CHAPTER XV

INDUSTRY

1. Main Developments

Industrial development in the last two years, 1976 and 1977, has been characterized by one central trend: the rapid growth of output destined for export and the increase of the share of exports in output; however, the intensity of the trend weakened. Industrial exports increased quantitatively by about 11 percent in 1977, as compared to the particularly rapid growth of about 25 percent in the previous year. (Exports, excluding diamonds, increased by 19 percent and 30 percent respectively.) Sales to the domestic market, which had not increased at all in 1976, recovered somewhat in the last year and increased quantitatively by about 2 percent. Total growth of industrial production reached about 4–5 percent, a rate similar to that of the previous year[1].

This development in industrial production follows the general lines of changes that took place in demand in 1977: the industrial product resulting from investments in the economy decreased at a rate of about 12 percent. The decline, going on now for a number of years, in construction for housing and other branches of the economy, is reflected here along with a reduction of demand for investments in plant and equipment. Production in branches supplying building materials dropped particularly: quarries, sand-mining, construction carpentry, glass, ceramics, cement products, iron for construction, etc. The product arising from public consumption also decreased, at a rate of about 5 percent, because of the continued reduction in the spending of the government and the defense system, while production of metal and electrical products was increasingly directed toward export. An increase of about 3 percent in the demand for private consumption brought about an increase of about 2 percent in the appropriate industrial product. The total direct and indirect contribution of domestic demands led to a decrease of nearly 2 percent

[1] The rates of change presented here are not those published by the Central Bureau of Statistics (6.4 percent in industrial production in 1977 as against 1976). Data given here reflect the change that actually took place in production and labor inputs, while the indexes of the Bureau measure the change per possible working day; i.e. the index of the Bureau was adjusted to reflect possible production if the number of working days in the course of the year was equal to the perennial average (in 1977 there were only 303 possible working days, as against 309 in 1976 and 305 on the average).

TABLE XV-1

INDICATORS OF INDUSTRIAL DEVELOPMENT, 1961–1977

(percent)

	Annual average				Annual increase or (-) decrease				
	1961-1965	1966-1967	1968-1972	1973-1977	1973	1974	1975	1976	1977
Industrial production[a]	13.4	−0.8	15.4	4.4	4.5	5.1	3.1	5.1	4.3
Revenue at current prices[a]	20.5	3.0	23.3	41.7	26.2	52.7	46.9	37.3	45.5
Number of workers	7.6	−3.7	8.0	1.8	0.9	2.8	0.4	2.5	2.3
Man-days worked[a]	..	−5.5	9.4	−0.1	−4.0	1.3	0.4	2.8	−1.1
Real gross investment	6.0	−23.9	31.5	−2.2	−4.3	1.4	17.0	−8.0	−17.0
Real gross capital stock[b]	11.0	6.4	7.7	7.6	8.7	8.0	8.2	7.4	5.9
Output per employed[c]	9.8	3.0	6.9	2.6	3.6	2.2	2.7	2.5	2.0
Output per man-day worked	..	5.0	5.4	4.6	8.9	3.8	2.7	2.2	5.5
Output per unit of capital[c]	2.2	−6.8	7.1	−3.0	−3.9	−2.7	−4.7	−2.1	−1.5
Change in factor productivity[d]	4.2[e]	0.8	6.8	1.0	2.7	0.7	−0.9	0.2	2.2
Domestic wholesale prices	5.0	3.0	6.3	36.2	19.1	51.5	40.8	30.9	38.6
Revenue per unit of output	6.3	3.8	7.1	35.7	20.8	45.3	42.5	30.6	39.5
Real industrial exports (excl. diamonds)	13.7	12.5	16.6	11.8	−1.5	12.3	−1.0	30.4	18.8
Total payroll outlay	..	5.0	18.7	38.2	22.1	42.6	41.6	40.5	44.4
Capital return rate[f]	..	14	20	17	17	19	17	15	17

a The Central Bureau of Statistics data have been adjusted to reflect actual production and labor input, rather than possible production per man-days worked (See footnote 1 in text).

b At the beginning of the year.

c Output here refers to industrial production.

d Defined as the difference between the output change and the combined input of labor and capital. The weights: 56 percent labor (actual man-days worked) and 44 percent capital.

e With the change in the labor input measured in terms of man-days worked during this period.

f Return includes profits, interest and rents (in other words, added value which is not payment for labor); capital includes fixed assets and product and material stocks. Rate of return is gross, including depreciation.

SOURCE: Central Bureau of Statistics and Bank of Israel.

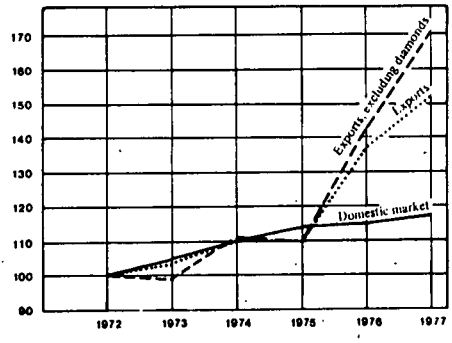
in industrial output, while exports contributed about 6 percent to the enlargement of total production in industry (including the input production for export products). Thus the weight of production earmarked, both directly and indirectly, for export continued to grow, from about 29 percent in 1973 to 40 percent in 1977.

The deceleration that took place in the growth rate of industrial exports[2] compared with the previous year must be examined against the background of the entire period. Over the course of this period, the year 1976 was exceptional in the growth of industrial exports, stemming from an accumulation of a number of factors that weakened during the year under review; the following are the most important: recovery of foreign demand in 1976 from a deep recession in the preceding year and a moderation of domestic demands that was apparently sharper in 1976. In 1976, conditions particularly favorable to the enlargement of diamond exports prevailed, but these were not sustained in 1977. Moreover, an increase of about 70 percent in the export of goods related to the defense system, such as that which took place in 1976, is not likely to be repeated every year, the more so since the 1977 increase of more than 20 percent is in itself notable. Of all the factors that contributed to the growth of exports in the past two years, the return on exports in relation to the return in the domestic market should be emphasized; this continued to grow in the past year together with the relative price of exports.

FIGURE XV-1

INDEX OF QUANTITATIVE GROWTH IN INDUSTRIAL SALES TO EXPORT AND THE DOMESTIC MARKET, 1972–1977

(Base: 1972 = 100)



The central contribution of exports to the growth of industrial production in the past two years cannot be doubted (see Figure XV-1 and the data in Section 2). It is interesting to examine the conditions that made this remarkable growth in exports possible especially in the recent past; for this purpose the long-term background in the development of production and production factors in industry as a whole should be dealt with. It is only possible to examine the special characteristics of export operations within the wide framework of the main industrial branches[3] due to data limitations. Despite the limitations, a

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2 For a full analysis of the development of industrial exports see Chapter 5.

3 We were unable to calculate capital stock in greater detail than that of the 18 main branches. For a comprehensive analysis of the characteristics of export operations, the firms themselves should of course be examined or at least the 105 subbranches should be.

TABLE XV-2

REAL ANNUAL GROWTH IN PRODUCTION, EXPORT, PRODUCTION FACTORS, AND PRODUCTIVITY IN INDUSTRY (EXCLUDING DIAMONDS) – "EXPORT BRANCHES" AND OTHER BRANCHES, 1972–1977

(Percent)

	Export branches[a]	Other branches	Total industry	Export branches[a]	Other branches	Total industry
	1972			1977		
Weight of group in export	42	58	100	61	39	100
Weight of group in production	50	50	100	53	47	100
	Increase or (-) decrease, annual rates					
	1972–1977			1975–1977		
In export	19.7	2.1	10.8	31.5	14.0	24.1
In production	6.0	2.9	4.5	4.6	3.3	4.1
In production factors:						
Capital stocks	10.4	5.7	7.7	10.5	3.9	6.8
Labor inputs	0.6	–0.3	0.1	–2.0	2.2	0.3
In total productivity[b]	1.2	0.6	1.1	1.3	0.4	1.0
In output per man-day	5.5	3.2	4.2	6.8	1.0	3.9
In number of workers	3.0	0.6	1.7	0.5	3.4	2.0
In number of man-days per worker	–2.4	–0.9	–1.6	–2.5	–1.1	–1.7

[a] Export branches are defined here as those branches whose export grew by more than 50 percent in the period under discussion (on the condition that the weight of export in the branch is more than 10 percent of the output of this branch). In accordance with this definition, 7 branches were included in this group: transport equipment, electrical equipment, machinery, metal products, basic metal, chemicals and petroleum, rubber and plastics. (This applies in detail to the 18 principal branches of industry.

[b] Total productivity per combined input was calculated by weighting capital and labor according to the ratio between the returns on production factors in 1972: 59 percent labor and 41 percent capital.

very clear picture emerges even on superficial examination, based on the division of the main industrial branches into two groups: 7 "export branches", and the other branches (see Table XV-2). The branches in which exports increased in the period between 1972 and 1977 at a considerable rate (above 50 percent) were chosen as "export branches", provided they export a significant share of their products[4].

A comparison of the two groups reveals that exports in the chosen branches increased during this period by a factor of 2 1/2, while exports in the other branches increased by only 11 percent. It is therefore justified to examine special characteristics of production changes in the export branch group and to compare them with other branches.

Industrial production increased in the 'exporting group" at double the rate of the other group; this development was made possible by a suitable change in production factors, particularly in fixed capital. The growth rate of fixed asset inventories was also double the rate in other branches (64 percent as against 32 percent). Although labor input, which has not increased at all since 1972 in industry as a whole, did expand in the export branches, it was only at a low rate of about 3 percent.

Output per day worked increased, as expected, at twice the rate in this group, due to the change in capital. A similar result was obtained in the field of total productivity – product per combined unit of capital and labor increased in "export branches" more than in the other branches; at the same time, it should be kept in mind that productivity was very low in these branches as well, compared to previous periods. (We will discuss this subject in more detail below.) In other words, the exploitation of production factors was also higher in export branches, and technological advancement in them was faster. Support for this last assertion can be found in an examination of research and development expenditures in industry, by branch: the rates of this expenditure from revenue were high in the main export branches – about 3 percent in the electrical equipment and electronics branch; 1.7 percent in transport equipment; 1.4 percent in chemicals and petroleum, and 0.9 percent in machinery – as against a general average of 0.6 percent in industry in the year 1975/76.

An additional examination of the causes of the expanded growth of exports is that of the connection between the growth of exports and the expansion of capital stock. This examination supports the opinion that it was the change in capital that made possible the remarkable increase of exports. In the group of branches whose capital stock increased in

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4 In "export branches" as well, the bulk of production is directed to the domestic market. These branches commanded about 61 percnet of total exports in 1977. The discussion in its entirety centers on industry, without diamonds. For additional clarification, see Table XV-2.

the period under review (since 1972) by more than 50 percent[5], exports increased at an annual average rate of about 15 percent, as compared to only 5 percent in the other branches. Total production increased in both groups at a similar rate.

The general conclusion that can be drawn from this analysis is that a clear change in the structure of capital has taken place; its significance is the concentration of production capacity in export production more than in production for the domestic market. The surplus production capacity that might serve as a reserve for future enlargement of production also appears to have been concentrated to a great extent in the export branches. It is not surprising that this change was accompanied by an accumulation of unutilized capital in factories producing for the domestic market in all branches, and led to a decrease in the productivity of production factors and fractional unemployment of capital and labor. From the point of view of the transition to export products, with a considerable slowdown in production for the domestic market, the period under review, mainly the past two years, has been different from preceding periods, in which there was also a considerable increase in exports. Between 1968 and 1972, when a steep increase of industrial exports had taken place following the recession and unemployment of 1966/67, a parallel increase of production for the domestic market had also been noticeable.

The considerable growth of capital in industry in the period between 1972 and 1977 (about 8 percent per year), without a corresponding rise in output and labor inputs, points to a significant unemployment of capital and low productivity[6]. And, in fact, it appears from Table XV-3, that total productivity during this period increased by less than 1 percent, as compared to 7 percent in the period of prosperity between 1968 and 1972, or to 4 percent between 1965 and 1972 – a period that includes the previous recession as well and therefore comprises a complete business cycle.

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[5] The seven branches in which capital stocks increased by more than 50 percent will be called the "investment branch" group; they are as follows: clothing, rubber and plastics, metal products, chemical and petroleum, machinery, electrical equipment and miscellaneous.

Annual rate of change (percent)	In "investment branches"	In other branches
In capital stocks	12	5
In exports	15	5
In production	5	4

[6] For an additional discussion of the accumulation of unutilized production capacity in industry and an explanation of the main reasons for this phenomenon, see Chapter IX.

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If there were no changes in production technology this difference points to a cumulative loss of industrial output arising from capital unemployment that reached 15–20 percent during the entire period. This means that in the years 1972 to 1977, an annual gap of about 3–4 percent was created between actual industrial output and the output that could have been obtained under the conditions of utilization of the previous period (1965 to 1972). The main reasons for the existence of this gap, apart from the unemployment during the transition period (as mentioned above), are excess investment following the cheapening of capital through the subsidizing of investment financing and a continuing attempt to replace workers with plant and equipment. It should be mentioned here that despite the fact that labor is by its nature a relatively mobile production factor, there exist side by side in industry numerous factories in which workers are partially unemployed and numerous other factories in which the lack of workers is the main obstacle to additional export growth. Indeed, there is no complete coordination between partially unemployed workers and workers required for the operation of a second or third shift in export operations, from the professional as well as from other points of view, however, the fact that no considerable migration of workers took place from branches in which the demand for products within industry decreased, or from the construction branch and the public sector, points to insufficient mobility of workers as an effective obstacle to growth. This problem is apparently also linked to institutional factors that have not overcome the lack of flexibility in the transfer of the social rights of workers.

We have no detailed information on the changes in wages in the exporting factories so that we are unable to carry out an exact examination of the adjustment of wages to excess demand for workers or to partial unemployment. At the same time, a sectoral examination reveals that in almost all "export branches" as defined above, daily wages increased in 1977 at a higher rate than the average increase in industry as a whole. On the average, daily wages in export branches increased by 51 percent during this year, as compared to an average increase of 41 percent in the other branches. A similar result is obtained when comparing the increase of average wages during a longer period, and the great increase of wages in export branches in the last two years stands out in particular. It is possible that the difference in growth rates also stems from other factors, such as growing employment of academically trained people, engineers and technicians in the export branches for their activities in the fields of research and development, which have a high level of professional work, but it seems that the weight of these factors is negligible.

The increase in total wage payments to employees in industry as a whole reached about 45 percent during 1977, a rate equal to the growth of total revenues; in other words, there has apparently been no significant change this year in the share of work compensation: an average of about 59 percent of the value added in industry in the last

TABLE

RATE OF REAL ANNUAL AVERAGE CHANGE IN THE PRODUCT, INDUSTRIAL BRANCHES,

(per-

	1966–1967				1968–1972			
	Production[a]	Capital[b]	Labor[c]	Productivity[d]	Production[a]	Capital[b]	Labor[c]	Productivity[d]
1. Mining, quarrying and non-metallic minerals	–9.7	7.7	–12.8	–6.9	13.2	3.0	4.5	9.4
2. Food, beverages, tobacco	6.2	5.1	1.4	3.2	9.3	6.0	4.5	4.1
3. Textiles, clothing, leather, miscellaneous	–0.7	4.8	–2.6	–1.4	14.1	7.1	7.9	6.6
4. Wood, paper, printing and publishing	5.4	9.9	–8.4	6.8	10.2	6.9	6.1	3.8
5. Chemicals, petroleum, rubber and plastics	5.2	1.1	–2.8	5.9	18.4	10.3	8.1	9.1
6. Metal, machinery, electricity and transport equipment	–9.5	8.4	–5.0	–9.6	20.5	12.3	13.2	7.6
Total industry, excluding diamonds	–2.4	6.1	–4.3	–2.6	15.5	7.6	8.6	7.3

a According to the industrial production index weighted by value added.
b Change in capital stocks of fixed assets, beginning of year.
c Change in number of man-days.

two years. The rate of total return on capital (defined as the relation between the amount of compensation for capital and the fixed and current capital)[7] returned more or less to the level of 1975 after a slight decrease in 1976. This does not testify to permanence in the rate of profitability in industry (which is the profit on equity capital). If we make the

7 See also Tables A-1 and A-2, in the Appendix to the Report of the Bank of Israel, Chapter XV, in which two alternative calculations of the rate of return are presented, and the definitions are explained.

XV-3

PRODUCTION FACTORS AND PRODUCTIVITY IN THE 1965–1977

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1973–1977				Entire period 1965–1977				Weight of labor in value added in 1972[e]
Production[a]	Capital[b]	Labor[c]	Productivity[d]	Production[a]	Capital[b]	Labor[c]	Productivity[d]	
−1.4	4.1	0.1	−3.5	2.9	4.2	−0.4	1.0	9
6.0	6.9	2.3	1.7	7.4	6.2	3.1	2.9	12
3.8	6.7	−0.4	1.0	7.2	6.6	2.6	2.8	19
1.9	6.1	0.8	−0.9	5.9	7.0	1.3	2.4	11
5.0	10.6	5.6	−3.4	10.5	8.8	5.2	3.3	12
6.6	10.6	1.0	2.0	9.2	10.9	4.9	2.0	37
4.7	7.9	1.3	0.6	7.8	7.5	3.3	2.7	100

d When the weight of capital and labor are fixed for each group of branches over a long period. Calculated as the difference between the growth of production and the growth in the combined unit of labor and capital input.

e According to the value added at factor prices.

reasonable assumption that exports enjoy cheaper earmarked credit than producers who supply mainly to the domestic market, it appears that the rate of profit (the compensation for capital, after reduction of interest) of the exporters is higher than the profitability of other producers, and the development of the overall rate of revenue shows that the profitability of exporters even grew slightly in 1977. This conclusion confirms the calculation (appearing in Chapter V) according to which compensation for exports increased this year in relation to compensation in the domestic market.

TABLE XV-4

INDUSTRIAL EXPORTS BY MAIN BRANCH, 1975–1977, AND EXPORT CONCENTRATION, 1977

	Industrial export value			Export share in branch output[a]			Export weight of[b] largest firms in branch	
	1975	1976	1977	1975	1976	1977	1976	1977
	($ million, at current prices)			(percent)			(percent)	
Mining and quarrying	84	61	76	35	43	60	100	100
Food	125	154	178	9	10	9	37	53
Textiles	52	62	64	25	28	27	58	58
Clothing	104	125	149				30	36
Leather and leather goods	5	8	9	10	12	12	87	81
Wood and wood products	13	20	28	7	5	5	80	76
Paper and paper products	3	4	5	7	5	5	97	95
Printing and publishing	19	11	15				41	50
Rubber and plastics	45	54	68	24	28	30	77	70
Chemicals and petroleum[b]	186	222	270	24	26	28	65	68
Nonmetallic minerals	7	7	10	3	3	4	88	81
Basic metals	26	20	34	14	12	19	84	81
Metal products	70	122	187	12	20	26	86	84
Machinery	64	110	153	16	29	32	52	58
Electrical and electronic products	98	112	122	23	25	25	77	78
Transport equipment	40	92	116	5	9	10	96	96
Miscellaneous	31	44	66	25	33	36	31	37
Total exports (excl. diamonds)	972	1,228	1,550	13	17	19	29	29
Diamonds, net	549	712	1,003	100	100	100		
Total industrial exports	1,521	1,940	2,553	20	24	25		

[a] Output and exports are at producer prices (including subsidies, excluding taxes), and at fixed 1968/69 prices.

[b] Export rates do not include petroleum exports.

SOURCE: Central Bureau of Statistics, Bank of Israel.

2. Exports, Production and Production Factors

The main change that left its mark on activities in industry in the past two years is the transition to export products. This transition stands out in Table XV-7, which shows the changes in the product deriving from every destination, directly or indirectly (thus, for instance, the product deriving from the production of textiles and threads is included in clothing exports if made of materials produced by local industry). The following data, showing the growth in direct sales to the domestic market and to exports, also emphasize the transition.

DIRECT QUANTITATIVE CHANGE IN INDUSTRIAL OUTPUT, IN EXPORTS AND IN SALES TO THE DOMESTIC MARKET
(percent)

	1974	1975	1976	1977	Average 1974–1977
Total output	5	3	5	4	4
To domestic market	5	4	0	2	3
Exports	6	0	25	11	10
Exports, excl. diamonds	12	–1	30	18	15

The sectoral composition of exports and the change in the share of each branch are shown in Table XV-4. The fact that the weight of direct exports increased in each of the "export branches", i.e. all the metal and transport branches, as well as chemical and plastics, stands out.

There were no great changes during 1977 in the concentration of exports from the previous year (see Table XV-4). 23 factories (as against 25 in 1976) exported about half of the total industrial exports this year. A more detailed examination revealed that only 4 large new factories were added during the last year, all in the "export branches", and these replaced 6 factories in the textile and food branches whose export volume declined. A similar picture emerges upon examination of the 100 largest exporters, who exported 72 percent of industrial exports (70 percent in 1976): here, too, food manufacturers were replaced by exporters of chemical, electronic and metal products. The bulk of exports, as well as their growth, are therefore concentrated in the hands of a very limited number of producers, and this group is more or less constant in each of the branches.

The concentration of most exports in the hands of large companies testifies to the great importance of marketing abroad, which in many cases is being done by the export-

TABLE

ANNUAL CHANGE[a] IN PRODUCTION,
(percent

	Production		
	1975	1976	1977
Total	3.1	5.1	4.3
Mining and quarrying	12	–21	0
Food, beverages, tobacco	1	8	6
Textiles	–3	3	7
Clothing	–2	5	5
Wood & wood products	–5	6	–3
Paper & paper products	4	0	9
Printing & publishing	–5	3	13
Leather & leather goods	–1	5	5
Rubber & plastics	–8	5	6
Chemicals & petroleum	0	8	7
Nonmetallic minerals	9	4	–9
Diamonds	–1	21	3
Basic metal	–5	–3	2
Metal products	10	3	–1
Machinery	9	–4	10
Electrical equipment	11	8	0
Transport equipment	15	9	7
Miscellaneous	10	3	10

[a] The data on production, labor and wages for 1977 used to compute this table are significantly different from the data published by the Central Bureau of Statistics. The rates given here reflect the changes which actually took place this year, while the Central Bureau of Statistics data relate to the possible changes in production and labor inputs if the number of days of work were equal every year. In fact, there were only 303 work

XV-5

EMPLOYMENT AND WAGES, 1975–1977
annual change)

Actual work days					Daily wage			
Average 1975-1977	1975	1976	1977	Average 1975-1977	1975	1976	1977	Average 1975-1977
4.2	0.4	2.8	–1.1	0.7	41	37	46	41
–3	4	–4	3	1	38	13	44	32
5	–5	10	2	3	42	35	43	40
2	–5	0	–3	–3	36	36	40	37
3	–4	10	2	2	38	39	38	38
–1	–5	5	–3	–1	44	31	39	38
4	2	–1	–6	2	52	32	39	41
4	–4	0	3	0	35	42	42	40
3	–6	10	–3	0	49	38	39	42
1	–2	4	–4	1	40	38	48	42
5	4	3	5	4	46	41	41	43
1	–2	3	–10	–3	39	31	43	38
8	–10	10	15	5	47	36	46	43
–2	–5	0	–7	–4	43	35	49	42
4	3	1	–3	1	43	36	47	42
5	9	–6	–6	–1	37	40	56	44
7	9	–5	–3	0	36	44	50	43
10	15	–2	–7	2	30	48	67	48
8	2	2	4	2	45	47	42	45

days in 1977, compared with 309 in 1976. This difference of 2 percent has been eliminated from the Central Bureau of Statistics data in order to reflect changes that actually took place in output and labor. The changes for previous years were also corrected, taking into account the fact that the actual number of work days was 305 in 1974 and 307 in 1975.
SOURCE: Central Bureau of Statistics.

ing factories themselves. It is more difficult for the small factories to penetrate the export markets, as such penetration often requires much publicity, specialized distributing agents, the assurance of permanent service to customers and a follow-up of reactions to the various products.

It should be added that the growth in industrial exports seems to be concentrated more and more in modern locally developed products. This appears from the great intensity of research and development in the main export branches and factories, and is confirmed by the evaluation of a partial survey made in factories doing research and development work. In this survey[8], the export of these products was estimated to amount to about 20 percent of total industrial exports as far back as 1976, and its primary findings show that exporters foresee a considerable growth in the weight of exports of their own development. They estimate that the development policy of their factories stresses this direction in particular.

The main changes in production factors in 1977 – a decrease of about 1 percent in the labor input, an increase of about 2 percent in the number of employees and of about 6 percent in capital stock – were accompanied by an increase of about 2 percent in general productivity, for the first time since 1973. This change in productivity reflects the deceleration in the growth rate of capital stock, which after a time-lag adjusted itself to the slowdown and standstill in domestic demand in recent years. The growth of capital stock was slowed mainly in branches that are not export branches (see Table XV-2). It should be pointed out that the ripening period of some of the heavier investments in the economy – such as mines and quarries or the petrochemical plants – sometimes lasts five years or more, and the distribution of this period is great among investments in the various branches, in various factories, and in types of plant and equipment. The quick growth of capital stock in previous years in most branches of the economy apparently made possible the development of exports (although in these branches as well there was an accumulation of surplus production capacity); however, this was the result of many excess investments stemming from the considerable privileges – grants, subsidized credit financing, etc. – received by investors in fixed assets. The other side of the coin was low, and in many cases even negative, productivity in branches and factories producing for the domestic market. (A study of production and labor indexes, in Table XV-5, and of the changes that took place in capital stock in past years points to the wood products branch, for instance, as a

8 The survey encompassed 67 factories out of almost 300, dealing with civilian research and development, and receiving government grants for this purpose. It was carried out by the Center for Analysis and Technological Forecast at the University of Tel Aviv (see Interim Report, November 1977).

TABLE XV-6

ANNUAL CHANGES IN WHOLESALE INDUSTRIAL OUTPUT PRICES FOR DOMESTIC DESTINATIONS BY MAIN BRANCHES, 1975–1977

(percent)

	Annual change			Change throughout year[a]		
	1975	1976	1977	1975	1976	1977
Total	40.8	30.9	38.6	18.8	39.5	49.7
Mining and quarrying	44.8	38.0	44.8	30.3	39.6	65.5
Food, beverages, tobacco	57.7	26.8	38.1	10.9	40.4	51.7
Textiles	27.1	40.5	38.3	23.3	43.6	39.0
Clothing	22.9	40.0	38.0	21.1	44.4	41.1
Wood and wood products	35.1	35.0	37.0	31.6	38.0	43.6
Paper and paper products	53.8	32.4	43.7	28.7	39.2	41.6
Leather and leather goods	12.1	57.8	48.6	27.0	74.8	52.1
Rubber and plastics	33.8	31.3	36.4	25.2	36.7	41.8
Chemicals and petroleum	39.1	26.1	37.0	21.4	33.2	54.0
Nonmetallic mineral products	42.0	28.9	37.9	21.7	33.8	54.8
Basic metals	35.8	29.1	36.2	12.4	40.2	45.2
Metal products	30.5	27.6	38.0	10.7	39.9	48.1
Machinery	43.1	33.2	38.6	28.1	39.2	53.6
Electrical and electronic equipment	33.7	31.1	40.2	21.6	38.8	61.1
Transport equipment	43.9	28.0	38.4	27.2	30.6	62.1
Miscellaneous	41.9	33.9	44.8	22.6	47.6	55.4

[a] Change throughout the year is calculated on the basis of the price index for December of the year under discussion and January of the following year, compared to the average of January of the year under discussion and December of the previous year.

SOURCE: Central Bureau of Statistics.

branch in which many of the factories and secondary branches showed a negative total productivity.)

A phenomenon connected with the change in the structure of capital and the reduction of productivity is the continuing decline, since 1972, in the number of days worked and

TABLE XV-7

DERIVED INDUSTRIAL PRODUCT BY FINAL USE[a], 1968–1977

(percent)

	Weight of uses in derived product average			Quantitative increase or (--)decrease from previous year			
	1968-1972	1973	1977	1974	1975	1976	1977
Private consumption	36.4	33.3	31.6	5.4	1.0	2.6	1.8
Public consumption	15.4	18.0	15.4	17.5	–5.1	–6.2	–4.6
Investment on fixed assets	18.1	20.0	13.1	–.3	2.5	–14.4	–11.7
Total domestic uses	69.9	71.3	60.1	6.9	–0.2	–4.3	–3.4
Exports to administered areas	2.2	2.4	3.6	11.2	19.5	6.5	23.4
Exports to rest of world	27.9	26.3	36.3	10.8	2.6	24.3	14.8
Total exports	30.1	28.7	39.9	10.8	4.0	22.6	15.5
Total final uses	100.0	100.0	100.0	8.0	1.0	3.8	3.6

[a] Central Bureau of Statistics data on direct final uses, except for investment in inventories, and calculations of the Research Department of the Bank of Israel, based on the input-output table for 1968/69, in relation to the derived product according to final uses.

work hours per employee. This trend, which became stronger in 1977, apparently expresses two principal factors: an attempt to prevent, as much as possible, dismissal of employees in factories where demand for the products is reduced, based on the expectation of changes in demand in the future; and a transition to branches and factories in which many women and part-time workers are employed: the number of working hours of women is low on the average, and in the export branches, the electricity and electronics branch stands out as the one employing the highest percentage of women.

Output per work-day, reflecting the productivity of labor, increased as well in 1977 by about 5 percent in industry as a whole. This rate is higher than that of the past three years. Significant differences were noted in the development of the various branches: thus

for instance, productivity of labor in mines and quarries decreased by about 2 percent, and by 1 percent in the wood branch – both branches supplying materials for construction. Whereas in transport equipment, machinery, printing, and rubber and plastics, productivity increased by 10 to 17 percent. These changes should be viewed within the framework of long-term development, and the average of the last three years does indeed point to considerably low rates (see Table XV-5). This mean even diminishes the possible statistical errors in production indexes and work-days.

In general it seems that in the long run the growth rate of output per work-day becomes higher with the increase in the growth rate of capital stock in the branch, despite the fact that it has not been fully utilized. It is obvious that additional capital at the disposal of workers enables them to increase productivity. It is interesting to note that the greatest increase in labor productivity over a long period, since 1965, occurred in the collective branch – chemistry, petroleum, and plastics – as well as in the collective branch of textiles, clothing, leather, etc.

At the same time, the distribution of productivity among branches decreased gradually during the last period. The relative (standard deviation) of output per work day decreased from 41 percent in 1972 to 25 percent in 1977. It is possible that this phenomenon reflects the reduction that took place in the variance of capital intensity among the various branches, a reduction that expresses mainly the increase in capital intensity in branches where the capital per employee is low in relation to others.