CHAPTER VI

THE PRINCIPAL ECONOMIC SECTORS

1. INTRODUCTION

A. The Business Sector—Main Developments and Government Policy

In 1987 the business sector product grew by some 7 percent,[1] following its 4 percent growth in 1986. This is a substantial rate of expansion, not only by comparison with the stagnation of growth in the first half of the 1980s, but also when compared with the entire period since 1973. Expansion was not concentrated in some specific products or uses, but embraced all industries and sub-sectors (see Table VI–3). Even in the construction sector, where activity had in the five preceding years contracted steadily, the product rose at rate similar to the average business sector growth. Among the principal economic sectors, agriculture stood out with an 11 percent growth, which was due to a year of specially favorable natural conditions. Plentiful rains contributed to good crops and saved inputs. Tourism was also marked by a rapid recovery from its decline in 1986 which was related to the state of security.

On the demand side, private consumption and investment in construction contributed 3 and one percent, respectively, to the incremental business sector product. Exports contributed 3 percent, as against one percent in the previous year (see also Chapter II, Product and Domestic Demand, and Appendix Table II–A1).

The rapid growth of business sector product was accompanied by a substantial rise in the labor input (some 4 percent, after a 2 percent increase in 1986) and a sluggish 2 percent increase of the capital stock. In a period of recovery and the beginning of relatively rapid growth, the labor input—the variable factor of production—obviously responds more rapidly than the input of capital. The year under review was in fact a turning point also as regards nondwelling investment—rising by 14 percent in structures, machinery and transport equipment. This will show up in the capital stock at the beginning of 1988 (see Table VI–1). In addition to the product growth coming from the input of production factors, both labor productivity (product per man-hour) and total productivity (product per weighted unit of labor and capital) showed a relative high rise in 1987. In the last two and a half years total productivity increased by 2½

[1] See also Chapter II, Product and Domestic Demand. The change in GDP is measured here from the product side. For most years this differs slightly from the expenditure-side estimates of the national accounts, which show a higher rate of change for 1985 and 1986; for 1987, the two estimates are similar.

percent per annum, after negligible growth between 1980 and 1985, and an average annual rise of 1.3 percent in 1973–79 (see Table VI–2).

These estimates indicate that the stabilization policy implemented since mid–1985 has begun to bear fruit. It would seem that the curbing of inflation and the new atmosphere in the economy work to step up growth, with rising productivity, after the first half of the decade's stagnation of per capita product growth and next to no rise in productivity. This stagnation was the result of galloping inflation, the wide swings in economic policy, and a general sense of economic crisis. Thus, for example, the uncertainty caused by inflation impaired the ability of firms to plan their use of production factors and their marketing, and pushed them into allocating a great deal of resources to financial operations.

Another factor affecting expansion is population growth, which is the sum of immigration, emigration and the birth rates of earlier years.All three of these sources of population growth improved in 1987: the number of immigrants rose from 9,000 to 13,000; emigration apparently decreased, from 17,000 to 10,000[2] and there was no further contraction in the age group 20–30 (which greatly influences saving and the demand for housing) as the generation of the great baby boom of the late 1960s entered this age group. These growth-promoting factors were complemented by the favorable effects of the decrease in the the public sector's share in the economy and the cuts in the government deficit, the first steps in the reform of the capital market and the cuts in income tax rates. As against these, there were the growth-retarding effects of the rise in real wages and the increase in real interest rates.

The growth of output and productivity in 1987 was not accompanied by a matching rise in the profitability of the business sector. Since profits are a residual item,[3] influenced by all the various factors affecting the business sector which cannot all be quantified, the final result is difficult to estimate accurately. We may list the direction in which the most important of these factors acted: the cost of labor (real wages per man-hour from the employer's perspective) rose in 1987 by some 5 percent, following a 15 percent rise in the previous year, so that this year, too, labor costs rose more (by 2 percent) than productivity per worker. Since the share of labor in the business sector product was over 60 percent in the last two years, this factor has a decisive influence on profitability (see also Chapter IV, Employment and Wages).

The considerable rise in financing costs in 1987 had an adverse effect on profitability in all industries, except the banking industry. Although these costs weigh much less

[2]The data actually refer to Israelis who left the country in 1986 and have not returned within 12 months.

[3] 'Profitability' is here defined as the difference between value added and expenditure on wages and financing. Financing expenditures (net interest payments) are interest payments on credit less receipts of interest on financial investments. The estimates of profitability in fact also include errors and omissions.

Table VI–1
BUSINESS SECTOR INDICATORS, 1960–87
(Annual average real change, percent)

	1960–1965	1966–1972	1973–1979	1980–1985	1986–1987	1985	1986	1987
Product[a]	8.9	9.1	3.9	2.4	5.7	2.7	4.1	7.3
Labor input[b]	4.6	2.7	0.8	1.1	3.2	–0.0	2.1	4.3
Capital stock[c]	10.4	7.5	6.3	3.6	2.4	3.1	2.3	2.4
Investment	8.6	7.6	2.6	–0.7	8.6	–6.7	0.7	17.0
Labor productivity[d]	4.2	6.3	3.1	1.3	2.4	2.7	2.0	2.9
Capital intensity[e]	5.6	4.7	5.5	2.5	–0.8	3.1	0.2	–1.8
Total productivity[f]	2.5	4.9	1.3	0.5	2.8	1.7	2.0	3.6
Exports, excl. capital services			9.1	4.8	7.6	7.3	4.8	10.5
Credit[g]					9.8	18.1	16.6	3.4
Energy consumption[h]			–0.3	–1.7	2.0	–4.6	0.7	3.4

[a] GDP at factor cost.
[b] Man-hours (labor force survey data).
[c] Beginning-of-year stock.
[d] Product per man-hour.
[e] Capital stock per man-hour.
[f] Product per unit of factor input (average weight of labor is 68 percent).
[g] Medium and long term credit flows, including recycling.
[h] 'Final' use of energy in tons of oil equivalent. The data apply to the whole economy, not only the business sector.

than labor costs in the business sector product (in 1987, at a rough estimate, some 5 percent) it seems that there was a great increase in the volume of credit and mainly in the average real interest rates paid by the business sector, (amounting to a total increment of 4 percent of the product). The real interest rate on total short-term bank credit (including credit to households) rose from some 7 percent in 1986 to 20 percent in 1987, and the average cost of total outstanding long-term credit also rose slightly; as against this, the interest on credit flows for long-term investments declined by about one percent (see also Chapter VIII, Money and Capital Markets). The real 1987 cost of the credit basket, including nondirected and directed credit, suppliers' credit from abroad, and deposits for earmarked credit has been estimated at 10 percent , but there is a wide spread between the different economic sectors: while the real average cost of the total credit basket for export-oriented industries was only 5 percent per annum, that of industries primarily oriented towards the home market was on average some 9 percent; for agriculture it was 11 percent, and for the construction sector—about 15 percent. Evidently, the greater the recourse of a firm to short-term nondirected credit, the higher was the average cost of its credit basket, and in 1987 the marginal real interest rate reached 40 percent per annum—a very high rate by any standard. (It should, however, be mentioned that the short-term interest rate fell substantially

towards the end of the year.) The marginal interest rate is particularly important for small new firms. There were also firms which for many reasons found themselves, especially after the curbing of inflation, with a financial structure that made it impossible for them to stay in operation. A wide spread of interest rates testifies to the existence of great disparities in profit rates between firms and industries. The situation of the banks is different, since their profits go up when the net interest paid by the other industries rises. This was apparently the situation in 1987 for many firms and industries.

The first stage of the reform in the system of taxation of corporations and self-employed, which consisted mainly of cuts in income tax rates, from a maximum of 60 percent to 48 percent, had an opposite effect on net profits. Net profitability is known to be favorably affected by tax cuts, but at present it is still hard to quantify the direct effect of this change in motivating for more work, higher productivity, investment and growth.

Table VI–2
TOTAL AND LABOR PRODUCTIVITY IN THE BUSINESS SECTOR, 1960–87
(Average annual change, percent)

	Labor productivity: product per man-hour					Total productivity: product per unit of weighted capital and labor				
	1960–1965	1966–1972	1973–1979	1980–1985	1986–1987	1960–1965	1966–1972	1973–1979	1980–1985	1986–1987
Agriculture	8.2	8.6	8.0	4.2	5.2	5.6	6.6	5.7	3.6	5.2
Industry	6.3	6.6	3.2	1.9	2.3	6.1	6.0	1.1	0.3	2.1
Transport and communications	3.5	7.0	5.2	3.0	1.0	0.9	4.7	3.2	2.3	1.7
Electricity and water	10.2	9.5	1.6	1.4	3.2	5.3	6.7	0.4	–0.7	3.5
Construction	3.5	2.6	–0.9	–1.1	1.0	2.5	2.2	–1.7	–1.4	2.0
Commerce and services	–0.2	6.2	3.0	–0.2	2.8	–3.6	4.1	1.4	–0.6	3.1
Total business sector	**4.2**	**6.3**	**3.1**	**1.3**	**2.4**	**2.5**	**4.9**	**1.3**	**0.5**	**2.8**

A slight favorable effect on profitability apparently also came from intermediate inputs. Material inputs became cheaper in 1987 as the relative price of imported inputs declined. The input prices of industry rose 2 percent less than the price of industrial output. In addition, there was a fall in the local relative prices of the various fuels used as inputs in the economy's industries. This was particularly important for energy-intensive firms or industries, such as electric power generation, water systems, transport, and various chemical industries.

It is not certain that the rapid growth of 1987 will continue in the future, and not only because of the specific circumstances of this year; sustained significant growth of per

Table VI–3

GROSS DOMESTIC PRODUCT AT FACTOR COST, 1960–87

(Percent)

Period	Agriculture	Industry	Transport and communications	Electricity and water	Construction	Commerce and services	Total, business sector
			Composition of GDP by sectors, 1980 prices				
1960–63	10.1	22.2	11.1	3.5	19.4	33.8	100.0
1970–73	7.8	28.1	12.8	3.7	18.5	29.0	100.0
1980–83	9.8	28.7	13.4	4.0	13.0	31.1	100.0
1985–87	10.2	29.6	14.1	4.0	9.5	32.5	100.0
			Percent change in GDP over preceding period				
1960–87	5.8	7.0	6.7	6.3	3.2	5.4	5.7
1960–65	6.7	13.4	10.3	10.2	11.1	4.6	8.9
1966–72	6.4	10.3	10.8	9.1	7.9	9.0	9.1
1973–79	5.9	4.8	4.9	5.1	–1.7	4.8	3.9
1980–85	5.4	2.2	2.8	2.5	–1.8	3.1	2.4
1986–87	5.6	5.5	4.9	6.3	2.6	7.1	5.7

(Table VI-3 continued)

Period	Agriculture	Industry	Transport and communications	Electricity and water	Construction	Commerce and services	Total, business sector
				Percent change over previous year			
1970	5.4	9.5	13.5	10.2	16.2	7.8	10.3
1971	10.3	10.5	14.7	9.9	12.9	12.5	12.0
1972	7.2	11.9	13.0	12.0	15.2	10.6	11.9
1973	–0.3	4.5	4.7	3.9	3.9	3.9	3.9
1974	10.1	5.1	4.3	4.2	0.4	3.6	4.0
1975	8.9	3.1	–1.6	4.9	3.3	0.3	2.2
1976	8.0	7.6	6.3	5.6	–11.7	4.7	3.0
1977	8.0	5.2	8.7	5.6	–13.9	3.2	2.3
1978	4.9	5.0	6.6	6.3	–0.2	11.7	6.5
1979	2.4	3.4	5.9	5.2	8.1	6.6	5.3
1980	5.2	–2.3	–3.9	–0.8	5.8	–1.6	–0.6
1981	10.0	2.3	5.5	5.9	0.8	7.2	4.9
1982	11.0	0.3	–0.2	3.4	–2.4	5.2	2.6
1983	3.6	4.0	7.9	3.0	–1.2	4.7	4.0
1984	–1.4	5.4	5.2	2.4	–7.1	–0.9	1.0
1985	4.7	3.9	2.7	1.0	–6.3	4.3	2.7
1986	0.8	5.2	1.9	7.6	–2.8	7.0	4.1
1987	10.6	5.8	7.9	5.0	8.2	7.3	7.3

capita product and productivity depends both on continued economic stability and on a consistent industrial policy that does not distort the allocation of resources. Since the change in economic policy in mid-1985 some corrective steps were taken, mostly within the framework of the capital market reform, which has the principal objective of reducing the government's involvement in the economy in general and in the capital market in particular. The restrictions on private bond issues on the stock market were lifted in 1987, but much still remains to be done: the allocation of resources is distorted because of subsidies to one or the other factor of production, such as tangible capital or water for agriculture, while other production factors, labor and human capital, are taxed, and because of the discriminatory pattern of the tax system, the subsidies, and the degrees of protection of domestic production.

Various studies[4] have found inefficiencies in the allocation of subsidies and capital grants in development areas; furthermore, changes introduced in the definitions and implementation of the Law for Encouragement of Investment, in response to pressures by interested parties, are inconsistent with the objectives of the law. (Thus, for example, the government attempted to designate an enterprise in Haifa as a 'development area' only in order to permit it to obtain assistance within the framework of this law.) Research and development grants are subject to similar inefficiencies. It turned out, for instance, that there has been discrimination against small and new firms. The government's involvement in the economy expresses itself, as is well known, also in direct ownership of many business sector corporations; despite efforts to privatize part of them, there has been no significant progress in this area—neither in direct sell-offs nor in the finding of the proper way to deal simultaneously with the distortions caused by monopolies and cartels and those which come from the government's ownership itself.

Finally, investment policy of the infrastructure—transport, communications, technological education, etc.— has decisive influence on the efficiency of production in the business sector. Bottlenecks in production and marketing may be the product of difficulties in communication (for example, the shortage of telephones) and of difficulties in transportation (such as road congestion and traffic jams). The latter problem seems to have greatly aggravated in recent years. Although it has been argued that the expected return on investment is higher in many transportation projects than that of any alternative investment, the government does not allocate the necessary resources for such investments, and also fails to cope with the inefficiencies and bureaucratic hassles in this area (for further detail, see Section 5 below). It is well worth

[4] See Schwarz, D. (1988), *The Effect of the Law for Encouragement of Investment on Investment in Development Areas*, a lecture (based on a Ph..D. dissertation) presented at a meeting on 'Studies of the Economy, 1988', and Bregman, A. (1986), *Industry and Industrialization Policy in Israel*, Bank of Israel Research Department.

keeping in mind that a solution of this troublesome problem has implications that go much beyond the economic aspects; it is enough to mention just the hoped-for reduction of traffic accidents.

Another problem arising from structural inadequacies is the debt crisis in agriculture. This crisis has become acute in 1987, due to the mounting accumulation of debt. The solution for the financing problem must be combined with redress for the basic economic faults that have caused it (see below, Section 2).

B. Developments in the Principal Economic Sectors in 1987

The principal economic sectors all expanded their product by 6–8 percent in 1987, except for agriculture which grew faster, and which is naturally subject to wide annual fluctuations. This uniform growth rate might seem to reflect structural constancy in the business sector, despite the relatively rapid growth. Nearly the same picture emerges from a comparison of the breakdown by industries in 1987 and 1985 (see Table VI–2). However, these averages for principal sectors obscure sharp changes that have taken place within each sector. Thus, for example, it is not surprising that the production of cotton has declined in the last two years together by some 46 percent in real terms, while the production of avocadoes increased by 64 percent. Developments in the transport and communications sector, the various sub-sectors of which depend on different demand factors, such as tourism, foreign trade, and the output of construction, have also been far from uniform. The output of communications climbed rapidly (by a cumulative 30 percent in the last two years), and so did the output of aviation (19 percent) and shipping (11 percent), while slower growth was recorded in land transport (6–7 percent). Industry is particularly marked by great variation among sub-branches: while production in the clothing, leather goods, printing and publishing, and food industries increased in the last two years by around 30 percent, the transport equipment industry accumulated a 13 percent decline, and the electronics industry—7 percent. In the industry branches growth rests largely on export demand, and the declines reflect the liquidation of the Lavie project and the contraction of the government's demand for defense products. A partial examination even showed that the variance of rates of change in the industrial product was significantly greater than in the first half of the 1980s.

The product of the commerce and services sector in the last two years also rose at a rate similar to the average of the business sector as a whole. In this sector, which accounts for about a third of the business sector product, there has been great variation among the different sub-branches. In commerce, both retail and wholesale, there has been, for the second year running, a considerable expansion of activity, which reflected itself in a steep rise both of product and of employment. This expansion accords with the last two years' developments in private consumption, and imports and exports.

The slowdown in the rise of employment in business and legal services also marked the year 1987. This may be due to the fall of the inflation rate from hundreds of percent to 20 percent a year—a drop that diminishes demand for these services. A slowdown has also been recorded for the last two years in the growth rate of the computer services product.

The contraction of employment in the banking corporations continued also in 1987, and their share in the labor input and product of the commerce and services sector fell back to the level of the end of the 1970s. The commercial banks had in 1987 a year of very high profitability; the financial margins on unindexed sheqel transactions widened, together with an increase of this segment of banking operations. It should, however, be noted that in the long run it is undesirable to base profits on a narrow segment of operations. The banks' profitability was also affected by the income tax reform, a rise in the real rates of commissions, and further efficiency measures, reflected in the closure of unprofitable branch offices and sales of assets costly to continue holding and which are not used for banking activity. But in contrast to previous years, when wage expenditure decreased, real wages per employee rose in 1987 by 17 percent (including bonuses)—a much higher increase than in most other economic sectors.

The continued contraction in the number of bank employees paralleled the decline in the public's demand for banking services as inflation came down, and the automation of banking services was expanded.

2. AGRICULTURE[5]

Agriculture, being exposed to the vagaries of nature in addition to the general developments in the economy, is subject to relatively wide annual fluctuations. The year 1986/87 was an exceptionally good year: total output, including the intermediate products of the sector, grew by 8 percent and production for exports increased at the same rate, in contrast to the decline of the previous year. Actual agricultural exports amounted to some $600 million (f.o.b.). The sector's gross product rose by about 12 percent—a growth rate exceptionally high even for a sector known for its ups and downs. The farming sector's share to total business sector product (at factor cost) amounted in 1986/87 to some 8 percent. These real changes, in addition to favorable changes in relative prices (output prices relative to input prices) for the third consecutive year resulted in a real 6.3 percent increase in the total income from agriculture, up from its decrease in the preceding year.

[5]Unless otherwise stated, the data refer to agricultural years (ending September 30 of the stated year). Output and price data are averages for agricultural years.

Following two years of relatively little precipitation, rainfall in 1986/87 was higher than the multi-annual average, and made a substantial contribution both to the quantity of crops and the saving of inputs. It is therefore more meaningful to examine developments in agriculture over a period of years than for a single year. In the last three years the average annual growth of output and product was 3 and 5 percent, respectively, and real income from farming increased by 7.6 percent a year (see Table VI–4).

Table VI–4
INDICATORS OF AGRICULTURAL ACTIVITY, 1979–1987[a]
(Real annual change, percent)

	1979–1981	1982–1984	1985–1987	1985	1986	1987
Total output[b]	2.9	4.3	2.9	2.2	–1.2	7.9
Inputs, purchased and intermediates	1.8	3.1	1.0	–1.4	0.4	4.3
Gross product	4.8	5.6	5.2	7.3	–2.9	11.8
Total income from agriculture[c]	5.8	–3.8	7.6	27.3	–7.9	6.3
Factor input						
Labor[d]	–0.3	–1.2	2.5	6.2	1.3	–0.0
Capital stock[e]	3.6	2.5	1.0	1.5	1.3	0.2
Capital-labor ratio[f]	3.9	3.8	–1.4	–4.4	–0.0	0.3
Productivity						
Product-labor ratio[f]	5.1	6.9	2.7	1.0	–4.1	11.8
Total productivity[g]	3.3	5.3	3.3	3.0	–4.2	11.7
Exports[h]						
Total fresh farm produce	–0.1	6.2	1.4	–3.4	5.7	2.1
of which: Citrus	–1.9	–9.0	–0.9	–4.9	–2.1	4.6
Other	1.6	20.7	2.6	–2.6	9.8	0.9
Prices[i]						
Output prices[j]	108.3	160.4	113.9	416.7	71.9	10.1
Prices of purchased inputs	112.0	168.7	104.9	381.3	67.4	6.8
Terms of trade[k]	–3.0	–3.1	4.4	7.4	2.7	3.1

[a] Agricultural years ending September 30 of stated year. Output and productivity in 1982/83 were estimated at April prices for each year; from 1984/85 the estimate is at the annual average of the agricultural year.

[b] At producer prices; including inputs to agriculture.

[c] At constant prices; deflated by the consumer price index; includes wages and the entire gross return to capital—profit, interest and rent.

[d] Calculated from figures in millions of man-hours. Includes residents of Judea-Samaria and the Gaza District employed in Israel.

[e] Gross capital stock at constant prices (beginning of year).

[f] Per man-hour.

[g] Product per unit of factor input (the average weight of labor is 59 percent).

[h] Based on export data in 1986 dollars; does not include exports to Judea-Samaria and the Gaza District.

[i] Annual rates of change, percent.

[j] Producer prices; excludes inputs to agriculture.

[k] Ratio of output prices to prices of purchased inputs.

SOURCES: Central Bureau of Statistics and Bank of Israel calculations.

This year's output grew substantially both in the vegetal sector, which benefited particularly from the plentiful rainfall and from the two-year cycle of certain crops, and in the animal sector, the total output of which had fallen in the two preceding years.

The growth of output this year was not accompanied by a change in the labor input, nor was there any significant change in the number of persons employed (both Israelis and residents of Judea-Samaria and Gaza), which stood at 80,000–85,000. The share of workers from the administered areas in the total labor input is estimated at 17 percent. The downtrend in the proportion of agricultural employment in the total labor force continued also this year, and stood in 1987 at 5.1 percent, compared to 6.2 percent in 1980. No change of significance was recorded this year in the capital stock.[6]

These developments in output and factors of production obviously led to an exceptional rise in productivity, but the three-year average rise of total productivity totalled 3.3 percent—a growth rate lower than the annual average of the last ten years, but high by comparison with the other economic sectors.

In the calendar year 1987 fixed investment increased by 6.5 percent. This was a turning point, since investment dropped considerably in the years 1984–86, rising only slightly in 1975, but in view of the low profitability and the financial difficulties of the sector, this year's investment would seem to be intended for maintaining the capital stock. The volume of investment, at 1987 prices, was at the annual level of the beginning of the 1980s.

The data presented above highlight the broad gap between the current state of the sector and the continuing financial crisis in which important segments of it find themselves, and which threaten their organizational and economic stability. The severity of the problem differs from one agricultural branch to another and between different forms of agricultural settlements.

Technological progress in agriculture—in the world and in Israel— together with the rise in living standards generally call for a reduction in the number of farmers and a higher concentration of production factors in fewer hands. In the kibbutz movement, workers have been shifted to industry, whereas in the moshav sector there has been an increasing switch to outside work, full or part-time. This occurred against the background of efforts to maintain the moshav farm as a family enterprise (which prevents the unification of farm lots), and to absorb those of the second generation willing to stay in the settlements. At the end of the 1970s, the intensification of agriculture was seen as a solution for the shortage of production factors (land and water); at the same time exports were regarded as the solution for additional output as

[6] This refers to the beginning of the calendar year 1987. During the year, the capital stock increased by 0.3 percent, as against a 3.2 percent growth for the business sector as a whole. Agriculture's share in the total capital stock of the business sector stabilized at the 1980 level—12 percent, as compared with 18 and 25 percent, respectively in 1960 and 1970.

the domestic market for farm produce became saturated. In this period, large-scale investments were made—sometimes lacking economic justification—and long-term investments were financed by short-term credit, with widening gaps of financing. The economic calculus behind these investments was also confounded by the acceleration of inflation and the negative interest paid until 1984 on a substantial proportion of these investments.

When the real interest rate rose, especially when inflation dropped, the debt burden became heavier, particularly in settlement units heavily reliant on farming; the systems of mutual guarantees in the moshav sector were injured; the purchasing organizations, which also functioned as financial intermediaries, ran into financial trouble, and as a result, their sources for renewing their credit lines were blocked. In view of these developments, which aggravated the problem, the government appointed, at the end of 1986, the 'Ravid Committee', which submitted its recommendations for a debt consolidation arrangement in May 1987. The debt amounted to NIS1.66 billion (at September 1986 prices). Since the solutions have not yet been implemented and the debt was not paid off, it mounted further in the course of 1987.

Among the sub-branches of the farming sector, the most remarkable growth was in the crop of avocadoes (which is primarily destined for export) , due to the two-year cycle characteristic of this crop and favored by exceptional climatic conditions. Wheat crops were plentiful, due to the abundance and wide geographical spread of rainfall, and the steady decline of citrus output was checked, stabilizing at a proportion of 14–15 percent of total agricultural output (excluding intermediates) . This contrasted with the considerable decline in the output of cotton fiber, for the second year running, mainly due to the reduction in the area planted to cotton in response to the fall in world prices for cotton in the two preceding years, and as a result of the cuts in the water rations.

The output of animal products is mostly sold on the home market, and these sectors benefit from direct production subsidies. A large increase was recorded in the output of animals for meat, accompanied by a significant fall in the relative price to the consumer, as a result of the agreement to freeze prices and the substantial fall in the price of imported feeding stuff. Milk production continued to expand, albeit more slowly, and still exceeds the population growth rate. Sales of eggs posted a decrease which apparently reflects an inadequate coverage by the statistics as the unorganized market expanded—among other things, due to the cut in subsidies to the dairy farmers.

The producer price of total farm output for direct domestic consumption declined by 6 percent relative to the Consumer Price Index. The fall was most conspicuous in the sector of animals and animal products, the prices of which were frozen for most of the year. At the same time, their costs of production also declined. In contrast, the output of the vegetal sectors became more expensive. This price rise, which was concentrated in vegetables, particularly, early in the year, tomatos for the domestic market, was the combined result of the crop area of these products (mainly greenhouses) and natural

causes, and pushed up the CPI. In most vegetal products consumer prices rose faster than producer prices, which indicates that marketing margins have increased, especially in products which had supply constraints. The producer prices for output sold to industry also recorded a significant real decrease in 1987, except for tomatos sold for industrial processing.

In production for export producer prices in the vegetal sector rose by 15.4 percent (in terms of local currency), which was above the price rise of purchased inputs (13.3 percent),[7] but below the rise in vegetal product prices for direct domestic consumption (22 percent). Agricultural exports, which go mainly to Europe, benefited this year, too, from the appreciation of the European currencies against the dollar. Compared with the overall currency basket of agricultural exports, the price obtained by the farmer for his

Table VI–5
CURRENT ACCOUNT OF AGRICULTURE, 1969–87[a]

	NIS million		Average percent change over previous period						
			Quantity					Price	
	1986/ 1987	1987/ 1988	1979– 1981	1982– 1984	1985/ 1986	1986/ 1987	1987/ 1988	1986/ 1987	1987/ 1988
1. Gross output at producer prices[b]	3,645	4,331	2.9	4.3	2.2	–1.2	7.9	71.9	10.1
2. Inputs[c]	1,892	2,108	1.8	3.1	–1.4	0.4	4.3	67.4	6.8
3. Gross product[d] (1–2)	1,752	2,223	4.8	5.6	7.3	–2.9	11.8	77.0	13.5
4. Depreciation	320	385	–0.7	–1.3	0.9	–0.7	–0.7	82.7	20.9
5. Net product[d] (3–4)	1,432	1,839	5.8	5.7	9.0	–3.4	14.6	75.8	12.0
	NIS million							*Change in value, percent*	
6. Net product[d]	1,432	1,839						69.9	28.4
7. Compensation for damages of nature and war	16	16						15.4	–1.7
8. Total income (6+7)	1,449	1,855						69.0	28.0
9. Wage bill of hired labor	365	516						88.5	41.1
10. Total returns to capital and own work (8–9)	1,083	1,339						63.3	23.6
11. Change in CPI[e]								83.6	20.4

[a] See note a to Table VI–5. Data are for agricultural years, from autumn to autumn.
[b] At average prices of agricultural year.
[c] Purchased and intermediates of own production.
[d] At producer's prices.
[e] Average change in CPI for agricultural year.
SOURCE: Central Bureau of Statistics and Bank of Israel calculations.

[7] Estimated; does not include wage expenditure and depreciation. The overall index was adjusted by deducting the specific inputs of the animal sectors.

exports was not eroded by the changes in the exchange rates as such, but farmers were injured by the fall of prices in the domestic market.

The real price of total farming output fell by about 9 percent, but input prices (except wages and depreciation) declined more—over 11 percent— relative to the CPI. The prices of nearly all inputs fell in real terms. Particularly marked was the 19 percent drop in prices of feeding stuffs (these make up 36 percent of the total expenditure on purchased inputs) due to the fall in world prices of grain and of the price of water and pesticides etc. The quantity consumed of these last two also decreased in 1987, as a result of the year's favorable natural conditions.

As a result of the real changes and the changes in relative prices described above, a 6.3 percent increase was recorded in total farm income in the agricultural year 1987, as against an 8 percent fall in the preceding year. After deduction of the expenditure for hired labor, there remained a 3 percent increase in the return to own labor and capital, compared to an 11 percent decline in the previous year (see Table VI–6). But this return is not identical with the income from agriculture obtained by owners of farming units from agriculture, since out of that income they must provide for the payment of net financing costs to the banks and other sources of finance. We have no data for estimating these expenditures, which may be classified as belonging to the agricultural activities proper of the farming sector.

3. INDUSTRY

The growth rate of the industrial product (excluding diamonds) accelerated in 1987 to 5 percent[8] up from an average 3 percent a year since 1980. Most of the increase in industrial production occurred in the first half of the year, continuing the substantial acceleration in the second half of 1986. In the second half of 1986 industrial production was only slightly above the high level of the first half of the year, so that the growth rate during the year was less than half the annual average.

This year's increase in industrial production was not associated with any significant change in the composition of uses of the product. According to preliminary estimates based on input-output tables, the output destined for export and investment increased by some 7 percent, while the output used by the public sector rose by about 9 percent, reflecting the higher defense purchases this year, after two years of reduced procurement. The output destined for private consumption rose by 11 percent, after having increased by an exceptional 14 percent in 1986, with a shift of demand towards imports in these two years. Locally produced stocks, which had increased in 1986, this year showed a decline consistent with the (ex-post) rise in real short-term interest rates. The

[8] Including diamonds, the industrial product rose by 6 percent, as against 5 percent in previous years.

total derived output estimated from resource uses increased by 7 percent—which is higher than the rise in the index of industrial production.

This year's growth of the industrial product is, among other things, the outcome of the adjustment of firms to the changes that have taken place in the composition of domestic and foreign demand. Exports to both of Israel's principal two export markets, Europe and the U.S., expanded,without signs of a diversion of trade from one market to the other, despite the weakening of the U.S. dollar against the European currencies. This may have been due to factors other than the change in foreign cross rates, such as the free trade agreement with the U.S., which reduced U.S. tariffs on Israeli exports, as well as the recovery of world trade in electrical and electronic products. The industrial product destined for domestic uses was affected by the boom in private consumption, the expansion in construction, and higher demand for defense products.

Imports showed signs of accounting for a larger proportion of total industrial goods in 1987, of both consumer goods and capital goods (see Appendix Table VI–A2). This diversion was in part due to higher demand for products that have no domestic substitutes (such as vehicles, television sets, etc.), but the proportion of imports increased also where local production competes with imports (e.g. furniture, household appliances, machinery, etc.). It should be noted that in 1987 final import goods did not become cheaper relative to their domestic equivalents.

The total industrial wage bill, from the employer's perspective,[9] rose in 1987 by 9 percent. Since the industrial product increased by 5 percent, the unit wage bill rose by 4 percent. The industrial sector's terms of trade, on the other hand, improved in the year under review: output prices rose by some 3 percent more than the prices of inputs, with a relative decline in the prices of imported as compared to locally produced inputs (prices of the former rose 12 percent, while the latter increased by 15 percent). This improvement in the terms of trade offset the rise in labor costs, and the real unit wage bill, which had risen substantially in 1986, remained nearly unchanged in 1987. Wage costs per unit of product have in fact been stable from June 1986 until December 1987 (see Table VI–6).

The developments described above determined the gross profitability of industry; net profitability was affected by additional factors, such as the changes in the rates of taxation of the business sector, and real interest rates. The outstanding change in taxation was the cut in income taxes for corporations and self-employed from a top rate of 60 percent to 45–48 percent. The real cost of total short-term credit to industry increased from one percent a year in 1986 to 13 percent in 1987. This rise was due,

[9] Wage expenditure deflated by the price indexes of industrial production for the domestic market and for exports.

among other things, to the timing of the January 1987 devaluation;[10] in contrast, long-term interest rates remained relatively low, so that the cost of the total credit basket to industry—nondirected and directed short-term credit and long-term loans—amounted to only 5 percent per annum. It should be pointed out that by comparison with other sectors, industry pays the lowest interest on its short-term credit basket, because directed credit accounts for the major part of industry's credit basket.

The industrial sector, in summary, underwent many changes in the year under review; some of these were due to the government's economic policy, and some were connected with developments abroad (prices and foreign cross rates). Some of these changes promoted the growth of industrial production, among them, a) the substantial

Table VI–6
INDICATORS OF GROWTH IN INDUSTRY, 1968–87[a]
(Real change, percent)

	Average annual change			Change over previous period				
	1968–1972	1973–1978	1979–1986	1985	1986	1987	1987 1st half	1987 2nd half
Industrial production	15.1	4.8	3.0	2.9	3.7	4.9	1.9	0.8
Labor input (man-days)	9.1	–0.1	1.2	–0.2	2.0	0.0	–0.4	–0.6
Number of employees	8.1	1.8	0.9	–0.3	0.9	2.0	0.9	–0.2
Gross investment[b]	28.9	3.3	2.6	4.8	–5.7	6.3	...	...
Gross capital stock[c]	6.5	7.8	5.0	4.5	4.3	3.2	...	...
Production per man-day[d]	5.5	4.9	1.8	3.1	1.7	4.9	2.4	1.4
Total productivity[e]	6.9	1.6	0.2	1.1	0.9	3.5	...	...
Industrial exports	16.6	10.1	8.6	7.5	5.7	9.6	5.3	8.5
Unit wage bill[f]	–2.3	–1.0	1.9	1.8	16.7	–0.2	...	...
Input prices relative to output prices	1.4	0.5	–0.4	3.6	–0.1	–3.1	...	...

[a] Excluding diamonds. The labor input figures are from the industrial production indexes of the Central Bureau of Statistics. Industrial production (from the same source) is value added at constant prices. The indexes for 1968–78 are adjusted for full-time equivalent labor input.

[b] Excluding motor vehicles.

[c] Beginning-of-year stock.

[d] Production here refers to gross industrial output.

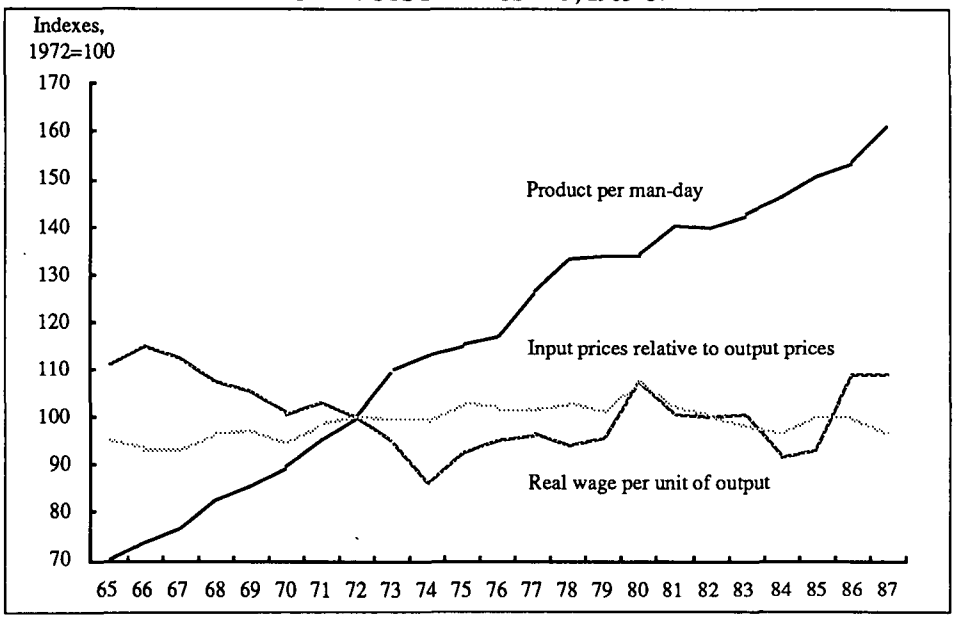
[e] The labor input for the calculation of total productivity is from the industrial production indexes of the CBS, and not from the labor force surveys.

[f] Index of total labor cost deflated by the wholesale price index of industrial output, divided by the index of industrial production.

SOURCE: Central Bureau of Statistics and Bank of Israel calculations.

[10] Since part of the credit is in foreign currency, the devaluation had an immediate effect on the effective nominal interest rate.

Figure VI–1.
PRODUCT, REAL WAGES AND RELATIVE PRICES OF INPUTS IN INDUSTRY, 1965–87



reduction of the inflation rate, which increased certainty and reduced the resources that had to be allocated to protection against inflation; b) the reform of the capital market, which facilitated easier access to sources of finance; c) the cut in corporate tax rates, which raised net profitability. The movement of prices of imported inputs this year improved industry's terms of trade and augmented its supply, while the low interest on long-term credit contributed to the expansion of fixed investment in industry. As against this, two factors had an adverse short-run effect on supply: the rise in real short-term interest rates, which caused hardships for many firms, and the rise of real wages by 4 percent in excess of the growth of labor productivity , with wide deviations from this average among sub-sectors and firms.This wide spread of wage costs was in part due to the failure to reduce wages or the granting of wage hikes by losing firms—a practice that cannot be sustained for long without public assistance. The combined result of these changes was an increase of total supply by industry in 1987, but the inter-sectoral variation of the rates of change (at a 72-sector breakdown) increased substantially this year. In 1987 the coefficient of variation was 27 percent, as against an average of 20 percent in the period 1980–86 (ranging between 16 and 24 percent). The causes of the greater variance were: a) the curbing of inflation, which had a differential effect on the financial adjustment of firms; b) the change in foreign cross rates, which favored firms exporting to Europe (and possibly also increased the worthwhileness of producing substitutes for goods imported from Europe); c) the real appreciation of the sheqel

Table VI–7

INDUSTRIAL OUTPUT DERIVED FROM FINAL USES,[a] 1968–87

(Percent)

	Percent share in derived output						Percent change over previous year		Share in incremental derived output	
	1968–1972[b]	1973–1975[c]	1976–1979[d]	1980–1985[e]	1986[b]	1987	1986	1987	1986	1987
Private consumption	37.0	27.0	28.3	25.0	26.5	27.5	14.3	10.8	3.6	2.9
Public consumption	15.0	21.0	16.4	17.2	15.4	15.7	1.2	9.1	0.2	1.4
Investment	18.0	18.0	15.3	16.3	13.8	12.4	9.4	–4.1	1.3	–0.6
of which: Fixed investment	*18.0*	*18.0*	*14.8*	*15.9*	*13.2*	*13.2*	*0.0*	*7.1*	*0.0*	*0.9*
Total domestic uses	**70.0**	**66.0**	**60.0**	**58.5**	**55.7**	**55.5**	**9.2**	**6.7**	**5.1**	**3.7**
Exports	30.0	34.0	40.0	41.5	44.3	44.5	6.4	7.7	2.9	3.4
Total final uses	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**7.9**	**7.1**	**7.9**	**7.1**
Index of industrial output, excl. diamonds							3.6	4.9		

[a] Derived output is the value added in the production of goods for each final use, including the estimated intermediate output. The estimates are based on data on final uses from the Central Bureau of Statistics and Bank of Israel calculations on the basis of input-output tables for 1982/83. The estimates of derived output are at 1982/83 prices.

[b] Based on input-output tables for 1968/69.

[c] Based on input-output tables for 1975/76.

[d] Based on input-output tables for 1977/78.

[e] Based on input-output tables for 1982/83.

during the year; and d) the great differences in the real interest rates for different industrial enterprises, one cause of which is the inter-sectoral variation in the proportion of exports in output, the size of which is the criterion for eligibility for directed and relatively cheap credit.

Table VI–8
INDICATORS OF QUARTERLY CHANGE IN INDUSTRY,[a] 1986–87
(Percent change over previous quarter)

	1986				1987			
	I	II	III	IV	I	II	III	IV
Industrial production[b]	0.2	0.7	4.1	2.2	1.4	–1.1	1.1	0.4
Industrial exports	3.8	3.1	3.8	–9.6	7.6	6.2	8.8	–6.3
Number of employees	0.4	0.7	1.6	0.9	0.4	0.1	–0.1	–0.2
Man-days worked	1.1	0.0	1.6	0.8	–0.3	–1.1	0.3	–0.7
Output per man-day, (labor productivity)	–0.9	0.7	2.5	1.3	1.7	0.0	0.9	1.1

[a] Excludes diamonds; seasonally adjusted.

[b] The data on industrial production come from a different statistical source than the other data; comparisons of the quarterly changes in industrial production with other quarterly changes should be made with caution.

SOURCE: Based on Central Bureau of Statistics data.

4. CONSTRUCTION

The construction sector came to a turning point in 1987: the downtrend that had characterized for five consecutive years was checked; the sector's gross output grew by 8 percent, in contrast to the average annual 2 percent contraction of the years of recession, and output thus returned more or less to its 1984 level. Except for defense construction, the expansion covered all sub-sectors—residential construction (up 5 percent), non-residential construction, earthworks and road building (about 21 percent), and apparently also renovations and maintenance works (some 4 percent). Defense construction, which is part of public consumption, continued to decline for the sixth year running. Despite the sector's expansion, output per man-hour and total productivity continued to decline. The only available indicator of profitability—the change in output prices relative to input prices— points to a decline of some 8 percent, following a 13 percent fall in the previous year. It hardly needs saying that no signs are as yet visible of a real restructuring of the construction sector, and its release from the basic structural problems that have plagued it since 1973 (see Table VI–9).

The contraction of the construction sector that began in the 1970s became much sharper in the 1980s, reflecting not only an absolute fall of output, but also a continuous

and lasting decline in productivity (for 13 years, total productivity has been falling on average by 2 percent a year); an absolute shrinkage, since 1980, of the capital stock; an accumulation of unutilized capacity, and the lengthening of construction time for a standard apartment from 14 months in the early 1970s (when construction boomed) to 18 months in the second half of the decade, and to 24 months in 1986–87. We estimate the present building duration to be twice or more as long as in most industrialized countries in Europe, and even more so by comparison with the U.S. The share of the construction sector in the total business sector has declined from 19 percent in 1972 to 9 percent at present.

These developments are due to both demand factors (particularly the decline in immigration and natural population growth) and, on the supply side, to the manner in which the sector adjusted to the shrinkage of demand. The adjustment of supply expressed itself in part in a shift to the relatively cheap production factor—the employment of workers from the administered territories. The industry's major problem is to be found in the area of technological innovation, research and development. In this respect, construction is the most antiquated of all economic sectors, as may be seen from the estimates of change in productivity which reflect the rate of technological progress. Construction is the only industry in which there has been an absolute decline of productivity,[11] and in which the gap between it and other industries is so conspicuous (see also Table VI-3). Construction is marked by low efficiency which reflects itself, among other things, in unprofessional management of many firms, in conservative processes of production, and in bureaucratic difficulties with respect to the procedures of licensing, taxation, planning, and allocation of state-owned land. Investment in building equipment and improvement of the production factors encounter financing problems due to the lack of available capital and its high cost. Until 1986, there was a steady exodus of Israeli workers from the construction industry: their absolute number declined steadily since 1972, with a corresponding increase in the number of unskilled workers from Judea-Samaria and Gaza, who cost less. The proportion of workers from the territories rose gradually from 22 percent in 1972 to 32 percent in 1980, and 42 percent in the last two years. It has become evident that such a large proportion of temporary workers who come from relatively distant places subjects the sector to much uncertainty and lack of stability. Total employment in the sector declined less than output, and settled down, between 1980 and 1987, to some 115,000 workers, as against a real 15 percent contraction of product, and a 24 percent decrease in the number of apartments under construction. The lag in adapting the labor input to the shrinkage of output seems to be due to the shift to the employment of cheap and unskilled labor, as well as to institutional rigidities and the influence which works committees have in the big construction firms.

[11] Although there are reservations as regards the statistics of productivity, other partial indicators also provide evidence for a decline in output per worker and total productivity in the period under review.

The largest component of the construction sector is residential building, which in the last two years accounted for 43 percent of the sector's output. Nonresidential construction—structures, earthworks, and other construction works, such as road building, bridges and water works—account for about a quarter of the industry; the remaining third, which is output for uses other than investment, consists of defense construction, maintenance, installation of equipment, repairs and renovations of apartments. The latter item is difficult to measure statistically, and its size and changes are therefore estimated roughly and indirectly. Renovations of dwellings and maintenance of structures are a function of their wear and tear, and are sometimes a substitute for the acquisition of new apartments or new investments. It is therefore reasonable to assume that these activities developed differently from the other output of the sector, and that it continued to increase also in the 1970s and 1980s, when investment construction contracted by 3 percent a year on average. The proportion of maintenance and renovation works in the sector's total output thus increased from some 10 percent in 1972 to about 25 percent in 1987. Production factors—land, capital, labor, cement and other materials—are evidently used with different intensity in the various components of the sector's output. This may partly explain the disparities between the changes in total output and those of inputs. The change in the structure of output is ultimately also reflected in the value added and in the estimates of total productivity. Their overall direction, for example, is a rise in the share of value added in total output, a decline in the ratio of financing required for long-term activities such as investment, and a rise of labor intensity in many activities. We do not have sufficient information to estimate and evaluate these changes.

The construction sector's dependence on credit[12] is relatively high because of the long duration of building. Since its products are not internationally tradeable, the sector receives less public directed and foreign-currency credit on preferential terms than the export sectors—industry and agriculture. Contractors and construction firms therefore pay on average a higher price for credit. According to Bank of Israel calculations, in 1987 the average real price of the credit basket was some 15 percent for the construction sector, compared to 11 percent for agriculture and about 7 percent for industry. There can be no doubt that the high real rates of interest add to to the difficulties of the constructions firms and reduce the profitability of this industry.

[12] Credit to contractors, not including mortgages given to the buyers of apartments who provide the contractors with additional 'credit', by making payments according to the progress of building.

Table VI–9
INDICATORS OF CONSTRUCTION, 1968–87[a]

	Absolute figures		Percent annual change					
	1986	1987	1968–1972	1973–1979	1980–1986	1985	1986	1987
Output ('000 of 1980 NIS)								
Total	16,532	17,887	17.7	–1.8	–2.0	–6.3	–2.8	8.2
of which: Residential	7,280	7,671	30.1	–3.0	–3.1	–12.0	–7.8	5.4
Nonresidential	4,014	4,853	11.2	–2.4	–3.9	–3.2	3.1	20.9
Other[b]	5,238	5,363	7.4	2.1	1.9	1.4	0.4	2.4
Starts (thousand m²)	3,600	4,160	25.8	–5.6	–6.9	–13.2	–7.0	15.6
of which: Residential	2,670	3,140	31.0	–5.8	–6.7	–7.8	–4.0	17.6
Nonresidential	930	1,020	15.7	–5.1	–7.4	–24.6	–14.7	9.7
Dwelling units (thousands)								
Starts	19	21	28	–8.0	–9.6	–10.2	–9.9	13.3
Completions	22	21	21	–6.5	–4.7	–9.6	–12.3	–2.9
Duration of dwelling construction, months[c]	24	24		3.8	2.9	2.2	2.1	0.0
Employed persons ('000)	109	117	15.3	–1.0	–1.2	–6.6	–6.2	7.3
of which: Israelis	62	68	9.7	–2.6	–4.0	–8.6	–14.5	9.5
From Judea-Samaria and Gaza	48	50		3.9	3.9	–3.3	7.4	4.4
Stock of construction equipment, ('000 of 1980 NIS)[d]	3,357	3,167	2.3	4.1	–0.5	–4.7	–6.6	–5.6
Output per worker ('000 NIS)	151	152	2.1	–0.8	–0.8	0.4	3.6	0.8
Total productivity			1.0	–1.7	–0.6	0.0	4.5	–0.5
Price index of residential construction inputs	1,926	2,418	8.7	42.7	153.1	246.0	46.6	25.6

[a] Includes construction in Jewish settlements in Judea-Samaria and Gaza, and an estimate of illegal construction.

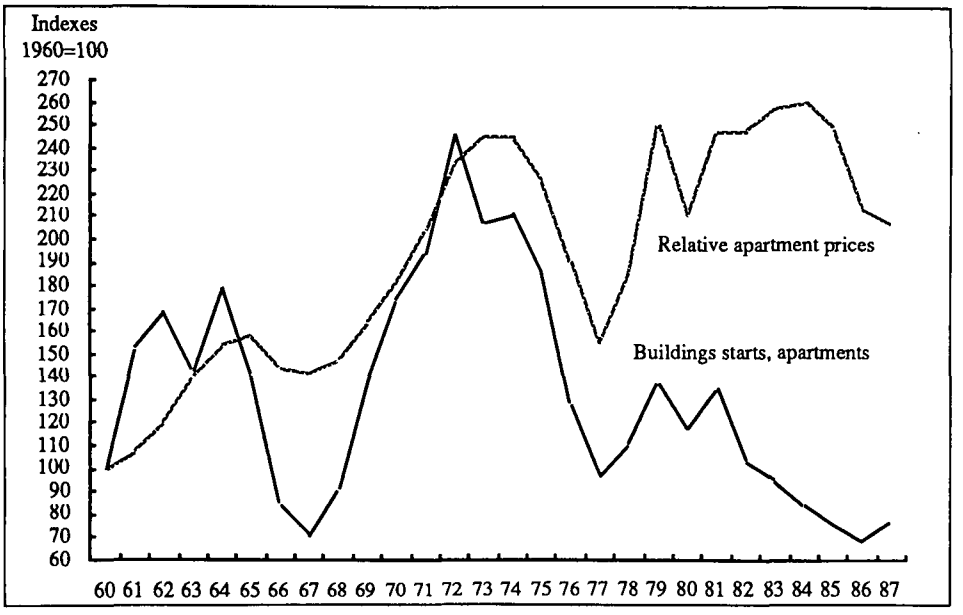
[b] Includes defense construction and a Bank of Israel estimate of maintenance and renovations.

[c] Standardized average duration of private sector dwelling construction, according to size of apartments in 1985.

[d] Beginning-of-year stock.

SOURCE: Central Bureau of Statistics and Bank of Israel calculations.

Figure VI–2
BUILDING STARTS AND APARTMENT PRICES RELATIVE TO CONSUMER PRICE INDEX, 1960–87



5.TRANSPORT AND COMMUNICATIONS

A. Main developments

In 1987 the output of the transport and communications sector grew by 9.5 percent and its product by 8 percent. Since this sector serves all other industries, this was an expected development in view of this year's large expansion of the business sector product. Other factors that contributed to the sector's output growth, which particularly affected aviation and shipping, were the rise in the volume of the country's foreign trade and the upswing in incoming tourism. These sub-sectors, especially shipping, also benefited from the growth of world trade and from the continued low level of international oil prices. Despite the growth of output, there was no change in the share of the sector's product in total business sector product, which remained at 14.5 percent. The increase of output was accompanied by a rise of nearly 6 percent in the number of employed persons, and a 7.5 percent increase in labor input, after a 4 percent decrease of employment in 1985 and no change in 1986. This halted the rise in labor productivity that had characterized recent years, and is a puzzling development in a year when the sector's product grew so substantially. At the same time it seems that in certain sub-sectors—shipping, aviation and communications—productivity did increase. Particularly conspicuous in the sub-sectors of transport, was the continued stagnation, for the fourth consecutive year, of the output of bus services (see Table VI–10).

Fixed investment in transport and communications expanded rapidly in 1987; particularly so in road building (which grew by a real 52 percent, following a 60 percent increase in 1986), and in transport equipment. Despite the growth of investment in roads, its average level was in the last two years still 30 percent below the average of the first half of the 1970s, the peak period of these investments, and the increment to the capital stock was also small. Investment in equipment also recorded a considerable increase in the year under review. The stepped-up growth of total fixed investment in the transport and communications sector resulted during 1987 in an accelerated increase of the capital stock, which grew by 3.7 percent, after an average annual increase of 2 percent in the preceding three years.

B. The road infrastructure

Increasing road congestion has become one of the principal problems of land transport in recent years. It is the result of the accelerated growth in the number of motor vehicles, especially private cars, with a steep rise in the level of motorization[13] since 1981, while the expansion of the road infrastructure continued to lag behind. From 1981 until 1987 the number of motor vehicles increased by 63 percent, while the real increase in the capital stock of roads was a mere 18 percent. Since the early 1970s, real investment in roads has been on a long-term downtrend, due to decisions over time to restrict budget allocations to road construction. Road congestion lowers the level of service of the motorized system (reflected, among other things, in a slower speed of travel or the lengthening of travel time), and also creates a gap between its private cost and its overall cost to the economy, leading to a sub-optimal allocation of resources.

Figure VI–3 clearly illustrates the aggravation of road congestion in the 1980s, according to two measures of congestion—the ratio of the number of motor vehicles to total road area, and the ratio of kilometers travelled, weighted by different coefficients of obstruction for the various types of motor vehicles,[14] to the road area. The second index, which reflects the intensity of use of vehicles and not only their number,[15] would appear to be a better measure of the demand for road services than

[13] The degree of motorization is defined as the number of motor vehicles per thousand of population.

[14] See Grunau, R., and Weiss, Z., *A Congestion Fee and Taxation of Motor Vehicles in Israel*, Bank of Israel, Research Department, April 1983, Table 4. The coefficient of obstruction expresses the positive correlation between the size of a vehicle and its contribution to road congestion. For the calculations of Figure VI–3 we used the coefficients of Grunau and Weiss—1.0 for private motor cars, commercial vehicles and taxicabs, 2.0 for buses and 2.4 for trucks.

[15] The increase in road congestion according to the index based on kilometres traveled—15–20 percent since the beginning of the decade—does not seem to be particularly grave. It is, however, to be noted that the study by Grunau and Weiss (see note 14) was based on data up to 1978, and their analysis of the then prevailing road congestion already found it serious. The additional congestion in recent years therefore makes the problem much more acute.

Table VI–10
OUTPUT OF TRANSPORT AND COMMUNICATIONS, 1984–87

	Weight in total		Percent change over preceding year							
	Product	Output	Real output				Price			
	1986	1986	1984	1985	1986	1987	1984	1985	1986	1987
Land transport	49.5	30.5	0.5	0.6	0.7	5.9				
Buses	15.1	6.2	–0.8	–1.0	–7.8	0.3	353	408	76	26
Taxis	4.7	2.6	–6.0	2.0	2.0	0.0	339	309	67	34
Trucks[a]	27.4	20.7	1.9	0.6	3.2	8.5	340	293	58	23
Railways	1.4	0.9	–1.6	8.5	6.7	1.9	319	306	41	11
Oil and gas pipelines	0.9	0.1	–1.2	21.0	–12.0	10.0				
Shipping and ports	**14.2**	**30.9**	13.4	–1.5	2.1	8.5	302	304	32	7
Shipping	8.7	24.1	15.8	–3.8	–0.7	8.2	377	298	28	7
Ports	5.5	6.8	3.5	8.8	13.3	9.4	282	332	47	5
Civil aviation and airports	**12.8**	**19.3**	15.4	2.4	4.8	13.3	364	296	34	5
Civil aviation	10.1	17.4	17.8	2.6	5.3	12.8	358	297	35	4
Airports	2.7	1.9	–1.9	0.5	0.4	17.4	426	289	27	9
Communications	**11.2**	**10.4**	15.1	4.4	13.9	13.8	347	361	45	19
Other[b]	12.3	8.9	3.3	13.1	–2.3	13.4				
Total output at market prices		**100.0**	8.6	1.7	2.9	9.6				
Total gross product, at 1982/83 prices	**100.0**		5.2	2.7	1.9	7.9				
Gross fixed investment			–29.8	–14.1	15.4	41.9				
Gross capital stock, at beginning of year[c]			4.8	2.3	1.6	2.2				
Employed persons			3.0	–3.6	0.5	5.7				
Labor input			4.3	–4.9	0.5	7.6				
Total productivity			1.0	5.5	1.3	2.1				

[a] Estimates for trucks are based on input-output tables.
[b] Includes warehouses, cold storage, parking lots, terminals and transport services n.e.s. Estimates are based on input-output tables.
[c] At constant prices.

SOURCE: Central Bureau of Statistics and Bank of Israel.

the first. The gap between the two indexes that has opened since 1981 is due to the decline in the average intensity of use of vehicles in recent years. The reasons for this decline are: a) a change in the composition of the fleet of motor vehicles, with the main increase in private cars, which travel on average fewer kilometers than heavy vehicles; and b) a decline, over time, in the intensity of use of private cars, due to the decrease, in recent years, in their fixed cost (purchase price) relative to their variable cost, and also because the acquisition of a second car per family has become more prevalent. The second car is on average less intensively used.

In addition to the macro-economic perspective which calls for a general increase in the budget allocations for road building,[16] there is also a problem with the allocation of existing budgets. In recent years road congestion has become worse, particularly in urban areas, at the entrances to the big cities (particularly in the Dan district), and not always has the rule been observed of allocating the scarce resources available in accordance with the severity of congestion. This problem is due, to no little extent, to the excessive dispersal of authority and jurisdiction in the planning and construction of roads,[17] and the splitting up of the available budget funds among the various authorities involved.[18] The present organizational set-up precludes the formulation of a broad transport concept that could be used to define the economy's requirements in the area of land transport. The problem of the internal allocation of resources clearly has implications for the level of service that public transport is able to supply in urban areas.

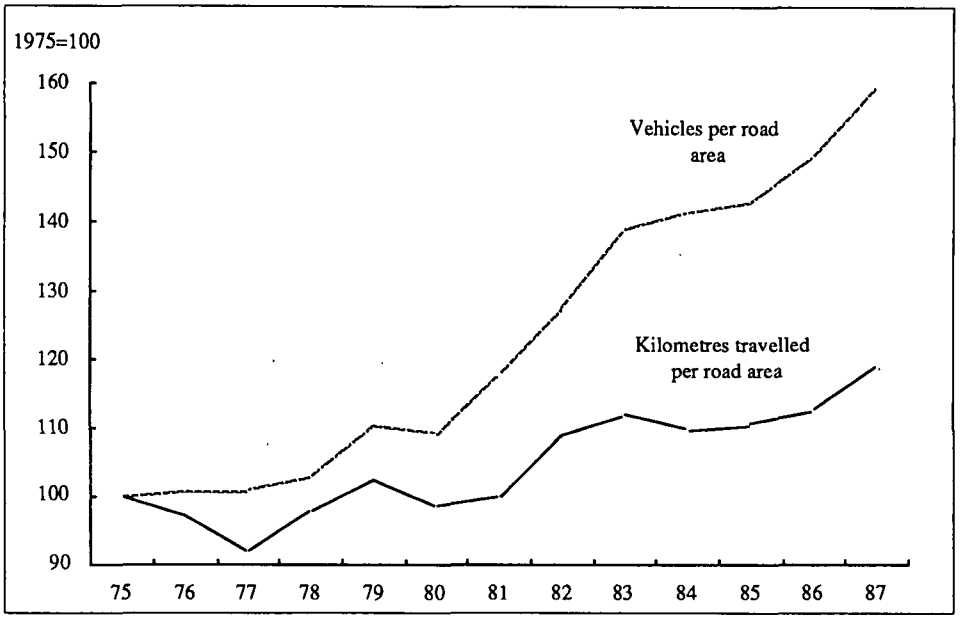
The level of service of the motorized transport system also depends on the state of existing roads. The budget allocations for roads are meant to cover maintenance, and it appears that this area has in recent years suffered from serious neglect. It should be kept in mind that the postponement of maintenance increases eventual outlays because of accumulating wear and tear, so that neglect in this case increases the cost to the economy.

[16] For the purpose of the present discussion, road building includes, in addition to the construction of new roads, the widening of existing ones, which increases the road area.

[17] Road building mainly falls under the responsibility of the Public Works Department of the Ministry of Housing, which is responsible for the construction of inter-urban roads, and the Ministry of Transport which, together with the local authorities, deals with intra-urban roads. Also involved are the Ministry of the Interior, for giving the necessary permits, especially in urban areas, and the Ministry of Defense, which has jurisdiction over the construction of roads for the defense establishment, as well as the Ministry of Agriculture, which has the power of decision as regards the release of agricultural land for road building.

[18] In the United States, by way of comparison, each state has its own transport ministry, and all budget allocations for road construction in the state, including federal funds, are channeled through it.

Figure VI–3
INDEXES OF ROAD CONGESTION, 1975–87



A precondition for the proper allocation of resources to road building is a cost-benefit analysis of this investment. Such an analysis should take into account several major aspects: a) time saved—reducing the waste of time that road congestion causes in the economy; b) the direct and indirect (through loss of work time) economic cost of road accidents; and c) the operational cost caused by congestion—accelerated wear and tear of vehicles, excess use of fuel, oil etc. In the framework of such an analysis, alternative solutions for building and widening roads, of constructing interchanges, constructing suburban railways, and others, should be examined and ranked in order of priority according to the criteria described above.[19] A program agreed to by all the parties involved should then be implemented.

[19] A committee was appointed in 1987 to examine the worthwhileness of various transport projects. Represented on the committee are the Ministry of Finance, the Ministry of Transport, the Public Works Department, as well as transport firms and enterprises (such as the Netivei Ayalon company and Israel Railways), and transport research institutes.

6. TOURISM[20]

Incoming tourism rebounded in 1987 from the low of the preceding year and reached a new peak: the number of tourist arrivals[21] rose to 1,380 thousand—a increase of 25 percent, after a 13 percent decline in 1986—and 9 percent above the previous peak, in 1985 (see Table VI–11). According to national accounts data, income from tourism services in 1987 amounted to about $1,350 million.

The disturbances in Judea-Samaria and Gaza which began in December 1987 had no effect on tourist arrivals in the first two months of 1988, but in March–April arrivals declined considerably.

The 1987 recovery of tourism was particularly marked in tourism from the U.S. and Canada, which grew by 36 percent, while tourist arrivals from Europe was some 24 percent higher than its previous peak in 1985. These two areas account for more than 80 percent of total tourist arrivals. The principal reason for the disparate increase in tourism from the two areas was the continued weakening, in 1987, of the dollar against the European currencies, which reduced the American tourist's purchasing power both in Israel and in Europe.

The large increase in tourist arrivals benefited the hotel industry. The number of nights spent in hotels recommended for tourists increased in 1987 by 35 percent, after a 17 percent decline in the previous year, and was 12 percent higher than in 1985. Bed occupancy also increased considerably, as did the hotel revenues—by some 35 percent in dollar terms, and 20 percent in terms of constant sheqels,[22] after a 10 percent decline in 1986. The stepped-up demand for hotel services led to a 7 percent rise in the sector's number of employees, together with a rise in productivity which offset its fall in the previous year. The ratio of labor costs to total income declined in 1987, and raised the industry's profitability. In contrast, the industry's terms of trade worsened, as in 1986, since most hotel transactions are in U.S. dollars and prices are determined by binding rates that cannot be raised at any chosen point in time. During 1987, particularly towards the end of the year, the sheqel in fact appreciated against the dollar while the

[20] This section deals mainly with incoming tourism, i.e., exports of tourism services. Tourism is not a defined economic sector, since expenditures by tourists are recorded in many industries—hotel, restaurant and coffee shop services, commerce, transport, etc. The product originating from tourism services is estimated at some 5 percent of the total business sector product. This ranks Israel among the countries in which the product from tourism is very high.

[21] Most of the analysis in this section is based on this definition of the number of tourists, which excludes cruise visitors, since the latter tend to stay only briefly and have little impact on the various sectors that serve tourism, such as hotels, restaurants, etc. The number of cruise visitors also rose considerably in 1987, but was still 20 percent lower than in 1985.

[22] Current sheqel receipts deflated by the consumer price index. There is no price index of inputs to the hotel sector, the construction of which requires a study on this industry's 'expenditure basket'.

Table VI-11
TOURISM TO ISRAEL, 1984–87
(Thousands)

				Percent annual change			
	1985	1986	1987	1984	1985	1986	1987
Visitor arrivals, total[a]	**1,436**	**1,196**	**1,518**	**7.8**	**14.2**	**–16.7**	**26.9**
Tourists	1,264	1,102	1,379	5.0	15.5	–12.9	25.2
Cruise visitors	172	94	139	31.5	5.4	–45.2	47.1
By mode of travel							
Air	1,079	930	1,151	9.9	15.3	–13.9	23.8
Thereof: to Eilat	(46)	(64)	(83)	(100.7)	(63.7)	(39.6)	(29.3)
Charter flights	192	185	240	8.2	6.4	–3.5	29.4
Scheduled flights	887	744	911	10.3	17.5	–16.1	22.4
Land	166	154	205	–17.5	17.6	–7.2	33.3
Sea	20	18	23	–9.5	7.7	–6.2	26.8
By selected countries of residence							
Europe	677	665	840	8.9	6.3	–1.7	26.2
United Kingdom	129	134	156	7.3	–1.5	3.6	16.2
France	141	136	159	–2.0	12.5	–3.3	16.8
West Germany	146	139	182	20.2	8.9	–4.5	30.9
United States and Canada	405	240	328	13.2	–7.6	–40.7	36.4
Asia and Africa[b]	75	80	92	11.6	–10.8	6.7	15.6
Latin America	37	50	41	17.5	10.7	33.3	–17.9

[a] Excludes persons arriving from Lebanon without a tourist visa (residents of southern Lebanon, U.N. military personnel, and diplomats), foreign tourists in transit to Judea-Samaria and the Gaza District, and visits by holders of Israeli passports residing abroad. From May 1985, includes tourists arriving after a stay of one week or less in Sinai.

[b] Excluding Lebanon. The annual fluctuations in 'tourism' from that country were related to the Lebanon war and its aftermath.

industry's costs continued to rise. Several factors combined to raise the hotel industry's prices: the January 1987 devaluation, the average 10 percent rise in prices per hotel night, and the revision at the end of 1986 of the value-added content for the purpose of calculating exchange rate insurance, but this price increase does not seem to have been sufficient to keep up with the increase in production costs.