CHAPTER VI

THE PRINCIPAL ECONOMIC SECTORS

1. MAIN DEVELOPMENTS

The growth of business sector product,[1] which rose by 4½ percent in 1983, came virtually to a standstill in 1984, while the proportion of exports rose. However, the growth rate of factor inputs did not show a corresponding decline, capital stock in fact accelerating owing to the marked increase in purchases of machinery and equipment in 1983.[2] Thus labor productivity and total productivity (i.e., per unit of factor input)[3] fell off (see Tables VI–1 and VI–A1); the factors which have affected productivity in the last decade (among them rapid inflation, which accelerated considerably this year) evidently continue to burden the economy.

Not all sectors were affected by the slowdown in product growth and 1984 was marked by considerable intersectoral variability, which reflects a change in demand structure—a substantial reduction in domestic demand (after two years of rapid growth) and the expansion of exports (with stagnated in those years). This reflected the fact that the main thrust of economic policy was now aimed at narrowing the trade deficit, as well as other factors (such as the decline in the public's portfolio after the bank-share crisis) which had a direct effect on demand. Exports benefited from the marked expansion of world trade in 1984. Those sectors which export a comparatively large proportion of their output, such as industry and transport, benefited from the recovery of exports and their product grew appreciably (see Tables VI–3, VI–4, and VI–A2). Industrial exports grew substantially and their share in total industrial production rose to 52 percent (compared with 45 percent in 1983). Shipping and aviation benefited from increased export shipments from Israel and increased activity between foreign ports. This year's rise in relative import prices increased the share of local production in sectors facing competing imports, particularly industry. (The opposite happened in the preceding two years; see Table VI–A7.) On the other hand, those sectors in which the bulk of output goes to the domestic market

[1] As measured from the income side. For a comparison with the expenditure-side estimate (national accounts), see Table II–2.

[2] Part of this increase stemmed from the fact that the lifespan of capital goods is shortening (a long-term process). Much of it is due to the reduction in import prices in 1983. See Chapter II.

[3] The weights of labor and capital are assumed to be 32 percent and 68 percent, respectively, as in the productivity calculations of Table II–2.

Table VI-1

BUSINESS SECTOR INDICATORS, 1960–84

(Annual average real change, percent)

	1960–1965	1966–1972	1973–1978	1979–1984	1981	1982	1983	1984
Product[a]	8.9	9.2	3.7	2.6	4.0	2.6	4.4	0.2
Labor input[b]	4.6	2.7	0.0	2.0	2.2	0.3	3.4	2.4
Capital stock[c]	10.4	7.5	6.6	3.8	3.0	2.9	3.1	4.7
Investment	8.2	7.5	–0.3	2.9	7.5	9.0	26.4	–15.8
Labor productivity[d]	4.2	6.4	3.7	0.5	1.8	2.3	1.0	–2.2
Capital intensity[e]	5.6	4.7	6.6	1.8	0.7	2.7	–0.3	2.2
Total productivity[f]	2.5	5.0	1.6	0.0	1.6	1.4	1.1	–3.0
Exports	..	..	7.0	4.4	4.8	–3.7	1.1	14.7
Credit[g]	..	..	..	3.9	4.3	35.8	–7.4	–16.9
Energy consumption[h]	..	..	3.3	2.2	2.5	4.0	1.2	0.6

[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.
[h] 'Final' use of energy (see note d to Table VI–9) in tons of oil equivalent. The data apply to the whole economy.

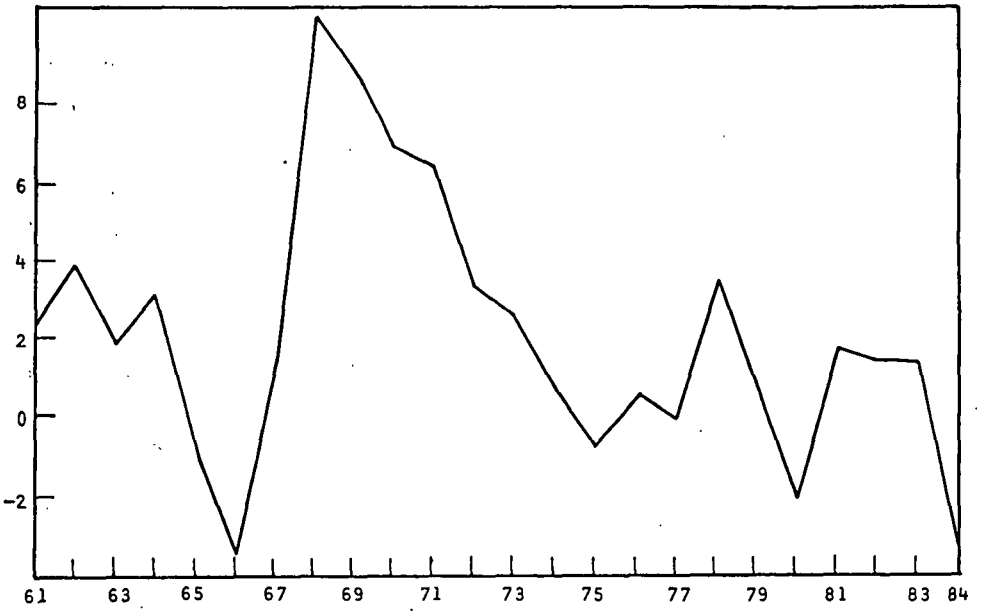
suffered from the contraction of domestic demand, for example, construction (which exported only 2 percent in 1983) and trade and services (21 percent). Construction product, which has been declining since 1982, dropped further in 1984, and its share in total business sector product continued to shrink (to 11½ percent in 1984 compared with 14 percent in 1981 and 20 percent in 1972). Trade and services product, which rose at an average annual rate of 5 percent in the last three years, declined this year (see Table VI–A1). In spite of its large export component (41 percent in 1983), agricultural product dropped by 3½ percent, in marked contrast to 1981–83, when it rose at an annual rate of close to 8 percent. Although agricultural exports excluding citrus grew appreciably (see Table VI–2), the increase was offset by the sharp drop in citrus exports and cotton production due to international competition and natural conditions. Agricultural income declined even more steeply, since input prices rose faster than output prices.

The change in demand structure also had an indirect effect on product, as can be learnt from the input-output table. Thus, for example, industries producing building materials were held back by the decline in construction.

Figure VI-1

TOTAL FACTOR PRODUCTIVITY, 1961–84

(Percent annual change)



This year's impressive growth in industrial product arrested the decline in its share of business sector product (from a peak of 30.5 percent in 1977 to 28 percent in 1983), while the slowdown in trade and services product moderated the rise in its share. As mentioned, the share of construction continued to decline. Agricultural product has been expanding since the early 1970s, in contrast to the trend in developed countries.

The persistent stagnation of productivity has aroused much discussion and various causes have been adduced. The principal ones are the escalation of inflation and the increasing volume of factors of production engaged in coping with it; frequent changes in economic, especially fiscal, policy; and sharp changes in the composition of demand, chiefly the shift to imports because of their relative cheapness (until 1983). The relationship between inflation and productivity is not clearcut—inflation has become much worse since 1974, while total productivity increase has remained stable at a low rate.[4] At the same time, the rapid inflation, together with other factors, increased producers' uncertainty and undermined

[4] Labor productivity has dropped considerably since 1973 (see Table VI-A1). However, it seems that this is at least partly connected with the fact that the rate of change of capital intensity (capital per man-hour) dropped from 6.6 percent per annum from 1973 to 1978 to 1.8 percent per annum for 1979 to 1984 (see Figure VI-1).

the economic stability that is essential for product planning and efficient factor utilization. The effect of these factors on productivity was no different in 1984 from what it was in other years: uncertainty persisted and productivity slowed to a standstill.

The inflationary spiral that has beset the economy in recent years, gaining momentum this year, can produce sharp changes in unit wages and in the "terms of trade" between input and output prices. These changes may lower profitability in industries in which it is difficult to adjust output prices to increases in input prices and nominal wages, and this can certainly be blamed on inflation (see Chapter III). The terms of trade of agriculture deteriorated in the 1983/84 agricultural year and dropped by over 18 percent, whereas in 1982/83 they rose by a similar percentage. This is also true of transport: its relative output prices fell against the CPI (land transport) and in dollar terms (shipping and aviation). On the other hand, the terms of trade of industry improved in 1982 and 1983, but their positive effect on profits was offset by the rise in unit wages. In 1984, unit wages went down, in line with the general trend in real labor cost (see Chapter IV), while the terms of trade remained stable.

Business sector fixed investment declined by a steep 16 percent, as is consistent with the slack in business sector product.[5] Industrial investment, however, rose by 2 percent.

The slowdown in product growth affected energy consumption, which did not rise this year. There has been a long-run decline in energy per unit of output since the first (1973–74) oil crisis, particularly in agriculture and industry. This has blurred the relationship between output and energy consumption. Industrial electricity consumption rose substantially in line with the expansion of industrial product, and there was a substantial decline in household use, part of the year's steep contraction of private consumption. This year's most important energy event was the completion of the coal-based Hadera Power Station, so that 60 percent of the country's electricity is now being produced from coal.

The new exchange-rate policy, which stimulated the product of sectors with a large export component, should also have benefited tourism, typically an export industry. Indicators of physical activity, such as the number of tourist arrivals and bednights, did in fact rise in 1984 and suggest steady recovery from the recession due to the war in the Lebanon (1982). But the product of tourism was held back by the widening gap between the effective and official exchange rates. Aside from its effect on the number of tourists, this gap increased the amount of foreign currency exchanged by tourists in the black market. A contributory factor was the consistent strenghthening of the dollar against European currencies, since a large proportion of foreign tourists are from Europe.[6] The consumption

[5] A large part of the decline occurred in the investment of public sector corporations (see Chapter II).

[6] Tourism from Europe increased by 8 percent in 1984 (as did tourism from North

of local tourist services by Israelis also declined, in line with private consumption.

Trade and services product failed to rise this year. In previous years accelerating inflation increased employment in financial, business, and legal services, while a substantial growth in private consumption increased employment in trade; the employment share of wholesale and retail trade and financial, business, and legal services increased from 17.3 percent in 1980 to 19.5 percent in 1983. In 1984, the decline in private consumption, particularly in imported consumer goods, reduced product and employment in wholesale and retail trade (see Table VI–A3), while the banking system's efficiency drive (triggered by the October 1983 bank-share crisis) reduced employment in the financial services (the contraction was confined to commercial banks). Business services employment continued to expand as inflation stepped up, but its product failed to rise.

In 1982 there was an exceptional increase in the flow of medium and long term credit to the business sector; in 1983 it began to move back to the previous level, and continued to do so in 1984, when additional factors came into play—the substantial fall in investment and the rise in the interest rate. Average short-term credit balances did not go down this year. However, both the marginal and average cost of credit rose steeply, with adverse consequences for business activity. Export credit rose (absolutely and relatively), in line with export recovery.

2. Agriculture[7]

The year 1984 was a particularly difficult one for agriculture: total output (including agricultural intermediates) and product, which showed signs of recession in 1983, fell for the first time in many years, by a steep 2.7 and 5.8 percent, respectively. Coupled with relative price developments, this reduced real income originating in agriculture by 18 percent, bringing it back to the 1982 level (see Tables VI–2 and VI–A4).

The annual growth rate of the sector's product fell to 4 percent in 1982–84, compared with 5 percent in the three preceding years and over 6 percent in 1972–78. This reflects the saturation of the domestic market and a slack in agricultural exports. Rainfall was below average in 1984 and its seasonal distribution was unsatisfactory, whereas 1983 was a good crop year. This obviously affected yields and quality, prices of agricultural products, and the amount of inputs (including agricultural).

America). The number of winter tourists from Scandinavia and Western Europe grew substantially, though. Tourism from the United Kingdom and France rose by less than 1 percent.

[7] Unless otherwise stated, the data refer to agricultural years (ending September 30 of stated year). The figures on output and prices in this section are at prices of April of each year from 1982 on.

Table VI-2

INDICATORS OF GROWTH IN AGRICULTURE, 1973–84[a]

(Real annual change, percent)

	1973–78	1979–81	1972–84	1982	1983	1984
Total output[b]	4.5	2.9	3.5	7.4	6.1	–2.7
Purchased inputs	3.4	1.6	4.3	3.2	4.7	4.9
Gross product	6.3	4.8	4.1	12.7	6.2	–5.8
Factor input						
Labor[c]	–1.6	–0.3	–1.1	–7.0	1.1	3.0
Capital stock[d]	4.8	3.6	2.5	2.4	2.5	2.7
Capital–labor ratio[e]	6.5	3.9	3.5	10.0	1.1	–0.3
Productivity						
Product–labor ratio[e]	8.0	5.1	5.2	21.2	4.9	–8.5
Total productivity[f]	5.3	3.3	3.7	16.4	4.5	–8.4
Total income from agriculture	3.7	5.8	0.1	3.5	18.3	–18.2
Exports[g]	8.6	–0.1	6.2	15.5	–3.2	7.0
Citrus	2.3	–1.9	–8.8	–4.6	–8.4	–13.3
Other	17.9	1.6	15.1	29.6	–0.2	17.8
Prices						
Output prices[h]	35	108.3	154.0	95.4	139.7	250.0
Purchased input prices	38	112.0	157.7	103.3	123.4	276.9
Terms of trade[i]	–12[j]	–3.0[j]	–1.1[j]	–3.9	7.3	–7.1

[a] Agricultural years ending September of stated year. The figures underlying the 1982–84 calculations are at prices of April of each year (using the April CPI). Owing to changes in methods of estimating product and prices introduced by the CBS (starting in 1982), the data for the last three years are not strictly comparable to the earlier data.

[b] Including inputs to agriculture.

[c] Calculated from data of the labor force surveys and the Judea-Samaria family survey (in millions of man-hours).

[d] Gross capital stock (beginning of year).

[e] Per man-hour.

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

[g] Based on data in 1972 dollars (foreign trade statistics of the CBS). Does not include exports to Judea-Samaria and the Gaza District.

[h] Producer prices, excluding agricultural inputs.

[i] Percent change in index of relative prices (output ÷ input).

[j] Total change over the period.

SOURCE: Based on data of the Central Bureau of Statistics.

Output of crops (excluding intermediates) dropped by over 6 percent this year, while livestock output grew by almost 7 percent (faster than last year). The share of livestock in total output rose in 1984, reflecting the failure of crop exports to rise because of the steady fall in profitability and because livestock output, which is mostly marketed home and enjoys heavy subsidies, grew faster (see Table VI-A5); surpluses are often disposed of abroad at a loss (this

accounts for the bulk of livestock exports). Field crop production fell chiefly because, owing to the drought, wheat output fell by over 65 percent and cotton production also declined. Climate and other natural factors reduced orchard yields (deciduous fruit and avocado). Flowers and vegetables, on the other hand, benefited.

Exports of crops, on which recent development efforts have concentrated because of the saturation of the domestic market for most products, remained unchanged for the second year running; the product mix changed, however, chiefly because of a drop in citrus exports (which have now been declining for several years).

Agricultural output prices lagged behind import prices ("terms of trade" deterioration) and the CPI. The terms of trade deteriorated by 7 percent in 1984 (compared with 1 percent over 1982–84); this year's deterioration is part of a long-term relative-price trend. Relative to the CPI, producer prices of output fell by 3–4 percent, while purchased input prices rose by 4 percent.

Real domestic crop prices declined by 10 percent, with particularly strong declines in vegetables and citrus (28 and 19 percent, respectively). This was lagely because the market was glutted by prematurely ripe crops, and there was also some competition from the administered areas. Producer prices of livestock products (excluding beef) rose by 3 percent in real terms. The real producer price of agricultural inputs to industry rose (especially livestock products and citrus).

Export prices to the producer (including exchange-rate insurance) declined by 15 percent (relative to the CPI) for all crops, and by 26 percent for citrus (compared with 9 percent in 1983). This was the combined result of stiffer competition abroad and the depreciation of European currencies against the dollar.

The relative price of feedingstuffs (40 percent of total purchased inputs) rose by 15 percent; the relative price of fertilizers and pesticides also rose. Water and transport became relatively cheaper (down by 10 and 9 percent respectively).

Labor input increased in 1984 in spite of the fall in output; the number of employed persons rose by almost 2 percent, and the number of man-hours by 3 percent. Workers from the administered areas (14–15 percent of total agricultural labor input) accounted for most of the additional employment. The increase in labor input appears to be due to this year's high yields of vegetables and flowers, both of which require a large workforce for the harvest. The share of agriculture in total employed persons declined this year too, to 5.4 percent, compared with 6.2 percent in 1980. Capital stock (end of calendar years) rose by 2.7 percent in 1983 and 1.7 percent in 1984. Productivity declined by 8.4 in 1984, the first time there has been a decline. However, the average for 1982–84 was, at 3.7 percent, still quite high.

Total real income originating in agriculture fell by 18 percent in 1984, compared

with an 18 percent rise in 1983 (see Table VI–A4); one third of the change reflects quantity, and the rest is due to the change in relative prices. In 1981–84, when real product rose at an annual rate of 4 percent, real income originating in agriculture was virtually stable. The real wage bill dropped by 7 percent, and real returns to own labor and capital dropped by 22 percent, compared with 26 percent in 1983. Farmers' income, which is net of interest payments and includes income originating outside agriculture, cannot be estimated owing to lack of data; it may, however, be assumed that if real agricultural income continues to fall or if annual fluctuations intensify, the share of income from alternative sources will increase, whether by necessity or choice. But it should not be forgotten that agriculture is not a homogeneous industry; there are considerable differences in economic performance and profitability—between crops, between domestic and export markets, between specialized and mixed farms, and between types of farm organization (e.g. kibbutzim versus other types).

Gross fixed investment declined by 11–12 percent in 1984, both structures and equipment being affected. This contrasts with the significant increase in 1983 (especially in equipment), and was presumably the reaction from that year's advance purchases as well as the expression of uncertainty and pessimism about agricultural prospects—in view of rapid inflation, this year's fall in private consumption, and the inconsistent subsidy policy.

Bank credit[8] to agriculture rose by 6–7 percent in 1984. Credit from earmarked foreign-currency deposits (connected in part with purchases of equipment) again rose significantly. This year's real changes in output and investment (which declined) and purchased inputs (which rose) do not fully explain the increase in credit.

Agricultural Exports

Agricultural exports rose by 2 percent (at constant prices) in 1984 after a moderate decline in 1983.[9] The share of exports in total marketed output continued to fall gradually, from 30 percent in 1981 to 27 percent in 1984. Almost half of the output of crops is exported. The most striking feature is the sharp decline in citrus exports: until a few years ago, citrus accounted for some 40 percent of total agricultural exports; by 1984 it was down to less than a quarter. The volume of cotton and avocado exports also fell this year. However, exports of vegetables (including the large volume shipped to the Lebanon) and flowers increased.

[8] The increase in credit was calculated by comparing the average of 5 credit balances in 1984 with the corresponding average for 1983. Note that the banks' statistics on loans to agriculture do not distinguish between agricultural and other uses of the loans. There is also no reliable information on the volume of suppliers' credit, customers' credit, and net financing expenses.

[9] Agricultural data come from a variety of sources which differ in classification and definition, and comparison between tables should be made with caution.

Several factors affected export profitability, but not all in the same direction, so that it is difficult to draw clearcut conclusions. Changes in volume have already been mentioned. Competition in European export markets and the weakening of European currencies against the dollar reduced dollar proceeds. Real[10] depreciation of the IS came to 10.2 percent (annual average) against the dollar and 2.4 percent against the five-currency basket. However, the depreciation of the European currencies gradually raised the weight of the dollar in the basket, whereas the bulk of agricultural exports went to Europe, so that returns continued to erode. At the same time, the new exchange-rate policy reduced payments of exchange-rate insurance from 19.8 percent to the dollar in 1983 to 11.3 percent in 1984.[11] Another source of support to agricultural exports is the subsidy element of directed credit, which eroded during the year, owing to the shift to foreign-currency credit.[12] The existing subsidy and compensation mechanisms are not economically justified if the present trend of European currencies and stiffening competition in the European market persist; instead a thorough rethinking of the organization and composition of agricultural exports is needed.

Direct Subsidies

The change in policy in October 1983 (the beginning of agricultural year 1984) raised the prices of subsidized goods, including eggs, poultry, and milk, and subsidy rates fell substantially, continuing to do so until mid-1984. After the decision to hold elections, the prices of essential commodities continued to rise, but by less than the general price level. On average for the year, the subsidy rate on livestock products fell to a little below the 1983 peak. Direct subsidies to agriculture rose by 5 percent in 1984 relative to the CPI. Egg subsidies rose by 27 percent, while milk subsidies fell by 5 percent and the subsidy on broilers rose by 14 percent. However, the subsidy rate on output at producer prices fell, as can be seen in Table VI–A6. This is because livestock output exceeded production quotas. Another possible explanation is the lag between marketing and payment of the subsidy.

The retail price of poultry and milk products rose relative to the CPI in 1984 (annual average). There was also a marked increase in the relative price of imported meat owing to the duty imposed on it.

The frequency and magnitude of the changes in subsidy and relative price policy cause serious damage to farmers and distort factor allocation. One symptom is the alternation of surplus and scarcity, especially with poultry products (eggs and broilers). Milk and its products are less severely affected, since milk consump-

[10] I.e., approximately purchasing power parity, but the calculation ignores the domestic price changes of Israel's trading partners.

[11] Over 1980–84, real appreciation of the IS against the five-currency basket came to 30 percent (more against the principal European currencies).

[12] The credit subsidy rate was estimated at 10–11 percent per export dollar.

tion is more sensitive to changes in income than in relative prices. Note too, the subsidy discrimination between fresh meat, frozen meat, and turkey. The economic rationale of this policy, which changes the relative prices of close substitutes, is by no means clear.

3. INDUSTRY

The growth rate of industrial product picked up in 1984, increasing by 5 percent in real terms (compared with 2 percent in the preceding two years), as a result of a significant rise in industrial exports and in spite of the contraction of domestic demand.

Factor input rose by 4 percent this year, explaining around 70 percent of the increase in industrial product. The growth rate of total productivity (1.5 percent) is not much different from that of the last ten years (1973–83) but is well below that of 1968–72 (see Table VI–3). The recent low rates are presumably related to the substantial fluctuations in the growth rate of industrial product and to sharp changes in the composition of demand (particularly between domestic and foreign

Table VI–3

INDICATORS OF GROWTH IN INDUSTRY, 1968–84[a]

(Real annual change, percent)

	1968–72	1973–78	1979–83	1981	1982	1983	1984
Industrial production	15.1	4.9	2.5	6.3	0.9	3.5	5.1
Labor input (mandays)	91	–0.1	1.1	1.4	1.5	1.5	2.2
Number of employed	8.0	1.8	1.1	2.6	2.0	1.7	0.9
Gross investment[b]	28.2	3.2	4.7	3.8	23.1	17.3	1.5
Gross capital stock[c]	6.5	7.7	5.2	4.4	4.0	4.9	5.5
Industrial production per manday	5.5	5.0	1.3	4.8	–0.6	1.9	2.9
Total productivity	7.0	1.9	0.0	3.7	–1.6	0.6	1.5
Industrial exports	16.6	11.4	7.3	11.9	0.3	–0.7	19.8
Unit wagebill[d]	–4.2	–1.7	4.3	5.1	3.3	4.7	–2.9
Input prices relative to output prices	1.0	0.5	–1.0	–0.2	–3.6	–4.1	–0.3

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

[b] Excluding motor vehicles.

[c] Beginning-of-year stock.

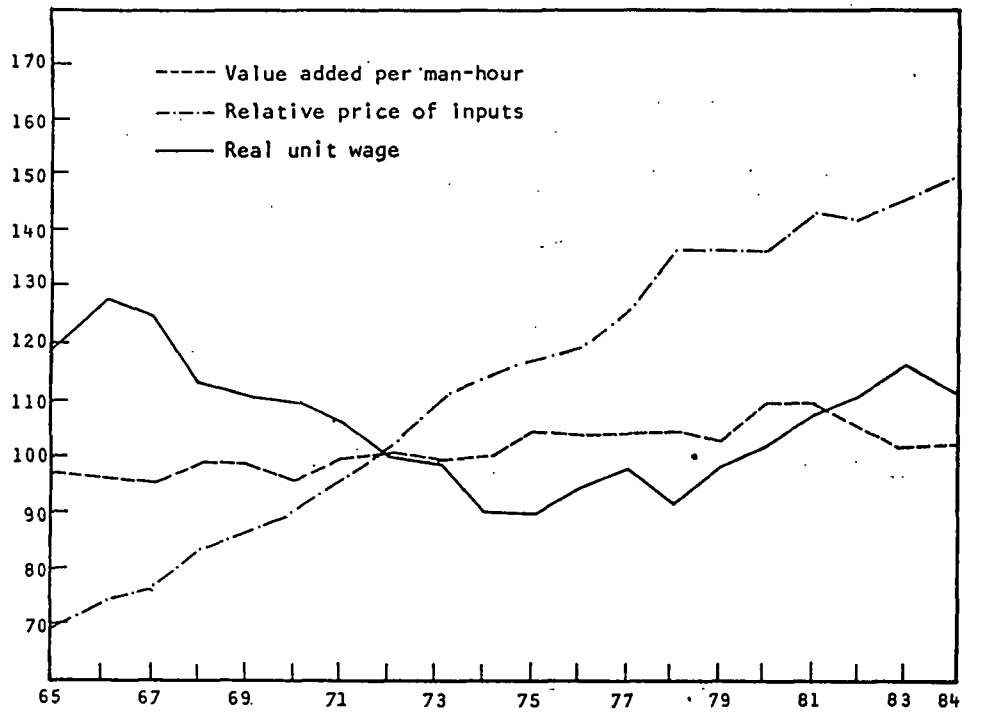
[d] Deflated by index of output prices.

SOURCE: Based on data of the Central Bureau of Statistics.

Figure VI–2

INDUSTRY: REAL VALUE ADDED AND RELATIVE PRICES OF INPUTS,[a] 1965–84

(Index, 1972 = 100)



[a] Index of input prices ÷ index of output prices.

markets); the latter call for adjustments which are difficult to make in the short run. High inflation rates and frequent changes in economic policy are also responsible for the productivity slowdown.

This year, the decline in public sector investment and in the public's portfolio (because of the bank-share crisis) reduced domestic demand: real wages fell and unemployment and the relative price of imports and exports rose. Consequently, industrial product whose final destination is the domestic market fell, as did imports of industrial consumer and investment goods. Since these imports declined by more than their domestic counterparts, the share of imports in final industrial goods contracted (see Table VI–A7). Production of industrial exports rose by 15 percent, a significant increase due to the real depreciation of the IS and to world economic recovery.

Thus 1984 departs from the negative trends of 1982–83. In these two years the measures adopted by the government led to the expansion of domestic demand, while devaluation did not keep pace with domestic inflation. As a result, the share of imports in total final industrial goods rose and exports suffered.

The input of mandays rose by 2 percent this year, output per manday increasing by 3 percent; this is above the annual average rate in 1979–83 (1.3 percent), but is not much more than half the 1968–78 rate (over 5 percent).

While product per manday rose this year, real labor costs dropped and real unit wages fell by 3 percent,[13] bringing the steady rise of 1978–83 to an end. This decline presumably raised industrial profitability and stimulated exports when domestic demand contracted.

In the preceding two years, raw materials prices fell relative to output prices, but this decline was offset by a rise in unit wages, and production did not expand. In 1984, there was little change in the relative price of raw materials.

After expanding rapidly in the preceding two years, industrial investment rose by no more than 1½ percent in 1984, but this compares well with the 16 percent drop for the business sector as a whole. The incremental investment was concentrated in those industries which expanded exports.

4. Transport and Communications

The gross product of transport and communications rose by 5 percent in 1984. Output at market prices rose faster, since land transport, whose output fell by 1 percent this year, increased its share in product more than in output (see Table VI–4). These changes in product and output are the combined result of some slack, and perhaps a decline, in those industries supplying only the domestic market, and a relatively rapid increase in shipping and aviation, whose activities are affected by developments in the world market as well. With the resumption of growth in the latter, world trade also picked up, benefiting aviation and shipping. Export shipments and the output of traffic between foreign ports (sea and air) increased appreciably. The output of inland passenger transport, on the other hand, fell off, along with private consumption, since it too, is related to disposable income trends and population growth. The carriage of freight is largely a function of general economic activity, and this year's construction slowdown affected road haulage output.

Land transport prices fell this year relative to the CPI, mainly because of the decline in freight charges; there was no change in relative bus prices. Shipping and aviation output prices decreased in dollar terms.

Total labor input rose by 4.5 percent this year, and the sector's share of total employed persons came to 6.6 percent.

[13] See Chapter IV on the downward bias in the real wage estimates.

Table VI–4

OUTPUT OF TRANSPORT AND COMMUNICATIONS, 1981–84[a]

	Percent of total		Percent annual change					
			Real output				Price	
	Product[b] 1983	Output 1983	1981	1982	1983	1984	1983	1984
Land transport	**44.6**	**34.2**	5.7	2.4	2.2	–0.9	132	338
Buses	15.6	8.1	5.6	7.0	–2.9	–4.6	120	374
Taxis	5.1	3.0	4.0	0.0	–3.0	–6.0	132	339
Trucks	21.4	22.1	8.4	1.1	5.5	1.4	138	340
Railways	1.9	0.9	–4.3	6.5	3.5	–1.6	120	318
Oil pipelines	0.6	0.1	–50.2	–16.7	–4.7	–1.2	..	..
Shipping and ports	**22.5**	**31.5**	0.5	–4.3	2.5	12.5	124	358
Shipping	15.2	24.7	–0.1	–5.9	2.2	14.5	113	379
Ports	7.3	6.8	4.0	3.9	4.0	3.4	174	282
Civil aviation and airports	**18.1**	**17.6**	4.0	–5.5	21.2	15.1	127	383
Aviation	15.1	15.5	3.1	–5.8	22.4	17.4	126	380
Airports	3.0	2.1	11.6	–2.6	10.7	–4.8	143	419
Communications	14.8	16.7	12.6	1.5	11.5	3.7	108	347
Total output		**100.0**	4.9	–1.5	7.4	7.5	123	356
Total gross product	**100.0**		5.1	–0.0	6.4	4.7		
Labor-input (man-hours)			–0.1	–0.6	0.1	4.5		
Gross fixed investment			10.5	21.8	30.4	–40.0		
Gross capital stock[c]			0.6	0.5	1.5	3.8		

[a] Output and product are at market prices. The product estimate is based on the 1977/78 input-output table; annual changes in output in each branch were applied to the benchmark figure. The figures for 1981–83 are revised and the 1984 figures are provisional.

[b] At 1977/78 prices.

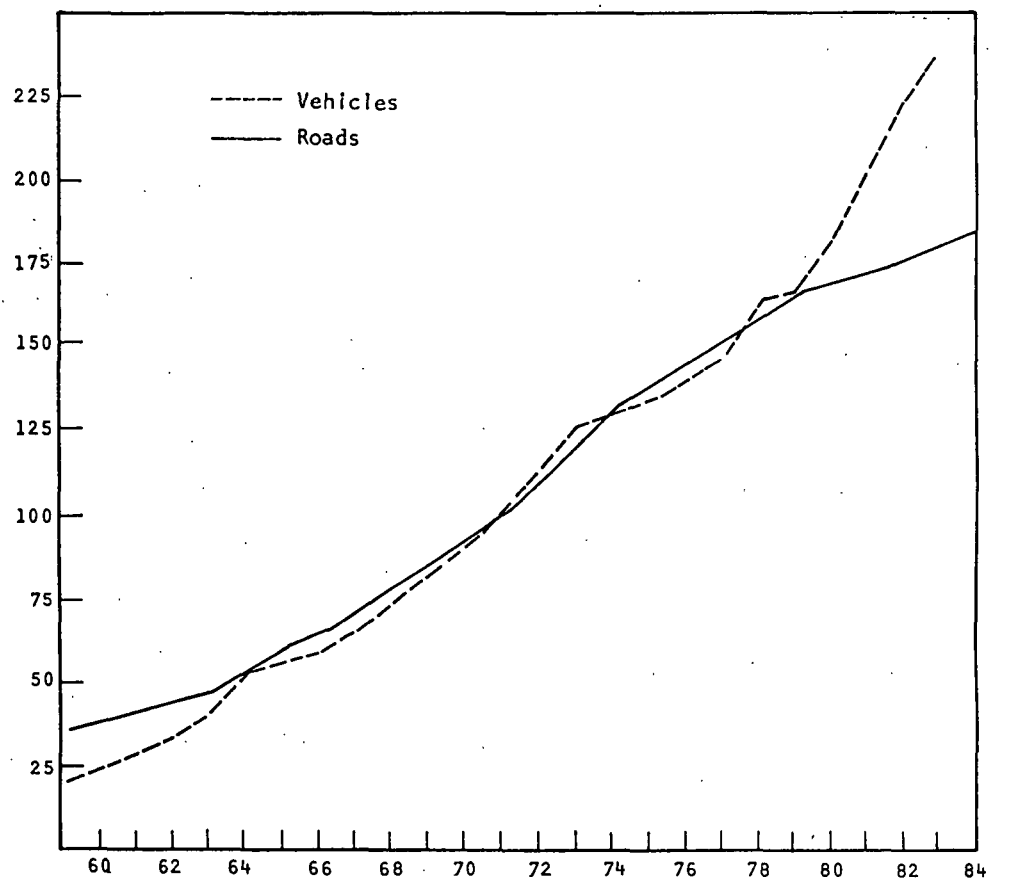
[c] Beginning-of-year stock.

SOURCE: Central Bureau of Statistics and Bank of Israel.

Figure VI-3

THE STOCK OF VEHICLES AND ROADS, 1959–84

(1972 = 100; end-of-year stock)



Gross investment, which increased rapidly in 1983, fell by 40 percent. Excluding transport equipment, the decline was only 25 percent (compared with a 6 percent rise in 1983). The largest decline (42 percent) was in motor vehicles; in 1982 and 1983 these rose by 38 and 17 percent, respectively, in response to the substantial drop in the relative price of imports, which the public believed would be temporary. As a result of public sector budget cuts, gross investment in structures (particularly roads) fell considerably this year (26 percent).

The gross capital stock[14] rose by 3.8 percent in 1983 and by 1 percent in 1984. The stock of transport equipment rose by 5 percent in 1983 and by 0.2 percent in 1984. The stock of aircraft increased and the stock of ships again declined.

[14] The comparison is between end-of-year stock figures.

There was little change in total productivity this year. Note that the stock of roads accounts for around one quarter of the sector's total stock; the sector's output, however, does not fully reflect the capital services of the stock of roads; for example, the services of private cars are not defined as transport output. An alternative comparison is with the stock of motor vehicles: in the 1960s and 1970s, both stocks were growing at roughly the same rate; since 1980, the growth rate of the stock of vehicles has been rising, while that of the stock of roads has been declining.[15]

Inland Transport—Passengers[16]

The output of inland passenger transport fell by 5 percent this year, compared with 3 percent last year; both scheduled (4 percent) and special services (5 percent) were affected.[17] The number of employed persons declined by 1½ percent (i.e., by less than output), while the number of buses did not change, indicating reduced productivity. A slowdown or even a decline in the output of scheduled services is consistent with rising disposable income, as travel habits change and the demand for private car services increases. In 1981–83 the stock of private cars grew at an annual average rate of 12 percent (7 percent in 1984) and this explains a good part of the 1983–84 fall in public transport output. Moreover, the price of public transport rose faster than the price of keeping a private car in 1984. Several indicators show a substantial rise in the use of private cars; thus the number of cars per 1000 persons rose from 104 in 1979 and 1980 to 144 at the end of 1984.

Taxi output went down by more than bus output, in spite of the fact that bus prices rose faster, especially on inter-urban routes, because, absolutely, prices are much lower on the (subsidized) buses. The relative quality of inter-urban bus services also improved.

The frequent and sharp change in real bus subsidies and the subsidy/revenue ratio of the cooperatives are evidence that subsidies are not given on considerations of income distribution nor to further transport objectives (such as inducing a shift from private cars to buses in urban centers). Instead, subsidies are a by-product of budgetary considerations related to the government's general prices

[15] Several indicators suggest that the gap is greater in urban (than in inter-urban) roads, but the available mileage data (vehicles and roads) are not sufficiently detailed to check this. It should be borne in mind that the change in the stock of roads (as estimated) is not necessarily proportional to the change in road capacity. For example, doubling the number of lanes on an inter-city highway more than doubles its capacity.

[16] Buses, taxis, and passenger trains. For buses, which account for 73–75 percent of output, there are figures for the transport cooperatives only; there are no data on tours etc. (dozens of smaller companies operating close to 2000 buses). The change in taxi output was estimated on the basis of partial indicators and returns. Inland flights (Arkia) are included in aviation (see below).

[17] Special hire fell off because of temporary suspension of Ministry of Defense hires and because of price competition from other companies.

policy; This is borne out by the increase in the subsidy/revenue ratio since 1980, which is certainly not commensurate with any increase in needs.

Inland Transport—Freight[18]

The output of inland freight carriage rose by 1 percent in 1984, compared with over 5 percent in 1983. The growth rate of road haulage output[19] (which accounts for 95 percent of inland freight) rose by 1–2 percent this year, compared with an average of 5 percent in 1981–83. Real output of railway freight dropped by almost 5 percent, largely because less oil and cereals were carried. The slowdown in road haulage was due to the contraction of producers' demand for transport services. The 1984 decline in construction activity, particularly in building starts, led to a corresponding drop in transport for construction and related industries, which account for about 20 percent of road haulage output; on the other hand, transport for industry went up by 4 percent. On the supply side, the carrying capacity of trucks rose by 6 percent (provisional estimate) in 1984, similar to 1982 and 1983. As a result, competition between carriers stiffened. Freight charges fell by 7 percent relative to the CPI and by 10 percent relative to input prices, and by about twice as much for haulage for the construction industry.

Communications[20]

Communications output rose by 4 percent in 1984, compared with 11.5 percent in 1983.[21] Between 1981 and 1984, the average annual rise in output came to 7 percent. Telephone services (about 80 percent of communications output) increased by 6–7 percent in 1984 (in terms of revenue at constant prices). This year telecommunications services were transferred to an independent public enterprise, Bezek, which was set up to develop and improve the system and is not constrained by the State Budget (it is still too early to say whether this experiment has been successful). The number of direct exchange lines connected rose by 6.5 percent and the number of new telephones installed by 10 percent. The number of applications for new telephones fells by 7 percent (similar to the change in private consumption), so that the waiting list declined by 2 percent, standing at 252,000 at the end of the year. The ratio between the waiting list and the number of connected direct lines remained the same as in the past (1 to 4).

[18] Includes road haulage, railway freight, and oil and gas pipelines.

[19] The change in road haulage output is estimated from a variety of indicators, and the figures should be treated with caution. The indicators were updated this year and new ones added; the data for previous years were corrected accordingly.

[20] Excluding Post Office Bank.

[21] The estimates of communications output are not too reliable, so too much weight should not be given to the annual fluctuations (quite large variations in the growth rate are recorded for previous years too).

Although they have been indexed since February 1984 telephone charges fell by 7 percent relative to the CPI.[22] The relative price of telephone services has declined by altogether 10 percent since 1981.

Other communications services (particularly the mails), continued slack, with real output falling by 7 percent this year. The relative price of these services has lagged for some years, and remained virtually unchanged this year, but this trend failed to check the fall in output. One reason was the expansion of higher-quality, though dearer, postal services provided by other firms.

Ports and Shipping

After several years of recession, real shipping output rose by 14–15 percent. A major factor was the upswing in traffic between foreign ports, the output of which rose by 21 percent (three times as fast as last year), thanks to world trade recovery.

The prolonged world shipping recession has left its mark on Israeli shipping, which faces strong competition and low prices (see Table VI–A8). Dollar prices of shipping output fell by 8 percent in 1984 (this includes the effect of changes in European exchange rates): a drop of 17 percent for exports, 8 percent for imports and 6 and 7 percent between foreign ports. The dollar price of charters rose by an estimated 10 percent. Competition stiffened between Zim and other carriers (shipping conference members and others), and prices dropped considerably. In August 1984, the shipping conferences and their competitors agreed to raise prices substantially, but this only brought prices back to their beginning-of-1982 level.

The tonnage of imports and exports handled by Israeli ports rose by 9.5 percent; the tonnage carried in Israeli bottoms rose faster, by 15.2 percent (apparently because of the considerable fall in freight charges). The proportion of Israeli trade shipped in Israeli carriers thus rose to 45 percent (38.5 percent in imports and 53.3 percent in exports) compared with 57.3 percent in 1980 and 43 percent in 1983.

The carrying capacity of Israeli shipping (in terms of deadweight tonnage) fell somewhat in 1984; since the peak year, 1975, carrying capacity has declined by one third (reflecting chiefly the sale of oil-tankers after the Iranian crisis, offset by a 30 percent increase in other freighters). In spite of this structural change, the number of employees did not change significantly.[23]

The profitability of Israeli shipping began to contract in 1981, and the industry

[22] Telephone charges were frozen during the first package deal. Note also that in May 1983 peak-hour charges were raised and off-peak charges reduced, and a second off-peak category was introduced. This makes it difficult to measure changes in prices and output in 1983 and 1984.

[23] No data are available for 1984. In 1975–83, the number employed on land fell, the number at sea rose, and the percentage of foreigners in the latter increased.

has been in difficulties in the last two years. There are indications that the cost of maintaining sea crew on Israeli ships is very high, higher even than costs on European fleets. Since wages are an important component of running costs, Israeli shipping cannot be competitive unless the high wages are offset by high productivity. Within the shipping conferences, in which Zim also operates, prices are set by the least efficient firm; a shipping firm's survival therefore depends on market conditions. The past few years have witnessed the contraction of national fleets in the West and there has been a strong shift to flags of convenience in order to ensure that firms remain competitive without recourse to direct or indirect subsidies. (The principal advantage of flags of convenience is that they can be run with cheap manpower.)

Port output rose by 3.4 percent in 1984; most of the rise is attributable to the increased volume of imports.

Airports and Aviation

The real output of air companies[24] again expanded, by 18 percent, compared with 21 percent in 1983. As can be seen from Table VI–A8, this year's rise was chiefly in air freight, which rose by 40 percent (El-Al). Last year there was an exceptional rise in passenger transport—largely the reaction from the prolonged El-Al strike (in the last quarter of 1982 and the first quarter of 1983) which held down 1982 output.

As mentioned, airfreight flown by El-Al rose by 40 percent. Flights on the North Atlantic route increased appreciably (especially to and from the United States), partly because El-Al expanded its flights in the United States. Income from airfreight came to about one quarter of El-Al's total revenue.

Passenger transport also grew rapidly this year, although the effects of the El-Al strike are still in evidence. The number of passengers on scheduled El-Al flights rose by 20 percent (by 17 percent including charters). El-Al traffic on the North Atlantic route rose by 25.4 percent. Flights to new destinations in the United States and the increase in the number of passengers between Europe and the United States contributed to the rise.[25]

El-Al faced sharp price competition in Israel and abroad this year. It reduced fares in order to recapture passengers lost because of the strike and to fill up flight capacity.[26] Average returns per passenger/km. on scheduled flights therefore fell (also because the European exchanges depreciated relative to the dollar)

[24] El-Al (including San-Dor), Arkia, K.A.L. and Maof.

[25] El-Al's share of total passenger traffic at Ben-Gurion Airport rose to 45.7 percent this year compared with 40.5 percent last year (El-Al traffic rose by 15 percent, compared with a rise of less than 2 percent in total traffic). The number of residents departing by air fell by 5 percent this year, compared with 20 percent in 1983.

[26] Price competition was certainly one of the reasons for the closure of the Maof charter company.

by 12 percent (15 percent on the North Atlantic route). The average price decline for total civil aviation output came to 10 percent (in dollar terms).

The average number of persons employed by the airlines remained stable this year; previously, it fell by about 3 percent in each of the years 1981–83.

The real output of airports fell by 4.8 percent this year; since the volume of traffic handled rose, this is on the face of it surprising, but it is probably due in part to the decline in income from aircraft services: servicing charges are based on technical specifications (e.g. weight), some of which have been changing.

International passenger traffic to and from Israel rose by 2.8 percent this year, and the Israeli airlines' share in it rose from 50 percent in 1983 to 53 percent in 1984.[27]

5. Construction

Building activity continued to decline in 1984, and output fell by 8 percent, with most types of construction work affected (see Table VI–5).

The decline in housing investment is a reflection of the decline in building starts in the last two years, itself a response to the prolonged decline in the demand for housing. There was a moderate decline in private residential construction and public construction dropped by 23 percent. Sharp fluctuations in the volume of public construction—both annual and during the year—have been a feature of the sector for many years and are not peculiar to 1984. Maintenance and renovation of dwellings continued to expand, a trend typical of countries whose buildings are on average fairly old.

Investment in nondwelling construction decreased by 12 percent this year, further reducing the growth rate of nondwelling capital stock. Presumably, the source of the contraction in investment is public sector corporations such as the Electric Corporation and Mekorot, since industrial investment went up this year (see Chapter II for a more detailed discussion of investment and capital stock).

Total employed persons fell by 6 percent this year. The number of Israeli employed fell by 8 percent (after a surprising rise last year of about the same amount), and the number from the administered areas declined by 1 percent.

Capital stock, which declined by 2 percent in each of the years 1981 and 1982, did not change in 1983. Investment in construction equipment decreased by 32 percent this year so that capital stock declined by 4 percent in 1984. Construction is the only industry in which the capital stock fell in absolute terms, although the decline falls short of the decline in earthworks and development (both military and civilian). Thus there is unutilized capacity as a result of which

[27] The number of passengers on scheduled flights rose by 4.7 percent in 1984, compared with a 5.1 percent decline in charters (only Israeli companies were affected). The share of charters in total passenger traffic has since 1980 been stable at 20–21 percent.

Table VI-5

INDICATORS OF CONSTRUCTION, 1967-84[a]

	Absolute figures		Percent annual change					
	1983	1984	1967–72	1973–78	1979–84	1982	1983	1984
Output (millions of 1980 IS)								
Total	19,416	17,867	18.7	-3.0	0.3	-1.6	-1.5	-8.0
Residential	8.738	7,944	30.1	-5.6	0.1	-3.9	-7.1	-9.1
Nonresidential	4,616	4,066	11.2	-2.2	-5.0	-0.5	4.1	-11.9
Other[b]	6,062	5,857	9.9	2.5	6.2	1.4	3.3	-3.4
Starts and completions								
Starts (million m. sq.)	4,820	4,210	25.8	-8.0	-3.9	-18.2	1.9	-12.7
Residential	3,360	2,825	31.0	-9.8	-3.7	-18.2	-5.0	-15.9
Nonresidential	1,460	1,385	15.7	-3.8	-4.4	-18.2	22.2	-5.1
Dwelling units (thousands)								
Starts	26.0	22.0	28.5	-12.5	-5.5	-23.7	-8.7	-15.6
Completions	30.5	27.1	11.2	-5.2	-4.4	-0.3	-8.4	-11.3
Employed persons (thousands)								
Total	130.5	122.8	15.3	-1.9	1.4	3.8	6.3	-5.9
Israelis	86.2	79.1	9.7	-3.4	-0.3	1.7	8.0	-8.2
From Judea-Samaria and Gaza District	44.3	43.1	..	2.6	5.0	8.0	3.2	-1.4
Stock of construction equipment (millions of 1980 IS)[c]	3,774	3,772	2.3	4.8	1.4	-1.7	-2.1	-0.1
Price index of residential construction inputs			8.7	36.4	150.3	117.0	134.7	388.4

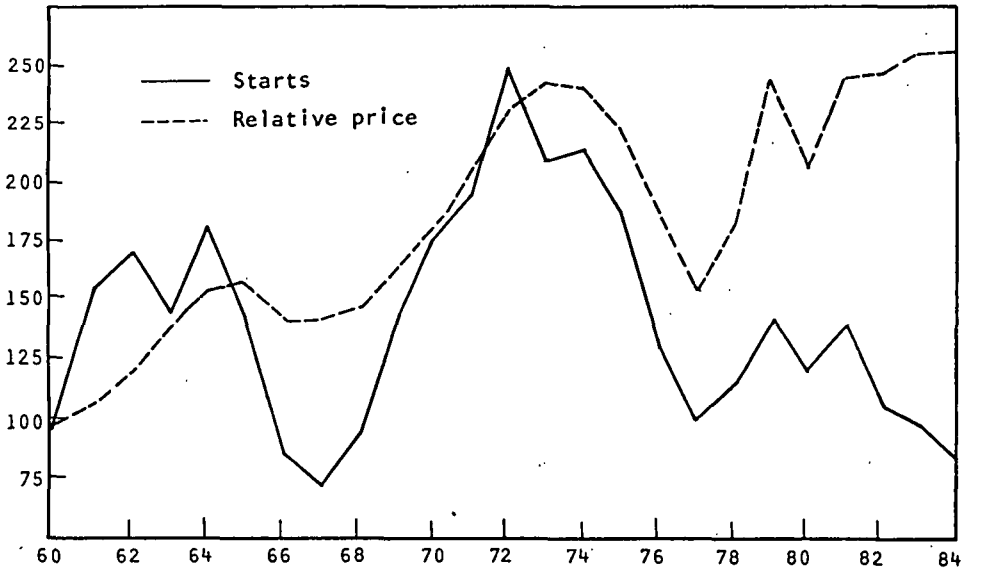
[a] Calculations are from less rounded figures.
[b] Includes defense construction and a Bank of Israel estimate of maintenance and renovations.
[c] Beginning-of-year stock.

SOURCE: Based on data of the Central Bureau of Statistics.

Figure VI–4

DWELLINGS: BUILDING STARTS AND RELATIVE PRICE,[a] 1960–84

(Index, 1960 = 100)



[a] Dwelling price index ÷ CPI.

equipment rentals fell by 20 percent. Sales of cement, a key input, fell by 7 percent this year which is consistent with the decline in output.

The Housing Market

The volume of activity in the housing market has in recent years been affected by the steady slowdown in population growth. The 20–29 age group, from which most new households are formed and whose numbers have been declining,[28] is a dominant factor in housing demand. The direct demand for new housing is largely from established households which sell to the newcomers, and, as the 20–29 age group contracts, this demand tends to shift to renovation and enlargement of existing dwellings. As can be seen in Table VI–A10, apartment sales fell off by 23 percent in 1984, to half the 1980 level.

[28] From 568,000 in 1980 to 550,000 in 1984 (beginning-of-year figures). No data are available for the end of 1984, but preliminary emigration indicators suggest a further decline this year.

Another important factor behind the fall in demand was the gradual cut in subsidies embodied in mortgages to eligible young couples. The rate of subsidy, which was 12 percent of the price of an average apartment in 1980, fell to 5 percent in 1983 for the minimum eligibility group and from 39 to 29 percent for the maximum group. This translates into a rise in the effective price of apartments, which reduced the demand for housing. In 1984, however, the rate of mortgages (as a percentage of the price of a 2½–3 room apartment) increased considerably during the year because effective interest rates on subsidized mortgages fell. As a result, subsidy rates increased for all eligibility groups, particularly for the maximum group (from 29 to 34 percent; see Table VI–A9).

Disposable income, which has been rising at an annual rate of 4 percent in the last five years, has fluctuated considerably round this average owing to frequent policy changes. When uncertainty with regard to permanent income increases, housing demand is affected by changes in disposable income, and this year's 5 percent rise helped to counteract the fall in demand.

Public building starts fluctuated appreciably during the year, with a pre-Budget peak in the first quarter followed by a steep decline in the second (this has been the typical pattern in the last few years). The irregularity of factors governed by budget considerations is also evident in the mortgage market—*ad hoc* adjustment of eroded subsidy and mortgage rates is followed by further erosion, and eventually another adjustment, and so on.

6. Tourism[29]

The tourist industry continued to grow in 1984, but more slowly than in 1983, which was marked by recovery from the 1982 recession (chiefly the result of the war in the Lebanon). Total tourist arrivals (excluding cruise visitors) rose by 5 percent in 1984, compared with 16 percent in 1983.[30] The number of tourist bednights in tourist hotels rose by 5 percent in 1984 (11 percent in 1983).

This slowdown is at first sight surprising considering the substantial rise in per capita income in the main countries of tourist origin and in view of the depreciation of the IS relative to European currencies, and in 1984, the dollar. However, the substantial growth of 1983 reflected recovery from the 1982 recession.

[29] This section is concerned mainly with tourists to Israel, that is, with exports of tourist services. It should be borne in mind that there is no 'tourist industry' and that tourist expenditures are included in hotels, catering, trade, transport, etc. Product originating in tourism is estimated at 6 percent of total business sector product in recent years.

[30] The special characteristics of tourists from the Lebanon justify their exclusion from the total number of tourists. The number of tourists to Israel (excluding tourists from the Lebanon rose by 8 percent in 1984 compared with 11 percent in 1983, while world tourist arrivals rose by only 2 percent. Over a four-year period, however, it is clear that the increase in tourism to Israel was not above the world average.

Table VI-6

TOURISM TO ISRAEL, 1981-84

	Thousands		Percent annual change[a]				
	1983	1984	1981-84	1981	1982	1983	1984
Tourist arrivals (excl. cruises)[b]	**1,042**	**1,095**	0.7	-2.4	-13.6	15.9	5.0
By mode of travel							
Air	852	936	-0.5	-3.6	-14.5	8.2	9.9
Charter flights	167	180	-6.6	-5.1	-25.3	-0.6	7.8
Charter flights	685	755	1.2	-3.1	-11.0	10.6	10.2
Land (by country of entry)	171	141	10.7	10.1	-6.3	76.5	-17.5
Lebanon	65	32	..	—	..	247.4	-50.8
Jordan	66	65	-4.5	-7.0	-36.2	42.2	-1.0
Egypt	40	44	26.0	82.7	0.9	24.2	10.0
Sea	20	18	2.6	-4.9	-5.1	35.1	-9.3
By selected countries of residence							
Asia and Africa	136	109	8.2	-22.0	27.4	72.4	-19.9
Lebanon	65	33	..	—	..	255.4	-48.8
Jordan	12	13	-1.4	-1.2	-28.7	26.0	6.2
Egypt	4	5	20.8	28.0	52.4	6.1	3.1
United States and Canada	334	360	6.7	-1.5	-3.7	26.4	8
Europe	552	563	-3.3	-0.7	-20.5	2.4	8
United Kingdom	109	110	-2.7	-0.7	-13.9	3.8	0.7
France	118	119	-2.0	6.5	-12.0	-1.9	1.0
West Germany	102	117	-3.6	-1.0	-28.3	6.1	14.7
Scandinavia	44	54	-5.8	-5.5	-21.5	-13.6	22.6
Cruise travelers	**124**	**164**	10.6	-12.1	1.7	26.3	32.3

[a] Calculated from less rounded data.

[b] Excludes persons arriving from the 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.

SOURCE: Central Bureau of Statistics.

Total dollar income from tourism shows a similar picture of strong recovery in 1983 followed by more moderate growth in 1984. A less satisfactory impression emerges from hotel data (see Table VI-A11): hotel occupancy rates fell, chiefly because bednights of Israelis declined, but also because the average number of bednights per tourist went down.

Tourism is affected mainly by two aspects of economic policy: investment promotion and export subsidization. Investment promotion concentrates on developing an infrastructure for tourism, and there are loans and grants for (mainly) hotel construction and other tourist services. In the last two years, loans and grants

to hotels decreased, especially in 1983. This is by no means inappropriate, considering the excess supply that has built up in recent years.

Export subsidies consist of exchange-rate insurance and the subsidy component of Bank of Israel credit. Export subsidies vary across industries and the rate to tourism is below the average, particularly in recent years, and particularly in terms of the effective exchange rate of the value-added dollar (see Chapter VII for a more detailed discussion).

In 1984, several steps were taken to reduce the number of Israelis travelling abroad, the most important being: (a) reduction of the foreign travel allowance from $3,000 to $2,000; in October, it was further reduced to $1,000; and (b) at the end of July, a 15 percent tax was imposed on the purchase of foreign currency by Israelis going abroad, and in October, a tax at the same rate was imposed on the purchase (in Israel) of ground services abroad. These steps, coupled with the expectations of devaluation that emerged over the year, have widened the gap between the representative and black exchange rates since the end of October 1983.

These conditions encouraged tourists to convert foreign currency in the black market. At the beginning of July, the tourist exemption from VAT on a long list of services was restricted to payment in foreign currency. Nevertheless, the gap between the official and black market exchange rate was such that at times, especially at the beginning of 1985, it paid to convert on the black market and to make payments—including VAT—in local currency. This became even more profitable during the first package deal when IS payments were computed at a frozen exchange rate: by January 1985, the black market rate was 50 percent above the frozen exchange rate. Data on tourists' currency conversions in the banks and on the foreign-currency deposits of firms selling services to tourists show a sizable fall in 1984 compared with 1983: in 1983, tourist expenditures that reached the banks were 7 percent below the Central Bureau of Statistics' estimate of income from tourism,[31] while in 1984, the gap was 30 percent.

7. Energy

The decline of dollar oil prices in the world market since their 1981 peak continued during 1984 despite world economic recovery, but at a much reduced rate of about 2 percent.[32]

The long-term world response to the 1973 and 1980 energy price shocks (toward greater energy efficiency and oil saving) continued, though, again, with reduced

[31] Based on indicators such as tourist departures and hotel bednights, not on bank data.

[32] This represented a very small fall (0.5 percent) in the real price as defined by average import prices of OPEC countries. But see below for more on international price changes.

Table VI-7

MINERAL FUEL IMPORTS—SELECTED INDICATORS, 1980-84[a]

	1980	1981	1982	1983	1984
Value and dollar price					
$ *million*					
Total	2,116	2,093	1,914	1,601	1,594
Crude oil	1,799	1,685	1,789	1,460	1,428
Percent annual change in quantity					
Total	4.1	-6.2	7.6	-7.0	-1.0
Crude oil	-4.0	-9.7	22.1	-10.6	-3.7
Percent annual change in $ price					
Total	44.6	2.9	-12.9	-10.0	0.5
Crude oil	50.7	3.7	-12.7	-8.7	0.3
Indicators of change in domestic price of crude oil					
At official exchange rate					
Absolute	206	129	86	111	423
Relative (to CPI)	32	6	-16	-14	10
At effective exchange rate[b]					
Absolute	198	130	94	110	398
Relative (to CPI)	29	6	-12	-14	5
Quantity ('000 tons)[b]					
Crude oil	7,399	6,887	8,266	7,326	7,053
Petroleum products	1,561	1,571	330	89	63
Coal	1	361	991	2,136	2,669
Total ('000 tons)	8,961	8,819	9,585	9,551	9,785
Total ('000 tons of oil equivalent)[c]	8,960	8,696	9,248	8,910	8,878

[a] Changes in quantity and price of total fuel and crude oil are based on Laspeyres indexes. The 1984 figures are provisional (change in quantity based on tonnage).

[b] There are regular and substantial exports of petroleum products; imports and domestic consumption are therefore not equal, although they tend to vary proportionately.

[c] One unit of coal is roughly equal to 0.66 units of oil.

SOURCE: Based on data of the Central Bureau of Statistics.

momentum. Israel, however, successfully completed the conversion of about 60 percent of its electricity production to reliance upon coal (at a saving in cost per kwh of at least one third). There has also been a pronounced long-term decline in energy per unit of output in industry and agriculture.

Israeli domestic real energy prices fell back from their 1981 peak in both 1982 and 1983 (for both dollar cost and exchange rate reasons). The decline was arrested, and, despite a significant temporary reduction of taxes (net of subsidies), was moderately reversed (by real depreciation) during 1984. Total dollar expenditure on energy imports was nearly stable in 1984 (-0.4 percent), as was the breakdown of this change into price and quantity. Due to the shift

from oil to coal (especially in 1983), these indexes somewhat overstate true prices and understate true quantities (e.g. in terms of a common energy unit, such as tons of oil equivalent).

Main Developments in the World Oil Market in 1984

In 1984 world market forces continued to press toward lower oil prices—a process under way since the second oil price shock, in 1979–80. This was especially significant in view of the fact that 1984 was the second year of a gradual strengthening of world economic recovery. However, it is also noteworthy that, since 1981, OPEC has managed to resist this pressure to a great extent—essentially by means of deliberate and drastic production cut-backs. The steady rise in the dollar over the same period (1981–84) creates a somewhat exaggerated impression of the oil price reduction. In fact, after rising by about 50 percent from 1978 to 1981, average real oil prices in the industrial countries (deflated by local consumer price indexes), fell from 1981 to 1984, but by only 10 percent.

As a result of the continuing rise in the efficiency of energy use (especially oil), the OECD recovery generated only a very small rise in overall OECD oil consumption in 1984 (34.9 compared with 33.8 million barrels per day in 1983). OPEC's total 1984 production thus remained virtually static at the 1983 level, and indeed, was forced down by 1.6 million barrels per day in the second half of the year.

Dollar prices paid by the OECD countries fell by about 2 percent in 1984. Spot prices remained below official prices, and fell during the year by about 5 percent. Market pressure led to official price reductions ($1–$2 per barrel) by Norway, Great Britain, the USSR, and Nigeria, in October, and to a decision to cut OPEC's quota to 16 million barrels per day,[33] and to make further small average price reductions in January 1985 in the process of reducing price differentials.

Energy Imports, Supply, and Demand in Israel

Table VI–7 provides basic data on the value, prices, and quantities of fuel imports in 1984 and in recent years. After two years of rapidly falling dollar prices, the price of fuel imports stabilized in 1984, with a rise of 0.5 percent. Data on oil prices alone (three quarters) show an even smaller rise of 0.2–0.3 percent, although world dollar oil prices registered a small downturn of 2.5–3 percent.

Essentially, these figures indicate price stability.[34] Moreover, in both 1983 and 1984 the price change for Israeli fuel imports reflects an index number

[33] Almost exactly half of OPEC's 1979 production of 31.5 million barrels.

[34] The absence of any reduction in the oil price index may reflect a lag due to the prevalence of long-term contracts.

distortion tending to bias it upward relatively to the true cost of imported energy. This arises when the price change of a class (in this case fuel) is measured (as is normal in the balance of payments and national accounts) by means of a price index with fixed quantity weights for subclasses during a period of rapid substitution from a more to a less costly subclass (in this case from oil to coal). The true price change, as approximated by the cost per energy unit, such as tons of oil equivalent would be lower in such a period (by a maximum of about 3.5 percent in 1983).[35]

The greatest relative shift from oil to coal took place in 1983. In 1984 the fourth and last unit of the Hadera Power Station was completed. Thus within only three years the country has moved from total dependence upon oil for electricity generation, to approximately 60 percent reliance upon coal (at a total real cost per unit of electricity supply which is at most two thirds that of oil).

The volume of fuel imports was, like prices, almost stable in 1984, registering a drop of 1 percent. (Oil imports fell by 3.7 percent, reflecting the continued substitution of coal.) The measured change in total fuel imports reflects the slowing of the long-term trend toward greater economy in fuel use. Table VI–7 also shows, however, that the effect of falling dollar import prices was reversed in 1984, in terms of real Israeli import prices, by the rise in the real exchange rate calculated on the basis of either the official or the effective import rate. (In 1982 and 1983 reductions in the real exchange rate had compounded the effect of the fall in dollar prices.)

In assessing fuel prices and fuel consumption relative to output, it should be held in mind that economic efficiency does not necessarily call for a fall in the volume of fuel relative to GDP over a long period following a price rise, even a sharp one.

If the economy were static, with a fixed level of technology, this would certainly be the efficient outcome. In fact, however, in both 1973 and in 1980, Israel, like many semideveloped economies, stood far below the productivity levels of the most advanced economies (at roughly 40 percent of the U.S. level in 1973). In 1982, energy consumption per dollar of GDP remained at no more than half the U.S. level (see Table VI–A13). Given the great difference in real per capita GDP, this implies a per capita use of all fuels in Israel of only one quarter that in the United States (and about three fifths that in the EEC).

In addition to the facts cited, econometric evidence also suggests that the normal course of technological progress is to increase energy per unit of output.

Despite this, the evidence on actual trends (Table VI–A13) shows that the

[35] The fuel import figures of Table VI–7 suggest a much smaller price bias in 1984 (of no more than 1–1½ percent). Such a positive price bias also implies a negative bias in the estimate of the quantity change.

Table VI-8

THE REAL PRICE OF ENERGY PRODUCTS, SELECTED YEARS, 1972–84[a]

(Index, 1972 = 100)

	Electricity (all uses)	Selected petroleum products				Total petroleum products[b]
		Kerosene	Distilled fuel oil	Heavy fuel oil	Gasoline	
Weights (1982)		11.1	17.4	54.6	13.9	100.0
Real price (index)						
1972	100	100	100	100	100	100
1975	142	223	246	281	175	211
1979	159	208	254	365	192	215
1980	224	256	313	494	222	295
1981	227	329	404	599	184	319
1982	222	406	485	599	181	343
1983	180	347	442	486	169	292
1984	186[c]	351	450	482[d]	174	294
Price (1980 IS/liter)						
1984		2.26	2.18	0.82	2.96	

[a] Price to consumer relative to CPI.
[b] For 1972–82, weighted by 1975 weights; for 1983–84, by 1982 weights.
[c] Extrapolated on basis of first eight months of 1984.
[d] By the fourth quarter, the index was 5 percent above the 1983 average.
SOURCE: Central Bureau of Statistics, Ministry of Energy, and Bank of Israel.

contrary substitution effect of the two sharp price increases (1973 and 1979–80) has in fact been dominant, and has usually resulted in an absolute decline in energy ratios. In line with the argument presented, the downtrend has been steeper in the developed countries than in the developing ones.

There appears, then, to be considerable scope for energy saving (especially in oil) even in the middle range of development. It is clear, however, that a simple test of "the bigger the better" is not applicable to energy saving; the primary emphasis should therefore be on the correct pricing of energy products, so that the market economy may adapt to cost-based allocative signals.

On the positive side, the rise in energy prices in the world market has in general (with considerable temporary fluctuation) been passed on to the Israeli user (often more promptly than abroad). A second positive tendency, especially in the past five or six years, has been to reduce the traditional sharp inequalities in the pricing of different petroleum products (especially gasoline versus the others) and, to an even greater extent, in electricity tariffs. This improvement is shown in the price data and in Table VI–9. Although the long-term trend has been toward diminishing price distortion, the practice of informal tax and subsidy

Table VI-9

DOMESTIC ENERGY CONSUMPTION RATIOS[a] BYSECTOR, SELECTED YEARS, 1972–84

	1972–73	1976	1979	1980	1981	1982	1983	1984[b]	Entire period[c]
Total uses[d]									
Total	2,615	2,481	2,622	2,601	2,585	2,663	2,605	2,660	+2
Excluding coal	2,615	2,481	2,622	2,601	2,585	2,480	2,279	2,164	–17
Excluding coal and non-energy use	2,444	2,311	..	2,319	..	2,195	..	1,873[e]	–23
'Final' uses[d]									
Total	1,810	1,684	1,778	1,759	1,752	1,805	1,792	1,773	–2
Excluding non-energy use	1,639	1,525	1,560	1,477	1,478	1,514	..	..	–8
Households, public sector, and commercial (GNP)	667	623	669	735	703	718	..	..	+8
Gasoline	284	270	274	260	266	283	305	307	+8
Gasoline (per motor vehicle)	1.96	1.69	1.55	1.46	1.40	1.34	1.34	1.32	–33
Industrial[f] (industrial value added)	1,978	1,739	1,601	1,403	1,371	1,405	..	..	–29
Agricultural[g] (agric. value added)	1,334	1,194	882	740	665	618	..	..	–54
Water pumping	56	61	55	51	54	55	..	..	–3[h]

[a] Energy in tons of oil equivalent. Unless otherwise specified (in parentheses), the denominator is GDP. Denominators in money terms are in millons of 1970 IS.

[b] Preliminary figures.

[c] Percent change from 1972–73 to latest figure available.

[d] Total uses include the energy input into the production of electricity and changes in stocks. (Total uses excluding coal is approximately equal to oil use.) 'Final' uses exclude the net loss of energy in the production of electricity and changes in stocks.

[e] Assumes that non-energy use was as in 1982 (last year available).

[f] Excludes non-energy use. Accounts for 24 percent of total 'final' uses.

[g] Accounts for 5 percent of total 'final' uses.

[h] The ratio of fuel use to water consumption has also been virtually stable.

SOURCE: Central Bureau of Statistics and Bank of Israel.

implemented through the so-called equalization fund remains; although based on the uneconomic assumption that subsidies considered desirable on one petroleum product (such as heavy fuel oil) should be financed by higher prices on others, and that costs and revenues should, ideally, only balance for the entire fuel basket, such a practice inevitably reduces economic efficiency, and its reform should be seriously considered.

Apart from trends in relative prices due to policy changes, we may note a significant, fundamentally cost-based, decline in the price of electricity relative to that of petroleum products (the indexes of Table VI–8 imply that this ratio fell by no less than 37 percent from 1972 to 1984). This trend helps to explain the large relative shift from direct use of petroleum fuels to electricity in both industry and agriculture.[36]

A further positive trend, which has appeared only in the past two years, is a more systematic cost-based differentiation of electricity tariffs on a time-of-day basis, which seems likely to result in significant cost saving (including the avoidance of excessive capacity expansion).

Considering longer-run trends, the stability of total fuel use (Table VI–9) relative to GDP since 1973 cloaks the growth of non-energy use of fuels (as raw material) in the petrochemical industry and elsewhere, and the necessarily rapid rise in the stock of consumer durables and motor vehicles in Israel over this period.[37] Thus the exclusion of petrochemical and other non-energy uses from the 'final' uses/GDP ratio brings the change in this ratio to –8 percent over the period. The fall in this aggregate was, it appears, concentrated in dramatic reductions in consumption per unit of value added in industry and agriculture, to –29 and –54 percent respectively.

For household consumption other than transport the data suggest a slow long-term rise (it was unfortunately not possible to separate households from the public and commercial sectors). But for the almost equally important land transport component (one quarter of 'final' uses), there was in fact a sharp (and internationally normal) fall of about one third in gasoline per motor vehicle. In Israel, however, this was, with respect to the gasoline/GDP ratio, offset by a proportionate increase in the motor vehicle stock.

For oil consumption alone, there was, in addition to the important saving in industry and agriculture, one other major form of saving, outside the 'final' uses category. This consists of the recent shift to coal-fired electricity generation. Thus, the total fuel/GDP ratio excluding coal and non-energy uses (which more

[36] The main factor in this relative price change was the oil price boom in 1973. Because capital costs are a significant part of the cost of electricity, this raised the price of direct oil use relative to electricity by over 30 percent in 1974.

[37] Both income elasticity and the system of extraordinarily high indirect taxes on consumer durables contributed to this result; the latter, ironically, by sharply depressing the normal level of penetration of such goods at pre-oil-crisis real income levels, and thus shifting the phase of most rapid increase to the years since 1973.

or less corresponds to oil used as energy) has fallen by about 23 percent, a figure that lies within the range of oil saving found elsewhere (see Table VI–A13).

The stability of import prices in 1984 strengthened the tendency for fuel prices (including electricity) to follow the trend of the real exchange rate. The slide in real fuel prices in 1982 and 1983 was therefore halted, and there was a small rise for 1984 as a whole. The average extent of this rise was, however, considerably dampened by a reduction in net taxes (largely an increase in subsidies) during the election economics phase of the year.

Real fuel prices did rise substantially after the big devaluation (and round of subsidy cuts) in October 1983. Virtually the entire rise was then given up (essentially by increases in domestic subsidy) during the second and third quarters. The prices were subsequently restored to their post-October 1983 levels by sharp subsidy cuts just before the introduction of the first package deal. Nominal prices were then frozen causing measured real prices to slide downwards and setting the stage for the compensatory price jumps of early 1985.

In short, energy prices were dominated by the extremely volatile general policies affecting subsidies and the prices of controlled goods during 1983 and 1984, which were largely motivated by attempts to restrain hyperinflation or to affect real incomes. Within this volatile scene, there was a more specific and questionable policy of continuing to push the relative price of heavy fuel oil back from its 1981 peak position (which was approximately at the international norm).

At present, we can still say relatively little about the change in fuel consumption in 1984, beyond the aggregate indication that total/GDP and 'final' uses/GDP both remained essentially stable, despite the erosion of energy prices since 1981, or their slight rise in 1984 as a whole (prices stood at 5 to 10 percent above the 1983 level by the last quarter).[38]

[38] An exceptional rise in water-pumping electricity use in 1984 reflects a sharply increased subsidy of agricultural water prices rather than the price of electricity for this purpose (charged mainly to water suppliers, such as Mekorot).