector, but the pace of change does not appear to be significant enough to produce a tangible industrial progress.

Middle-Income Latin America (MLA)

Latin America made a substantial headway towards the expansion of certain capital goods industries and heavy industries during the period: industrial chemicals (1.41), other chemicals (3.23), iron and steel (1.99) machinery (3.41), electrical machinery (1.57) and transport equipment (2.8). However, these gains in capital goods industries and heavy industries were accompanied by the diminishing importance of light industry: food products (-4.71), textiles (-5.39), wearing apparel (-1.19), foot wear (-0.93), wood products (-0.94) and printing and publishing (-1.85). On the whole, Latin America appears to have undergone the most rapid structural change among various developing country groups during the period of 1963-1980.

North America (NA)

The MVA shares of all light industries but beverages (0.37) decreased in varying degrees. Among major growth industries are industrial chemicals (2.45), other chemical products (1.40), plastic products (1.86), machinery (2.79) and electrical machinery (2.50), while the shares of iron and steel (-2.60) and transport equipment (-2.36) declined considerably over the period.

Advanced Western Europe (WE1)

Similar to the pattern of structural change in NA, most light industries experienced a contraction in varying degrees with the sharpest decline in textiles (-2.25). Some of the major growth industries are electrical machinery (2.58), paper and products (1.51) and rial chemicals (1.49), while iron and steel (-1.31) is the only industry e textiles mentioned above, whose share diminished by more than one percentag point.

Newly Industrialized Western Europe (WE2)

These European NICs experienced a much sharper decline in most light industries than their mature European counterparts; textiles (-5.65), wearing apparel (-3.38), food products (-1.68), and tobacco (-1.38). In contrast to NA and WE1, the share of iron and steel grew by 2.36 percentage points along with other growth industries such as industrial chemicals (2.37), other chemicals (1.08), petroleum refining (1.10), electrical machinery (1.74), metal products (1.11) and transport equipment (1.81). The patterns of change in the sectoral MVA share for this group may as well reveal a transition stage from an advanced developing economy to a developed economy. It is expected that during this transition period, the decline in most light manufacturing activities would accelerate, while some of the traditional heavy industries such as iron and steel and metal products would maintain their steady growth rates, and the shares of capital goods industries begin to increase perceptibly.

Japan (JP)

Japan seems to represent the leading edge of structural change in that a drastic cutback across all light industries occured and instead the growth center was shifted to the production of sophisticated capital goods and other precision products. This important shift was evidenced by a sizable decline in most light industries: food products (-4.01), printing and publishing (-4.71), textiles (-2.88), wearing apparel (-1.46), beverages (-1.49), wood products (-2.7), furniture and fixtures (-2.63), accompanied by a phenomenal increase in electrical machinery (9.11) followed by transport equipment (4.42), machinery (3.42) and professional goods (2.48). Other industries also grew considerably as well: other chemical products (2.10), plastic products (1.07), iron and steel (1.10) and metal products (1.14).

Eastern Europe (EE)

Eastern Europe's is more or less a self-contained block of centrally planned developed economies with relatively little trade linkages with countries outside the group. However, the patterns of structural change are strikingly similar to those of developed market economies - a marked decline in the light industries and a considerable growth in the capital goods industries. Among those declining industries are food products (-5.67), beverages (-1.46), textiles (-2.85), wearing apparel (-1.08), wood products (-1.17), printing and publishing (-4.71) and iron and steel (-2.87), while the growth industries are headed by electrical machinery (3.19), transport equipment (3.11), machinery (2.75), professional goods (2.48), metal products (2.29) and other chemical products (2.10).

Other Developed Countries (OD)

This group represent, for the sake of completeness, a hodgepodge collection of residual developed countries (i.e., Australia, Israel, New Zealand and South Africa) which do not neatly fit other country groupings. Therefore, the numerical results of this group seem less meaningful for our analytical purposes.

The foregoing analysis of the numerical results contained in tables 4 and 5 are highly intuitive and imprecise. What is needed here is a more systematic and rigorous method for measuring, testing and comparing the extent of structural change that had occurred in various regions of the world during the period under consideration. The most serious problem encountered in developing such a measurement method is the non-existence of an ideal norm against which actual performance could be compared. In the field of development economics, the notion of the optimal structure of production of an economy is not only conceptually elusive and yet to be formulated, but also may vary over time and space as affected by a shift in the international division of labour and comparative advantage, thus making its empirical measurement extremely difficult.

In the absence of ideal yardsticks for a comparative assessment, the study adopted a more pragmatic approach, making certain "heroic" assumptions. Namely, assuming that the industry share distributions of MVA in Japan and North America in 1980 reflect a desired, if not ideal, form of structue, we designated them as a benchmark against which changes in the industry share of all other regions are measured. Evaluation criteria used for this purpose are the inequality coefficients (u)[3/] and the root-square mean error (RSME), i.e.

$$u = \left(\sum_i (y_i^s - y_i^b)^2 / \sum (y_i^b)^2\right)^{1/2}$$

$$RSME = \left(\sum_i (y_i^s - y_i^b)^2 / N\right)^{1/2}$$

where

y_i^b = "i"th industry share of total MVA in the benchmark region,

y_i^s = "i"th industry share of total MVA in the sample region,

N = the number of industries.

The RSME and inequality coefficients of the share values of all regions for 1963 and 1980 are given in Table 6. Note that these figures in Table 6 provide an overall indication of how close the share distribution of a sample region in a given year came to the corresponding value of a benchmark region in 1980. For instance, it is obvious that the closer the share distribution of a sample region is to that of a benchmark region, the smal'er the coefficient is, and zero if the two are identical in the extreme case.

3/ For a detailed explanation of the use of the inequality coefficient method, see Henry Theil, Applied Economic Forecasting, Chicago: Rand McNally and Co., 1966.

Table 6

A Comparative Measure of Structural Change

	Inequality Coefficients[1]				R S M E[2]			
	Bench Mark Region JP[3]		Bench Mark Region NA[4]		Bench Mark Region JP[3]		Bench Mark Region NA[4]	
	1963	1980	1963	1980	1963	1980	1963	1980
TDG	0.39565	0.209513	0.31397	0.150344	4.52799	3.29502	3.82487	2.64677
LIS	0.53803	0.259466	0.54326	0.233055	5.28025	3.66684	5.03126	3.29535
LAF	1.29656	0.687090	1.17516	0.592719	8.19687	5.96704	7.39983	5.25530
MAS	0.71236	0.327233	0.57738	0.266307	6.07578	4.11794	5.18686	3.52261
MME	0.78592	0.606578	0.69860	0.552690	6.38177	5.60654	5.70541	5.07474
MAF	0.39624	0.406063	0.30406	0.322946	4.53136	4.58721	3.76404	3.87916
MLA	0.33356	0.167025	0.25014	0.111746	4.15755	2.94200	3.41403	2.28186
TDD	0.09173	0.040442	0.04623	0.014572	2.18027	1.44767	1.46761	0.82400
NA	0.09160	0.052688	0.03371	0.000000	2.17876	1.65236	1.25319	0.00000
WE1	0.07518	0.048421	0.04067	0.014766	1.97383	1.58406	1.37666	0.82948
WE2	0.30700	0.178045	0.24356	0.124231	3.98860	3.03750	3.36787	2.40596
JP	0.14326	0.000000	0.11611	0.058596	2.72465	0.00000	2.32594	1.65236
EE	0.20162	0.086560	0.16899	0.074556	3.23232	2.11792	2.80611	1.86387
OD	0.15685	0.151793	0.09316	0.080164	2.85100	2.80464	2.08344	1.93270

---

1. Inequality coefficient = $[\sum_i (y_i^s - y_i^b)^2 / \sum (y_i^b)^2]^{1/2}$;

   where y_i^b = "i"th industry share of total MVA in the bench mark region;

   where y_i^s = "i"th industry share of total MVA in the sample region;

2. RSME = $[\sum_i (y_i^s - y_i^b)^2 / N]^{1/2}$, N = 28;

3. Industry share of total MVA in Japan, 1980 used as a benchmark;

4. Industry share of total MVA in North America, 1980 used as a benchmark;

Numerical results in Table 6 tend to reconfirm the intuitive analysis and judgemental conclusions obtained earlier. Among other things, the results show that:

(1) Whether measured against Japan or North America as a benchmark region, both "u" coefficients and RSME for the low-income Africa (LAF) in both 1963 and 1980, are largest among the 12 regions. It seems to suggest that LAF resembles least Japan or NA in the structure of production among all groups included in the sample, reflecting still the early stages of industrialization in this region. It is worth noting, however, that both coefficients were considerably reduced between 1963 and 1980 in the same region. For instance, "u" coefficient fell to 0.6871 from 1.2965 and RSME to 5.967 from 8.1969 for Japan as a benchmark region. This means that some positive structural change occurred between 1963 and 1980 in the region, although not rapid enough.

(2) In this regard, it is interesting to compare the relative performance of LAF and MAF. All the coefficients for the middle-income Africa slightly increased between 1963 and 1980 and the gap between LAF and MAF was substaintially reduced. It would imply that the initial structure of production for MAF was more balanced and far more closer to that of Japan or North America (NA) than that of LAF vis-à-vis Japan or NA in 1963 indicated, but it deteriorated over the period, while LAF improved its structural balance to such an extent that the initial large gaps which existed between the two groups in 1963 narrowed considerably by 1980. This further seems to show that both LAF and MAF have been affected by the similar problem of structural imbalance in recent years.

(3) It comes as no surprise that the coefficients for the Middle East and North Africa (MME) is one of the highest, only second to those of LAF, and worse yet, these coefficients changed little between 1963 and 1980. Many countries in the region are major oil exporters and tend to specialize in the production and exports of a few commodities and particularly crude oil. Despite their high per capita incomes, the structure of the economies in the region during the period of 1963-1980 was basically dominated by the oil

sector with a very narrow industrial base. However, this may change drastically in the current decade, in view of recent massive investments in the physical and social infrastructure and energy-related downstream industries, particularly in the Gulf region. The 1980-1990 statistics seem most likely to tell a different story of substantial structural transformation.

(4) Latin America (MLA) yielded the best indicators of structural change among all regions in the South. In fact, MLA's coefficients are strikingly close to those of Newly Industrialized Western Europe (WE2), perhaps signifying roughly the same degree of structural change which might have taken place in the two regions during the period under consideration. In this regard the middle-income Asia (MAS) which is mostly populated by NICs and near-NICs did not fare as well as LA, but a substantial decrease in the coefficients between 1963 and 1980 seems to point to the evidence that the region had undergone a significant structural change. Furthermore, the recent remarkable growth of production and exports in the MAS region, albeit the adverse conditions of the international economic environment in the early 80s, in sharp contrast to the worsening performance of MLA hobbled by mammoth external debts, would seem most likely to present a quite different picture in the 1980s, portraying MAS as the most dynamic growth pole in the world. Incidentally, it is interesting to observe that the region's structure of production seems to have moved somewhat closer to the model of NA than that of Japan.

(5) The results also show that Developed Western Europe (WE1) was structurally much closer to Japan and NA than Newly Industrialized Western Europe (WE2) and Eastern Europe (EE) vis-à-vis the two benchmark regions. Also the coefficients comparing two benchmark regions, Japan and North America, are markedly low, thus suggesting a remarkable similarity in the patterns of structural change between the two benchmark regions. Furthermore, the extent of structural change seems to be somewhat greater in Japan than in North America over the same period. For instance, Japan's RSME calculated from the formula using Japan as a benchmark shows the coefficient value of 2.7 in 1960, while a similar calculation for North America yields the value of only 1.3.

(6) Finally, on the whole, the results show a significant gap in structural balance between the North and the South both in 1963 and 1980, if the model of industrialization in Japan and North America is assumed to be patterned after. Of course, this particular assumption may be open to question.

IV. A Decomposition Analysis of the MVA Changes by Region and Industry for the periods of 1963-1967, 1967-1973 and 1973-1980

A. Methodology

The objective of the section is to develop and empirically apply a simple method for analyzing the past growth performance of manufacturing value-added (MVA) of 28 manufacturing industries in each of the 12 regions identified earlier for this study. The method developed here permits the disaggregation of MVA growth into three components attributable to:

(1) the global economic effect;
(2) the individual industry effect; and
(3) the regional effect.

Our main goal is served by the identification of regional growth or decline in the MVA of an industry which is region-specific. The regional effect component is intended to provide a measure of the relative performance of the region in a particular industry. Positive regional effect could then be associated with locational advantage of the region for that industry and vice-versa.

The location advantage discussed in this paper is not to be confused with the concept of comparative advantage analyzed within the context of foreign trade. In international trade, comparative advantage generally refers to the ability of a country or a region to expand its exports of certain products based on factor endowments and production efficiency considerations. On the other hand, the concept of locational advantage is to be interpreted within the context of the region-specific capacity of a given region to expand its

share of the world MVA change, independently of the general increase in the world MVA in aggregate and the relative performance of the industry in question vis-à-vis other industries in the world economy. In other words, there is no necessary causal link between traditional comparative advantage and locational advantage. For instance, MVA growth of an industry in a particular region may be attributable largely to the strong export growth of a region as in the case of East Asia and particularly Newly Industrializing Countries (NICs), or factors other than export performance and relative factor efficiency such as import-substitution and expanded domestic market for a given product, a phenomenon which may explain part of the past MVA growth in Latin America.

The analytical method used here is adapted partially from shift-share analysis which has been widely used as a forecasting technique for regional employment in the field of regional science.[4/]

Let us define the following variables:

MVA_{ijt} = MVA of industry "i" in region "j" in period "t".

$i = 1, 2, \ldots, n$
$j = 1, 2, \ldots, m$

r = percentage increase in total world MVA from period t-1 to period t.

r_i = percentage increase in world MVA of industry "i" from period t-1 to period t.

r_{ij} = percentage increase in MVA of industry "i" in region "j" from period t-1 to period t.

4/ The literature on shift-share analysis is quite extensive and there are numerous variants of the shift-share technique. For a critical review of the literature of shift-share as well as comprehensive bibliography on this subject, see B.H. Stevens and C.L. Moore , "A Critical Review of the Literature on Shift-Share as a Forecasting Technique", Journal of Regional Science, Vol. 20, No. 4, 1980, pp. 419-37; Leamer and Stern also developed independently a similar technique to analyze the relative performance of export growth in a particular country, see R.E. Leamer and R.M. Stern, Quantitative International Economies, Boston: Allyn & Bacon, 1970; for an empirical applicaton of the constant market share analysis, see R. Banerji, "The Export Performance of Less Developed Countries: A Constant Market Analysis", Weltwirtschaftliches Archiv, Bd. 110, 1974, pp. 447-81.

It follows from the foregoing definition

$\Sigma_j MVA_{ijt} = MVA_{it}$ = World MVA of industry "i"

$\Sigma_i MVA_{it} = MVA$ = World MVA of all manufacturing industries.

Now, for industry "i" in region "j", we can derive the following mathematical identity.

$$\Delta MVA_{ijt} = MVA_{ijt} - MVA_{ijt-1} = r\,MVA_{ijt-1} + (r_i - r)MVA_{ijt-1} + (r_{ij} - r_i)MVA_{ijt-1} \quad 5/$$

(a) (b) (c)

The above equation decomposes the growth of MVA of industry "i" into three components attributable to:

(a) the global effect, (r): the general rise in the total world MVA as a function of the world economic activity levels;

(b) the industry effect ($r_i - r$): the growth rate of MVA of industry "i" relative to the world average MVA growth. Thus, if the MVA of industry "i" is growing faster than the world average for all manufacturing industries, the term would be positive, and negative if the opposite holds;

5/ The above mathematical identity described can be readily converted into a recursive form for forecasting the region-and-industry-specific MVA, namely,

$$MVA_{ijt} = MVA_{ijt-1} + \Delta MVA_{ijt}$$

where $\Delta MVA_{ijt} = rMVA_{ijt-1} + (r_i - r)MVA_{ijt-1} + (r_{ij} - r_i)MVA_{ijt-1}$

The definition of time, t-1, in the long process would have to be determined by empirical research. Even so, once the parameter values of r, r_i, r_{ij} and the initial values of MVA_{ijt-1} are given, a series of forecast values of MVA_{ijm} (m = t, t + 1, t + 2, ...,) can be recursively generated. The use of the above equation for forecasting MVA should be limited to a relatively short-term period ahead, however, since the structural parameters of the equation are likely to change considerably over a lengthy period of time.

(c) the regional effect, $(r_{ij} - r_i)$: this term measures a differential growth rate of MVA in the same industry between a given region and the rest of the world. Therefore, if a given region has a special advantage in producing and increasing the local input content of the industrial product "i" due to favourable factor endowments or locational advantages (e.g., Gulf region's locational advantage in petro-chemical products owing to cheap energy costs), the term would show a positive sign. If the region is losing its locational advantage, its sign would be, of course, negative.

Finally, we must consider some of the limitations associated with the application of the method presented above. First, the estimate is devoid of any causal relationships by nature of the identity relation. The technique is useful in disaggregating the past MVA growth into its different components but it fails to offer any explanations as to why a given component, for example, regional effect, is the dominant factor in explaining actual MVA changes in a given region. Nevertheless, the technique helps to identify the areas in which the explanations can be sought. Second, as mentioned earlier, the technique is not stochastic in form and hence it is not valid for econometric projections: the procedure can be used only to analyse the ex post performance. Third, the conclusions drawn from a decomposition analysis are valid only for the particular time period chosen, the level of industry disaggregation used and the particular regional grouping adopted. An alternative set of these parameters may produce different results and perhaps variant conclusions.

B. Empirical Results

Table 7 summarizes the overall decomposition of MVA changes for the developing and developed countries groups into the three effects - global, industry and regional for three periods, 1963-1967, 1967-1973 and 1973-1980. More detailed table for the decomposition of MVA changes for 12 regions for the same periods are given in the appendix.

Table 7 A North-South Comparison of Decomposition of MVA Changes, 1963-1980 (per cent)

		1963-1967				1967-1973				1973-1980			
		ΔMVA[a]	k	i	r	ΔMVA	k	i	r	ΔMVA	k	i	r
Agro-Food Processing													
311	Developing	1952	142.8	-39.1	-3.7	5194	109.7	-46.1	35.3	5938	72.3	-7.3	35.0
	Developed	16880	137.2	-37.6	0.4	26242	181.6	-74.6	-7.0	26337	120.0	-12.1	-7.9
313	Developing	469	105.0	-12.3	7.3	1310	81.3	-19.2	37.9	2807	31.6	9.4	59.0
	Developed	3857	114.3	-13.4	-0.9	6664	140.7	-33.2	-7.4	6902	95.5	28.5	-24.0
314	Developing	425	117.0	-55.7	38.7	668	157.6	-81.5	23.9	1293	55.7	-5.5	49.8
	Developed	933	224.5	-106.9	-17.6	1785	225.8	-116.8	-9.0	1668	153.8	-15.2	-38.6
	TOTAL[b]												
	Developing	2846	132.72	-37.16	4.44	7172	108.97	-43.76	34.71	10038	58.78	-2.40	43.62
	Developed	21670	136.87	-36.27	-0.61	34691	176.02	-68.82	-7.18	34907	116.77	-4.22	-12.55
Energy													
353	Developing	1343	79.4	29.0	-8.4	3378	72.8	23.1	4.1	3694	57.8	-13.4	55.6
	Developed	4009	71.1	26.0	2.8	8786	77.2	24.4	-1.6	2360	243.7	-56.6	-87.1
354	Developing	158	56.6	-33.1	76.5	333	68.4	-37.7	69.3	329	61.6	-23.3	61.7
	Developed	419	310.4	-181.5	-28.9	858	282.8	-155.9	-26.9	723	206.2	-78.1	-28.1
	TOTAL[b]												
	Developing	1501	77.00	22.46	0.54	3711	72.11	17.64	9.95	4023	58.11	-14.21	56.10
	Developed	4428	93.74	6.37	-0.20	9644	95.44	8.36	-3.85	3083	234.91	-61.64	-73.26
Basic Products													
341	Developing	485	82.4	-3.4	21.0	1047	87.3	-7.5	20.2	1167	63.5	-28.7	65.2
	Developed	6423	105.9	-4.4	-1.6	13216	111.2	-9.6	-1.6	5280	208.7	-94.3	-14.4
351	Developing	668	52.6	44.0	3.4	2363	38.8	24.7	36.9	2472	43.3	7.5	49.2
	Developed	14191	54.6	45.6	-0.2	31549	63.3	39.5	-2.8	20327	90.3	15.7	-6.0
352	Developing	1435	55.2	16.1	28.7	3011	67.5	7.6	24.8	5234	34.7	17.3	47.9
	Developed	7175	81.9	23.9	-5.7	14222	94.6	10.7	-5.3	13399	79.2	39.5	-18.7
361	Developing	96	122.6	-42.4	19.8	286	86.4	-4.1	17.7	357	56.2	9.1	34.6
	Developed	790	156.5	-54.1	-2.4	2324	107.2	-5.1	-2.2	2071	91.2	14.7	-6.0
362	Developing	199	61.8	6.2	32.0	618	49.3	6.4	44.4	795	39.5	18.9	41.6
	Developed	1909	93.9	9.4	-3.3	4211	94.3	12.2	-6.5	4312	72.8	34.9	-7.7
369	Developing	609	84.7	0.9	14.5	1731	67.7	3.8	28.5	2862	36.6	-11.7	75.2
	Developed	6972	100.7	1.0	-1.3	15642	97.6	5.6	-3.2	5947	200.7	-64.5	-36.2
371	Developing	811	92.4	-9.0	16.6	2585	64.5	-7.6	43.2	4374	34.7	-29.3	94.6
	Developed	12692	111.9	-10.8	-1.1	25620	118.4	-14.0	-4.4	-639	-3495.2	2947.9	647.3
372	Developing	435	65.5	17.5	16.9	808	85.9	5.9	8.3	935	60.5	-10.8	50.3
	Developed	4876	80.1	21.4	-1.5	9444	94.3	6.4	-0.7	5304	132.6	-23.7	-8.9
	TOTAL[b]												
	Developing	4738	70.37	10.22	19.32	12449	63.85	5.36	30.78	18196	39.97	-4.28	64.29
	Developed	54978	88.23	13.44	-1.68	116228	93.86	9.47	-3.33	55996	154.13	-33.24	-20.90

		1963-1967				1967-1973				1973-1980			
		ΔMVA[a/]	s	i	r	ΔMVA	s	i	r	ΔMVA	s	i	r
Light Industry													
321	Developing	1115	203.6	-91.8	-11.8	3761	117.5	-25.6	8.1	2979	109.4	-65.2	55.7
	Developed	6938	178.6	-80.9	1.9	18878	129.9	-28.3	-1.6	5456	322.6	-192.1	-30.4
322	Developing	600	94.7	-40.0	45.3	620	202.7	-55.7	-47.0	575	141.8	-55.7	13.9
	Developed	4284	184.2	-77.8	-6.3	11565	134.4	-36.9	2.5	6632	166.7	-65.5	-1.2
323	Developing	73	287.3	-137.3	50.1	117	229.7	-146.3	16.6	305	55.9	-26.3	70.4
	Developed	356	413.4	-303.2	-10.3	957	281.2	-179.1	-2.0	661	250.3	-117.8	-32.5
324	Developing	184	131.4	-66.7	35.3	148	338.6	-242.0	3.3	329	91.4	-34.5	43.1
	Developed	1171	214.4	-108.8	-5.5	1381	351.5	-251.2	-0.4	1664	174.2	-65.7	-8.5
331	Developing	250	170.4	-68.2	-2.3	747	113.5	-27.9	14.3	1032	61.3	-52.6	91.3
	Developed	2988	166.3	-66.5	0.2	7384	134.4	-33.0	-1.4	58	12176.7	-10451.6	-1625.1
332	Developing	228	99.8	-7.9	8.1	344	144.6	11.6	-56.2	671	51.8	-18.3	66.6
	Developed	3475	109.2	-8.6	-0.5	8988	90.6	7.3	2.2	3762	173.3	-61.4	-11.9
342	Developing	267	188.1	-35.9	-52.2	898	109.9	-51.0	41.1	446	166.5	-41.2	-25.3
	Developed	7251	121.2	-23.1	1.9	9543	193.7	-89.8	-3.9	9221	131.2	-32.5	1.2
355	Developing	313	92.6	-9.8	17.1	1009	63.9	7.9	28.2	1156	51.0	-16.1	65.0
	Developed	2474	114.2	-12.0	-2.2	6468	92.9	11.5	-4.4	2516	189.6	-59.7	-29.9
356	Developing	251	63.2	101.4	-64.7	851	46.0	83.5	-29.5	702	59.5	32.0	8.6
	Developed	4165	36.9	59.2	3.9	13197	34.8	63.3	1.9	8704	65.5	35.2	-0.7
381	Developing	1079	61.9	4.3	33.7	2110	78.4	5.2	16.4	2784	50.1	-0.1	50.0
	Developed	14689	95.8	6.7	-2.5	32740	94.8	6.3	-1.1	23049	106.2	-0.1	-6.0
	TOTAL[b/]												
	Developing	4360	125.89	-34.42	8.48	10605	108.14	-14.75	6.60	10979	78.97	-29.78	50.79
	Developed	47785	126.08	-25.28	-0.78	111101	113.23	-12.59	-0.64	61723	152.03	-42.98	-9.02
Capital Goods													
382	Developing	1072	43.3	9.4	47.3	3470	37.5	3.5	59.0	3531	43.8	14.4	41.8
	Developed	24226	83.9	18.2	-2.1	48586	95.3	9.0	-4.2	46969	77.6	25.6	-3.1
383	Developing	1122	46.5	21.5	32.0	2520	56.5	29.9	13.6	4841	28.4	21.5	50.0
	Developed	19004	69.6	32.2	-1.9	48070	65.8	34.9	-0.7	47866	59.8	45.3	-5.1
384	Developing	1153	84.5	3.5	12.0	4844	45.7	3.9	50.4	4549	-2.1	-2.9	50.8
	Developed	20387	96.7	4.0	-0.7	44681	97.1	8.3	-5.5	29776	114.0	-6.3	-7.8
385	Developing	69	83.7	45.5	-29.2	232	56.7	20.4	22.9	311	40.8	67.1	-7.9
	Developed	7319	64.6	35.1	0.3	15662	73.8	26.6	-0.3	26414	37.8	62.2	0.1
390	Developing	405	74.3	-1.2	26.9	221	319.8	-8.8	-211.0	876	48.8	26.7	24.5
	Developed	3604	104.8	-1.8	-3.0	8413	97.1	-2.7	5.5	9681	66.0	36.2	-2.2
	TOTAL[b/]												
	Developing	3821	60.69	10.70	28.61	11287	51.18	9.67	39.14	14108	41.44	13.18	45.35
	Developed	74540	82.87	18.58	-1.47	165412	85.27	17.41	-2.67	160706	71.80	32.21	-4.00

a/ in millions of 1975 US$
b/ industry group totals and averages

Source: Computations from the more detailed decomposition of Appendix Table.

The presence of negative signs in the table seems somewhat confusing at first glance, but this can be readily clarified via an illustration. For instance, take the case of basic products for 1973-1980 in Table 7. The total MVA change of $ 18,196 million between 1973 and 1980 in the basic products industry in the developing countries as a whole is explained by the three components in the following proportions; 40 percent by global effect and 64 percent by regional effect the sum of which is partly offset by about 4 percent due to the below-average performance of the industry in question. For the developed countries, the actual MVA change of this industry was $ 55,996 million during the same period. However, if MVA in basic products group were growing at the world average growth rate of total manufacturing for the period (25%) and were not offset by the negative industry and regional effects, MVA change would have been $ 86,307 million, about 1.54 times the actual value. However, this positive global effect of $ 86,307 million was partly counter-balanced by about $ 18,613 million (-33%) due to the sluggish performance in basic products relative to the world average, and by around $ 11,703 million (-21%) due to the loss of locational advantage of the developed countries in the industry under consideration. This means that the net MVA change was $ 55,996 million.

For analytical convenience, 28 manufacturing industries were reclassified under five broad industrial groups; agro-food processing, energy, basic products, light industry, and capital goods. This was done mainly to articulate a broad sweep of structural change across industries and regions. However, this broad overview was often supplemented by a more detailed analysis of some significant developments at the individual industry level when appropriate.

The most striking outcome is the pervasive presence of positive regional effects in the South and the opposite of this situation in the North, consistently across industries and over time with a few exceptions. As a corollary to the above phenomenon, MVA change was seen to be considerably more sensitive to the general global economic environment and the worldwide market conditions of individual industries in the North than in the South. This would

seem to suggest that production and trade in the North has become increasingly internationalized, while the South has still abundant untapped potentials for increasing value-added in many manufacturing activities at the regional levels.

Now we will turn to each broad industrial group.

Agro-food Processing

The South secured an expanding share of total MVA change over time in this industry group as evidenced by the ratio of South-North MVA change being rapidly increased from 13 percent in the first period (1963-1967) to 21 percent in the second period (1967-1973) and almost 30 percent in the final period (1973-1980). Furthermore, regional growth factors as measured by regional effect co-efficients played an increasingly important role in bringing about this change. For instance, only 4 percent of the South's MVA change ($ 2,846 million) in agro-food processing was accounted for by the regional growth factor in the first period, but this proportion was markedly increased to 35 percent in the second period and to 44 percent in the last period. Meanwhiles, the North exhibited extreme sensitivity to the world economic condition and the general downward trend of the agro-food processing industry with little regional strength throughout the periods. The same patterns of change were more or less replicated at the individual industry levels, all pointing to a substantial gain in the regional strength as a significant factor explaining the industry's growth in the South, which sharply contrasted with the growing vulnerability of the North's industries to external factors.

Energy

The energy group, which is made up of only two industries, petroleum refining (353) and petroleum and coal products (354), was the only sector in which the South gained a greater share of total MVA change than the North. To be more precise, this has occurred only in petroleum refining which started out with the South's MVA change amounting to less than half the North's in the

first two periods, but the South's MVA growth surpassing the North's by one and a half times in 1973-1980, primarily thanks to the two oil price-hikes which occurred during the period. In this regard, it is worth noting that the regional coefficient for the South made a quantum jump from 4.1 percent in 1967-1973 to 55.6 percent in 1973-1980, while the North's regional coefficient dropped sharply from -1.6 percent to -87.1 percent, and the global effect drastically increased from 77.2 percent to 244.0 percent between the last two periods. This seems to underscore the growing fragility of the petroleum refining industry in the North. In a similar vein, region-specific factors explained more than 60 percent of the MVA growth of petroleum and coal products in the South, while the same industry performance in the North was predominantly influenced by both the global and indsutry effects over the same periods.

Basic Products

From the South's viewpoint, the basic products group as a whole registered the second best MVA growth performance, only behind the energy group. There was a remarkable increase in the South's MVA growth as percent of the North's change starting from 8.6 percent in 1963-1967 to 10.7 percent in 1967-1973 and an abrupt increase to 32.5 percent in 1973-1980. The regional strength to sustain output in the South also dramatically improved in a similiar fashion over time as the regional coefficient increased from 19 percent in the first period to 31 percent in the second period to 64 percent in the last period. In sharp contrast, with its diminishing share of MVA change, the North's performance became progressively sensitive to the global effect, whose coefficient increased from 88 percent in the first period to 154 percent in the third period. At the individual industry level, the growth performance of iron and steel casts a particularly interesting North-South contrast. The South's MVA change increased more than five-fold from $ 811 million to $ 4,374 between the first period and the last period along with its markedly improved regional coefficient, while the North's MVA change initially doubled from $ 12,692 million to $ 25,620 between the first two periods, only to experience a sudden decline in its MVA by $ 640 million between 1973 and 1980. Other

notable industries in the South which were quantitatively significant in terms of output and performed exceptionally well as compared with their counterparts in the North are industrial chemicals (351), other chemical products (352) and non-metal products (369).

Light Industry

In general, the light industry group in the South chalked up an impressive gain in its share of MVA growth vis-à-vis the North, although not as striking as the results achieved by the basic product group. The ratio of South-North MVA change remained almost constant around 9.5 percent between the first two periods, but the ratio nearly doubled to 18 percent in the third period. At the same time, the regional coefficient markedly increased from about 8 percent in the first period to 50 percent in the third period, which was equally matched by a substantial decrease in the proportion of MVA change which was explained by the world economic conditions, a drop from 125 percent to about 79 percent. However, the relatively poor growth performance of the light industry group worldwide seems to have prevented this industry group in the South from growing faster, as explained by sizable negative values of the industry effect. What happened to the light industry group in the North is the opposite of the situation in the South. Namely, the predominant portion of MVA change in the the light industry group in the North was accounted for by the global economic situation and the worldwide growth performance of the industry under consideration.

The most important industries within the light industry group in terms of MVA change include:

1) The textile industry (321) in the South sustained its steady growth over the periods, bucking its worldwide downward trend which affected adversely the growth performance of the industry in the North. The region-specific factors also became increasingly important in explaining the South's growth in the most recent period.

2) The wood products industry (331) witnessed a dramatic reversal of the dominant position between the North and the South. The MVA growth in the North was as over fifteen times large as that of the South in the initial period, $ 228 million in the South to $ 2,988 million in the North. But the South's figure jumped to $ 1,032 million while the North's value shrunk to a trifling $ 58 million in the last period. Meanwhile, the South's capacity to generate growth internally increased tremendously, while the North's performance became extremely dependent on the external factors.

3) The South made a hefty gain in the rubber products industry (355) along with its considerably strengthened locational advantage. The MVA change of the industry in the South was up sharply to $ 1,000 million from $ 313 million between the first two periods and stayed at the same plateau in the last period. However, the North's gain was also equally remarkable, almost tripling from $ 2,474 million to $ 6,468 million between the first two periods, but subsequently dropped to the previous level of almost $ 2,500 million. In the mean time, the global and industry effects became dominant factors in explaining the North's growth performance.

4) In the metal products industry (381), both the North and the South enjoyed considerable MVA gains throughout the periods, although the ratio of South-North MVA growth slightly improved over time in favour of the South. Also the North's growth tends to be more sensitive to the external forces than the South.

Capital Goods

The development of the capital goods industries is commonly seen as one of the most essential ingredients required to accelerate technological advances and achieve industrial maturity of the developing countries. Yet, the empirical evidence seem to suggest that the South's gains in this critical sector during the periods were least impressive as compared with progresses made in other sectors. The ratio of South-North MVA change increased steadily but slowly from about 5 percent in 1963-1967 to 7 percent in 1967-1973 and to

slightly less than 9 percent in 1973-1980. Unlike previous cases, there were no striking changes in all coefficients for global, industry and regional effects in both the North and the South. It appears that the North clearly maintains a firm control over the production of capital goods and the South is yet to make any significant dent on the dominant position of the North in this important sector.

There are, however, considerable inter-industry variations within the capital goods sector in terms of the performance of the South as compared with that of the North. For instance, the South made a remarkable inroad towards the enlargement of its share of world MVA growth in the transport equipment industry (384) as the South's MVA change as percent of the North's rapidly climbed from about 6 percent in the initial period to 11 percent in the second period and further up to 15 percent in the third period. There was also a parallel growth in the South capacity to generate MVA in this industry on its own strength, as shown by a notable increase in the regional coefficients from 12 percent to around 50 percent between the first and third periods. By sharp contrast, the South's MVA growth in the professional and scientific goods industry (385) was trifling small relative to that of the North throughout the periods, never exceeding 1.5 percent of the North's growth. Meanwhile, the South's performance in machinery (382) and electrical machinery (383) comes between these two extremes. In the machinery industry the South's MVA growth as percent of the North's increased somewhat from 4 percent to 7 percent initially and remained at the same level thereafter with the regional coefficient varying between 40 and 60 percent. Likewise, in the electrical machinery industry, the ratio of South-North MVA change increased twofold from 5 percent to 10 percent between the last two periods along with a remarkable increase in the regional coefficient from 13 percent to 50 percent. On the whole, there were signs of budgeoning growth of the capital goods industry in the South but such growth was confined to a handful of countries in a few isolated regions in the South, namely Latin America, and South and Southeast Asia.

Even a cursory examination of the more detailed appendix tables for the decomposition of MVA change by 12 regions would readily reveal substantial variations among the regions. But the limitation of space simply does not permit a full account of MVA changes for 28 industries in the 12 regions covering the three periods. Here we will simply attempt to identify a few regions from both the South and the North which generated the most notable change, both positive and negative, in each industry in terms of regional coefficients as well as actual MVA change in the three periods. Such identification may serve the purpose of alerting interested readers for a more thorough and systematic analysis of a particular industry in a particular region which could be undertaken separately.

311 Food: MLA, MAS, EE, WE1, NA;
313 Beverages: MLA, MAS, EE, WE1, NA;
314 Tobacco: LIS, MAS, MLA, WE1, EE;
321 Textiles: MLA, MME, MAS, EE, NA, JP;
322 Wearing apparels: MLA, LIS, MAS, EE, NA, JP;
323 Leather & products: MLA, MAS, EE, NA;
324 Footwear: MAS, MLA, EE, WE2;
331 Wood products: MAS, LIS, MLA, EE, WE1;
332 Furniture & fixtures: MLA, LIS, WE1, NA, EE;
341 Paper & products: MLA, LIS, MAS, NA, WE1, EE;
342 Printing & publication: MLA, MAS, NA, WE1;
351 Industrial chemicals: MLA, LIS, MAS, NA, EE;
352 Other chemicals: MLA, LIS, MAS, NA, WE1, JP;
353 Petroleum refinery: MLA, MME, MAS, WE1, EE;
354 Petroleum & Coal products: MLA, MME, EE, NA;
355 Rubber products: MLA, MAS, NA, EE;
356 Plastic products: MLA, MAS, NA, WE1, EE;
361 Pottery & China: MLA, EE, WE1;
362 Glass & products: MLA, MME, NA, EE, WE1;
369 Non-metal products: MLA, MAS, EE, WE1, WE2, JP;
371 Iron & steel: MLA, MAS, EE, JP, WE1, NA;
372 Non-ferrous metals: MLA, MME, EE, NA, JP, WE1;
381 Metal products: MLA, MAS, EE, NA, WE1, JP;
382 Machinery: MLA, LIS, NA, EE, WE1, JP;
383 Electrical machinery: MLA, MAS, NA, WE1, JP, EE;
384 Transport equipment: MLA, MAS, NA, WE1, EE, JP;
385 Professional & scientific goods: MLA, MAS, EE, NA, JP, WE1;
390 Other manufactures: MLA, LIS, EE, NA, WE1, JP.

C. Regression Analysis

As stated earlier, the decomposition analysis could not offer any explanations of the causal factors underlying the relative regional strength of a particular industry in a particular region, as measured by the regional coefficient. Obviously, the region-specific ability to generate and sustain the MVA growth of an industry independently of external influences could be affected by a whole host of factors such as natural resource endowments, trade regimes, technological capacity and skill levels, market size, relative factor costs, physical and social infrastructure, and many other socio-economic variables. These factors vary vastly from region to region. Therefore, given the diversity and heterogeneity of these regions, each region may have to be examined separately.

It is, however, beyond the scope of this study to carry out such a comprehensive study of causal factors for each region's strengths and weaknesses of the manufacturing sector and its component industries. Instead, we develop an ad hoc general hypothesis about what might explain interregional and interindustry differences in the regional effect and statistically test its validity, using cross-section and time-series pooled data for each industry. It must be noted that the empirical results presented here only serve to determine the general empirical validity of a set of the variables which are postulated to have an explanatory power on the regional effect. The results do not apply to the special conditions of any specific region.

The following functional specification was used for this purpose:

$$X_{ij} = a + b_1 \ln y + b_2 (\ln y)^2 + cN + d_1 \ln(I/GNP) + d_2 \ln(Ep/GNP) + d_3 \ln(Em/GNP)$$

where

X_{ij} = calculated regional effect of "i"th industry in "j"th region,
y = per capita income,
N = population,
I/GNP = ratio of investment to GNP,
Ep/GNP = primary exports as percent of GNP,
Em/GNP = manufacturing exports as percent of GNP, and ln represents a natural-log transformation of the variable.

Per capita income was included as a proxy variable for the stages of development. It is based on the hypothesis that as a country or a region advances along the path of industrialization, so does its capacity to generate the growth of MVA internally up to a certain critical point. While industrialization broadens a regions' capacity to increase MVA, it tends to integrate progressively the region's economy into the world economy. At the same time, industrial performance becomes increasingly sensitive to external factors such as world economic conditions and the worldwide growth performance of a given industry rather than region-specific factors. Therefore, the importance of regional effect is expected to diminish, while global and industrial effects would become a dominant factor in explaining the MVA growth, once a region achieves industrial maturity. Furthermore, the patterns of this change may be approximated by a non-linear form, i.e., a log-quadratic function in this case. Theoretically correct signs should be plus for the linear term and minus for the quadratic term, reflecting a diminishing rate of increase of the regional effect in proportion to increasing per capita incomes.

It is further postulated that a region's capacity to generate the MVA growth is positively related to market size (N), and a region's rate of resource mobilization, i.e, the share of capital formation in GNP (I/GNP), and negatively related to a region's relative endowments of natural resources which is measured by the two variables, the share of primary exports in GNP (Ep/GNP) and the share of manufacturing exports in GNP (Em/GNP). It is well known that specialization in the production and exports of primary commodities tends to delay or even impede industrialization. It is equally obvious that manufacturing export-led growth would make an economy more open and sensitive to changing international economic conditions.

The goodness of fit for the estimated equations as measured by R^2 ranged from 0.09 to 0.81 but the majority of the equations (21 out of 29 equations) had a reasonably good fit with R^2 of over 0.5 (See Table 8). In fact, the results turned out to be better than expected, since cross-section data tend to yield poorer fits than time-series data. Furthermore, most of the sectoral equations have correct signs for their variables except for population (N).

Table 8

Regression Analysis of Regional Effect Determinants

ISIC		Constant	Regression Coefficients lny	(lny)^2	M	ln(I/GMP)	ln(XP/GMP)	ln(XM/GMP)	R^2	Dw	n
311	Food Products	-18621.10* (-3.362)	5914.36* (2.94)	-477.50* (-3.33)	-0.56 (-0.54)	825.09 (1.04)	-574.01* (-2.50)	-66.91 (-0.35)	0.72	2.35	27
313	Beverages	-6255.10 (-1.61)	2118.62 (1.50)	-157.75 (-1.56)	0.42 (0.57)	6.23 (0.01)	-218.93 (-1.35)	-291.00* (-2.14)	0.41	2.00	27
314	Tobacco	-2643.66* (-3.86)	732.25* (2.95)	-61.50* (-3.46)	-0.03 (-0.21)	209.08* (2.13)	-32.77 (-1.15)	44.77 (1.88)	0.81	2.31	27
321	Textiles	-4517.67 (-0.54)	1135.11 (0.37)	-124.14 (-0.57)	-1.83 (-1.17)	1569.09 (1.31)	-684.30* (-1.97)	-516.94* (-1.78)	0.48	2.01	27
322	Wearing Apparel	-4683.63 (-1.21)	1097.92 (0.78)	-109.483 (-1.09)	-1.40* (-1.93)	1063.82* (1.92)	-287.56* (-1.79)	-161.84 (-1.20)	0.65	2.08	27
323	Leather & Products	-920.21 (-1.11)	200.01 (0.66)	-20.54 (-0.95)	-0.25 (-1.60)	248.61* (2.09)	-76.36* (-2.22)	-43.02 (-1.49)	0.61	2.44	27
324	Footwear	-2937.71* (-2.25)	898.29* (1.89)	-79.62* (-2.35)	-0.67* (-2.72)	347.40* (1.85)	-164.05* (-3.02)	-5.10 (-0.11)	0.75	2.32	27
331	Wood Products	-5730.08* (-1.90)	1983.68* (1.81)	-149.69* (-1.91)	0.65 (1.14)	-189.06 (-0.44)	-57.53 (-0.46)	-12.51 (-0.12)	0.32	2.26	27
332	Furniture Fixtures	-5894.20* (-2.20)	2215.66* (2.28)	-158.52* (-2.29)	0.70 (1.39)	-622.14 (-1.62)	73.27 (0.66)	-3.42 (-0.04)	0.37	2.01	27
341	Paper & Products	-5787.22* (-3.02)	1645.10* (2.36)	-141.76* (-2.85)	-0.92* (-2.55)	754.18* (2.74)	-347.22* (-4.36)	-61.19 (-0.92)	0.79	2.57	27
342	Printing & Publishing	-1588.45 (-0.40)	631.64 (0.44)	-48.27 (-0.47)	-0.22 (-0.29)	-117.60 (-0.21)	2.44 (0.02)	-35.20 (-0.25)	0.09	2.09	27
351	Industrial Chemicals	-10463.85 (-0.91)	3269.59 (0.79)	-291.39 (-0.98)	-1.95 (-0.91)	1730.89 (1.06)	-148.39* (-2.42)	-696.06 (-1.75)	0.47	2.47	27
352	Other Chemical Products	-7109.14 (-0.84)	1215.45 (0.39)	-131.40 (-0.60)	-1.65 (-1.04)	2586.72* (2.13)	-970.60* (-2.76)	-598.63* (-2.03)	0.52	2.22	27
353	Petroleum Refinery	-12052.86* (-2.85)	3398.61* (2.22)	-272.31* (-2.49)	-0.22 (-0.27)	729.78 (1.21)	-150.05 (-0.86)	60.08 (0.41)	0.61	2.22	27
354	Petrol & Coal Products	-195.81 (-0.17)	-112.72 (-0.27)	1.93 (0.06)	-0.33 (-1.52)	414.00* (2.47)	-130.19* (-2.68)	-98.36* (-2.41)	0.54	1.94	27
355	Rubber Products	-4458.21* (-2.39)	1135.91* (1.68)	-100.31* (-2.08)	-0.45 (-1.28)	656.37* (2.46)	-194.96* (-2.52)	-29.66 (-0.46)	0.71	2.13	27

(continued on next page)

(contin.)

ISIC		Regression Coefficients: Constant	ln y	(ln y)^2	N	ln(I/GNP)	ln(XP/GNP)	ln(XM/GNP)	R^2	Dw	n
356	Plastic Products	2862.65 (0.50)	-685.64 (-0.33)	52.69 (0.36)	-0.10 (-0.10)	-44.61 (-0.06)	-176.01 (-0.75)	-255.36 (-1.29)	0.12	2.02	27
361	Pottery China, etc.	-1679.94 (-1.42)	497.79 (1.16)	-42.55 (-1.39)	-0.30 (-1.34)	252.49 (1.49)	-156.18* (-3.18)	-124.88* (-3.03)	0.66	2.33	27
362	Glass & Products	-3800.66* (-2.75)	1125.18* (2.24)	-87.28* (-2.43)	0.10 (0.38)	123.98 (0.63)	-32.72 (-0.57)	-53.73 (-1.12)	0.61	2.14	27
369	Non-Metals Products	-11939.49* (-2.80)	3312.15* (2.14)	-277.56* (-2.51)	-0.82 (-1.03)	1316.13* (2.15)	-522.80* (-2.95)	-183.07 (-1.23)	0.72	2.42	27
371	Iron & Steel	-25445.95* (-2.90)	6414.41* (2.02)	-566.59* (-2.49)	-3.10 (-1.88)	4126.04* (3.28)	-1445.43* (-3.97)	-189.82 (-0.62)	0.78	2.41	27
372	Non-ferrous Metals	-6693.38* (-1.96)	1642.38 (1.32)	-148.45 (-1.68)	-0.96 (-1.49)	1055.57* (2.16)	-267.90* (-1.89)	30.26 (0.25)	0.64	2.14	27
381	Metal Products	-20023.10* (-1.73)	4789.86 (1.14)	-463.55 (-1.54)	-4.14* (-1.91)	4364.84* (2.63)	-1473.52* (-3.07)	-471.97 (-1.17)	0.71	2.27	27
382	Machinery	-12541.51 (-0.68)	1444.05 (0.22)	-246.80 (-0.52)	-5.78 (-1.67)	7177.12* (2.72)	-2684.49* (-3.52)	-1676.00* (-2.62)	0.66	2.14	27
383	Electrical	-7542.23 (-0.41)	-1788.71 (-0.27)	-50.58 (-0.11)	-8.17* (-2.37)	9134.35* (3.47)	-2148.69* (-2.82)	-414.60 (-0.65)	0.65	2.04	27
384	Transport	-37158.00* (-1.80)	8123.58 (1.08)	-780.32 (-1.46)	-6.28 (-1.62)	7745.12* (2.61)	-1834.24* (-2.14)	-141.00 (-0.20)	0.67	2.01	27
385	Professional Goods	-2804.48 (-0.30)	-525.10 (-0.15)	-25.86 (-0.11)	-3.14 (-1.78)	3104.88* (2.30)	-703.32* (-1.80)	-107.07 (-0.33)	0.47	2.09	27
390	Other Industries	-8385.90* (-2.57)	2936.95* (2.48)	-220.96* (-2.62)	0.45 (0.74)	-387.63 (-0.83)	2.51 (0.02)	-69.90 (-0.62)	0.56	2.02	27
300	Total Manufacturing	-134541.00 (-1.49)	38573.46 (0.87)	-2798.28 (-1.19)	-25.10 (-1.48)	35240.03* (2.71)	-12203.67* (-3.25)	-3981.29 (-1.26)	0.64	1.99	27

Note:
Numbers in parenthesis are t-values;
y = per capita income;
N = population;
I/GNP = investment as percent of GNP;
XP/GNP = primary exports as percent of GNP;
XM/GNP = manufactured exports as percent of GNP;
* statistically significant at the 95 confidence level.

Now, turning to the individual variables, the regression results generally support the conceptual hypothesis about the relationship between per capita incomes and the regional effect as described by a log-quadratic function. In other words, the regional effect is expected to increase in a decreasing rate as per capita incomes rise, and become negative, once per capita incomes reach a critical level. For this relationship to hold, the sign for the linear term must be plus and the quadratic term negative. Generally, this is the case. Out of 29 sectoral equations estimated, only four have wrong signs. But only 12 estimated equations have statistically significant coefficients for both linear and quadratic terms at the 95 per cent confidence level.

It can be readily seen tha the elasticity of regional effect with respect to income, i.e.,

$$e = (y/x)(\partial x/\partial y) = (1/x)\ (b_1 + 2b_2 \ln y)$$

decreases as per capita incomes rise for $b_1 > 0$ and $b_2 < 0$. This means that the regional effect becomes progressively smaller, eventually diminishes to zero, and then becomes negative, as per capita incomes continuously rise. Also setting $(\partial x/\partial y) = 0$ and solving for y will give the value of a threshhold per capita income beyond which point the regional effect becomes negative, ceteris paribus. For instance, such threshold incomes calculated from Table 8 are $ 486 for food products, $ 853 for beverages, $ 349 for tobacco, $ 97 for textiles, $ 1,086 for furnitures and fixtures, etc., all in 1980 constant dollars. It must be cautioned, however, that these figures are very rough estimates and should not be taken too seriously.

It seems reasonable to expect that the region's capacity to generate the MVA growth from internal sources is positively related to the extent of resource mobilization within the region which is roughly measured by the share of investment in GNP (I/GNP). The empirical results clearly confirm this expectation. Only five among 29 coefficients have a wrong sign and more than half of them are statistically significant at the 95 per cent confidence level. More importantly, the results show that the elasticity of the

investment share in GNP is considerably larger than that of the primary export share in GNP or the manufacturing export share in GNP in most cases. This implies that resource mobilization and expansion of productive capacity is likely to have a greater impact on the endogenous growth of a region than trade promotion guided by natural resource endowments.

As stated earlier, specialization in the production and exports of primary commodities tends to be negatively correlated with structural change and industrialization of a country or a region. Particularly, the commodity-exporting region may be exposed to the boom-and-bust cycle of dependence on the widely fluctuating world demands and unpredictably changing supply conditions. As a result, the economy's capacity to grow on its own endogenous economic forces may be greatly impaired. It seems that the empirical results support this theoretical expectation. A major bulk of the coefficients for the primary commodity export share are not only statistically significant (at the 95 confidence level) but also have a correct sign (minus). The results further show that the regional coefficients tend to be more responsive to the primary export share than the manufacturing export share in most cases.

In a similar vein, the manufacturing export share is expected to be negatively related to the regional coefficient. This negative relationship seems to be consistently corroborated by the empirical results. Only 3 out of 29 equations have a wrong sign for this variable. However, albeit their correct signs, only 6 coefficients are statistically significant. It must be concluded, therefore, that statistical relationships between the manufacturing export share and the regional coefficient seem far weaker and less accurate than that between the primary export share and the dependent variable.

Lastly, the results obtained for the population variable would seem rather unexpected and inexplicable. Since population is used often as a proxy variable for market size, and market size is considered to be a crucial determinant of the region's capacity to expand its own internal market, the sign for the population coefficient should be positive. But almost all

coefficients have a wrong sign. However, the results should not carry too much weight, given the fact that most coefficients are statistically insignificant and hence little confidence could be placed on these estimates.

V. Conclusions and Some Policy Implications

Granted, our method for analysing MVA data is rather crude and subject to many limitations. Moreover, to draw a sharply focused picture of the patterns of MVA changes among different regions would be difficult without an in-depth analysis of why MVA increased the way it actually did within the specific regional context, going beyond a mere statistical analysis of data. The principal findings nonetheless provide interesting and substantive insights.

Our analysis shows that if the pattern of MVA growth in different manufacturing industries is expected to provide reasonable clues to structural change in manufacturing, world manufacturing industry underwent marked structural transformation between 1963 and 1980. Changes in the industry share of the world MVA between 1963 and 1980 indicate that some of the fastest growing industries have been concentrated in capital goods, particularly electrical machinery, machinery, industrial chemicals, and professional goods. Meanwhile, the relative shares of most light industries (e.g., food products, textiles, wearing apparel) and some resource-based industries (e.g., iron and steel, wood products) declined rapidly over the same period.

Although the North accounted for an overwhelming portion of the world MVA change between 1963 and 1980, the MVA of most traditional manufacturing industries in the South had been steadily on the rise despite the shrinking shares of most of these industries in the world total production, and even more importantly, the South's gains had been based on internally-generated economic forces, as revealed by the significance of the regional effect calculated from the decomposition analysis. Of course, Africa, both the low-income and middle-income groups, is a major exception to this otherwise encouraging picture.

As a corollary of the South's expansion in light manufacturing and resource-based industries, the North's share in these smokestack industries declined dramatically and instead its growth has been gravitated to capital goods and other high-tech industries. In this regard, it is important to note that the South's gains in this critical capital goods industry during the period were least impressive as compared with advances made in other sectors. The North still maintains an undisputed control over the production and trade of capital goods and the South is yet to make any significant dent on the dominant position of the North in this important sector.

Moreover, the decomposition analysis suggests that across nearly all manufacturing industries, the North exhibited a remarkable sensitivity to general fluctuations of the global economy and the worldwide performance of individual industries. It revealed little regionalized viability to withstand external pressures.

The South is, of course, not a monolithic economic group. The reality is considerably more complex, for the pace and patterns of structural change within the South varied widely from region to region. For instance, statistical test results show that the structure of production in Africa changed little between 1963 and 1980, when compared with the 1980 structure of Japan or North America. Meanwhile, Latin America underwent the most rapid structural change among all regions in the South, closely followed by the middle-income Asia during the period, although there are some sig. of a dramatic reversal of this positive trend in Latin America which has been troubled by the mammoth external debt in recent years. Also, the Middle East fared slightly better than Africa in terms of structural change despite the region's high per capita income. The result is not surprising, because the structure of the economies in the region during the period was dominated by the oil sector with a very narrow industrial base.

Taking all these empirical results together, one important conclusion would seem to emerge. The diverse configurations of structural change in the manufacturing sector in different regions of the world, as described so far, all seem to be explained by one common thread of development process. It is the theoretical premise that an economy like an organic body is subject to evolutionary process progressing through successive stages of specialization, beginning with the production of labour-intensive, technologically simple non-durable consumer goods in the first stage followed by the production of intermediate goods at the second stage, and culminating with the production of sophisticated skill-intensive capital goods and other knowledge-intensive high-tech products at the final stage. Exploiting shifting comparative advantage and dynamic international division of labour, some will move rapidly from one stage to another while others remain stagnant at the initial stages of development. Development experiences in Southeast Asia and Africa in the 1960s and 1970s provide a telling testimony to this fact. This development process will entail a shift in the composition of output and exports from traditional labour-intensive goods such as textiles, garments, electronic assembly, and other light manufacturing to more technologically advanced and skill-intensive goods such as engineering goods, machinery, components, consumer durables and transport equipment. The process will be also marked by shifting locational incidence of production of labour-intensive goods from the countries at the higher hierachy of development tc those at the lower echelon, as it occurred in the past in textile industry, first from Japan to the Republic of Korea and Hong Kong, and then countries in South Asia.

This stage theory seems to be capable of explaining what actually happened to the manufacturing industry in various regions of the world in the period of 1963-1980. At the risk of oversimplification, our detailed analysis of the MVA data for the period seems to offer the following salient points. Africa remained stagnant at the early stages of industrialization during the period; the Middle East and North Africa approached the threshhold of the second stage of industrialization with heavy concentration on production of energy-intensive industrial intermediate goods; in a similar vein Indian

subcontinent appeared to have been positioned to enter the third phase of industrialization by embarking on producing technologically simple capital goods and transport equipment, although the region needs to improve its international competitiveness in producing labour-intensive manufactured goods; newly industrialized countries in Europe were also at the upper end of the second phase of industrialization roughly comparable to that of the most advanced countries of the middle-income Asia and Latin America; lastly, our analysis shows a marked erosion of the MVA growth of most manufacturing industries in the North with the major exception of capital goods. This finding conforms with other mounting evidence of the shift in the comparative advantage of the North away from the traditional smokestack industries to skill-intensive capital goods and knowledge-intensive high-tech industries, which is the domain of the last phase of industrialization.

Another important dimension to this growth process is the extent to which an economy becomes increasingly sensitive to external pressures as it progresses through the successive stages of development. The main results of the decomposition analysis seem to substantiate this hypothesis. Irrespective of the branch of manufacturing industry, industry performance tends to be generally affected more by region-specific factors than external factors at the initial stages and at the early second stages of industrialization. At the advanced stages of industrilization, most industrial activities become extremely responsive to the ebbs and flows of the world economy and the worldwide performance of a given industry. The reason may be that as the economy passes through the successive stages of specialization, it will be also progressively drawn into the international division of labour and trade. Of course, the pace of integration into the world economy may vary considerably from industry to industry, but ultimately all reach the point where external economic environment becomes a more dominant factor than region-specific internal economic conditions in explaining the region's MVA growth. The regression results lend empirical support to the notion of increasing internationalization of production and trade at successively advanced stages of development. More specifically, the results show that the part of MVA growth attributable to internally-generated economic forces as

measured by the regional effect tends to increase initially in step with rising per capita incomes and then began to diminish continuously as per capita incomes rise beyond a certain critical level. As a result, our decomposition analysis portrays clearly the pervasive presence of positive regional effects in nearly all manufacturing industries of the South and the opposite of the situation in the North.

A number of important policy implications could be drawn from these conclusions. Firstly, the South has still abundant untapped potentials for increasing value-added in many manufacturing industries within its own respective regions without depending on external markets, whereas such opportunities in the North may have been almost exhausted.

Secondly, industrial redeployment from the North to the South based on the shifting international dividion of labour seems likely to accelerate in the years to come.

Thirdly, continuously shifting configurations of comparative advantage and the division of labour within the South resulting from the dynamic growth of certain regions of the South, particularly East Asia and part of Latin America, would seem to hold out prospects for expanding South-South industrial redeployment and economic co-operation. Namely, as rapidly industrializing developing countries venture into the new territory of high-tech upmarkets, the production of traditional labour-intensive low-technology goods will be likely to be redeployed to less advanced developing countries. The process of this industrial redeployment will also create greater potentials for South-South co-operation. For instance, rapidly industrializing developing countries could offer a wide range of technical know-how, skill development and international marketing expertise to resource-rich developing countries which could reciprocate with raw materials, cheap labour, and capital.

Fourthly, there has been mounting empirical evidence that trade in capital goods has a much greater tendency to be two-way trade or intra-industry trade than is the case for labour-intensive goods, intermediate goods and consumer goods.[6/] In view of the relatively embryonic stage of development of the capital goods industry in developing countries, it appears that a tremendous potential for intra-industry trade in investment goods among developing countries has so far not yet been exploited.

Lastly, looking far down into the future, say two or three decades ahead, the world economy will be likely to evolve eventually into one highly-integrated complex network of production and exchange of goods and services in which each part of the body is functionally dependent on every other part, analogous to an organic system. This ultimate form of global economic interdependence will slowly emerge as more and more developing countries forge ahead with industrialization through the successive stages of specialization and growth. In the process, the distinction between the North and the South will be increasingly blurred and regionalized economic strength will diminish, as all will be shaped by the common global forces at work. Until then, there seems to be ample scope for exploiting the region-specific growth-inducing factors in developing countries.

Some caveat are in order before concluding this study. First, much has happened since 1980. Most notable among many turbulent events are prolonged worldwide stagnation, persisting unemployment, a collapse of commodity prices and worsening terms of trade against developing countries, a rising tide of protectionism, and most important of all, the accute problem of external indebtedness in developing countries and particularly in Latin America. All of these factors combined may alter some of the basic conclusions arrived at on the basis of the 1963-1980 data. This seems likeliest in the case of Latin America. Nevertheless, most other findings still may hold.

6/ For an empirical analysis of intra-industry trade among developing countries, see O. Havrylyshyn and E. Civan, "Intra-Industry Trade among Developing Countries", Journal of Development Economics, Vol.18, 1985, pp.253-271.

Second, it remains uncertain how some of the frontier technolgy being now developed in the North such as microelectronics, robotics, fibre optics, bio-tech, genetic engineering, artificial intellegence would affect the present competitive advantage of the North and the South and the international division of labour. In particular, there is considerable concern that the application of new technology may lead to the regaining of the North's competitive advantage in some of the so-called "sun-set industries" by rendering the South's newly installed industrial structure obsolete and uncompetitive. On the face of it, this would bring about a dramatic reversal of the process of industrialization of the South which has been evolving in the last several decades. It would seem, however, premature and even too simplistic to foresee such a scenario of technological advances. Simply too little is known about the economic feasibility and cost implications of introducing new technology in traditional smokestack industries. In some industries, the North's gain in competitiveness through the application of new technology may not be sufficient to offset the South's competive advantage in labour and other resource costs. Moreover, according to a paradigm of the product cycle theory, a new product today produced by new technology will soon become a standardized product which will be imitated and produced by everyone through the diffusion of technology. In such a world of rapid technological change, an initial gain in cost competitiveness made possible by the application of new technology will be sooner or later outweighed by the competitive advantage in labour and resource costs as the product passes through the cycles of innovation, imitation and standardization. This is exactly what has happened to many of the sun-set industries in the past. So there will be likely to be always a wide range of products in which the developing countries could compete in the international markets.

Appendix I

Table 1 Decomposition of MVA Changes:
311 Food Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	18832	137.8	-37.8	0.0	31436	169.7	-69.7	0.0	32270	111.2	-11.2	0.0
TDG	1952	142.8	-39.1	-3.7	5194	109.7	-45.1	35.3	5938	72.3	-7.3	35.0
TDD	16880	137.2	-37.6	0.4	26242	181.6	-74.6	-7.0	26332	120.0	-12.1	-7.9
LIS	263	106.6	-29.2	22.6	209	289.2	-118.8	-70.4	608	60.9	-6.2	45.3
LAF	50	234.3	-64.2	-70.1	-14	-1603.0	658.4	1044.6	-148	-77.5	7.8	169.7
MAS	267	139.8	-38.3	-1.5	1108	69.1	-28.4	59.3	1425	47.6	-4.8	57.2
MME	183	152.9	-41.9	-11.0	705	80.2	-33.0	52.7	226	209.3	-21.2	-88.1
MAF	100	74.0	-20.3	46.3	231	75.3	-30.9	55.6	276	54.0	-5.5	51.5
MLA	1089	152.7	-41.9	-10.9	2995	113.9	-46.8	32.9	3550	70.6	-7.1	36.6
NA	3814	176.3	-48.3	-28.0	4725	282.0	-115.8	-66.2	6518	125.6	-12.7	-12.9
WE1	3903	193.5	-53.0	-40.5	6631	223.0	-91.6	-31.4	5769	163.5	-16.5	-47.0
WE2	734	92.6	-25.4	32.8	1726	87.5	-36.0	48.4	2094	58.5	-5.9	47.4
JP	1576	87.1	-23.9	36.8	1838	168.4	-69.2	0.8	1313	158.9	-16.1	-42.8
EE	6277	96.9	-26.6	29.7	10631	125.9	-51.7	25.8	10106	95.9	-9.7	13.8
OD	576	129.6	-35.5	5.9	691	224.5	-92.2	-32.3	532	185.8	-18.8	-67.0

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 2 Decomposition of MVA Changes:
313 Beverages (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	4326	113.3	-13.3	0.0	7974	130.9	-30.9	0.0	9709	77.0	23.0	0.0
TDG	469	105.0	-12.3	7.3	1310	81.3	-19.2	37.9	2807	31.6	9.4	59.0
TDD	3857	114.3	-13.4	-0.9	6664	140.7	-33.2	-7.4	6902	95.5	28.5	-24.0
LIS	26	68.8	-8.1	39.3	18	238.4	-56.3	-82.1	57	47.5	14.2	38.4
LAF	14	129.7	-15.2	-14.5	85	44.4	-10.5	66.1	-19	-215.6	-64.3	380.0
MAS	52	83.0	-9.7	26.7	244	40.4	-9.5	69.2	475	23.7	7.1	69.3
MME	-19	-207.0	24.3	282.7	88	66.4	-15.7	49.3	144	36.6	10.9	52.5
MAF	24	84.8	-9.9	25.1	163	28.3	-6.7	78.3	418	15.5	4.6	79.9
MLA	372	95.1	-11.1	16.1	712	109.8	-25.9	16.1	1732	34.0	10.1	55.9
NA	929	96.1	-11.3	15.2	1675	117.5	-27.7	10.3	1985	73.2	21.8	5.0
WE1	933	193.5	-22.7	-70.8	2303	153.5	-36.2	-17.2	1116	218.0	65.1	-183.1
WE2	241	61.6	-7.2	45.6	476	77.4	-18.3	40.9	580	53.8	16.1	30.1
JP	602	64.1	-7.5	43.5	334	282.9	-66.8	-116.1	-245	-236.9	-70.7	407.6
EE	1038	102.6	-12.0	9.5	1611	143.7	-33.9	-9.7	3258	49.7	14.8	35.5
OD	114	97.7	-11.5	13.7	265	92.3	-21.8	29.5	208	93.6	27.9	-21.5

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 3 Decomposition of MVA Changes:
314 Tobacco (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	1358	190.9	-90.9	0.0	2453	207.2	-107.2	0.0	2961	111.0	-11.0	0.0
IDG	425	117.0	-55.7	38.7	668	157.6	-81.5	23.9	1293	55.7	-5.5	49.8
IDD	933	224.5	-106.9	-17.6	1785	225.8	-116.8	-9.0	1668	153.8	-15.2	-38.6
LIS	156	72.5	-34.5	62.0	148	180.6	-93.5	12.8	232	76.5	-7.6	31.1
LAF	4	323.2	-153.9	-69.3	30	80.1	-41.5	61.3	-5	-402.2	39.8	462.4
MAS	111	93.2	-44.4	51.2	167	137.5	-71.1	33.7	476	34.1	-3.4	69.3
MME	44	214.4	-102.1	-12.3	75	243.3	-125.9	-17.4	144	79.7	-7.9	28.2
MAF	5	258.5	-123.1	-35.5	31	79.1	-40.9	61.8	32	64.4	-6.4	42.0
MLA	105	153.0	-72.8	19.9	217	149.7	-77.5	27.8	414	54.3	-5.4	51.0
NA	114	634.3	-302.0	-232.3	339	381.5	-197.4	-84.1	195	392.4	-38.8	-253.6
WE1	297	215.7	-102.7	-13.0	493	251.1	-129.9	-21.2	386	200.6	-19.8	-80.8
WE2	153	131.2	-62.5	31.2	219	190.1	-98.4	8.3	362	75.6	-7.5	31.9
JP	103	93.2	-44.4	51.2	171	124.6	-64.5	39.9	69	224.2	-22.2	-102.0
EE	253	153.8	-73.2	19.4	521	150.9	-78.1	27.2	642	84.7	-8.4	23.7
OD	13	347.0	-165.2	-81.8	42	198.7	-102.8	4.1	14	388.4	-38.4	-250.0

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 4 Decomposition of MVA Changes:
321 Textiles (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	8053	182.1	-82.1	0.0	22639	127.8	-27.8	0.0	8435	247.3	-147.3	0.0
TDC	1115	203.6	-91.8	-11.8	3761	117.5	-25.6	8.1	2979	109.4	-65.2	55.7
TDD	6938	178.6	-80.5	1.9	18878	129.9	-28.3	-1.6	5456	322.6	-192.1	-30.4
LIS	80	828.9	-373.7	-355.2	119	986.9	-214.7	-672.2	44	1472.8	-877.2	-495.6
LAF	65	53.7	-24.2	70.5	80	113.2	-24.6	11.5	-25	-270.1	160.9	209.2
MAS	76	155.6	-70.2	14.5	820	29.1	-6.3	77.2	1464	22.5	-13.4	90.9
MME	277	85.2	-38.4	53.2	607	88.2	-19.2	31.0	571	75.7	-45.1	69.4
MAF	131	33.2	-15.0	81.8	165	82.6	18.0	35.4	294	38.3	-22.8	84.5
MLA	486	241.7	-109.0	-32.7	1970	113.8	-24.8	10.9	631	264.7	-157.7	-7.0
NA	1994	106.9	-48.2	41.3	4249	108.2	-23.5	15.4	-319	-1089.4	648.8	540.5
WE1	-787	-617.5	278.4	439.1	4227	188.3	-41.0	-47.3	-1635	-320.5	190.9	229.6
WE2	564	137.4	-62.0	24.5	1388	114.9	-25.0	10.1	669	177.0	-105.4	28.4
JP	1329	67.6	-30.5	62.9	1994	108.7	-23.6	15.0	-665	-246.0	146.5	199.5
EE	3639	96.2	-43.4	47.2	6567	117.5	-25.6	8.1	7457	76.3	-45.5	69.1
OD	199	115.3	-52.0	36.7	453	107.5	-23.4	15.9	-51	-723.4	430.9	392.6

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 5 Decomposition of MVA Changes:
322 Wearing Apparel (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	4884	173.2	-73.0	0.0	12185	137.9	-37.9	0.0	7207	164.7	-64.7	0.0
TDG	600	94.7	-40.0	45.3	620	202.7	-55.7	-47.0	575	141.8	-55.7	13.9
TDD	4284	184.2	-77.8	-6.3	11565	134.4	-36.9	2.5	6632	166.7	-65.5	-1.2
LIS	211	94.4	-39.9	45.5	-202	-218.2	59.9	258.3	-188	-96.8	38.0	158.8
LAF	12	64.2	-27.1	62.9	32	58.9	-16.2	57.3	-11	-162.5	63.9	198.6
MAS	38	78.2	-33.0	54.9	234	29.4	-8.1	78.7	375	25.2	-9.9	84.7
MME	55	60.0	-25.9	65.3	143	57.7	-15.8	58.2	176	44.9	-17.6	72.8
MAF	20	90.8	-38.4	47.6	15	270.3	-74.3	-96.1	37	67.8	-26.6	58.9
MLA	264	106.2	-44.9	38.7	398	152.0	-41.8	-10.2	186	224.4	-88.2	-36.2
NA	987	231.5	-97.8	-33.7	1684	260.2	-71.5	-88.7	895	304.5	-119.7	-84.9
WE1	112	2137.3	-903.1	-1134.2	2439	170.4	-46.8	-23.6	-1045	-267.4	105.1	262.3
WE2	327	133.7	-56.5	22.8	737	122.6	-33.7	11.1	283	232.8	-91.5	-41.3
JP	799	56.9	-24.0	67.1	855	135.2	-37.1	1.9	-314	-261.5	102.8	258.7
EE	1949	109.6	-46.3	36.7	5552	82.5	-22.7	40.2	6637	57.1	-22.4	65.3
OD	110	167.0	-70.6	3.5	298	123.1	-33.8	10.7	176	151.8	-59.7	7.9

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 6 Decomposition of MVA Changes:
323 Leather & Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	429	374.9	-274.9	0.0	1074	275.5	175.5	0.0	966	188.9	88.9	0.0
TDG	73	187.3	-137.3	50.1	117	229.7	-146.3	16.6	305	55.9	-26.3	70.4
TDD	356	413.4	-303.2	-10.3	957	281.2	-179.1	-2.0	661	250.3	-117.8	-32.5
LIS	-5	-753.6	552.6	301.0	-26	-239.4	152.5	186.9	-20	-131.6	61.9	169.6
LAF	0	0.0	0.0	0.0	4	23.6	-15.0	91.4	7	21.3	-10.0	88.7
MAS	-1	-495.1	363.0	232.0	15	53.4	-34.6	80.6	139	5.7	-2.7	97.0
MME	7	133.6	-98.0	64.4	26	74.3	-47.4	73.0	53	31.4	-14.8	83.4
MAF	5	44.0	-32.3	88.3	11	55.7	-35.5	79.8	25	23.8	-11.2	87.4
MLA	67	122.3	-89.7	67.4	87	197.8	-126.0	28.2	101	111.1	-52.3	41.2
NA	148	176.6	-129.5	52.9	-70	-739.5	471.1	368.4	-69	-369.9	174.1	295.8
WE1	-112	-543.5	398.5	244.9	216	458.6	-292.2	-66.4	-216	-266.3	125.4	241.0
WE2	90	118.3	-86.7	68.5	51	441.0	-280.9	-60.0	144	91.0	-42.9	51.8
JP	24	222.3	-163.0	40.7	131	78.5	-50.0	71.5	7	1237.9	-582.7	-555.2
EF	231	174.9	-128.3	53.3	633	126.6	-80.7	54.0	757	76.5	-36.0	59.5
OD	-25	-151.8	111.3	140.5	-4	-1331.9	848.5	583.4	38	71.2	-33.5	62.3

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 7 Decomposition of MVA Changes:
324 Footwear (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	1355	203.1	-103.1	0.0	1529	350.3	-250.3	0.0	1993	160.6	-60.6	0.0
TDG	184	131.4	-66.7	35.3	148	338.6	-242.0	3.3	329	91.4	-34.5	43.1
TDD	1171	214.4	-108.8	-5.5	1381	351.5	-251.2	-0.4	1664	174.2	-65.7	-8.5
LIS	42	79.9	-40.6	60.7	-31	-249.4	178.2	171.2	-17	-194.2	73.3	221.0
LAF	7	74.7	-37.9	63.2	14	87.6	-62.6	75.0	-11	-90.3	34.1	156.2
MAS	18	73.3	-37.2	63.9	23	135.3	-96.7	61.4	196	11.3	-4.3	93.0
MME	11	170.0	-86.3	16.3	48	77.6	-55.4	77.8	52	60.6	-22.9	62.2
MAF	14	35.4	-18.0	82.6	17	88.7	-63.4	74.7	36	33.8	-12.7	79.0
MLA	92	180.6	-91.7	11.1	77	426.2	-304.5	-21.7	73	262.9	-99.2	-63.7
NA	145	367.4	-186.5	-80.9	-367	-267.5	191.1	176.4	274	-155.4	58.6	196.8
WE1	-49	-1899.6	964.2	1035.3	152	1034.4	-739.1	-195.3	308	-281.1	106.0	275.1
WE2	194	66.2	-33.6	67.4	312	99.9	-71.4	71.5	508	47.6	-17.9	70.4
JP	46	62.8	-31.9	69.1	108	65.9	-47.1	81.2	3	2143.5	-808.6	-1234.9
EE	792	105.5	-53.3	48.1	1150	157.0	-112.2	55.2	1708	72.4	-27.3	54.9
OD	43	125.4	-63.6	38.3	26	433.4	-309.7	-23.7	27	243.7	-91.9	-51.8

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 8 Decomposition of MVA Changes:
331 Wood Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	3238	166.6	-66.0	0.0	8131	132.5	-32.5	0.0	1090	705.8	-605.8	0.0
TDG	250	170.4	-68.2	-2.3	747	113.5	-27.9	14.3	1032	61.3	-52.6	91.3
TDD	2988	166.3	-66.5	0.2	7384	134.4	-33.0	-1.4	58	12176.7	-10451.6	-1625.1
LIS	140	38.7	-15.5	76.8	-75	-211.8	52.0	259.8	322	20.2	-17.3	97.1
LAF	3	467.6	-187.0	-180.6	0	0.0	0.0	0.0	-27	-49.7	42.6	107.0
MAS	118	60.6	-24.2	63.6	230	77.5	-19.0	41.5	241	62.6	-53.8	91.1
MME	0	0.0	0.0	0.0	79	51.3	-12.6	61.3	56	73.2	-62.8	89.6
MAF	5	379.6	-151.8	-127.8	54	64.6	-15.9	51.2	51	62.3	-53.5	91.2
MLA	-16	-1523.1	609.1	1014.0	459	89.4	-21.9	32.6	389	84.8	-72.8	88.0
NA	758	199.3	-79.7	-19.6	1768	166.7	-40.9	-25.8	-59	-3374.2	2896.2	578.0
WE1	719	194.7	-77.9	-16.8	2882	95.0	-23.3	28.3	-997	-216.4	185.8	130.7
WE2	146	130.4	-52.1	21.8	468	84.4	-20.7	36.3	302	107.4	-92.2	84.8
JP	497	121.5	-48.6	27.1	497	255.4	-62.7	-92.7	-549	-144.2	123.8	120.4
EE	769	137.5	-55.0	17.5	1652	131.6	-32.3	0.7	1299	119.7	-102.8	83.0
OD	99	210.6	-84.2	-26.4	117	345.3	-84.8	-160.6	62	390.1	-334.8	44.7

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 9 Decomposition of MVA Changes:
332 Furniture & Fixtures (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	3703	108.6	-8.6	0.0	9332	92.6	7.4	0.0	4433	154.9	-54.9	0.0
TDG	228	99.8	-7.9	8.1	344	144.6	11.6	-56.2	671	51.8	-18.3	66.6
TDD	3475	109.2	-8.6	-0.5	8988	90.6	7.3	2.2	3762	173.3	-61.4	-11.9
LIS	31	35.5	-2.8	67.3	-16	-209.2	-16.8	326.0	69	19.8	-7.0	87.2
LAF	6	59.6	-4.7	45.1	-2	-447.9	-35.9	583.8	-4	-105.5	37.4	168.1
MAS	18	99.3	-7.9	8.5	-13	-301.0	-24.1	425.2	44	39.5	-14.0	74.5
MME	7	192.5	-15.3	-77.3	31	85.2	6.8	8.0	59	36.6	-13.0	76.4
MAf	12	80.2	-6.4	26.1	28	79.1	6.3	14.5	30	62.1	-22.0	59.9
MLA	154	111.6	-8.8	-2.8	316	116.2	9.3	-25.5	473	57.5	-20.4	62.9
NA	759	109.7	-8.7	-1.0	1602	111.4	8.9	-20.3	201	665.4	-235.8	-329.6
WE1	1057	149.3	-11.8	-37.5	4144	77.3	6.2	16.5	1299	209.1	-74.1	-35.0
UK	379	41.8	-3.3	61.5	733	61.4	4.9	33.6	242	173.2	-61.4	-11.8
JP	485	121.5	-9.6	-11.9	484	256.0	20.5	-176.5	-535	-144.4	51.2	193.2
EE	725	76.1	-6.0	29.9	1800	71.5	5.7	22.7	2507	44.9	-15.9	71.0
OD	70	119.5	-9.5	-10.0	225	78.4	6.3	15.3	48	309.8	-109.8	-100.0

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 10 Decomposition of MVA Changes:
341 Paper & Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	6908	104.3	-4.3	0.0	14263	109.4	-9.4	0.0	6447	182.4	-82.4	0.0
TDG	485	82.4	-3.4	21.0	1047	87.3	-7.5	20.2	1167	63.5	-28.7	65.2
TDD	6423	105.9	-4.4	-1.6	13216	111.2	-9.6	-1.6	5280	208.7	-94.3	-14.4
LIS	51	90.6	-3.7	13.1	125	82.6	-7.1	24.5	59	144.8	-65.4	20.6
LAF	1	110.0	-4.5	-5.5	9	26.2	-2.3	76.1	5	69.5	-31.4	61.9
MAS	20	253.0	-10.4	-142.6	56	171.7	-14.8	-57.0	205	31.5	-14.2	82.7
MME	23	125.6	-5.2	-20.4	136	44.4	-3.8	59.4	99	66.2	-29.9	63.7
MAF	15	49.5	-2.0	52.5	47	42.1	-3.6	61.5	41	53.9	-24.3	70.5
MLA	375	70.8	-2.9	32.1	674	93.7	-8.1	14.3	758	66.0	-29.8	63.8
NA	2570	121.6	-5.0	-16.6	5182	126.8	-10.9	15.9	1961	242.1	-109.4	-32.7
WE1	1867	129.8	-5.3	-24.4	3826	131.6	-11.3	-20.2	738	487.9	-220.4	-167.5
WE2	327	44.1	-1.8	57.7	779	51.5	-4.4	52.9	758	53.4	-24.1	70.7
JP	845	59.9	-2.5	42.5	1880	67.4	-5.8	38.4	460	246.5	-111.3	-35.1
EE	655	71.4	-2.9	31.5	1222	90.9	-7.8	17.0	1145	77.6	-35.0	57.5
OD	159	86.3	-3.5	17.2	327	94.9	-8.2	13.3	218	112.2	-50.7	38.5

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 11 Decomposition of MVA Changes:
342 Printing & Publishing (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	7518	123.6	-23.6	0.0	10441	186.5	-86.5	0.0	9667	132.9	-32.9	0.0
TDG	267	188.1	-35.9	-52.2	898	109.9	-51.0	41.1	446	166.5	-41.2	-25.3
TDD	7251	121.2	-23.1	1.9	9543	193.7	-89.8	-3.9	9221	131.2	-32.5	1.2
LIS	37	97.4	-18.6	21.2	93	85.2	-39.5	54.3	2	3240.1	-801.6	-2338.5
LAF	2	192.5	-36.7	-55.8	19	39.7	-18.4	78.7	-1	-869.0	215.0	754.0
MAS	50	73.2	-14.0	40.8	160	53.9	-25.0	71.1	241	35.3	-8.7	73.4
MME	-50	-96.3	18.4	177.9	59	99.9	-46.3	46.4	71	64.3	-15.9	51.6
MAF	13	110.0	-21.0	11.0	68	45.1	-20.9	75.8	93	35.5	-8.8	73.3
MLA	215	169.0	-32.2	-36.8	499	145.1	-67.3	22.2	40	1263.2	-312.5	-850.6
NA	3660	101.8	-19.4	17.6	3265	248.4	-115.2	-33.2	3951	128.6	-31.8	3.2
WE1	2190	137.3	-26.2	-11.1	3444	179.6	-83.3	3.7	1936	212.5	-52.6	-59.9
WE2	158	142.9	-27.3	-15.7	686	67.3	-31.2	63.9	615	67.2	-16.6	49.4
JP	480	253.9	-48.4	-105.5	320	723.5	-335.5	-288.0	1388	93.6	-23.2	29.6
EE	624	66.7	-12.7	46.0	1176	85.7	-39.7	54.1	1063	77.4	-19.1	41.8
OD	139	140.1	-26.7	-13.4	652	61.2	-28.4	67.2	268	138.9	-34.4	-4.5

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 12 Decomposition of MVA Changes:
351 Industrial Chemicals (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	14859	54.5	45.5	0.0	33912	61.6	38.4	0.0	22799	85.2	14.8	0.0
TDG	668	52.6	44.0	3.4	2363	38.8	24.2	36.9	2472	43.3	7.5	49.2
TDD	14191	54.6	45.6	-0.2	31549	63.3	39.5	-2.8	20327	90.3	15.7	-6.0
LIS	105	62.1	51.9	-14.0	324	49.8	31.1	19.2	375	44.1	7.7	48.2
LAF	19	27.5	23.0	49.5	0	0.0	0.0	0.0	-3	-314.5	-54.8	469.3
MAS	51	58.8	49.1	-7.9	274	27.5	17.2	55.3	745	14.5	2.5	83.0
MME	50	33.0	27.6	39.4	206	25.2	15.7	59.1	-13	-603.5	-105.2	808.7
MAF	5	214.5	179.3	-293.9	47	44.1	27.6	28.3	32	70.6	12.3	17.1
MLA	438	51.1	42.7	6.2	1512	39.0	24.4	36.6	1336	51.4	9.0	39.7
NA	3754	65.2	54.5	-19.7	8986	66.4	41.4	-7.8	6279	85.6	14.9	0.5
WE1	5143	61.0	51.0	-11.9	9672	80.6	50.3	-31.0	38	-17128.5	-2984.9	20213.4
WE2	374	46.7	39.0	14.3	1353	35.2	21.9	42.9	1376	42.6	7.4	50.0
JP	1081	33.8	28.3	37.9	2537	44.8	28.0	27.2	374	328.5	57.2	-285.7
EE	3684	40.9	34.1	25.0	8532	50.6	31.6	17.8	11912	36.9	6.4	56.7
OD	155	73.3	61.3	-34.5	469	57.1	35.6	7.3	424	60.7	10.6	28.7

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 13 Decomposition of MVA Changes:
352 Other Chemical Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	8610	77.4	22.6	0.0	17233	89.9	10.1	0.0	18633	66.7	33.3	0.0
TDG	1435	55.2	16.1	28.7	3011	67.5	7.6	24.8	5234	34.7	17.3	47.9
TDD	7175	81.9	23.9	-5.7	14222	94.6	10.7	-5.3	13399	79.2	39.5	-18.7
LIS	102	183.6	53.6	-137.2	150	246.1	27.8	-173.9	336	68.9	34.4	-3.3
LAF	3	201.7	58.8	-160.5	23	51.2	5.8	43.0	-4	-297.9	-148.6	546.5
MAS	86	63.3	18.6	17.8	326	41.2	4.7	54.1	496	30.6	15.2	54.2
MME	75	56.5	16.5	27.1	245	44.1	5.0	51.0	350	33.6	16.8	49.6
MAF	13	220.0	64.2	-184.2	135	40.9	4.6	54.5	142	44.1	22.0	34.0
MLA	1156	40.9	11.9	47.2	2132	63.6	7.2	29.3	3914	31.8	15.8	52.4
NA	3269	72.3	21.1	6.7	4375	127.8	14.4	-42.2	6343	63.5	31.7	4.8
WE1	1789	134.3	39.2	-73.4	4076	121.7	13.7	-35.4	445	814.4	406.1	-1120.5
WE2	423	53.0	15.5	31.5	919	63.5	7.2	29.3	1288	41.6	20.7	37.7
JP	853	45.3	13.2	41.5	2911	36.6	4.1	59.3	3212	40.0	19.9	40.1
EE	705	49.0	14.3	36.7	1560	59.3	6.7	34.0	1878	46.6	23.2	30.2
OD	136	111.3	33.0	-46.3	381	86.1	9.7	4.2	233	114.8	57.2	-72.0

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 14 Decomposition of MVA Changes:
353 Petroleum Reginery (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	5352	73.2	26.8	0.0	12164	76.0	24.0	0.0	6054	130.3	-30.3	0.0
TDG	1343	79.4	29.0	-8.4	3378	72.8	23.1	4.1	3694	57.8	-13.4	55.6
TDD	4009	71.1	26.0	2.8	8786	77.2	24.4	-1.6	2360	243.7	-56.6	-87.1
LIS	42	49.8	18.2	32.0	67	83.0	26.3	-9.3	45	102.1	-23.7	21.6
LAF	9	70.3	25.7	4.0	19	79.4	25.1	-4.5	-21	-60.3	14.0	146.3
MAS	229	85.5	31.3	-16.8	773	57.4	18.2	24.4	608	70.0	-16.3	46.3
MME	447	59.6	21.8	18.6	1080	61.8	19.6	18.6	668	92.8	-21.6	28.8
MAF	38	4.3	1.6	94.1	30	69.1	21.9	9.0	23	79.9	-18.6	38.7
MLA	578	99.5	36.4	-35.8	1409	89.3	28.3	-17.5	2371	42.7	-9.9	67.2
NA	694	195.7	71.6	-167.3	1745	152.1	48.1	-100.3	14	13081.0	-3039.0	-9942.0
WE1	1650	57.9	21.2	20.9	3115	77.5	24.5	-2.1	-308	-664.0	154.3	609.7
WE2	325	31.7	11.6	56.8	835	39.5	12.5	48.0	468	81.4	-18.9	37.5
JP	220	24.3	8.9	66.9	499	39.1	12.4	48.5	-51	-444.5	103.3	441.2
EE	1030	34.2	12.5	53.3	2426	44.9	14.2	40.9	2181	53.9	-12.5	58.6
OD	90	34.2	12.5	53.2	166	57.4	18.2	24.5	56	163.2	-37.9	-25.3

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Sourc: UNIDO Data Base

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Table 15 Decomposition of MVA Changes:
354 Petrol & Coal Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	577	240.9	-140.9	0.0	1191	222.9	-122.9	-0.0	1052	161.0	-61.0	-0.0
TDG	158	56.6	-33.1	76.5	333	68.4	-37.7	69.3	329	61.6	-23.3	61.7
TDD	419	310.4	-181.5	-28.9	858	282.8	-155.9	-26.9	723	206.2	-78.1	-28.1
LIS	7	279.0	-163.2	-15.8	36	102.2	-56.3	54.2	7	404.4	-153.2	-151.2
LAF	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
MAS	7	55.0	-32.2	77.2	26	38.1	-21.0	82.9	63	18.5	-7.0	88.5
MME	1	687.6	-402.2	-185.5	30	40.9	-22.5	81.7	159	8.7	-3.3	94.6
MAF	31	48.8	-28.5	79.7	100	40.5	-22.4	81.8	-79	-58.5	22.1	136.3
MLA	112	39.3	-23.0	83.7	141	90.9	-50.1	59.2	179	57.3	-21.7	64.4
NA	138	184.8	-108.1	23.3	277	181.3	-99.9	18.7	66	504.9	-191.3	-213.6
WE1	-281	-161.9	94.7	167.2	-231	-280.2	154.5	225.7	-187	-151.6	57.4	194.2
WE2	23	130.4	-76.2	45.9	25	248.9	-137.2	-11.7	80	48.7	-18.5	69.7
JP	100	51.4	-30.1	78.6	418	32.4	-17.8	85.5	0	0.0	0.0	0.0
EE	420	117.5	-68.7	51.2	349	299.1	-164.9	-34.2	749	85.0	-32.2	47.2
OD	19	82.5	-48.3	65.7	20	179.2	-98.8	19.6	15	158.9	-60.2	1.3

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 16 Decomposition of MVA Changes:
355 Rubber Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	2787	111.8	-11.8	0.0	7477	89.0	11.0	0.0	3672	146.0	-46.0	0.0
TDG	313	92.6	-9.8	17.1	1009	63.9	7.9	28.2	1156	51.0	-16.1	65.0
TDD	2474	114.2	-12.0	-2.2	6468	92.9	11.5	-4.4	2516	189.6	-59.7	-29.9
LIS	28	109.0	-11.5	2.4	71	92.3	11.4	-3.7	72	72.4	-22.8	50.4
LAF	2	41.3	-4.3	63.1	7	33.7	4.2	62.2	4	74.5	-23.5	49.0
MAS	43	111.3	-11.7	0.4	156	65.6	8.1	26.3	315	29.4	-9.3	79.9
MME	-2	-1499.0	157.8	1441.2	33	152.9	18.9	-71.8	65	53.5	-16.8	63.4
MAF	14	70.7	-7.4	36.7	60	39.3	4.9	55.8	125	21.8	-6.9	85.0
MLA	228	74.9	-7.9	33.0	682	58.7	7.3	34.0	575	66.1	-20.8	54.7
NA	718	131.2	-13.8	-17.4	1695	115.2	14.3	-29.5	-423	-342.7	107.9	334.7
WE1	646	165.8	-17.5	-48.3	1971	108.6	13.4	-22.0	397	407.2	-128.3	-179.0
WE2	130	51.6	-5.4	53.8	337	52.3	6.5	41.2	246	71.8	-22.6	50.8
JP	252	87.8	-9.2	21.5	787	63.3	7.8	28.9	587	78.0	-24.6	46.6
EE	682	65.7	-6.9	41.2	1498	72.8	9.0	18.2	1733	54.6	-17.2	62.6
OD	46	163.8	-17.2	-46.6	180	83.8	10.4	5.8	-24	-517.3	162.9	454.3

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 17 Decomposition of MVA Changes:
356 Plastic Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	4415	38.4	61.6	0.0	14048	35.5	64.5	0.0	9406	65.0	35.0	0.0
TDG	251	63.2	101.4	-64.7	851	46.0	83.5	-29.5	702	59.5	32.0	8.6
TDD	4164	36.9	59.2	3.9	13197	34.8	63.3	1.9	8704	65.5	35.2	-0.7
LIS	11	40.0	64.2	-4.2	26	49.0	88.9	-37.8	25	52.6	28.3	19.0
LAF	0	0.0	0.0	0.0	18	5.2	9.5	85.3	-10	-49.7	-26.7	176.4
MAS	24	18.3	29.4	52.2	108	17.5	31.7	50.8	162	22.7	12.2	65.1
MME	4	226.9	364.1	-491.0	12	145.4	263.9	-309.3	25	48.7	26.2	25.2
MAF	4	48.1	77.2	-25.4	21	24.7	44.8	30.5	50	15.9	8.5	75.6
MLA	208	66.8	107.1	-73.9	666	50.5	91.6	-42.1	430	76.1	40.9	-17.0
NA	1334	26.8	42.9	30.3	3641	34.1	61.9	4.0	4526	34.4	18.5	47.1
WE1	1290	55.9	89.8	-45.7	4648	39.7	72.1	-11.8	1891	112.4	60.5	-72.9
WE2	143	28.1	45.1	26.9	470	29.0	52.6	18.4	323	58.3	31.4	10.3
JO	832	27.5	44.1	28.4	2863	27.4	49.7	22.8	133	845.1	454.7	-1199.8
EE	459	29.7	47.6	22.7	1187	37.9	68.8	-6.7	1831	29.0	15.6	55.3
OD	106	50.3	80.8	-31.1	388	36.5	66.2	-2.6	0	0.0	0.0	0.0

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 18 Decomposition of MVA Changes:
361 Pottery, China, etc. (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	886	152.9	-52.9	0.0	2610	105.0	-5.0	0.0	2428	86.1	13.9	0.0
TDG	96	122.6	-42.4	19.8	286	86.4	-4.1	17.7	357	56.3	9.1	34.6
TDD	790	156.5	-54.1	-2.4	2324	107.2	-5.1	-2.2	2071	91.2	14.7	-6.0
LIS	26	136.5	-47.2	10.7	1	7307.7	-344.7	-6863.0	-27	-143.5	-23.2	266.6
LAF	2	13.8	-4.8	91.0	3	47.1	-2.2	55.1	2	74.5	12.0	13.5
MAS	6	96.3	-33.3	37.0	4	318.2	-15.0	-203.2	28	27.5	4.4	68.1
MME	5	38.5	-13.3	74.8	6	94.3	-4.4	10.2	12	37.2	6.0	56.7
MAF	3	45.8	-15.9	70.0	3	125.7	-5.9	-19.8	7	39.0	6.3	54.7
MLA	54	135.0	-46.7	11.7	269	55.9	-2.6	46.7	335	43.6	7.0	49.4
NA	40	300.5	-103.9	-96.6	140	160.6	-7.6	-53.1	26	589.2	95.1	-584.3
WE1	150	450.7	-155.9	-194.9	688	178.7	-8.4	-70.3	46	1779.0	287.1	-1966.2
WE2	49	58.9	-20.4	61.4	98	74.1	-3.5	29.4	107	58.5	9.4	32.1
JP	135	68.0	-23.5	55.5	234	94.5	-4.5	10.0	107	163.1	26.3	-89.5
EE	409	75.9	-26.3	50.3	1142	63.5	-3.0	39.5	1780	37.4	6.0	56.6
OD	7	129.7	-44.8	15.2	22	85.7	-4.0	18.3	5	307.9	49.7	-257.6

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 19 Decomposition of MVA Changes:
362 Glass & Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	2108	90.9	9.1	0.0	4829	88.6	11.4	0.0	5107	67.6	32.4	0.0
TDG	199	61.8	6.2	32.0	618	49.3	6.4	44.4	795	39.5	18.9	41.6
TDD	1909	93.9	9.4	-3.3	4211	94.3	12.2	-6.5	4312	72.8	34.9	-7.7
LIS	13	114.3	11.5	-25.7	4	789.7	101.8	-791.5	36	49.0	23.5	27.5
LAF	1	137.5	13.8	-51.3	8	35.4	4.6	60.1	0	0.0	0.0	0.0
MAS	39	35.3	3.5	61.2	40	104.9	13.5	-18.4	70	45.8	21.9	32.3
MME	7	125.7	12.6	-38.4	174	10.6	1.4	88.1	202	26.2	12.6	61.3
MAF	4	34.4	3.5	62.2	5	84.9	10.9	4.2	26	13.4	6.4	80.2
MLA	135	61.3	6.2	32.5	387	53.1	6.8	40.0	461	44.3	21.3	34.4
NA	525	108.7	10.9	-19.6	710	172.6	22.2	-94.8	895	91.8	44.0	-35.8
WE1	402	157.3	15.8	-73.1	1457	87 4	11.3	1.3	914	113.0	54.2	-67.1
WE2	108	54.0	5.4	40.6	258	58.5	7.5	34.0	207	69.3	33.2	-2.6
JP	284	62.4	6.3	31.4	474	92.3	11.9	-4.2	-95	-366.4	-175.7	642.1
EE	560	56.0	5.6	38.3	1227	65.4	8.4	26.2	2371	30.7	14.7	54.6
OD	30	135.7	13.6	-49.3	85	98.7	12.7	-11.5	20	326.5	156.6	-383.1

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 20 Decomposition of MVA Changes:
369 Non-Metal Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	7581	99.0	1.0	0.0	17373	94.6	5.4	0.0	8804	147.3	-47.3	0.0
TDG	609	84.7	0.9	14.5	1731	67.7	3.8	28.5	2862	36.6	11.7	75.2
TDD	6972	100.2	1.0	-1.3	15642	97.6	5.6	-3.2	5942	200.7	-64.5	-36.2
LIS	46	145.9	1.5	-47.4	164	83.4	4.7	11.9	187	60.3	-19.4	59.1
LAF	16	39.5	0.4	60.1	30	61.3	3.5	35.2	-31	55.3	17.8	137.5
MAS	110	42.3	0.4	57.3	216	60.9	3.5	35.6	531	23.1	-7.4	84.3
MME	109	56.5	0.6	42.9	210	74.8	4.3	21.0	545	24.7	-7.9	83.2
MAF	29	47.4	0.5	52.1	62	60.1	3.4	36.5	14	250.1	-80.3	-69.7
MLA	299	107.2	1.1	-8.3	1049	65.8	3.7	30.5	1616	38.6	-12.4	73.8
NA	753	237.7	2.4	-140.1	2230	153.5	8.7	-62.2	587	401.4	-128.9	-172.5
WE1	1825	119.8	1.2	-21.0	3545	130.0	7.4	-37.4	-716	-461.9	148.4	413.6
WE2	342	67.0	0.7	32.3	1022	54.2	3.1	42.7	1135	48.1	-15.4	67.4
JP	959	50.5	0.5	49.0	2279	56.2	3.2	40.6	320	387.7	-124.5	-163.2
EE	2942	71.6	0.7	27.7	6168	81.0	4.6	14.4	4587	90.8	-29.2	38.4
OD	151	127.7	1.3	-29.0	398	100.9	5.7	-6.7	29	1070.2	-343.8	-626.4

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 21 Decomposition of MVA Changes:
371 Iron and Steel (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	13503	110.7	-10.7	0.0	28205	113.4	-13.4	0.0	3735	638.6	-538.6	0.0
TDG	811	92.4	-9.0	16.6	2585	64.5	-7.6	43.2	4374	34.7	-29.3	94.6
TDD	12692	111.9	-10.8	-1.1	25620	118.4	-14.0	-4.4	-639	-3495.2	2947.9	647.3
LIS	19	1010.5	-98.0	-812.5	109	310.1	-36.7	-173.4	290	70.7	-59.6	88.9
LAF	4	130.6	-12.7	-18.0	10	108.4	-12.8	4.4	-10	-81.9	69.1	112.8
MAS	31	48.8	-4.7	55.9	195	20.8	-2.5	81.7	783	8.9	-7.5	98.6
MME	62	55.9	-5.4	49.5	81	109.4	-13.0	3.5	96	69.6	-58.7	89.1
MAF	22	68.8	-6.7	37.9	98	37.0	-4.4	67.3	29	149.8	-126.4	76.5
MLA	673	72.4	-7.0	34.6	2092	55.1	-6.5	51.4	3186	35.3	-29.8	94.5
NA	2726	153.1	-14.8	-38.2	4320	195.3	-23.1	-72.2	-4895	-112.7	95.0	117.6
WE1	2733	203.5	-19.7	-83.8	7952	136.1	-16.1	-20.0	-2735	-280.6	236.7	143.9
WE2	616	36.3	-3.5	67.2	1637	41.2	-4.9	63.7	1258	60.5	-51.0	90.5
JP	3149	30.4	-2.9	72.6	6299	49.6	-5.9	56.3	651	492.9	-415.7	22.8
EE	3257	91.8	-8.9	17.1	4946	134.7	-16.0	-18.7	4625	102.4	-86.4	84.0
OD	211	141.3	-13.7	-27.6	466	131.0	-15.5	-15.5	457	95.7	-80.7	85.0

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 22 Decomposition of MVA Changes:
372 Non-Ferrous Metals (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	5261	78.9	21.1	0.0	10252	93.6	6.4	0.0	6239	121.8	-21.8	0.0
TDG	435	65.5	17.5	16.9	808	85.9	5.9	8.3	935	60.5	-10.8	50.3
TDD	4826	80.1	21.4	-1.5	9444	94.3	6.4	-0.7	5304	132.6	-23.7	-8.9
LIS	32	66.2	17.7	16.1	45	114.2	7.8	-22.0	15	254.9	-45.7	-109.3
LAF	0	0.0	0.0	0.0	-2	-377.2	-25.7	502.9	-4	-86.9	15.6	171.3
MAS	35	28.3	7.6	64.2	11	304.3	20.7	-225.0	141	14.4	-2.6	88.1
MME	53	74.2	19.8	6.0	95	97.3	6.6	-3.9	-117	-61.8	11.1	150.7
MAF	3	220.0	58.7	-178.8	57	22.3	1.5	76.1	21	99.3	-17.8	18.5
MLA	312	65.3	17.4	17.2	602	82.5	5.6	11.9	879	46.7	-8.4	61.6
NA	1424	98.0	26.2	-24.1	2098	146.0	9.9	-55.9	-637	335.0	60.0	375.0
WE1	488	201.9	53.9	-155.9	1622	118.3	8.1	-26.4	571	247.5	-44.3	-103.2
WE2	109	87.1	23.2	-10.3	400	53.5	3.6	42.8	319	66.5	-11.9	45.4
JP	614	40.7	10.9	48.4	1646	43.6	3.0	53.4	368	213.8	-38.3	-75.5
EE	1982	52.0	13.9	34.1	3417	79.1	5.4	15.5	4438	51.2	-9.2	58.0
OD	209	52.8	14.1	33.1	261	110.2	7.5	-17.7	245	88.3	-15.8	27.5

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 23 Decomposition of MVA Changes:
381 Metal Products (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	15763	93.5	6.5	0.0	34850	93.8	6.2	0.0	25833	100.1	-0.1	0.0
TDG	1079	61.9	4.3	33.7	2110	78.4	5.2	16.4	2784	50.1	-0.1	50.0
TDD	14684	95.8	6.7	-2.5	32740	94.8	6.3	-1.1	23049	106.2	-0.1	-6.0
LIS	106	70.6	4.9	24.5	148	120.4	8.0	-28.4	190	68.7	-0.1	31.4
LAF	17	37.2	2.6	60.2	29	65.0	4.3	30.7	-7	-244.7	0.3	344.4
MAS	70	53.4	3.7	42.8	101	96.2	6.4	-2.5	421	18.1	0.0	81.9
MME	58	83.5	5.8	10.7	219	50.4	3.3	46.3	186	60.5	-0.1	39.6
MAF	51	45.8	3.2	51.0	136	47.1	3.1	49.7	91	74.2	-0.1	25.9
MLA	777	61.5	4.3	34.2	1477	80.3	5.3	14.4	1903	52.1	-0.1	48.0
NA	5269	91.3	6.4	2.3	5622	190.9	12.6	-103.6	2167	325.3	-0.4	-224.8
WE1	2064	260.3	18.2	-178.5	6921	147.1	9.7	-56.9	2012	351.9	-0.5	-251.5
WE2	622	63.5	4.4	32.1	2175	44.6	3.0	52.5	1288	81.6	-0.1	18.5
JP	2412	34.9	2.4	62.7	6864	37.6	2.5	59.9	-92	-3329.5	4.3	3425.2
EE	3911	55.8	3.9	40.3	10339	54.0	3.6	42.4	17678	31.2	0.0	68.9
OD	406	113.6	7.9	-21.6	819	119.9	7.9	-27.8	-4	-18013.2	23.0	18090.2

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 24 Decomposition of MVA Changes:
382 Machinery (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	25298	82.2	17.8	0.0	52056	91.4	8.6	0.0	50500	75.2	24.8	0.0
TDC	1072	43.3	9.4	47.3	3470	37.5	3.5	59.0	3531	43.8	14.4	41.8
TDD	24226	83.9	18.2	-2.1	48586	95.3	9.0	-4.2	46969	77.6	25.6	-3.1
LIS	236	36.9	8.0	55.1	262	99.5	9.4	-8.9	442	45.8	15.1	39.1
LAF	2	137.5	29.7	-67.3	6	94.3	8.9	-3.2	-2	-223.5	-73.6	397.1
MAS	33	61.7	13.3	25.0	164	30.8	2.9	66.3	318	21.2	7.0	71.9
MME	0	0.0	0.0	0.0	62	50.9	4.8	44.3	203	15.8	5.2	79.0
MAF	11	45.0	9.7	45.3	23	59.4	5.6	35.0	5	258.2	85.1	-243.3
MLA	790	41.8	9.1	49.1	2953	31.8	3.0	65.2	2565	47.9	15.8	36.4
NA	10957	53.8	11.6	34.5	10990	139.0	13.1	-52.1	9879	109.1	35.9	-45.0
WE1	4646	199.5	43.1	-142.6	12758	141.7	13.3	-55.0	7416	171.1	56.4	-127.4
WE2	196	101.6	22.0	-23.6	1041	41.7	3.9	54.4	568	85.7	28.3	-14.0
JP	3074	43.7	9.5	46.8	10059	37.3	3.5	59.2	4331	103.3	34.1	-37.4
EE	5156	61.2	13.2	25.6	13533	57.9	5.4	36.6	24621	30.4	10.0	59.6
OD	197	239.4	51.8	-191.2	205	439.7	41.4	-381.1	154	341.3	112.5	-353.8

* millions of constant 1975 US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

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Table 25 Decomposition of MVA Changes:
383 Electrical Machinery (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	20126	68.3	31.7	0.0	50590	65.4	34.6	0.0	52707	56.9	43.1	0.0
TDG	1122	46.5	21.5	32.0	2520	56.5	29.9	13.6	4841	28.4	21.5	50.0
TDD	19004	69.6	32.2	-1.9	48070	65.8	34.9	-0.7	47866	59.8	45.3	-5.1
LIS	138	51.2	23.7	25.1	310	60.1	31.8	8.1	325	53.9	40.8	5.3
LAF	2	96.3	44.6	-40.8	12	35.4	18.7	45.9	-2	-260.7	-197.7	558.4
MAS	56	51.6	23.9	24.5	373	20.4	10.8	68.9	1715	7.7	5.9	86.4
MME	59	30.8	14.2	55.0	181	32.6	17.3	50.2	447	17.0	12.9	70.1
MAF	18	59.6	27.6	12.8	45	59.7	31.6	8.6	56	45.2	34.3	20.5
MLA	849	46.1	21.3	32.6	1599	67.0	35.5	-2.5	2300	41.8	31.7	26.5
NA	8447	52.0	24.1	24.0	10124	113.7	60.2	-73.9	7041	121.8	92.4	-114.1
WE1	3083	170.7	79.1	-149.8	14701	71.3	37.8	-9.0	7412	123.7	93.8	-117.5
WE2	612	40.1	18.6	41.3	1752	40.5	21.4	38.1	901	89.7	68.0	-57.8
JP	2358	31.6	14.6	53.7	9313	25.7	13.6	60.7	10610	33.7	25.5	40.8
EE	4294	53.9	25.0	21.1	11638	51.5	27.3	21.2	21895	27.6	20.9	51.5
OD	210	130.7	60.5	-91.2	542	105.1	55.7	-60.8	7	6207.2	4707.2	-10814.4

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 26 Decomposition of MVA Changes:
384 Transport Equipment (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	21540	96.0	4.0	0.0	49525	92.1	7.9	0.0	34325	105.8	-5.8	0.0
TDG	1153	84.5	3.5	12.0	4844	45.7	3.9	50.4	4549	52.1	-2.9	50.8
TDD	20387	96.7	4.0	-0.7	44681	97.1	8.3	-5.5	29776	114.0	-6.2	-7.8
LIS	-67	-301.7	-12.5	414.2	45	699.9	60.1	-659.9	140	126.4	-6.9	-19.5
LAF	1	385.1	15.9	-301.0	19	37.2	3.2	59.6	-2	-422.1	23.1	498.9
MAS	32	195.1	8.1	-103.2	346	35.3	3.0	61.7	936	16.0	-0.9	84.8
MME	45	44.0	1.8	54.2	229	24.1	2.1	73.8	160	53.7	-2.9	49.3
MAF	7	341.9	14.1	-256.0	46	96.3	8.3	-4.6	410	8.5	-0.5	92.0
MLA	1135	58.4	2.4	39.2	4159	40.2	3.4	56.4	2905	65.8	-3.	37.8
NA	8987	91.1	3.8	5.1	7832	233.4	20.0	-153.4	-330	-3506.1	192.	3413.9
WE1	2253	330.3	13.7	-244.0	14514	95.2	8.2	-3.4	3123	348.4	-19.1	-229.3
WE2	766	39.3	1.6	59.1	2160	40.6	3.5	55.9	856	116.6	-6.4	-10.2
JP	3438	21.4	0.9	77.7	7002	41.1	3.5	55.3	3565	91.3	-5.0	13.7
EE	4627	55.4	2.3	42.3	12563	52.4	4.5	43.1	22529	29.2	-1.6	72.4
OD	316	150.1	6.2	-56.4	610	157.7	13.5	-71.3	33	1994.6	-109.4	-1785.2

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 27 Decomposition of MVA Changes:
385 Professional Goods (per cent)

	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	7388	64.8	35.2	0.0	15897	73.5	26.5	0.0	26725	37.8	62.2	0.0
TDG	69	83.7	45.5	-29.2	232	56.7	20.4	22.9	311	40.8	67.1	-7.9
DD	7319	64.6	35.1	0.3	15662	73.8	26.6	-0.3	26414	37.8	62.2	0.1
LIS	18	82.5	44.9	-27.4	-1	-3394.5	-1223.5	4718.0	36	49.0	80.6	-29.6
LAF	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
MAS	3	165.0	89.8	-154.8	45	22.0	7.9	70.1	115	14.2	23.5	62.3
MME	0	0.0	0.0	0.0	1	47.1	17.0	35.9	2	24.8	40.9	34.3
MAF	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
MLA	48	78.5	42.7	-21.2	187	46.6	16.8	36.5	158	58.5	96.2	-54.7
NA	2689	55.2	30.0	14.7	3120	122.2	44.0	-66.2	2805	99.2	163.3	-162.5
WE1	684	148.9	81.0	-129.9	1603	129.0	46.5	-75.5	1084	137.2	225.8	-263.0
WE2	37	91.4	49.7	-41.2	130	58.0	20.9	21.1	74	97.3	160.2	-157.5
JP	243	87.0	47.3	-34.4	972	49.1	17.7	33.2	4941	10.1	16.4	73.6
EE	3632	53.9	29.3	16.8	9757	51.9	18.7	29.4	17428	29.2	48.1	22.7
OD	34	65.5	35.6	-1.2	83	65.3	23.5	11.1	82	60.0	98.7	-58.6

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

Appendix I

Table 28 Decomposition of MVA Changes:
390 Other Industries (per cent)

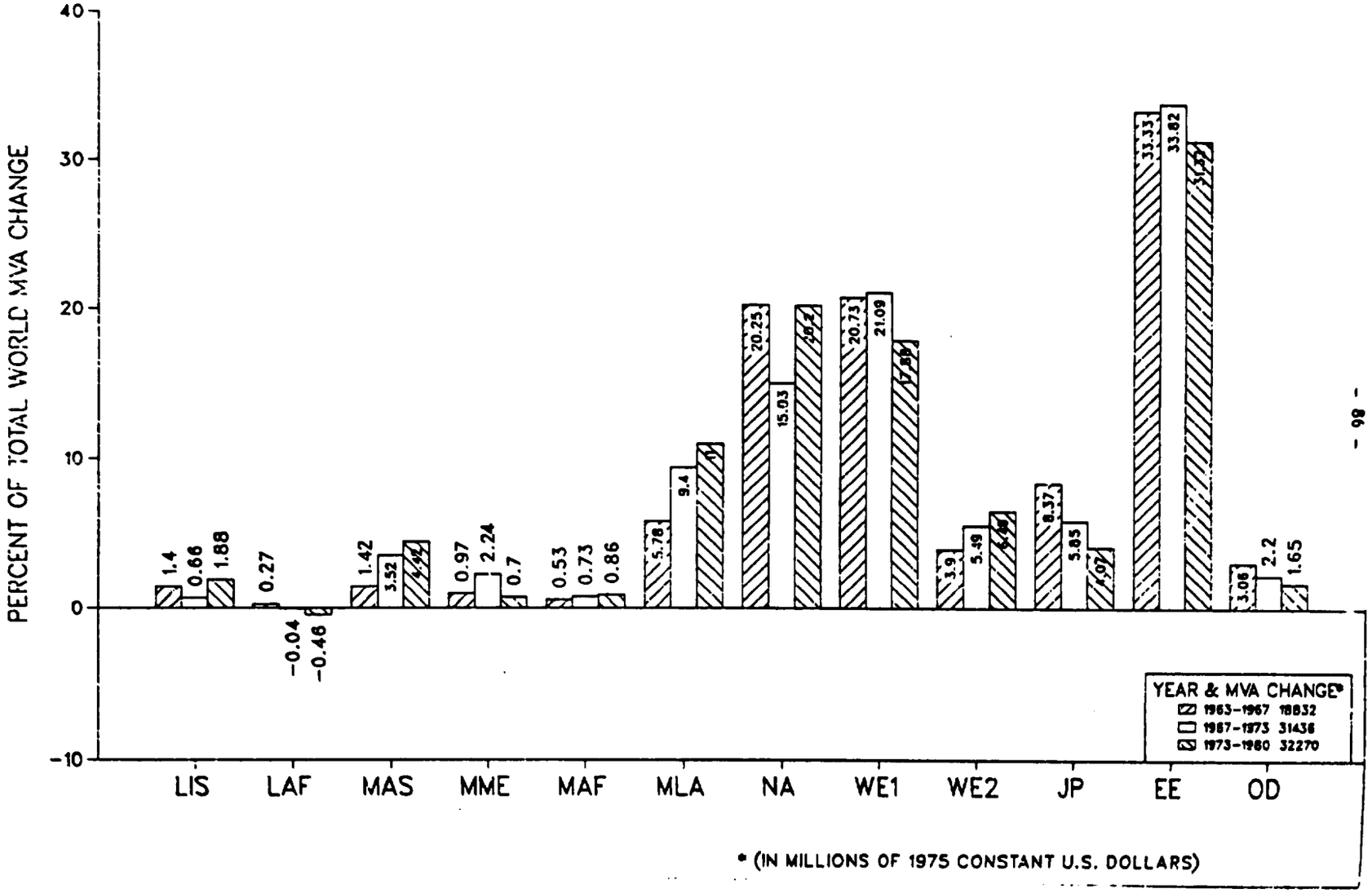
	1963-1967				1967-1973				1973-1980			
	ΔMVA*	g	i	r	ΔMVA*	g	i	r	ΔMVA*	g	i	r
World	4009	101.7	-1.7	0.0	8634	102.8	-2.8	0.0	10557	64.6	35.4	0.0
TDG	405	74.3	-1.2	26.9	221	319.8	-8.8	-211.0	876	48.8	26.7	24.5
TDD	3604	104.8	-1.8	-3.0	8413	97.1	-2.7	5.5	9681	66.0	36.2	-2.2
LIS	200	90.5	-1.5	11.0	-168	-240.8	6.6	334.1	298	57.5	31.5	11.0
LAF	16	17.2	-0.3	83.1	30	40.9	-1.1	60.3	-12	-115.9	-63.5	279.4
MAS	18	111.5	-1.9	-9.7	57	75.3	-2.1	26.8	103	35.7	19.6	44.8
MME	20	15.1	-0.3	85.1	27	54.1	-1.5	47.4	22	65.5	35.9	-1.3
MAF	4	151.3	-2.5	-48.8	18	68.1	-1.9	33.8	25	43.7	23.9	32.4
MLA	147	59.9	-1.0	41.0	257	85.7	-2.4	16.7	440	40.9	22.4	36.8
NA	821	122.8	-2.1	-20.8	1750	120.9	-3.3	-17.6	364	425.4	233.2	-558.6
WE1	599	136.0	-2.3	-33.7	1144	146.7	-4.0	-42.7	838	139.4	76.4	-115.8
WE2	148	44.6	-0.7	56.1	276	66.3	-1.8	35.5	351	47.0	25.7	27.3
JP	436	225.2	-3.8	-121.5	1045	180.7	-5.0	-75.8	609	205.9	112.9	-218.8
EE	1519	55.9	-0.9	45.1	4024	53.9	-1.5	47.5	7459	28.7	15.7	55.5
OD	81	70.3	-1.2	30.9	174	78.0	-2.1	24.1	60	191.2	104.8	-196.0

* millions of constant US dollars,
g = global effect, i = industry effect, r = regional effect,

Source: UNIDO Data Base

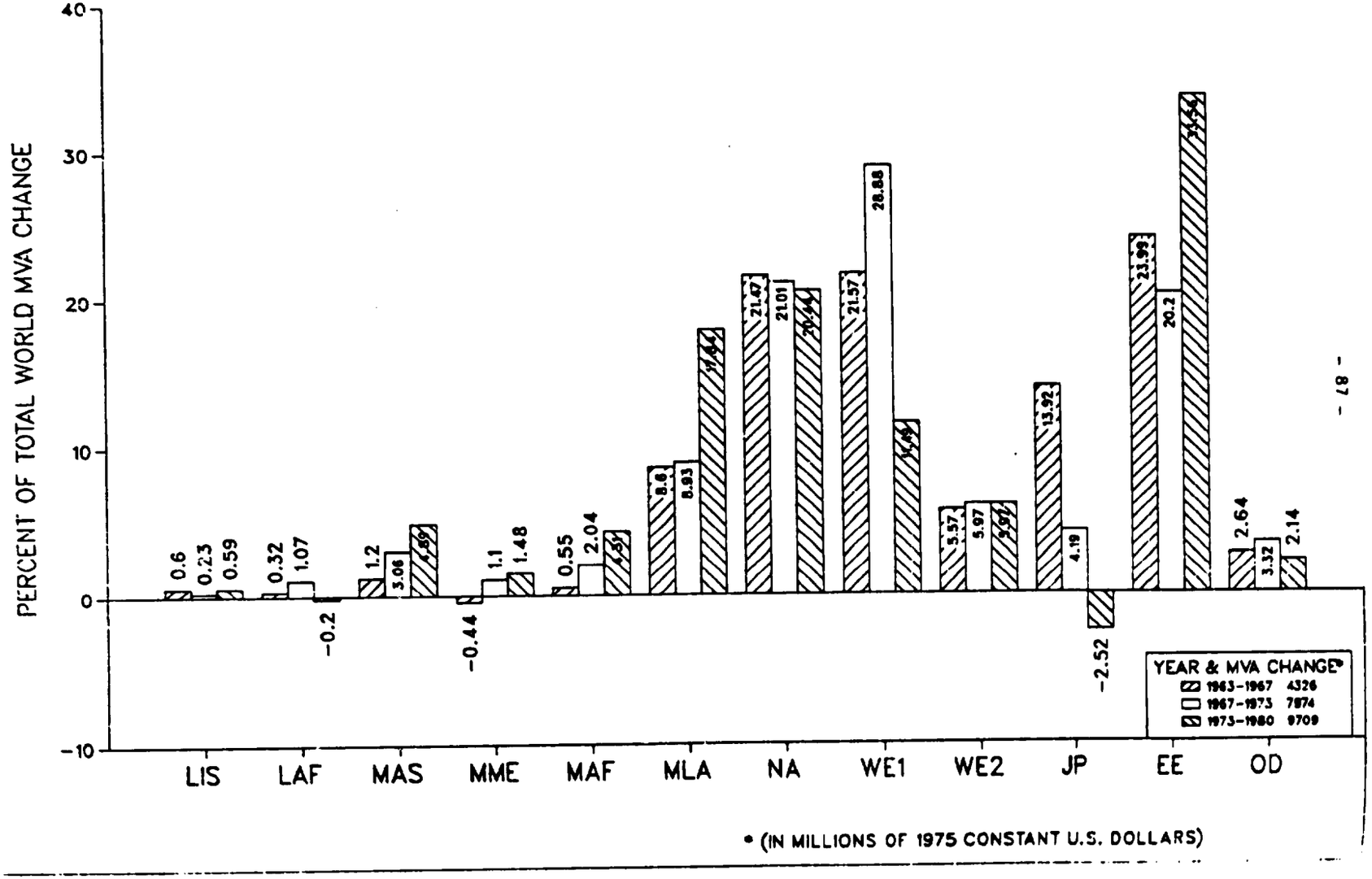
Appendix II
Figure 1

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
311 FOOD PRODUCTS



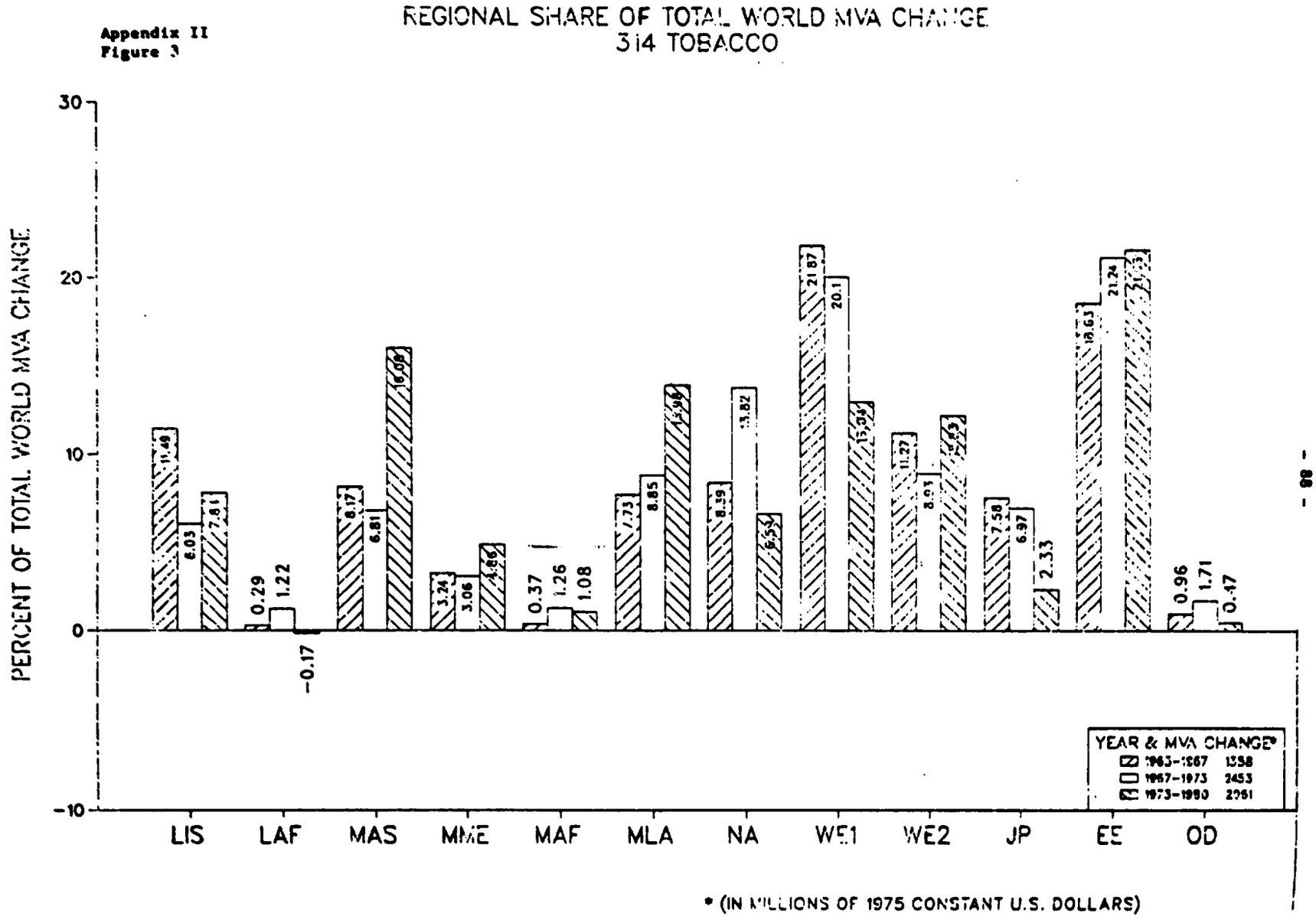
Appendix II
Figure 2

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
313 BEVERAGES



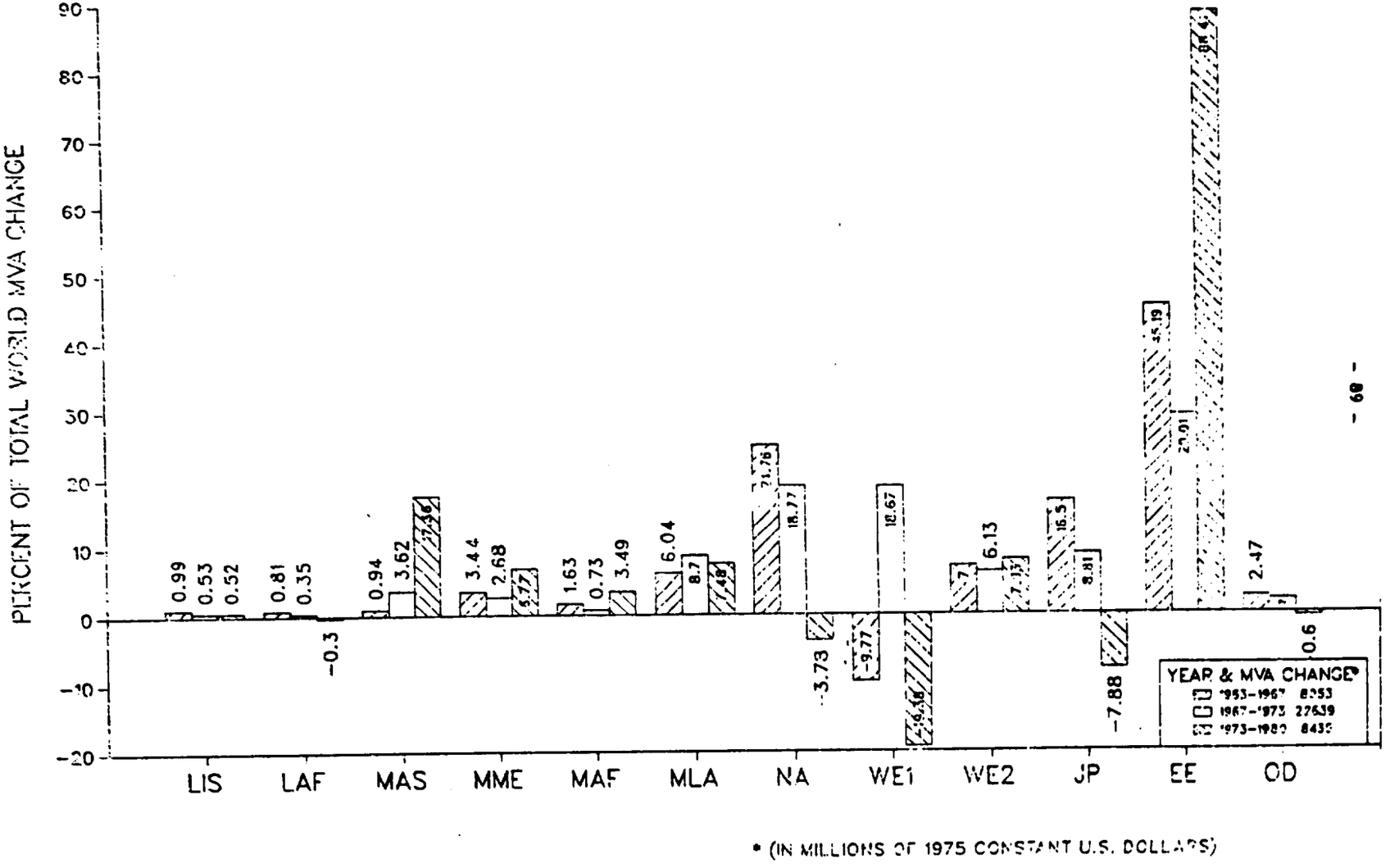
* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 3



Appendix II
Figure 4

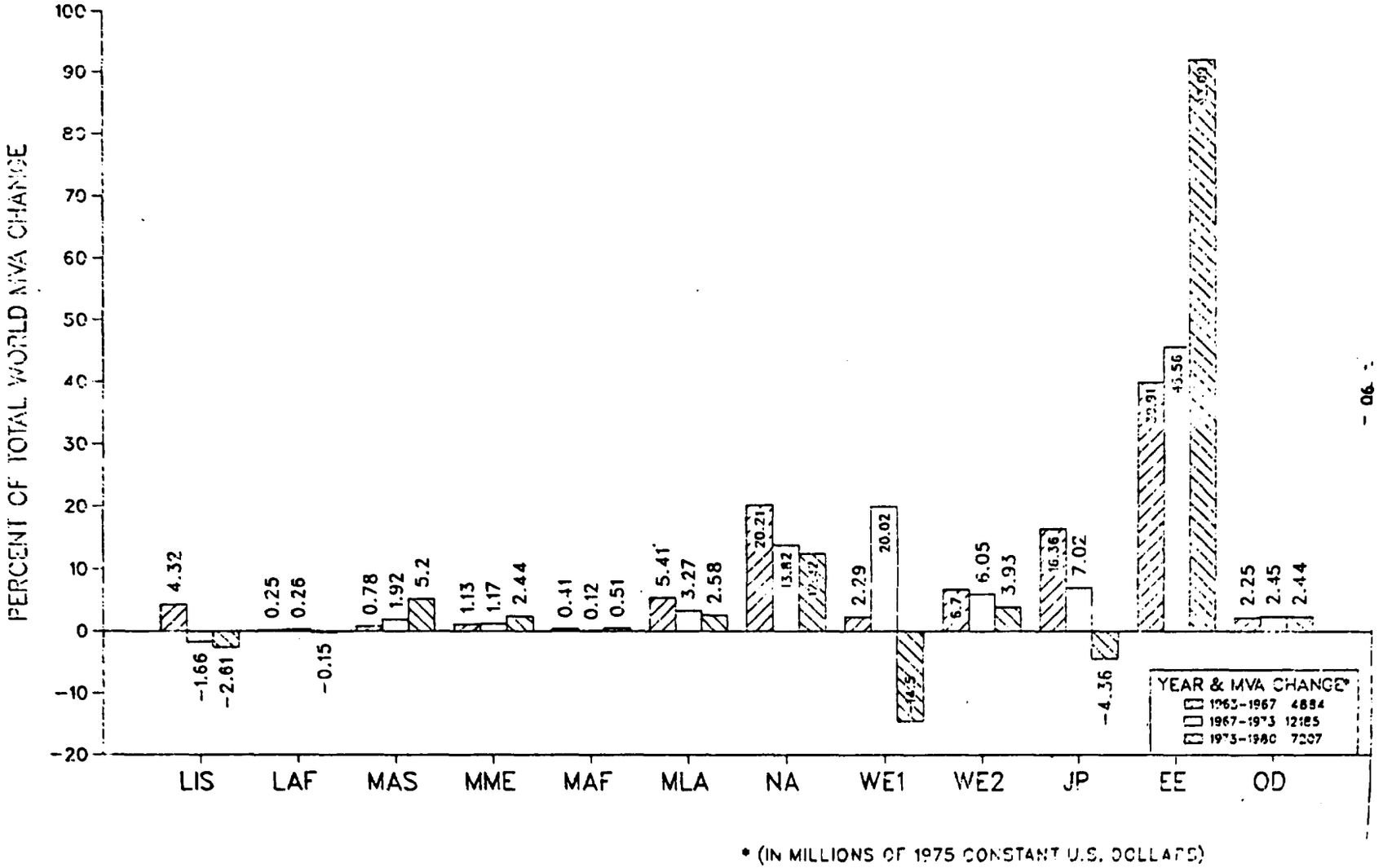
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
321 TEXTILES



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 5

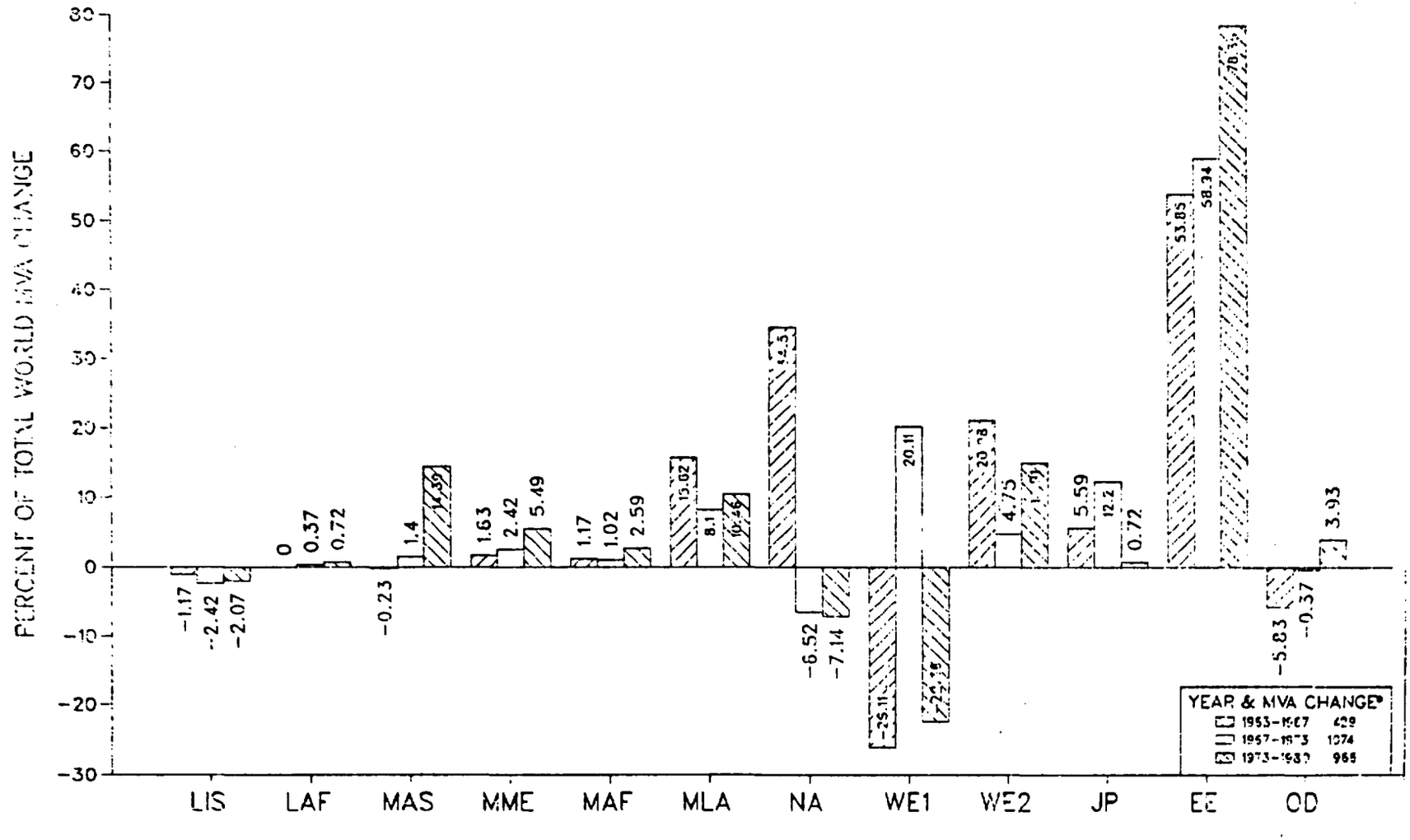
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
322 WEARING APPAREL



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 6

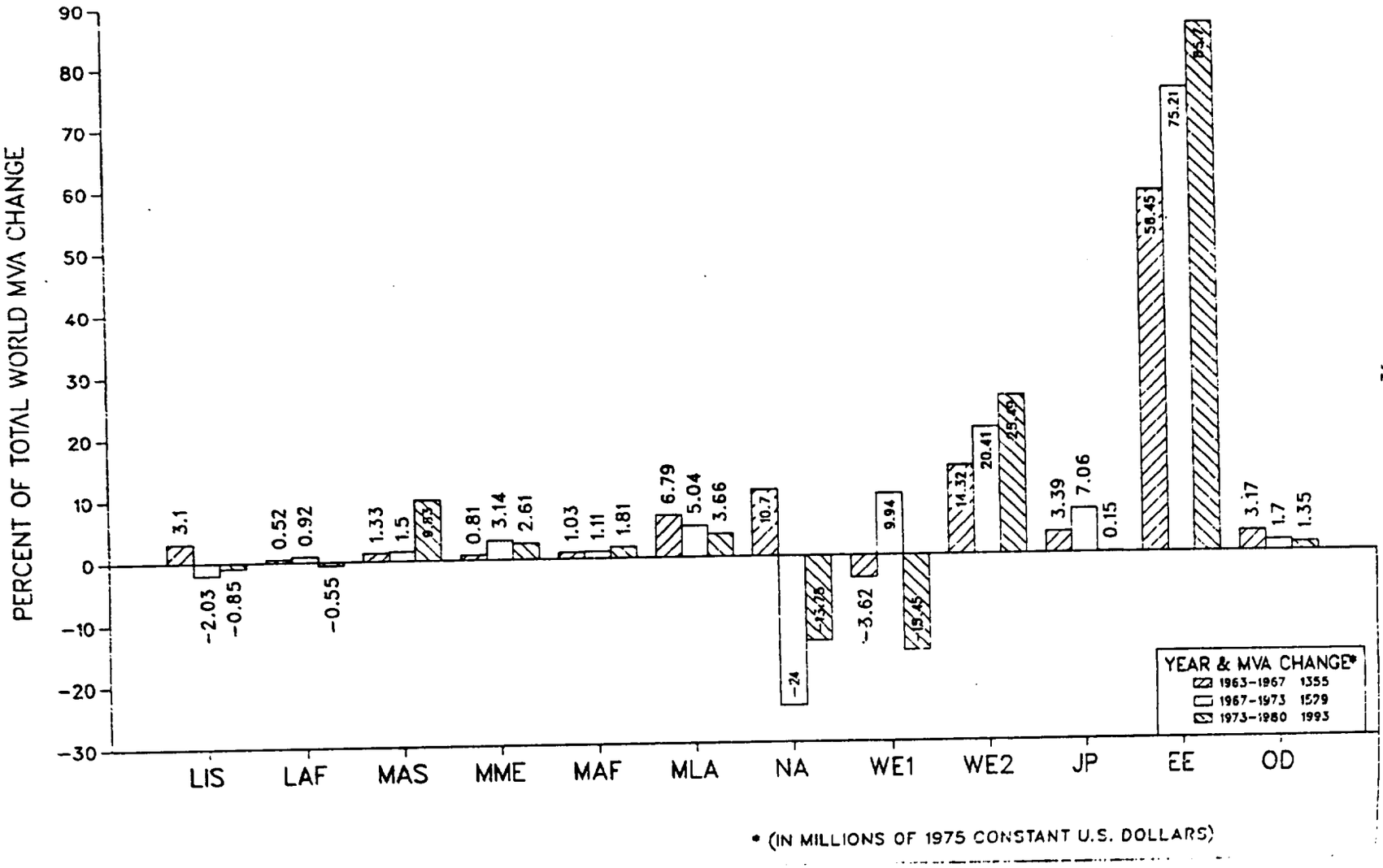
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
323 LEATHER & PRODUCTS



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 7

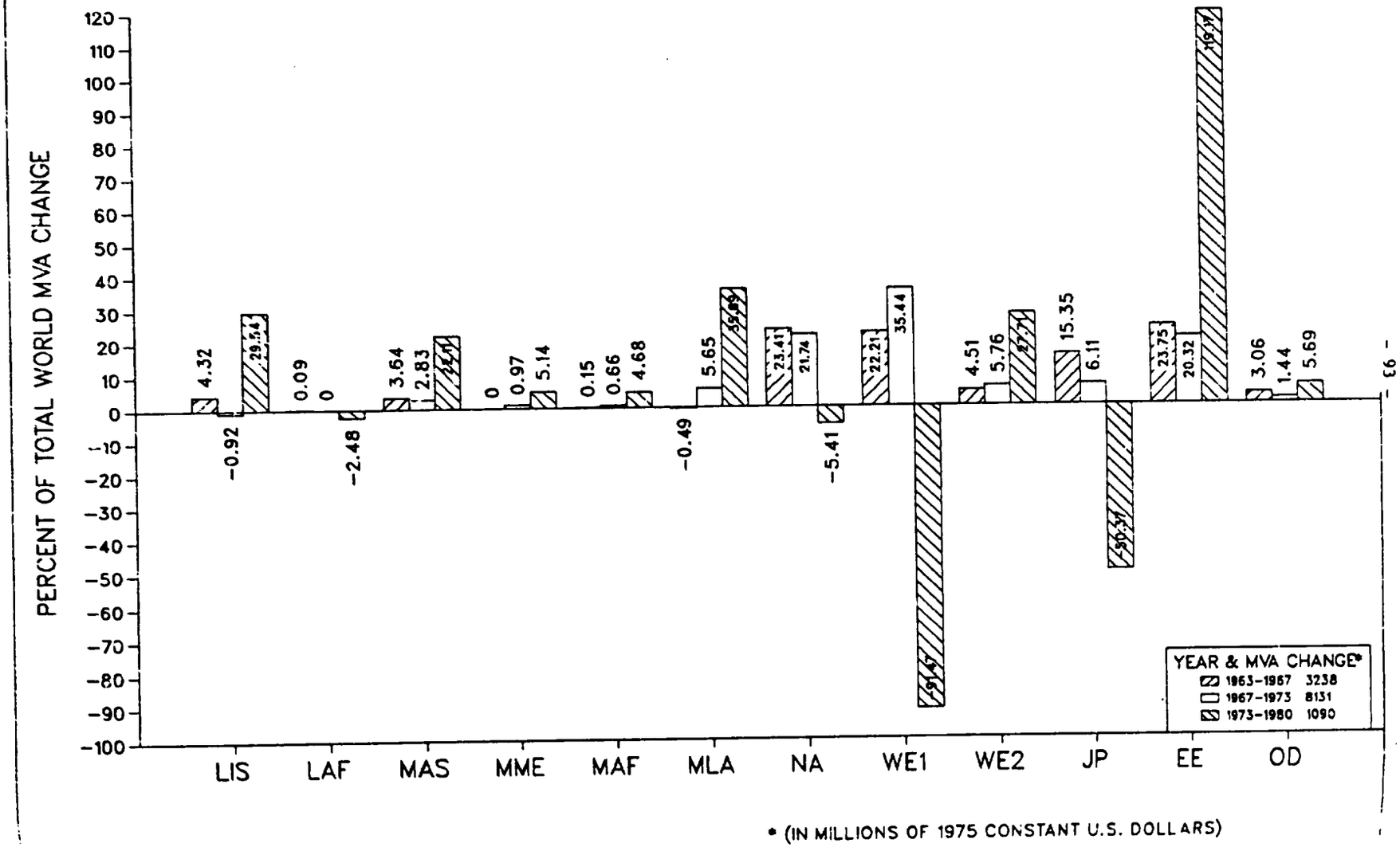
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
324 FOOTWEAR



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 8

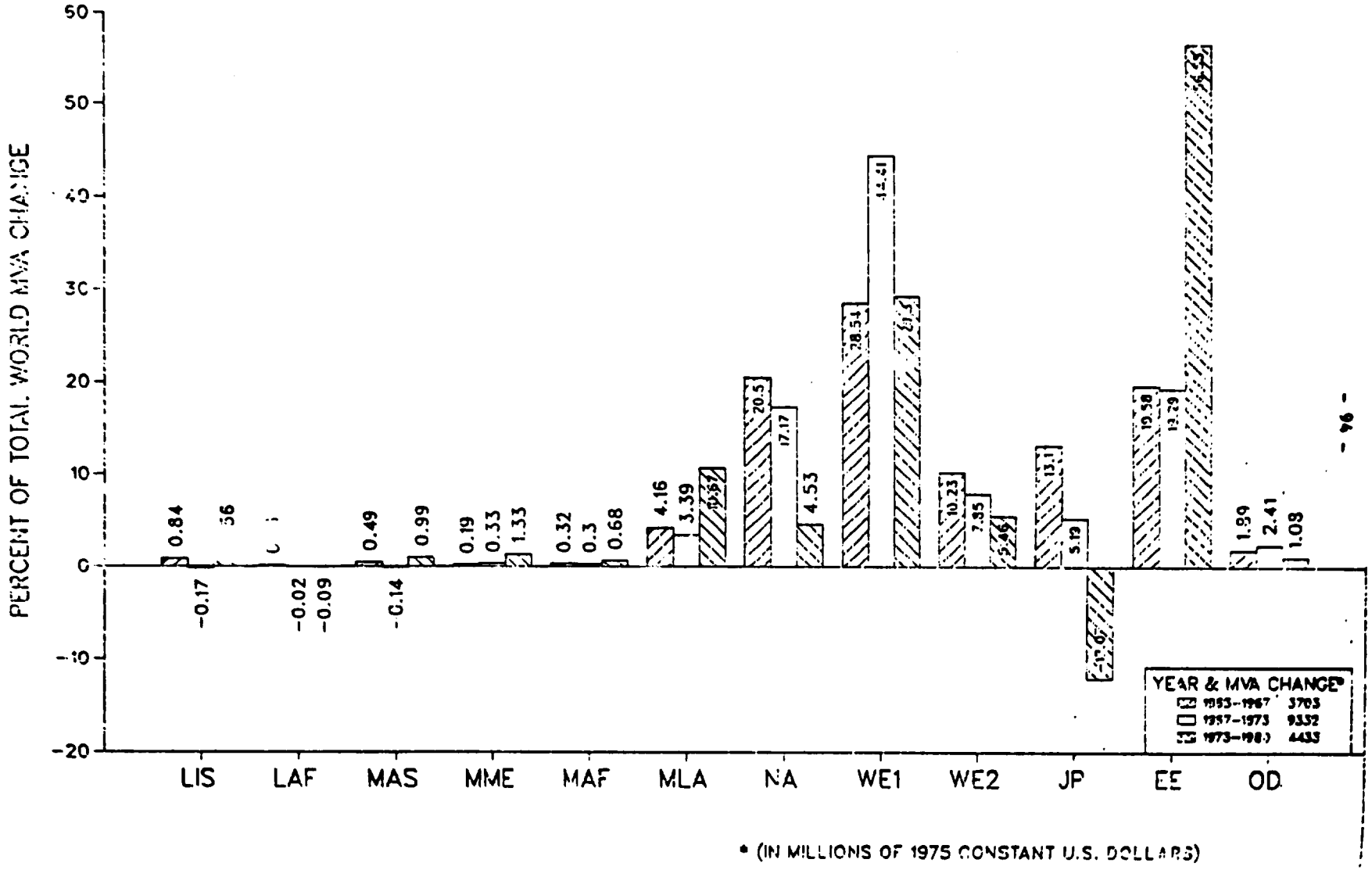
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
331 WOOD PRODUCTS



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

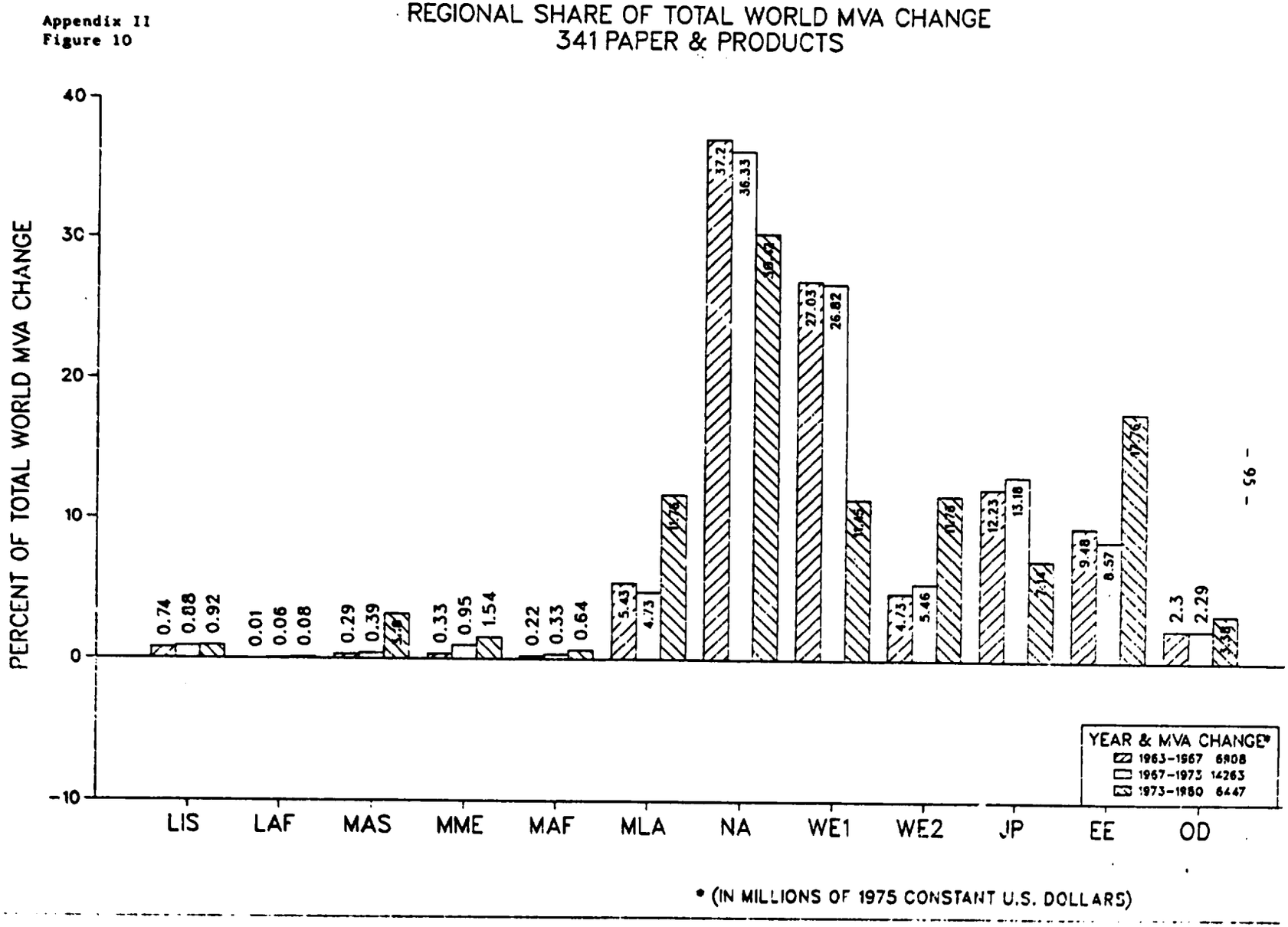
Appendix II
Figure 9

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
332 FURNITURE & FIXTURES

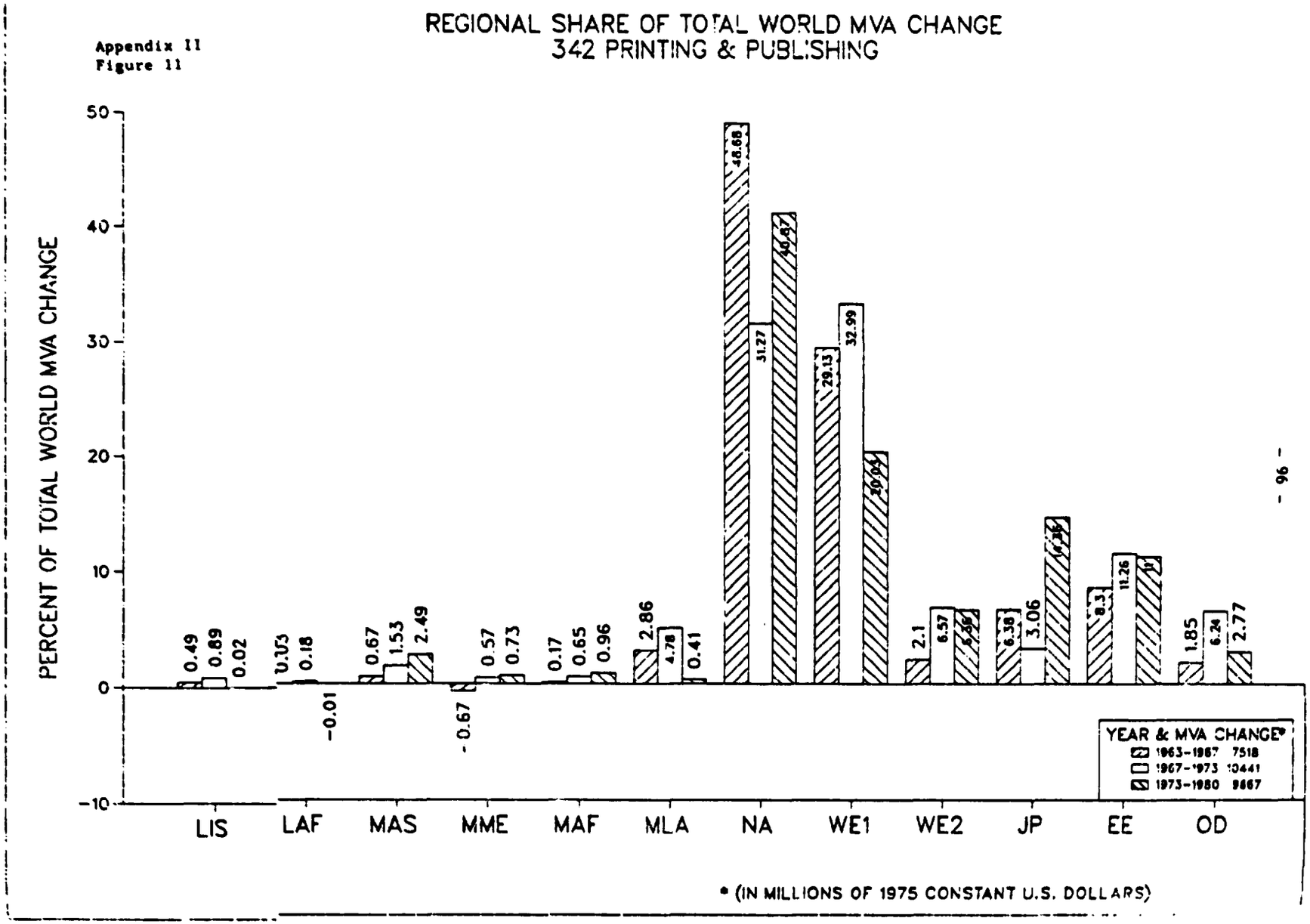


* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 10

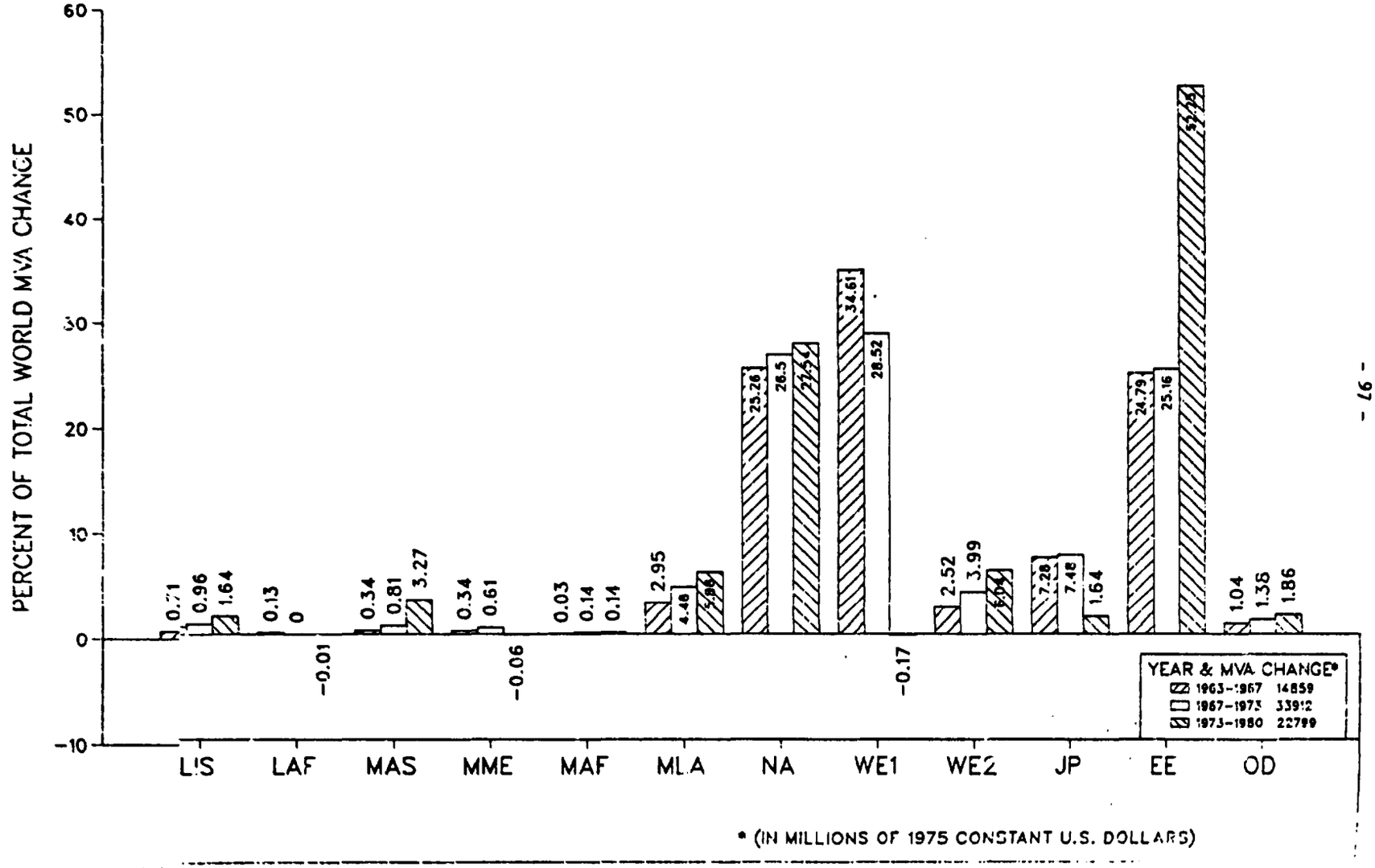


Appendix II
Figure 11



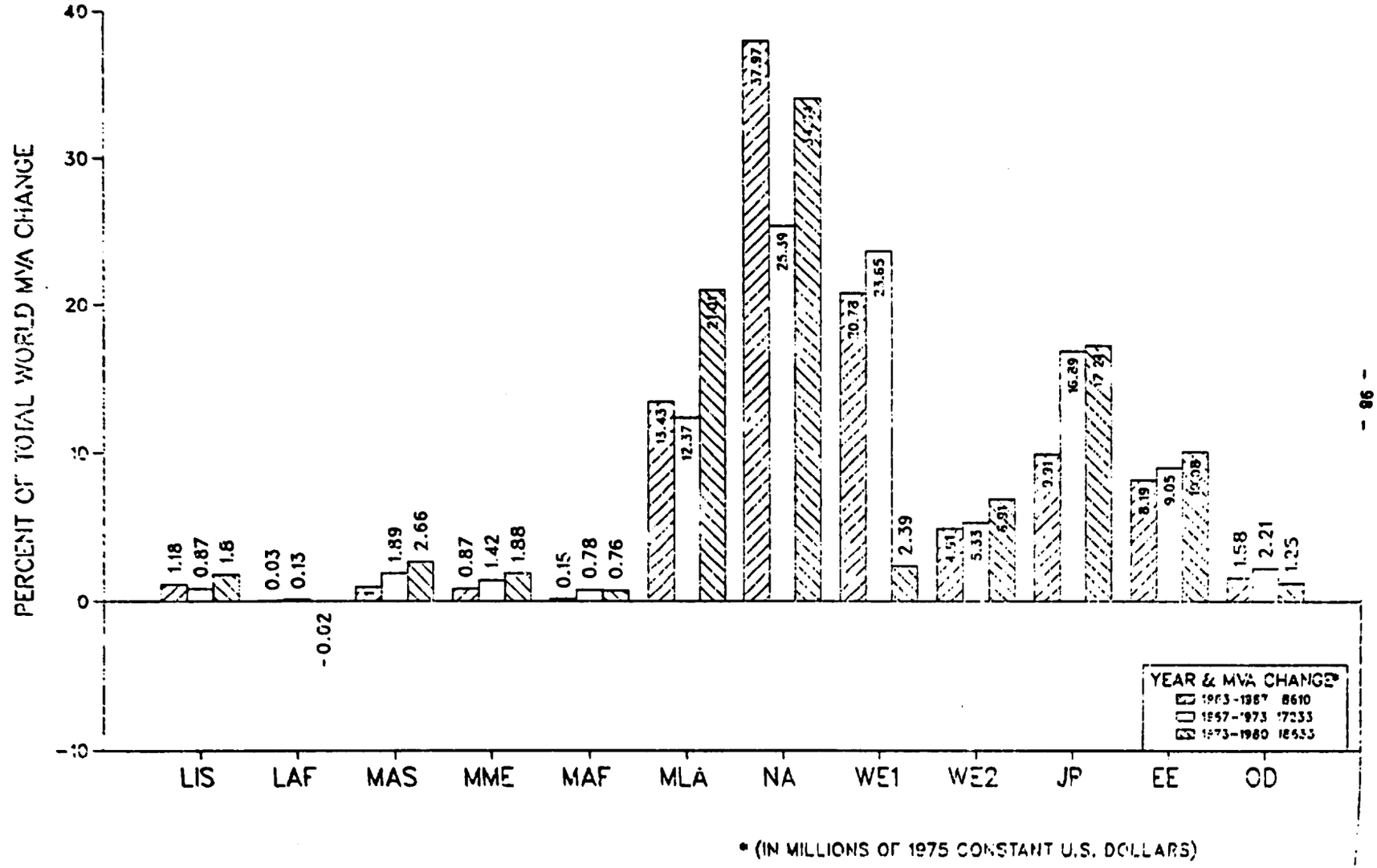
Appendix II
Figure 12

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
351 INDUSTRIAL CHEMICALS



Appendix II
Figure 13

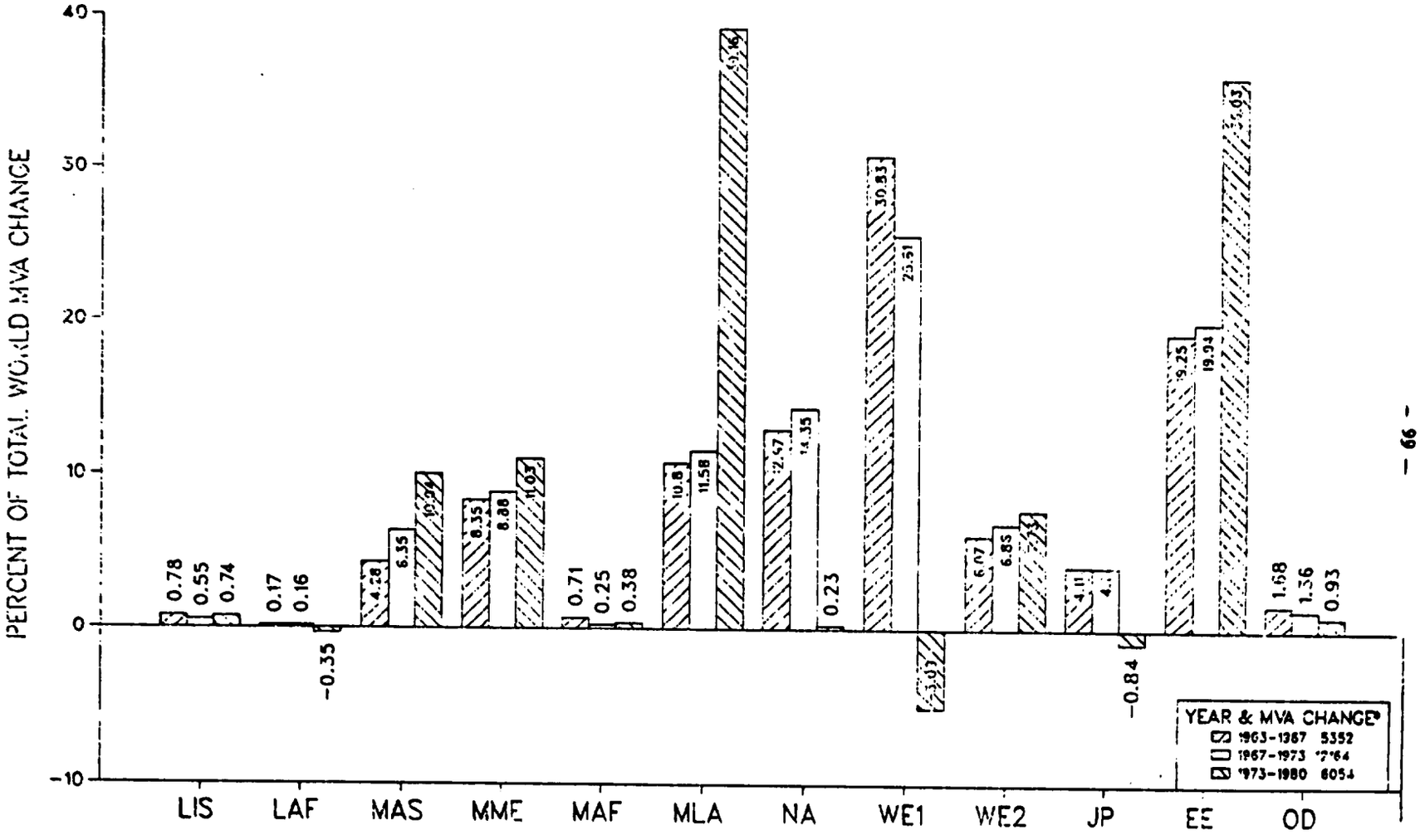
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
352 OTHER CHEMICAL PRD.



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 14

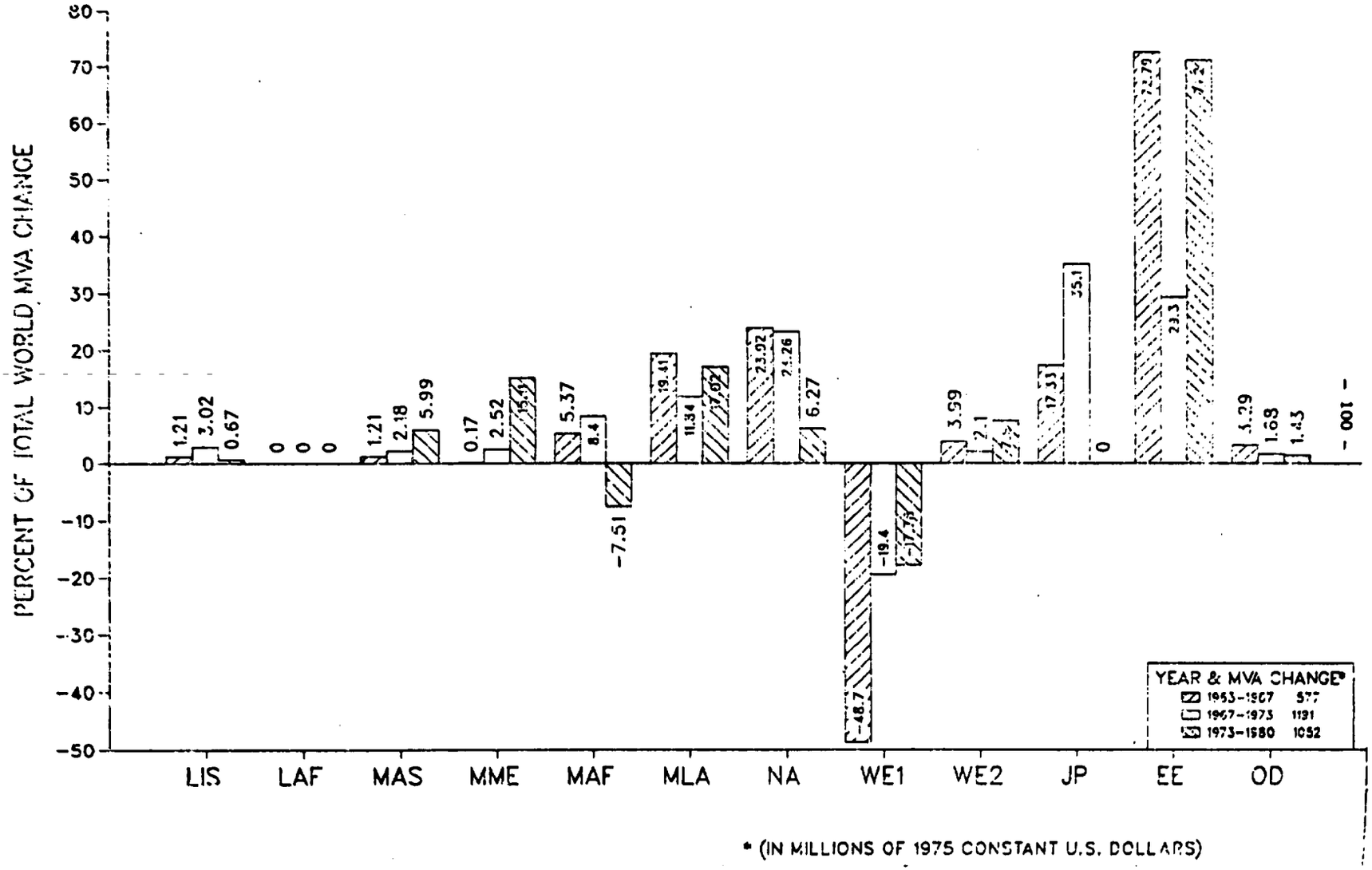
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
353 PETROLEUM REFINERY



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 15

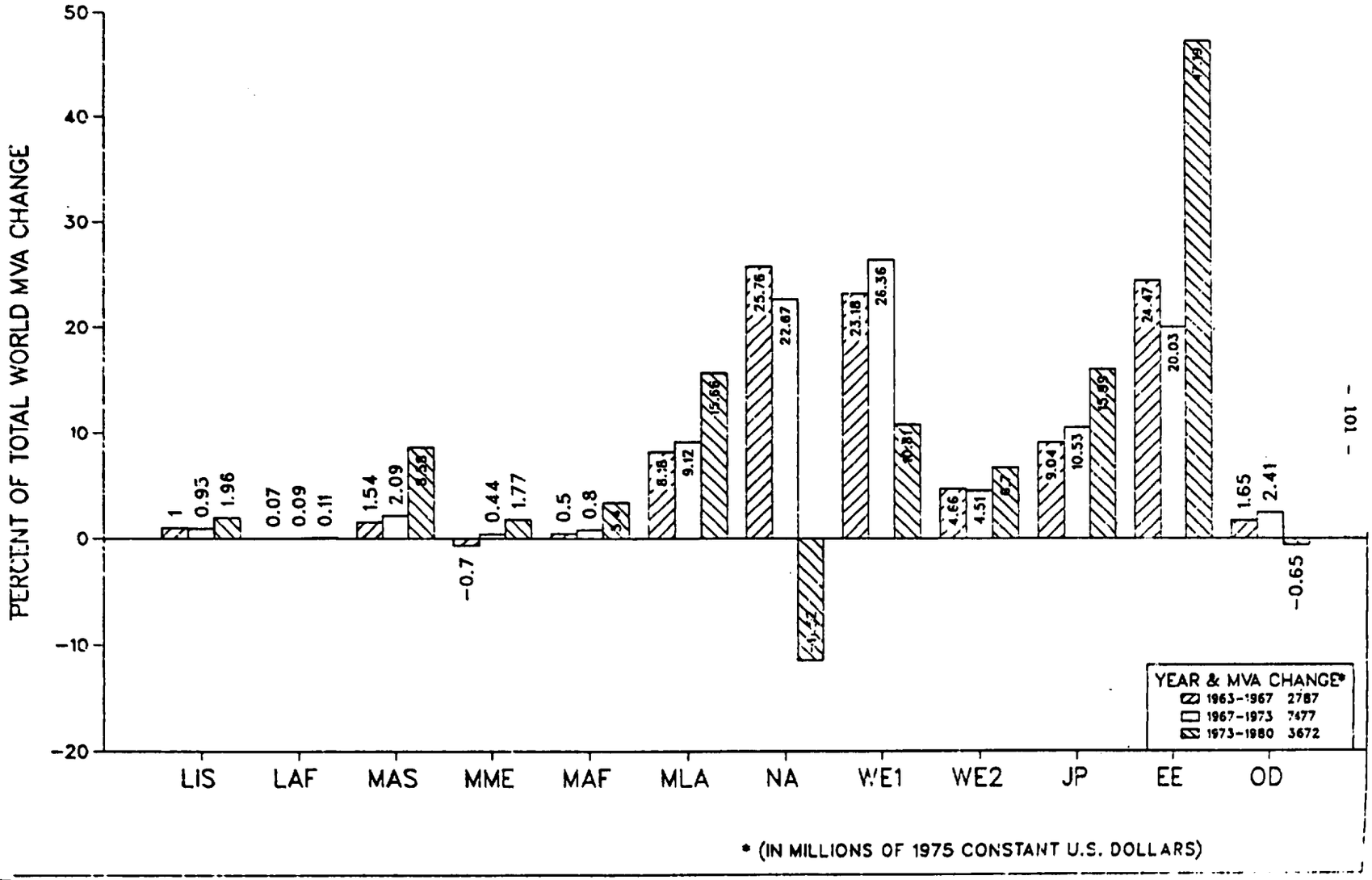
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
354 PETROL. & COAL PRD.



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

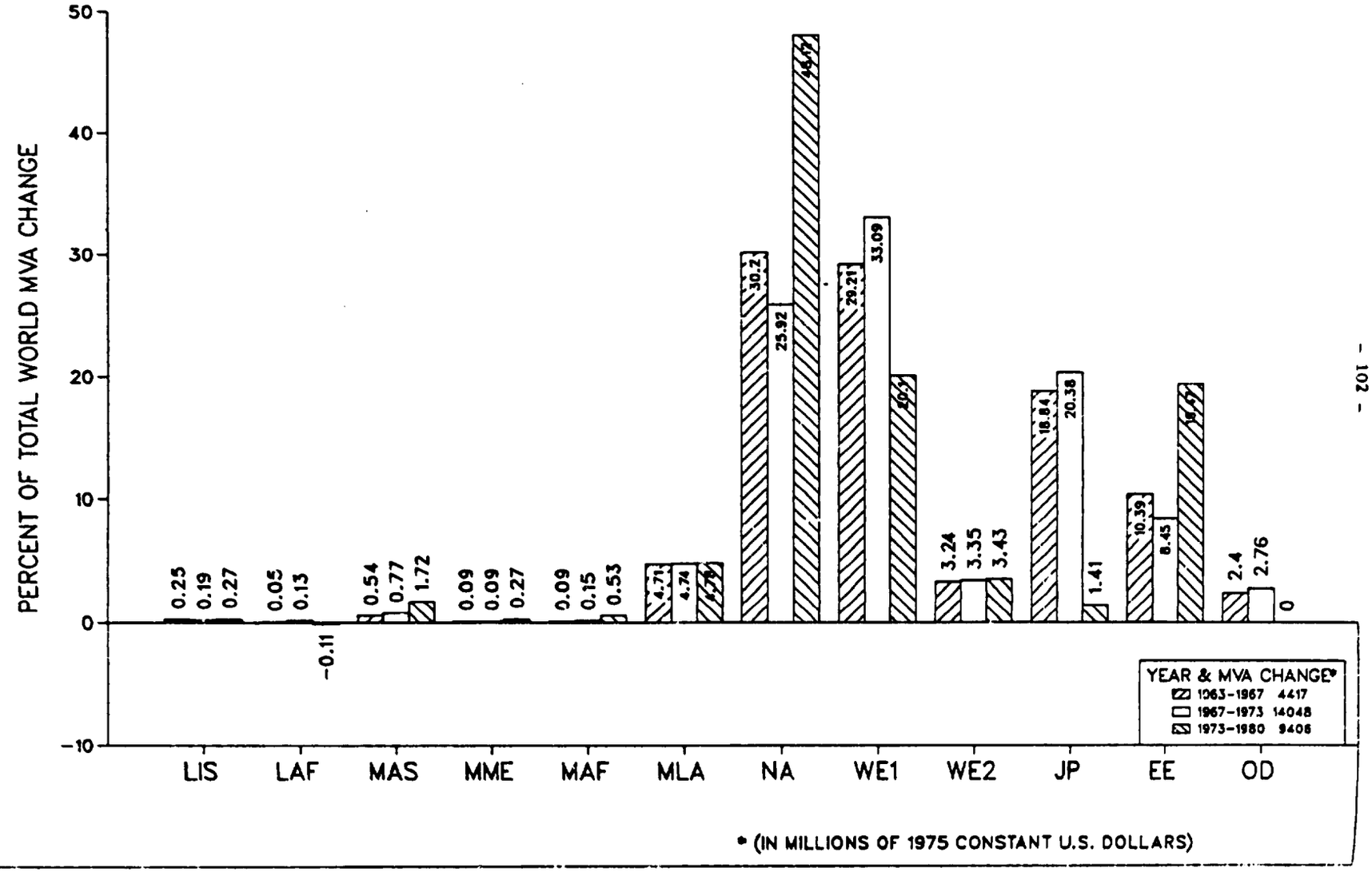
Appendix II
Figure 16

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
355 RUBBER PRODUCTS



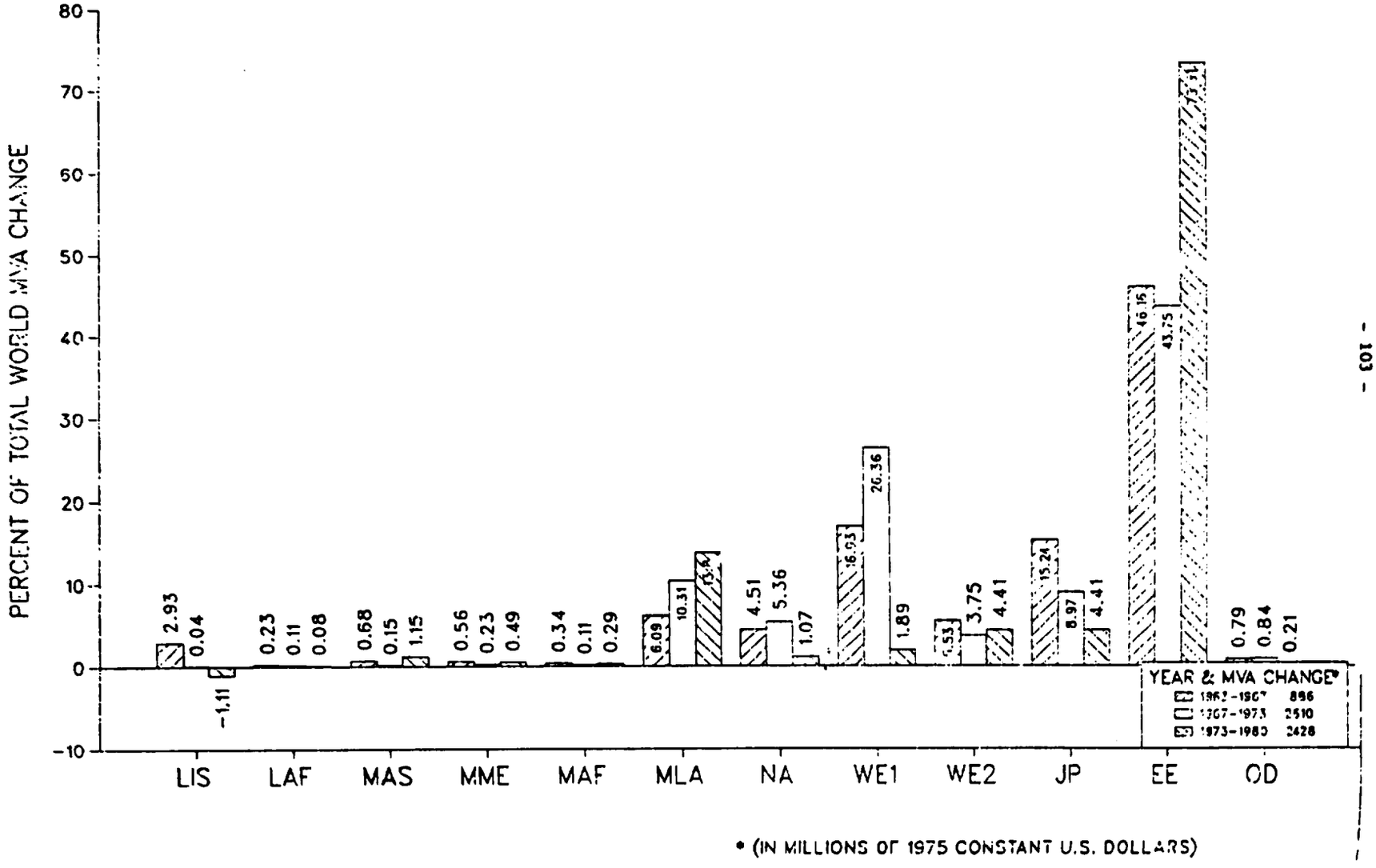
Appendix II
Figure 17

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
356 PLASTIC PRODUCTS



Appendix II
Figure 18

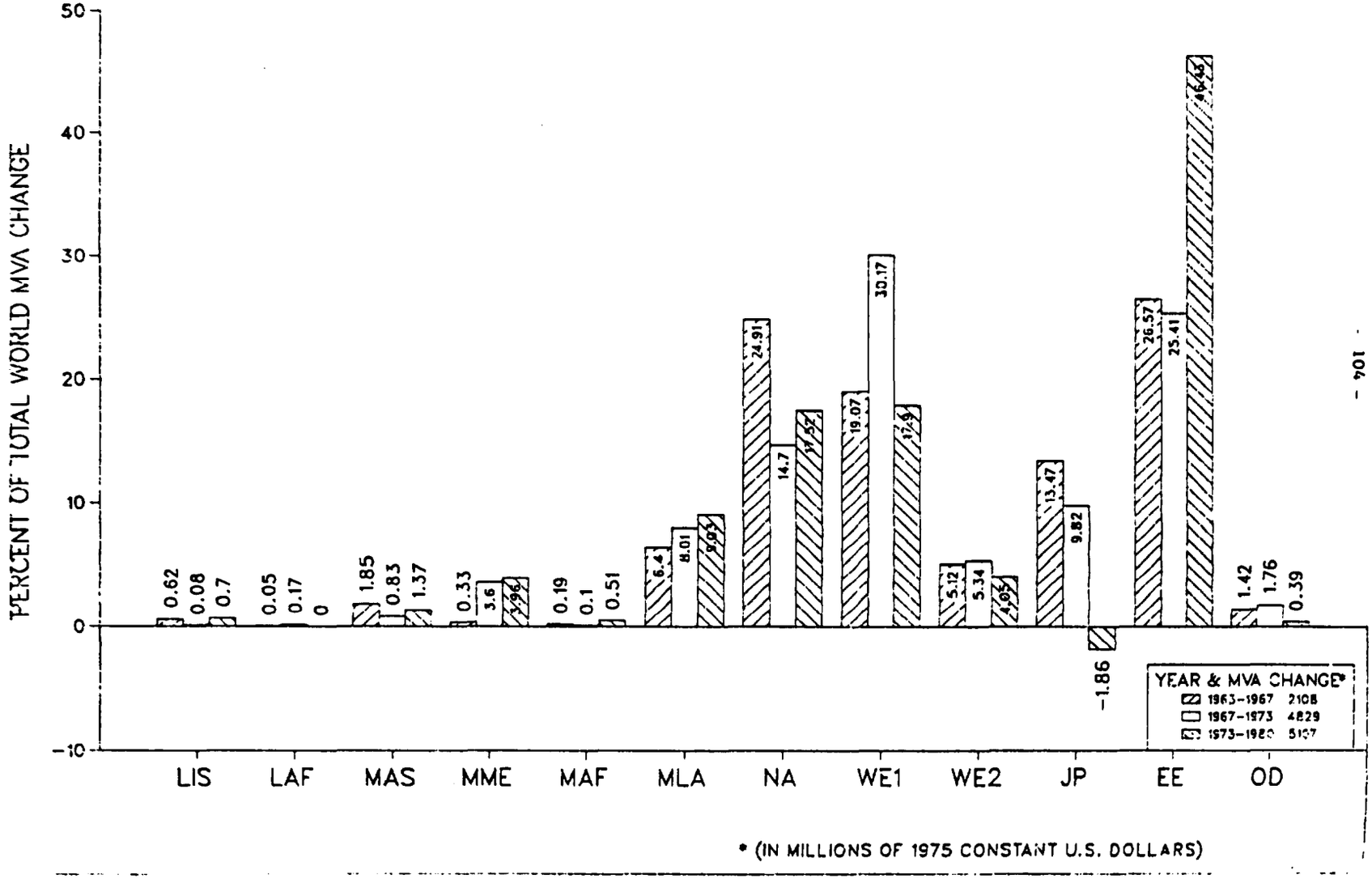
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
361 POTTERY, CHINA, ETC.



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

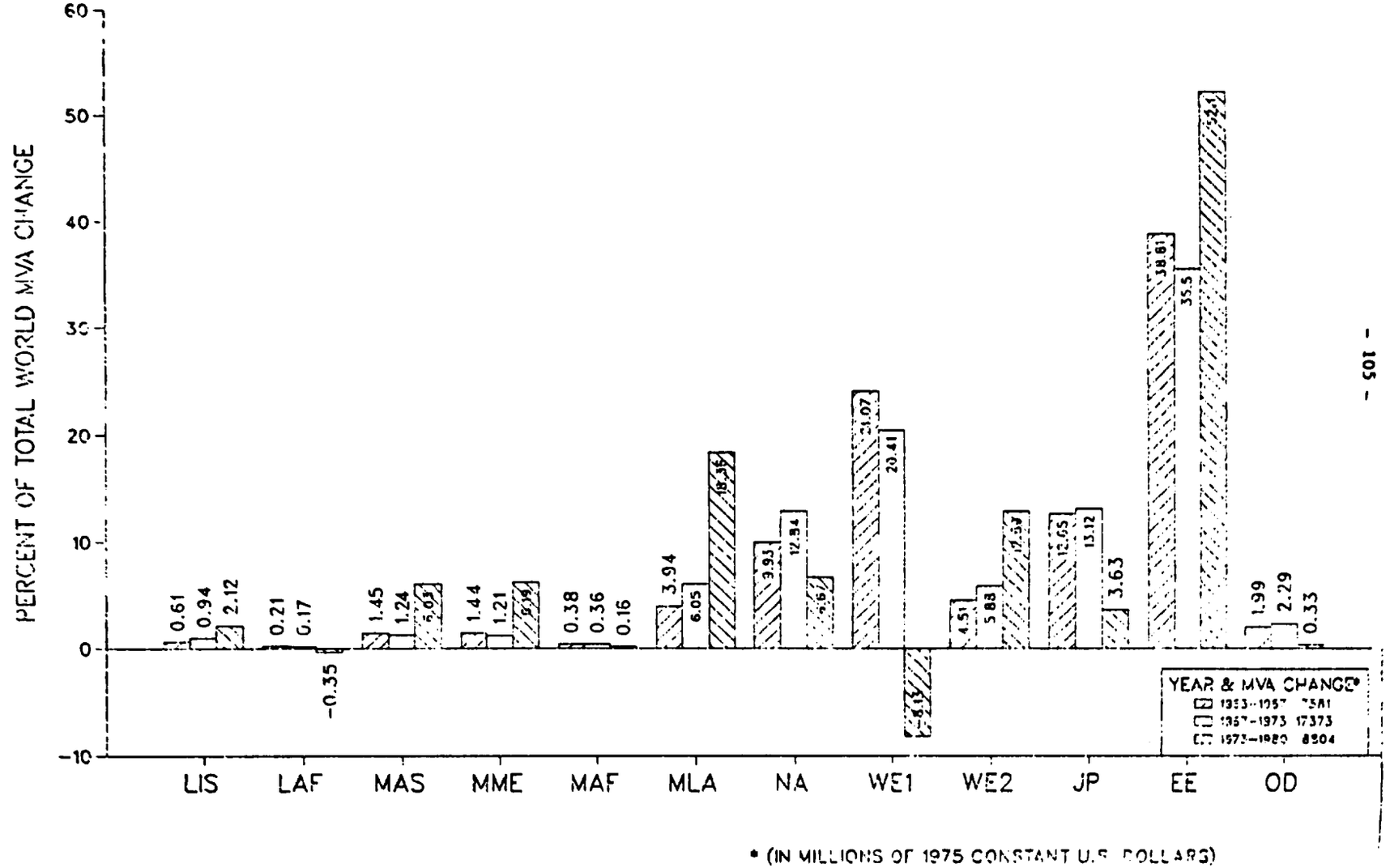
Appendix II
Figure 19

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
362 GLASS & PRODUCTS



Appendix II
Figure 20

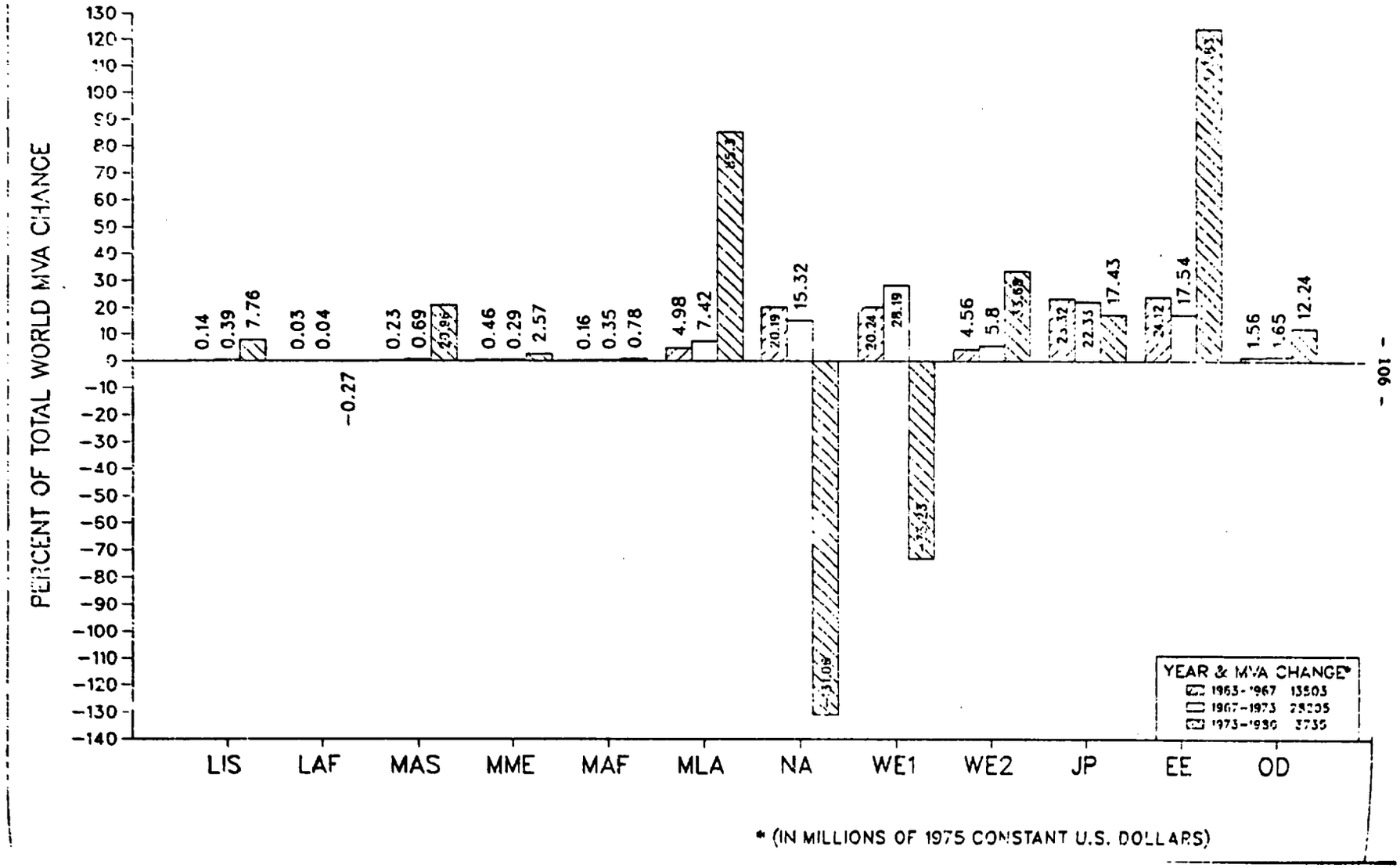
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
369 NON--METAL PRODUCTS



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 21

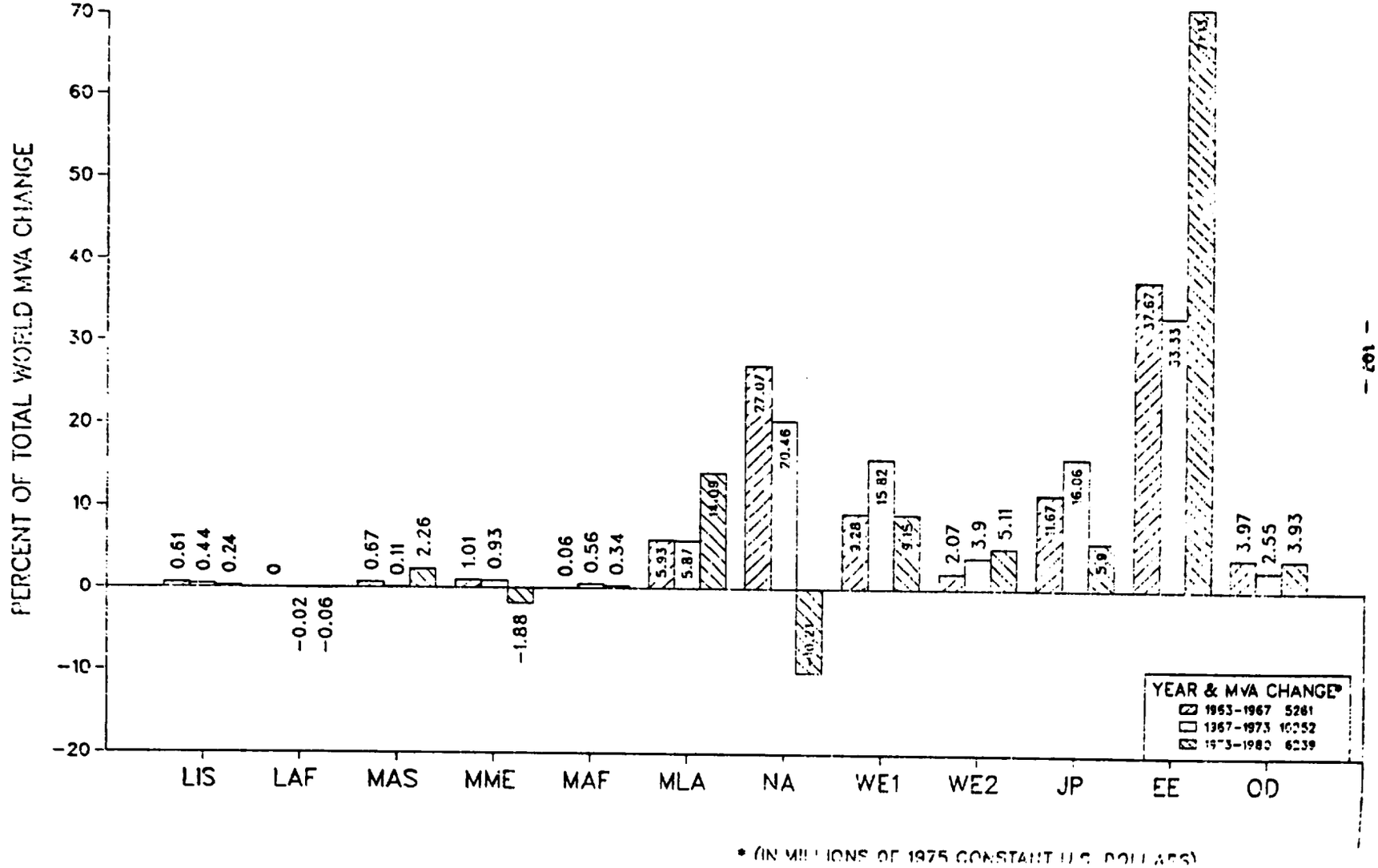
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
371 IRON & STEEL



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 22

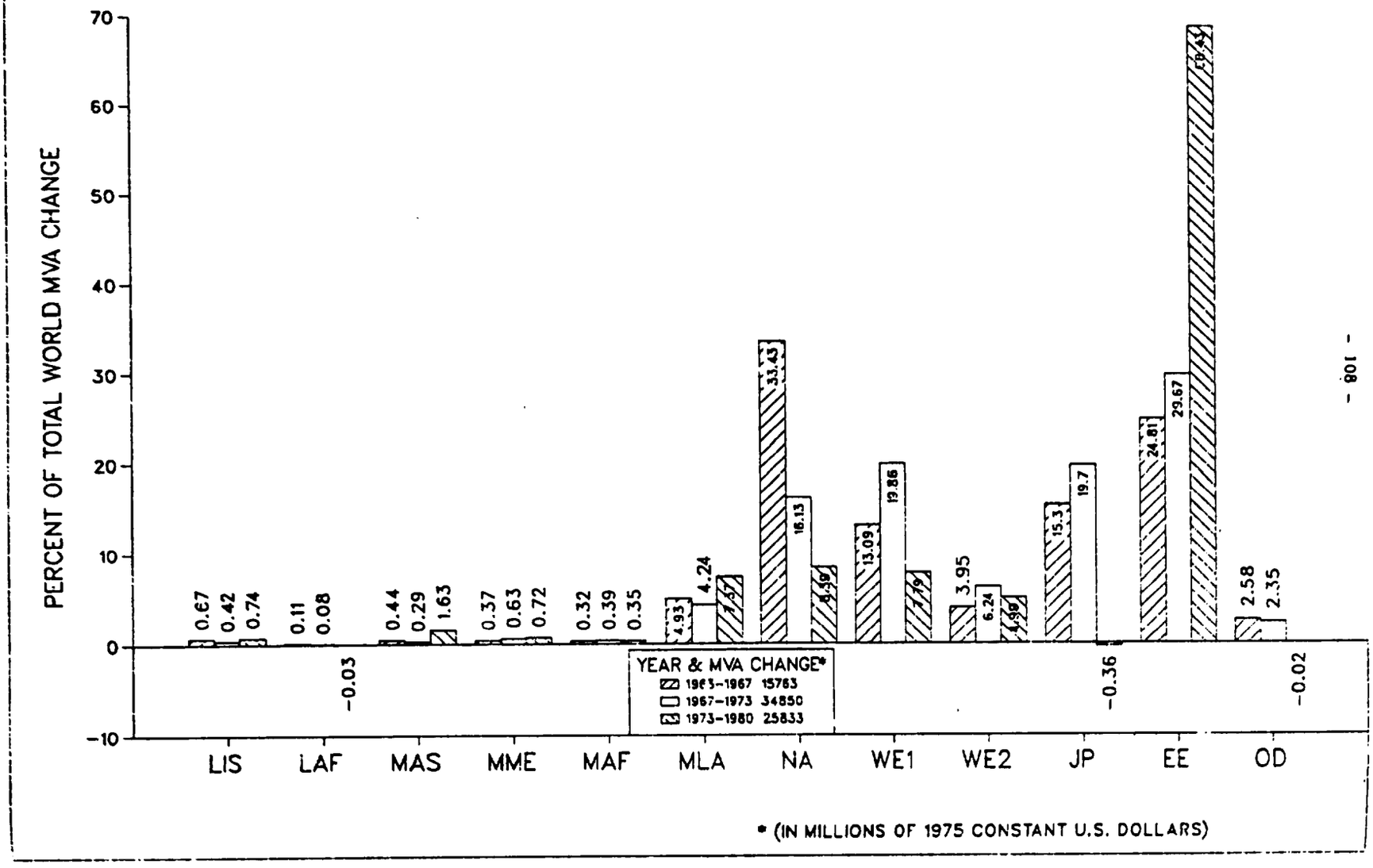
REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
372 NON-FERROUS METALS



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

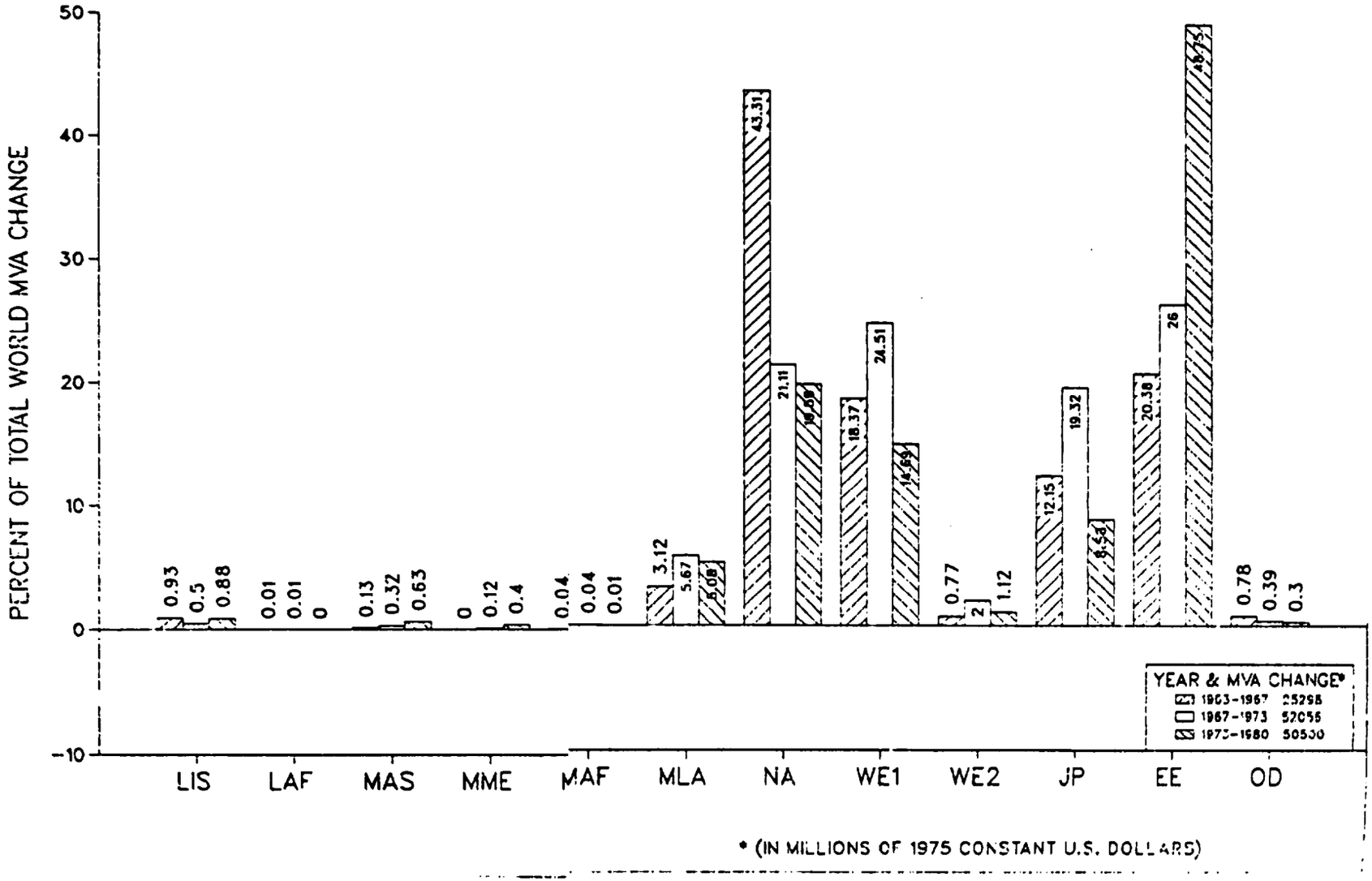
Appendix II
Figure 23

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
381 METAL PRODUCTS



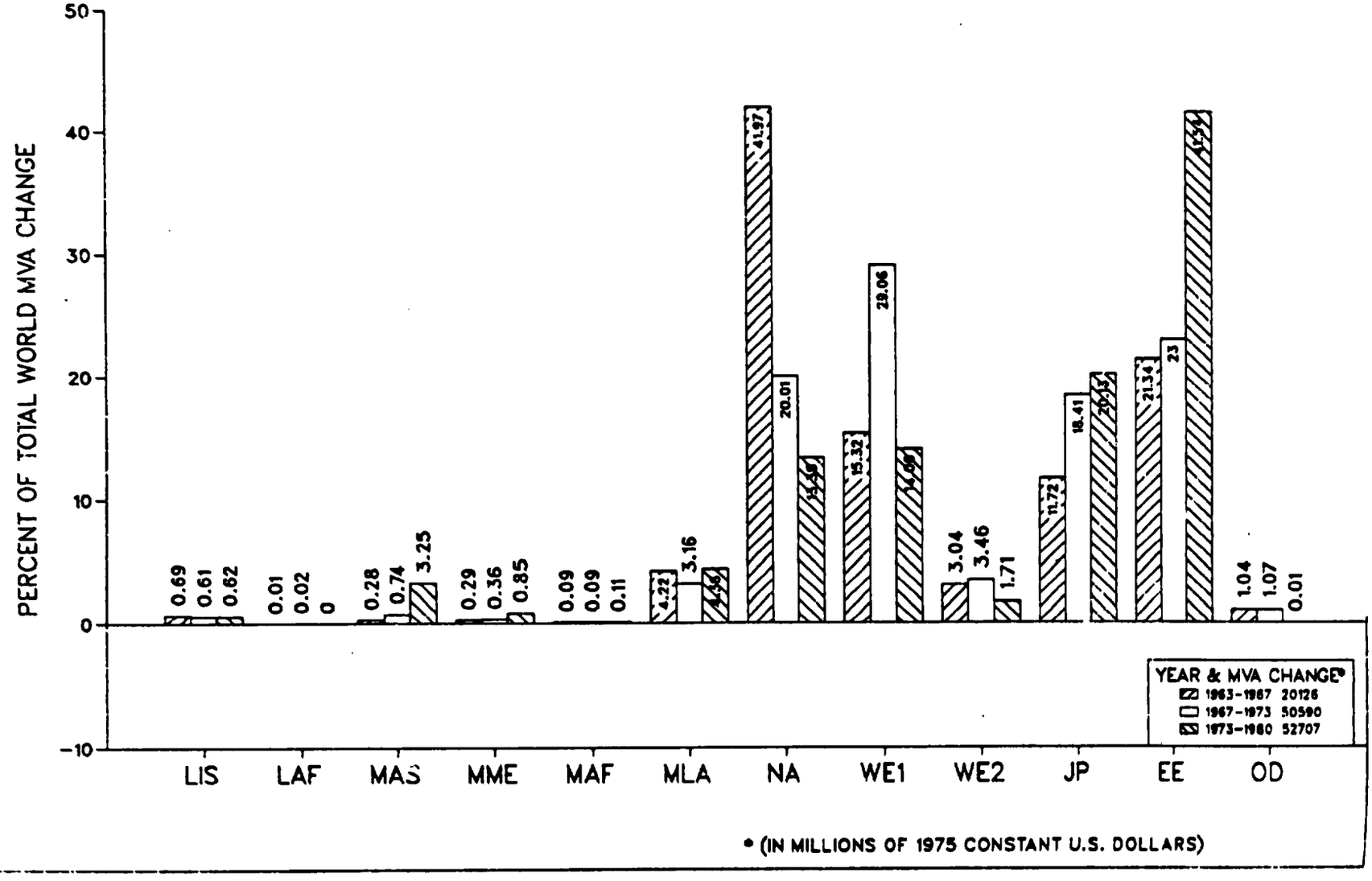
Appendix II
Figure 24

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
382 MACHINERY



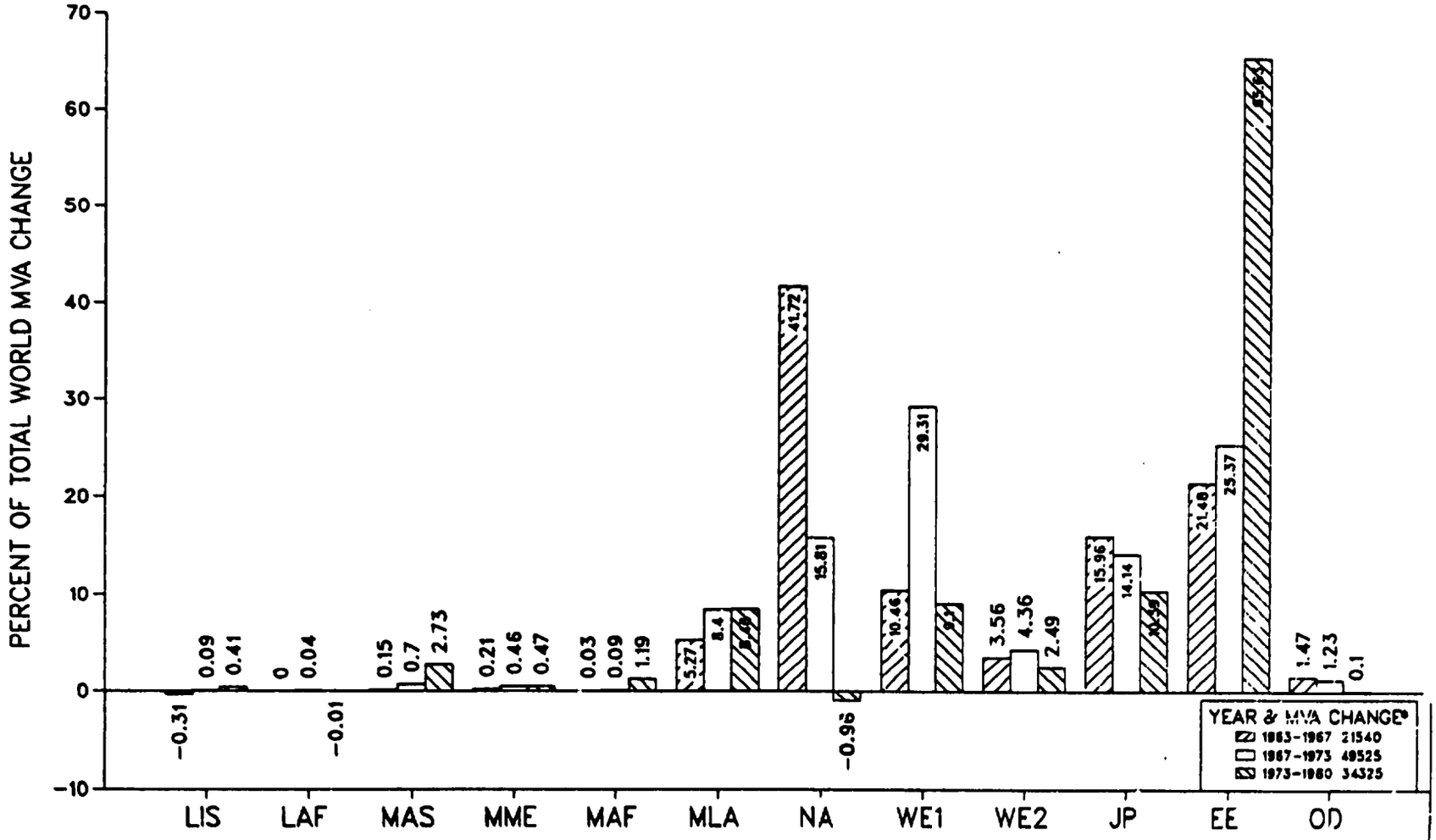
Appendix II
Figure 25

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
383 ELECTRICAL MACHINERY

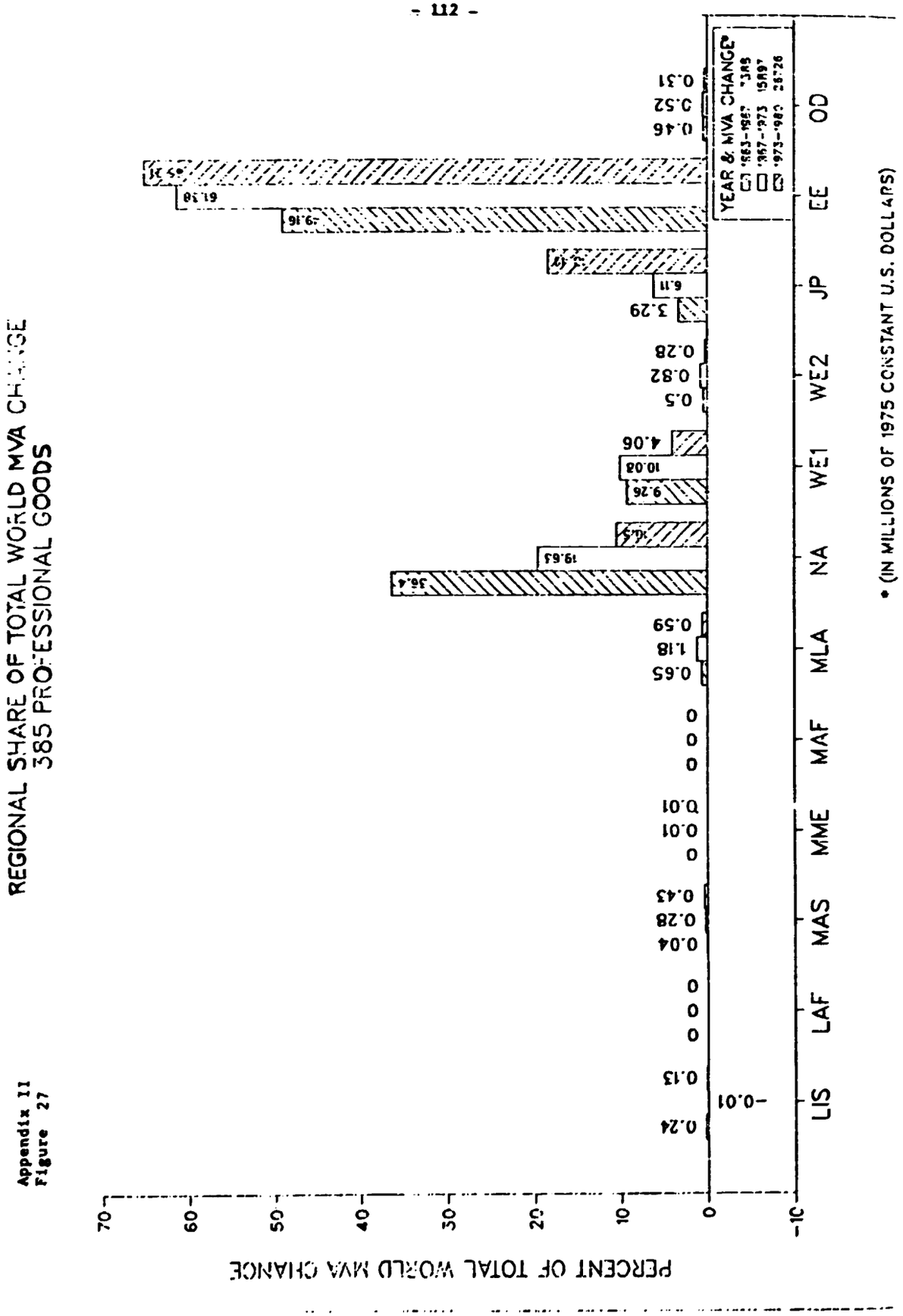


Appendix II
Figure 26

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
384 TRANSPORT EQUIPMENT



* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)


REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
385 PROFESSIONAL GOODS
Appendix II
Figure 27
PERCENT OF TOTAL WORLD MVA CHANGE
70
60
50
40
30
20
10
0
-10
LIS
LAF
MAS
MME
MAF
MLA
NA
WE1
WE2
JP
EE
OD
-0.01
0.24
0.13
0
0
0
0.04
0.28
0.43
0
0.01
0.01
0
0
0
0.65
1.18
0.59
36.4
19.63
10.45
9.26
10.03
4.06
0.5
0.82
0.28
3.29
6.11
29.16
61.38
0.46
0.52
0.31
YEAR & MVA CHANGE*
1963-1967
1967-1973
1973-1980
* (IN MILLIONS OF 1975 CONSTANT U.S. DOLLARS)

Appendix II
Figure 28

REGIONAL SHARE OF TOTAL WORLD MVA CHANGE
390 OTHER INDUSTRIES