CHAPTER 1

Output and the Principal Industries

Economic activity expanded in 2004, continuing the trend of recovery that had begun in the second half of 2003. The recovery of the economy is due to a great extent to the development in externalities - the resurgence of the global economy and the marked amelioration in Israel's security situation. These changes led to a sharp rise in demand, especially for exports, which grew particularly rapidly. The rally was expressed in the rapid growth rate of business-sector product, which was endemic throughout the principal industries as well as in the labor market: employment continued to rise, the unemployment rate fell throughout the year, and the average wage increased. The rise in total factor productivity (TFP) outstripped that in wages, so that unit labor cost declined.

TFP soared as a result of the increase in factor utilization, after its contraction during the recession had led to the creation of excess capacity. This excess, in conjunction with the policy of fiscal restraint and the fact that the recovery was led by exports, explains why the process has not yet been accompanied by significant pressure to raise prices, create real appreciation, and generate a current-account deficit in the balance of payments - features which generally characterize Israel's economy at times of economic expansion.

Economic policy in 2004 was distinguished by monetary expansion and the reduction of public expenditure alongside cuts in taxes. This policy, and the fact that its two targets - price stability and the deficit target - were attained, served to entrench financial stability and enable the process of economic recovery to become firmly established.

Despite the trend of recovery, the effects of the recession are still evident. Per capita GDP was still lower in 2004 than in 2000; the unemployment rate is higher than both Israel's long-term average, and the rate in developed countries; the level of per capita GDP declined in Israel relative to the OECD countries and the US, for the eighth year in succession.

1.MAIN DEVELOPMENTS

Economic activity expanded in 2004, continuing the recovery trend that began in mid-2003. Per capita GDP rose after declining for three years.

Israel's economic activity expanded in 2004, continuing the trend that had begun in the second half of 2003. GDP rose by 4.3 percent, and per capita GDP was up by 2.5 percent, after declining for three consecutive years (Table 1.1). The recovery was led by the business sector, which grew by 6.1 percent, while the product of the public services declined. The expansion of the business sector is the result of the increase in demand, especially for exports, and to a lesser extent in domestic demand (Table 1.2). The growth process in 2004, led by the business sector, and by exports in particular, alongside price and financial stability, is consistent with sustainable growth.

The marked rise in TFP indicates that the supply side expanded considerably through more efficient factor utilization (capital and labor). The return on net capital, which increased to 13.6 percent, similar to the average in the first half of the 1990s, and the sharp drop in unit labor costs by 4.7 percent also attest to this (Table 1.5). The cumulative decline in unit labor costs in 2003 and 2004 and the current level of the real exchange rate indicate that the competitiveness of Israeli firms has improved, enabling exports to expand by a steep 14.9 percent.

Table 1.1
Indicators of Economic Activity, 1986–2004

(rate of change, percent)

	1986–89	1990–95	1996–99	2000	2001	2002	2003	2004	Jan–Jun[a]	Jul–Dec[a]
Per capita GDP	2.0	2.6	1.2	5.2	–3.2	–2.7	–0.5	2.5	1.3	2.2
Per capita GDP in OECD countries[c]		1.0	2.5	3.2	–0.3	0.9	1.5	2.9	–	–
GDP	3.7	6.2	3.7	8.0	–0.9	–0.7	1.3	4.3	3.0	4.0
Excluding start-ups			3.6	6.5	–0.4	–0.0	1.6	4.1	3.0	3.4
Business-sector product	4.6	7.6	4.2	10.2	–2.4	–2.6	1.7	6.1	4.1	5.7
Excluding start-ups			4.0	8.1	–1.7	–1.7	2.1	5.9	4.2	4.9
Index of manufacturing output[a]	0.9	7.3	2.8	10.0	–5.0	–1.9	–0.3	6.6	9.2	6.3
Unemployment rate[b]	7.1	9.8	8.0	8.8	9.3	10.3	10.7	10.4	10.6	10.1

[a] Annual rates of change, seasonally adjusted, compared with preceding six months.
[b] These figures refer to levels, not rates of change.
[c] From 1991.
SOURCE: Based on Central Bureau of Statistics data.

The rise in activity was expressed in the labor market, and was evident in all the goods and services industries.

The expansion of economic activity affected the labor market, where wages and employment increased during the year and the unemployment rate dipped (Table 1.4). Nonetheless, the response of the labor market was only partial, as is indicated by the decline in the labor share (the share of the return to labor in GDP) and its low level (Table 1.5).

The recovery was evident in most goods and service industries: manufacturing product was up by 6.3 percent, and manufactured exports (excluding diamonds) soared by 15.5 percent. The services industries grew by 6.3 percent, expressing the rapid growth of all the two-digit industries (commerce, transport, business and other services), and the exports of these services increased by 16.5 percent. The exception

was the construction industry, whose product fell by 7.1 percent, but because of this industry's low share in business-sector product its influence was negligible (Table 1.7).

In spite of the trend of improvement, the effect of the protracted recession was still in evidence: per capita GDP was lower in 2004 than in 2000; the unemployment rate, which stood at an annual average of 10.4 percent, was higher than Israel's long-term average and than its level in developed countries.

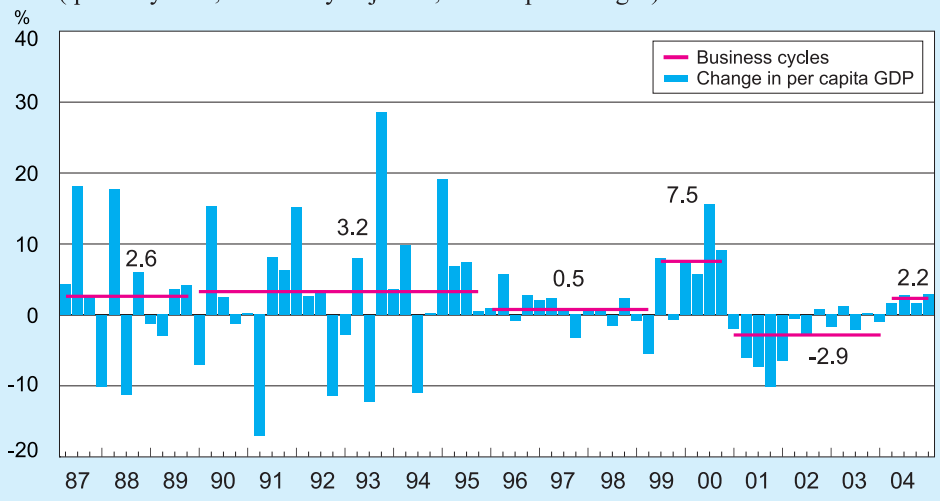
Despite the trend of improvement, the effects of the protracted recession were still in evidence.

The expansion of economic activity is the outcome of a combination of external forces, both global and domestic. Economic policy, which was characterized by fiscal restraint, tax reductions, and monetary expansion, bolstered these forces and enabled them to find expression by contributing to the decline in interest rates for all terms and the attainment of the price-stability and deficit targets while maintaining financial stability.

The expansion of economic activity was the result of the combination of external forces, both domestic and global; economic policy supported these forces.

These factors, which began to operate in the second half of 2003, led to an increase in economic activity, which even accelerated in the course of the year; the growth rates of business-sector product in the first and second halves of 2004 stood at 4.1 and 5.7 percent respectively.

Figure 1.1
Change in Per Capita GDP, 1987–2004
(quarterly data, seasonally adjusted, annual percentages)



SOURCE: Based on Central Bureau of Statistics data.

The two main external factors influencing developments in 2004 were the global economic recovery, expressed in the rapid 2.9 percent rise in per capita GDP in the OECD countries, and the improvement in Israel's security situation. The high global growth rate led to the rise in demand for Israel's exports, contributing directly to their expansion and indirectly to the growth of national income and domestic demand.

The global economic recovery and the improvement in Israel's security situation were the main causes of the recovery.

Global trade, whose growth rate averaged 3 percent in 2001–03, expanded by a notable 8.8 percent in 2004, and an analysis of the import composition data for the US shows that the industries in which Israel specializes grew (see section on manufacturing). This factor, alongside the improvement in the security situation and the real local-currency depreciation, served to greatly increase exports (excluding diamonds), by 16.2 percent. This increase is biased towards the high-tech industry, in both goods and other services, which include a large high-tech component, such as software services, and R&D. The recovery of these industries is also indicated by the steep rise in investment in start-ups, which is recorded as an increase in the inventory of these firms. The expansion of the exports of the high-tech industry persisted throughout the year, while the exports of the other industries were characterized by a large increase at the beginning of the year and a moderate growth trend or stability later on.

The improvement in the security situation was expressed in a steep rise in exports of tourism services.

As stated, in 2004 there was a significant improvement in the security situation, with a 47 percent decline in the number of terrorist incidents, and a 54 percent drop in the number of persons killed or wounded as a result of them. This had a marked effect on economic developments, particularly on domestic demand. The improvement in the security situation resulted in a steep increase in exports of tourist services, which were up by 40 percent, indicating that the improvement was internalized abroad, as well as in a decline in domestic defense expenditure, for the second successive year. This development, together with tight fiscal policy, led to the reduction of Israel's risk premium and made it possible to implement expansionary monetary policy while adhering to price and financial stability. The fact that the two targets of economic policy—the deficit and inflation targets—were attained in 2004, together with the coordination of economic policy, led to the reduction of the real interest rate for all terms, alongside the increased stability of the financial markets. This occurred despite the absence of political stability, expressed in frequent changes in the composition of the coalition and the failure to pass the 2005 Budget Law in accordance with the planned timetable.

These developments in the externalities confronting the economy, alongside political factors which operated in a positive way, gave rise to a considerable improvement in individuals' expectations. This may be inferred from the sharp increases in domestic share prices, beyond those in stock markets abroad, as well as from consumer surveys and the Bank of Israel's Companies Survey.

Domestic demand rose by 3.9 percent, as a result of the 5.7 percent increase in private consumption and the 6.4 percent expansion of gross domestic investment—two uses that display considerable sensitivity to changes in the security situation.[1] These increases were partly offset by the 1.3 percent decline in domestic public consumption.

[1] See Z. Eckstein and D. Zidon (2003), "The Macroeconomic Consequences of Terror: Theory and Practice in Israel" (Hebrew), and S. Haj-Yehia (2003), "Terrorizing the Consumers and Investors" (mimeo).

The rise in GDP in 2004 was primarily the result of the rise in exports, and to a lesser extent of the expansion of domestic uses (Table 1.3). The contribution of exports would appear to have been even greater, because their expansion contributed to the rise in both consumption and investment via the income channel. The contribution of the improvement in the security situation to the rise in exports is only secondary (with the exception of tourism, whose effect on total exports is slight).

The rise in GDP in 2004 was due mainly to the expansion of exports

To date the recovery process has not been accompanied by significant pressure for higher prices, real local-currency appreciation, or the creation of a deficit in the current account of the balance of payments, all features that have been in evidence in the past when Israel experienced rapid economic growth. This situation, in which the offsetting price mechanisms have not yet kicked in, enabled the recovery process to persist at a high rate throughout the year. This was possible because the economic rally was primarily export-led, due to the very low starting-point from which the resurgence began—expressed in excess capacity—and the reduction of public expenditure.

The recovery process has not yet been accompanied by significant pressure to raise prices, create real appreciation, or generate a deficit in the current account of the balance of payments.

In contrast to the positive external changes described above, Israel's terms of trade deteriorated in 2004, among other things because of the steep rise in the price of crude oil. A deterioration of this kind can have a direct negative impact on GDP as it pushes up production costs, depresses domestic demand due to the effect on national income, and indirectly causes export demand to drop by harming the global economy. It seems, however, that the real direct and indirect impact of this change on Israel's economy was slight, for reasons that will be given below. Because of the deterioration in the terms of trade, real gross domestic income in 2004, expressed in Israel's purchasing power abroad, rose by only 3.2 percent.

Fiscal policy had a mixed effect on economic activity in 2004, and it is difficult to ascertain whether its overall impact was expansionary or contractionary. On the expenditure side, policy was restrictive, expressed in the decline in government spending and transfer payments for the second year in succession. Most of the budget deficit this year is explained by the business cycle (Chapter 3, especially Table 3.14). On the other hand, the attainment of the fiscal target also had several expansionary effects on both supply and demand. The deficit target was met solely by reducing the current public expenditure component, without harming the capital account.[2] The number of public-service employees fell, and the attainment of the target was accompanied by the reduction of direct and indirect tax rates in the framework of a long-term plan which signals reliable, not temporary, reductions.

Fiscal policy had a mixed effect on activity in 2004.

Several factors were at work on the demand side. The policy of reducing direct taxes acted to increase private consumption in the short term,[3] as did the decline in indirect taxes. Fiscal restraint made it possible to implement expansionary monetary policy, thereby stimulating consumption and investment, while creating direct pressure

[2] Including public-sector investment in the infrastructure and the public services.

[3] See: Y. Lavi and M. Strawczynski (2003), "An Empirical Examination of the Effect of Fiscal Policy on Private Consumption in Israel, Emphasizing Fiscal Expectations" Economic Quarterly (4) December (Hebrew).

for real local-currency depreciation by means of the fall in aggregate demand for nontradables. Expansionary monetary policy also served to generate real depreciation in the short term, via its effect on the nominal exchange rate. In general, macroeconomic policy gave rise to real depreciation in the short term, thereby stimulating exports and offsetting the effect of the fundamentals, which served to create real appreciation.

The contraction of current transfer payments acted to reduce private consumption, especially by the weaker socio-economic groups, as is attested by the decline in consumption by the lower deciles in 2003[4] and the high elasticity of private consumption to transfer payments.[5] Fiscal policy such as that adopted in 2004 has been found to have an expansionary effect on GDP,[6] though this channel was secondary this time, because of Israel's large output gap.

Fiscal policy on the expenditure side was regressive in terms of income distribution this year.

Fiscal policy on the expenditure side was regressive in terms of income distribution in 2004, because a large part of the cuts in public spending were made in the current transfer payments item, both in order to attain the deficit target and in an effort to increase the labor-force participation rate. The current transfer payments item accounts for a considerable part of the income of lower socio-economic groups, so that their reduction had an effect on private consumption and its composition, as will be described below.[7]

Government policy led the process of declining per capita public expenditure, and this policy will continue in the future, with the adoption of a new fiscal target which limits the increase in public expenditure to a rate that is lower than that of population increase. This could serve to exacerbate inequality by reducing the public services to which the weaker segments of the population have recourse, being unable to purchase these services privately. In order to prevent this, it will be necessary to adapt the rate at which public expenditure rises, especially in items directly connected with population size, such as health and education, to the rate of population increase, and to direct the cuts to expenditure items which are less closely connected with population size, such as security, or to make the supply of services more efficient, so that their level is not affected. Alternatively, the provision of public services could be made more progressive, alongside their reduction in general. In the absence of such measures, access to such services as health and education by the weaker segments of society could be impaired, and in the long run this will have an adverse effect on economic growth.[8]

[4] In 2003, when transfer payments were cut, private consumption by the second, third, and fourth deciles fell, while that by the first (lowest) decile rose (source: CBS Survey of Household Expenditure, 2003).

[5] See: Y. Lavi and M. Strawczynski (2003), op cit.

[6] See: Y. Lavi and M. Strawczynski (2003), "The Effect of Policy Variables and the Rise in Business-Sector Product and its Components in Israel, 1960—1995," Bank of Israel, Economic Review 73.

[7] Inequality data for 2004, based on the survey of incomes, will be available only at the end of 2005. The increase in (net) inequality in 2004 stemmed from the contraction in national insurance payments of income assurance benefits and child allowances, the reduction of direct taxation at the higher income levels, and the economic developments which serve to increase gross inequality, such as higher wages in industries in which wages are higher vis-à-vis the absence of change in wages in industries in which wages are low.

[8] J. Temple (1999), "The New Growth Evidence," Journal of Economic Literature (March), 112–156.

Table 1.2
Sources and Uses, 1986–2004

(volume rates of change, percent)

	1986–89	1990–95	1996–99	2000	2001	2002	2003	2004
GDP	3.7	6.2	3.7	8.0	–0.9	–0.7	1.3	4.3
Imports	4.8	11.0	6.8	12.3	–4.7	–2.1	–1.8	12.0
of which Excl. diamonds, oil, ships and aircraft	4.1	11.7	6.6	14.5	–3.7	–5.5	–3.5	12.9
Total sources	4.0	7.7	4.6	9.3	–2.1	–1.1	0.3	6.7
Exports	4.5	7.4	8.3	23.1	–11.2	–2.4	6.2	14.9
of which Excl. diamonds	3.4	8.3	9.9	25.2	–10.4	–6.4	6.4	16.2
Goods exports excl. diamonds	4.5	9.3	10.1	26.6	–6.5	–6.7	4.7	16.3
of which High-tech	–	–	15.9	52.8	–8.3	–12.0	–1.0	17.0
Exports to Palestinian Autonomy	–	–	3.1	–11.5	–26.7	–8.3	13.8	32.3
Tourism exports[b]	–3.2	7.8	–6.4	–16.8	–57.2	–29.9	4.0	39.0
Gross domestic investment	3.2	15.4	2.4	0.9	–5.1	–13.7	–10.7	6.4
of which Nonresidential	2.1	15.6	2.6	6.3	–2.8	–9.3	–5.1	–0.2
Private consumption	7.1	7.5	4.1	7.7	2.7	1.1	1.3	5.7
Public consumption[a]	0.8	2.9	2.8	2.3	2.7	4.4	–0.7	–1.3
Domestic uses[a]	4.8	8.0	3.4	4.8	1.1	–1.0	–1.4	4.0
Total uses	4.0	7.7	4.6	9.3	–2.1	–1.1	0.3	6.7

[a] Excluding defense imports.
[b] From 1996 tourism exports do not include foreign workers.
SOURCE: Based on Central Bureau of Statistics data.

2. AGGREGATE SUPPLY AND DEMAND AND THEIR COMPONENTS

a. Demand

Domestic demand grew after declining for two years, as a result of increases in private consumption and gross domestic investment.

Domestic demand expanded by 3.9 percent in 2004, after declining for two years in succession. The factors leading to this rise were private consumption and gross domestic investment, while expenditure on public consumption fell, for the second consecutive year. Despite the admirable increase in domestic demand, the CPI remained stable. This was the result of the output gap and the composition of domestic uses: durable goods consumption and inventory investment rose markedly in 2004, as did uses in which the import element is high, so that imports soared.

Private consumption rose steeply in 2004, thereby contributing to the increase in disposable income and improvement in consumers' expectations.

Private consumption rose by a notable 5.7 percent in 2004, contributing 2 percent to GDP growth. Current consumption grew by 4.5 percent, while consumption of durable goods went up by a steep 19.8 percent, mainly as a result of the sharp rise in purchases of passenger cars.

The expansion of private consumption was due to several factors, foremost among them the 5.2 percent increase in wage income due to the rise in both employment and the average wage, and the 6.4 percent increase in the real value of the public's financial assets portfolio, resulting mainly from the rise in share prices. These changes were partly offset by the decline in total transfer payments (Table A.1.9). All in all, current disposable income from wages and transfer payments increased by 3.1 percent, and income from all sources (including capital income and transfers from abroad, which rose sharply in 2004) grew by 4.7 percent. The main reason for the rise in disposable income was the expansion of economic activity, bolstered by the lowering of direct tax rates.

There was a marked improvement in 2004 in consumers' expectations regarding their situation in the future, as is indicated by consumer surveys (see the accompanying Research Department volume, *The Economy: Developments and Policies*). Nevertheless, it cannot be stated unequivocally that this served to increase private consumption beyond its effect on net financial wealth. Whereas the private saving rate from all sources fell to 26.8 percent, a development which is in line with the improvement in expectations for the future, this is the outcome of the sharp increase in consumption of durable goods, and hence the adjusted saving rate[9] rose by 0.2 percentage points, apparently due to consumption smoothing. Although the saving rate, which reached its nadir in 2002, began to rise in 2003 (whichever way it is defined), it has remained lower than in the past (Figure 1.8), and this development is consistent with an improvement in individuals' expectations.

Additional developments which served to increase private consumption were the reduction of VAT during the year and the lower interest rate, which had both a direct and an indirect effect on the value of wealth. The composition of the expansion of private consumption indicates that it was not uniform: there was a sharp 19.8 percent rise in purchases of durable goods, an 8.7 percent increase in purchases abroad by

[9] In the adjusted calculation private consumption was replaced by the standard of living, which is defined as private consumption less durable goods consumption plus an estimate of imputed services derived from the stock of durable goods.

residents, and a 7.5 percent rise in services consumption—all items which primarily characterize the more established socioeconomic groups.

Current transfer payments, which constitute a significant part of the income of the weaker segments of the population, were reduced considerably in 2004. Since the marginal propensity to consume of these population groups is high, this change served to reduce private consumption by half a percentage point.

Gross domestic investment soared, but fixed investment declined.

Gross domestic investment was up by 6.4 percent in 2004, with considerable variance in the development of its components. Fixed investment dipped by 1.7 percent despite the growth of GDP, the reduction of the risk premium, and the lower cost of raising capital, both from bank credit and from nonbank sources such as the capital market, a development which seems to be out of step with the economic recovery. However, an examination of the composition of this investment shows that investment in machinery and equipment went up by 6.3 percent, so that the decline was the result of the 15.3 percent fall in investment in nonresidential structures because of marked excess supply and the 5.9 percent contraction of investment in housing. The decline in fixed investment in 2004 may be explained inter alia by the capital stock/GDP ratio, which rose steeply during the recession relative to its long-term level (Table A.1.10), as well as by the low utilization of capital stock, which fell continuously in 2002 and 2003.[10] The rate of investment in structures returned in effect to its long-term level, while the rate of investment in machinery and equipment was higher than in the past (Figure 1.5).

Most of the increase in investment is explained by the change in inventory, and particularly by the high level of investment in start-ups, which is recorded as investment in the inventory of these firms. The increase in this item relative to 2003 attests to the continued recovery trend of the high-tech industry, and since this industry is human-capital-intensive, and much of the investment in it is directed to wage payments, this item made a significant contribution to GDP.

The increase in manufacturing inventories, after declining for three years, may be explained by the expansion of manufacturing activity, as well as by the relatively low cost of maintaining inventory, due to the lower interest rate. Nonetheless, investment in inventory made only a slight contribution to GDP growth, because of its high import component.

Investment in the infrastructure (transport, communications, water, and electricity) by both the private and the public sectors went down by 14.4 percent in 2004 because of the sharp drop in investment in roads and the electricity infrastructure. Investment in transport and communications without roads rose by 7.3 percent as a result of the continued high growth rate of railroad investment (see section on the infrastructure).

Fiscal policy was contractionary in 2004, and was expressed in a decline in both public domestic consumption and public-services employment.

Domestic public consumption: in 2004 fiscal policy was tight, and was expressed in the 1.3 percent decline in domestic public consumption, and the 0.6 percent dip in the number of public-service employees. The reduction in public consumption was comprised of a decline in civilian consumption and a sharp drop for the second year

[10] In manufacturing, transport, and communications; source: Bank of Israel, Companies Survey, 2004: IV.

in succession in defense consumption, also made possible by the improvement in the security situation. Most of the 2004 budget deficit, which was 3.9 percent of GDP, is explained by the business cycle (see Chapter 3).

This reduction would appear to have acted in the short run to depress economic activity, but it seems also to have had expansionary effects on both the supply and the demand sides, via its impact on Israel's risk premium, on the real interest rate, and on individuals' expectations regarding their future disposable income. Hence, it is difficult to determine what was the overall effect of policy on economic activity.[11] Expenditure cuts were implemented while reducing tax rates and the number of employees in the public sector, changes which serve to boost the supply side and the rise in potential GDP, making it possible to pursue expansionary monetary policy, which supports private consumption, investment, and exports via its effect on the real exchange rate.

The decline in the share of public consumption just when economic activity expanded, as well as the attainment of the deficit target, served to enhance the credibility of fiscal policy. Furthermore, in and after 2005 the fiscal target is also defined by means of limiting the rise in government expenditure, not merely via the deficit target (at the planning stage). This change facilitates the preservation of the cuts and tax-reductions, as increasing taxes will not help to meet the expenditure target,[12] and it will not be possible to cancel the cuts without deviating from the target. This bolsters the expansionary effect of policy in the short term, by creating optimistic expectations regarding future income, and these in turn stimulate private consumption.

The debt/GDP ratio remained at a high level of over 100 percent of GDP, which could have had an adverse effect—both direct and indirect—on investment. However, this was not reflected in the interest rates, because of the decline in the risk premium and expectations of a reduction in the debt/GDP ratio in the near future, derived from the long-term implications of the changes in the public expenditure policy. The contraction of the deficit and the way it was financed in 2004 enabled the government to reduce the extent of borrowing from the public, serving to lower the real interest rate and free up capital sources for the business sector.

Exports were affected primarily by developments in the global economy and by the relatively favorable level of the real exchange rate.

Exports were affected primarily by developments in the global economy, which expanded by a notable 5 percent, as a result of high growth rates in the US, Japan, China, and the UK, and a lower rate in continental Europe. The high growth rate was accompanied by a marked increase in global trade, which rose by 9 percent. Although this rally was concentrated in the high-tech industries of the developed countries, all the components of exports expanded. One of the factors which had a beneficial effect on the exports of the traditional industries was the relatively favorable level of the real exchange rate.

The most rapid growth rate was recorded in tourism services exports. Although the level of activity in the industry in 2004 was lower than in the past, so that the contribution to GDP of a rise of this kind is small, its expansion indicates more than

[11] For a more detailed analysis of the effect of fiscal policy on the supply side see, Bank of Israel, Annual Report, 1998 (Box 2.2) and 1999 (Box 5.1).

[12] For a more detailed explanation of the new fiscal target, see Box 3.14 in Chapter 3.

anything else that the security situation has improved, and this may have had an indirect effect on the other components of exports. Alongside the rapid expansion of the exports of the high-tech industry, 17 percent, their market share in the US also rose (see section on manufacturing), attesting to their improved competitiveness.

Table 1.3
Contribution of Changes in Uses to Change in GDP, 2001–2004

(percent of GDP)

	2001	2002	2003	2004
GDP	–0.9	–0.7	1.3	4.3
Derived GDP[a]	–1.3	–0.9	0.6	5.4
Total domestic uses	1.3	0.4	–0.5	2.2
Private consumption	1.2	0.6	0.6	2.4
of which Excl. durables	1.5	0.8	0.6	1.8
Public consumption	0.6	1.1	–0.2	–0.3
of which Public civilian consumption	0.6	0.4	0.1	–0.3
Gross domestic investment	–0.6	–1.3	–0.9	0.1
of which Nonresidential investment excl. ships and aircraft	–0.2	–0.8	–0.4	–0.0
Residential investment	–0.2	–0.0	–0.2	–0.2
Exports	–2.6	–1.3	1.1	3.2
of which Goods exports	–1.0	–0.8	0.6	2.2
of which Manufactured exports excl. diamonds	–0.9	–0.9	0.6	2.2
Service exports	–1.6	–0.4	0.5	1.0
of which Tourism	–1.3	–0.3	0.0	0.3

[a] The total contributions of domestic uses minus imports, according to input-output coefficients of 1995. Discrepancies may arise due to rounding from the coefficients. The difference between GDP and derived GDP arises because of the deviation of the actual added value.

SOURCE: Based on Central Bureau of Statistics data.

b. Business-sector product

Business-sector product rose faster than factor inputs this year, so that labor productivity and TFP grew markedly.

Business-sector product rose by a steep 6.1 percent in 2004, after a cumulative 5 percent decline in 2001 and 2002 and a 1.7 percent increase in 2003. The increase in business-sector product exceeded that in factor inputs, so that labor productivity and TFP rose considerably in 2004, completely offsetting the decline of the previous years. Most of the increase in productivity is explained by cyclical factors, including the greater utilization of capital and labor due to changes in demand. This is indicated by the sharp rise in the net return on capital, which went up from 5.9 percent in 2003 to 13.6 percent in 2004, and a sharp 4.7 percent drop in unit labor cost (Table 1.5). In addition, the share in GDP of the return to labor declined in 2004, and the share of capital rose for the third year in succession.[13]

An examination of the development of TFP over time indicates that the state of the economy has deteriorated.

An examination of the development of TFP over time reveals that the state of the economy has deteriorated. In the 1990s productivity rose at an annual average of

[13] The rate of return to labor in GDP is relatively stable, and the changes in it are solely cyclical, supporting the calculation of TFP based on the production function with constant coefficients.

Table 1.4
Developments During the Year, 2002–2004

(seasonally adjusted, quarterly rates of change, in annual terms)

	During year			2002				2003				2004			
	2002	2003	2004	I	II	III	IV	I	II	III	IV	I	II	III	IV
Sources and uses															
GDP	0.8	1.4	4.0	1.4	–1.3	2.8	0.4	3.0	–0.6	2.1	1.0	3.4	4.4	3.4	4.8
Business-sector product	0.0	2.0	5.6	0.1	–3.1	3.0	0.1	4.3	–0.1	2.2	1.9	4.5	5.7	4.8	7.5
Private consumption	0.5	3.6	6.5	1.5	2.4	–4.7	3.1	–7.2	12.9	8.6	1.1	6.1	3.3	3.2	14.0
of which: Excl. durables	1.2	2.9	5.0	1.4	1.4	–0.5	2.4	–6.0	10.9	4.7	2.7	4.7	2.3	3.4	9.8
Public consumption	2.8	–4.4	–1.3	4.8	0.5	3.3	2.6	–2.2	–11.6	3.1	–6.3	2.0	0.6	–2.7	–4.9
Fixed investment	–2.2	–5.7	3.0	–3.1	10.8	–11.6	–3.7	–3.1	–2.8	–11.6	–5.2	6.8	–8.8	0.6	14.7
of which: Nonresidential	–2.4	–6.4	7.3	–2.8	14.8	–16.7	–2.3	–2.3	0.0	–14.7	–7.7	12.6	–7.5	0.1	27.3
Residential	–1.5	–3.0	–9.2	–0.5	2.3	–2.5	–5.2	–1.1	–10.8	–9.8	11.1	–5.6	–13.9	–8.1	–9.0
Exports[a]	4.2	7.9	13.0	–2.7	10.2	2.2	7.8	3.1	–3.0	31.7	2.8	34.7	12.2	2.3	5.7
of which: Excl. diamonds	2.2	7.5	13.7	–9.8	2.0	6.2	11.8	3.0	–8.9	37.4	3.7	35.0	17.0	3.9	1.9
Tourism exports	–12.0	44.0	1.4	–9.0	–27.7	3.6	–12.0	–12.9	–19.7	147.1	148.9	12.3	29.0	–3.5	–24.4
Goods exports	3.8	7.1	13.0	2.3	8.0	–0.3	5.4	1.3	0.1	19.6	8.5	34.6	7.8	1.2	11.1
Uses	0.8	1.2	6.9	0.6	1.9	–0.3	0.9	–3.8	0.3	11.6	–2.6	9.8	5.9	5.8	6.1
Imports	1.2	1.3	12.7	4.4	7.5	–5.0	–1.8	–14.9	3.3	21.3	–1.3	27.6	7.7	12.3	4.7
of which Defense imports, ships and aircraft	–5.0	3.4	14.4	0.3	–6.2	–5.7	–8.2	–9.3	8.9	19.3	–3.0	31.9	14.6	–0.6	14.0
Domestic uses	–0.1	–0.8	4.6	3.7	–2.7	1.3	–2.6	–4.3	1.5	5.9	–6.0	3.7	2.8	7.6	4.5
Unemployment rate[b]	–	–	–	10.5	10.2	10.4	10.3	10.7	10.5	10.9	10.9	10.7	10.5	10.2	10.0
Average hours worked by Israelis in business sector[c]	–	–	–	9.5	–0.6	–0.3	5.2	–6.4	–1.2	5.7	–7.1	3.1	–4.1	–3.1	–1.1
Manufacturing production index	0.9	1.8	5.3	1.7	5.8	–4.3	–0.9	–1.7	–2.1	1.1	11.5	10.5	4.3	6.3	8.3
State-of-economy index	–3.0	1.5	5.2	–1.7	–3.6	–3.3	–3.2	–2.7	–1.3	2.2	4.4	7.1	5.9	4.2	5.0

[a] Excluding receipts from factors of production abroad and public-sector interest receipts from abroad.
[b] These data refer to levels, not to rates of change.
[c] Quarterly data based on National Accounts data and Labor Force Survey of Central Bureau of Statistics.
SOURCE: Based on Central Bureau of Statistics data.

only 0.6 percent (Table 1.5). A comparison of per capita GDP in Israel with that in the OECD countries and the US shows that it has been declining for eight years in succession (Figure 1.10). Since Israel is characterized by a high rate of exports, the tradable industries do not appear to be suffering from low TFP, so that the source of the problem must lie in stagnation in the production technology of the nontradable industries.[14]

The labor supply expanded by 2.3 percent and was influenced by several opposing forces. The policy of reducing the number of foreign workers continued, and this went down by 10 percent. The working-age population rose by a relatively low rate in 2004, less than 2 percent, but the labor supply grew by more as a result of the increase in the labor-force participation rate. This stemmed from the greater probability of finding work, the long-term upward trend in women's participation rate, and policy factors, primarily the cuts in unemployment benefits. Policy also acted to replace foreign workers with Israelis by reducing the number of foreign workers, and to a lesser extent by raising the cost of employing them. In addition to the changes in the labor supply in general, the supply of labor to the business sector was also affected positively by the cessation of the employment of additional workers in the public sector, as well as by the reduction of the number of persons employed in it. Because of the expanded labor supply, alongside the rise in the demand for labor, the high unemployment rate, and erosion of the minimum wage in real terms (relative to the average wage), the increase in the average wage was lower than that in labor productivity, and unit labor cost fell sharply, by 4.7 percent.

In spite of the low investment rate in 2003, gross capital stock in the business sector rose by 2.9 percent in 2004, but more importantly, utilization of existing capital stock increased markedly, as is indicated by the continuous rise in the rate of utilization of machinery and equipment during the year.[15] The capital/worker ratio rose, but by a very low rate (Figure 1.2). The infrastructure capital stock/GDP ratio has risen in recent years, and this has had a positive effect on TFP. Infrastructure capital stock at the beginning of 2004 was up by 4.8 percent over its level at the beginning of 2003.

Firms' financing costs declined in 2004: weighted ex post interest on loans, whether CPI-indexed, unindexed, or foreign-currency-indexed, fell markedly, as did the cost of raising capital on the stock exchange. These changes contributed to the improvement in profitability (Table 1.5).

Despite the reduction of the interest rate, total bank credit to firms did not increase. This may attest to firms' supply-side difficulties, such as regulatory restrictions, or to a rise in the price of bank credit relative to the cost of raising capital on the stock market. The extent of capital raised in the capital market by means of bonds and shares rose sharply in 2004. Capital raised by hedge funds, which serves as another source, and sometimes the main one, of finance for the activity of the high-tech industry, also grew

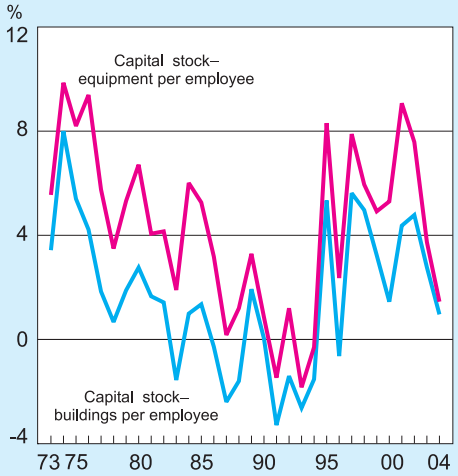
[14] Construction is an example of industry which is lagging behind technologically (see Bank of Israel, Annual Report 2003).

[15] In manufacturing, transport, and communications. Source: Bank of Israel, Companies Survey, 2004:IV.

sharply,[16] The financing constraint reported in the Bank of Israel's Companies Survey declined in the course of the year.

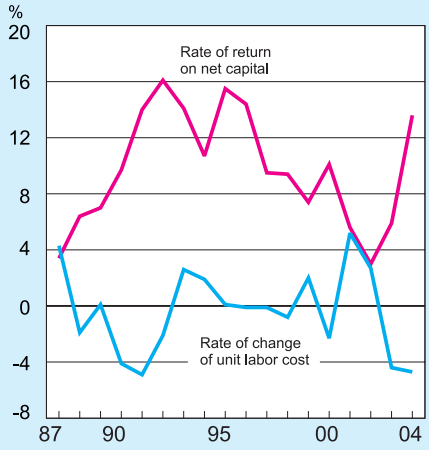
The direct tax rate was reduced in 2004; corporation tax went down to 35 percent, and is expected to continue to decline gradually until it reaches 30 percent in 2007; income tax rates also went down, and here, too, further reductions are planned for the future (see Chapter 3). Empirical studies have found that the reduction of tax rates has an expansionary effect on the supply side by increasing labor inputs, both indirectly and via a rise in TFP.

Figure 1.2
Capital per Employee in the Business Sector, 1973–2004
(volume change)



SOURCE: Based on Central Bureau of Statistics data.

Figure 1.3
Business Sector: Rate of Return on Net Capital,[a] and Rate of Change of Unit Labor Cost, 1987–2004



[a] Excluding roads.

SOURCE: Based on Central Bureau of Statistics data.

Israel's terms of trade worsened in 2004, partly because of the steep rise in the price of crude oil, although its impact on real economic activity appears to have been slight.

The effect of the terms of trade on economic activity: Israel's terms of trade worsened in 2004, in part because of the steep rise in crude oil prices, although the effect of this on real economic activity appears to have been slight. On the supply side, the principal direct impact was on manufacturing, where energy requirements are higher than in the services (except for transport). However, manufacturing industry accounts for only 25 percent of business-sector product, and the share of industries with a high rate of energy consumption (e.g., iron, paper, and cement) in total manufacturing is lower than it was in the past.

Thanks to changes in the structure of the economy, greater efficiency in electricity generation, and technological improvements which have reduced cars' fuel consumption, the share of energy imports in national income fell from 5 percent in 1975 to 2 percent in 1999. In contrast with the second energy crisis in 1980, when the share of imports almost doubled and reached 9 percent (Figure 1.9), in 2004 the price

[16] In 2004 these funds invested $ 1.4 billion in the high-tech industry, up by 40 percent over 2003. Investment in the inventory of start-ups in 2004 amounted to $ 2 billion.

Table 1.5
Supply of Business-Sector Product, 1986–2004

(volume rate of change, percent)

	1986–89	1990–95	1996–99	2000	2001	2002	2003	2004
Gross capital stock	2.4	4.7	9.7	7.8	7.1	5.6	3.9	2.9
Labor input[a]	2.0	7.0	4.4	4.6	–2.0	0.1	0.4	1.1
Civilian labor force plus foreign workers[b]	2.2	5.0	4.8	3.5	0.7	0.2	1.8	2.3
Total factor productivity[c]	2.4	1.3	–1.9	4.4	–3.3	–4.4	0.2	4.3
Rate of return on net capital (%)	5.4	13.3	10.1	10.1	5.6	3.0	5.9	13.6
Road capital stock per factor input unit[d]	1.0	–0.3	0.9	–0.6	4.6	4.9	4.7	3.4
Share of tax on non-wage income (%)[e]	31.8	25.5	21.9	24.2	24.0	21.3	19.9	20.9
Real yield on 10-year bonds (%)[f]	4.1	3.0	4.7	5.5	4.9	5.2	4.9	4.2
Average real ex post interest (%)[g,h]		6.1	10.7	10.1	7.1	8.8	11.9	6.6
Real ex post interest on unindexed credit (%)[h]		7.3	11.7	13.2	7.0	4.9	14.1	6.5
of which Real ex post overdraft interest (%)[h]		8.3	13.5	16.1	8.6	0.6	8.9	6.2
Real ex post interest on CPI-indexed credit (%)[h]		4.2	2.3	7.0	6.1	5.6	6.4	5.5
Real ex post interest on foreign-currency- indexed credit (%)[h]		2.0	8.8	1.5	7.1	15.5	7.4	4.8
Unit labor cost	3.1	–1.1	0.3	–2.3	5.2	2.7	–4.4	–4.7
Return to labor in the business sector[i]			70.5	70.0	72.4	71.6	68.5	66.1

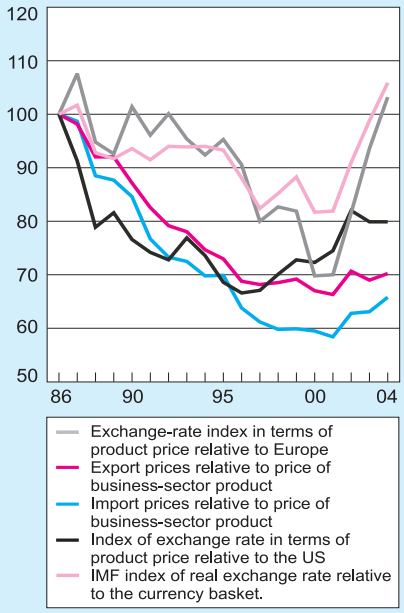
	1970–1961	1980–1970	1990–1980	2000–1990	2004–2000
Total factor productivity	4.8	2.5	2.1	0.5	0.2

[a] See notes to table 1.A.1.15.
[b] The labor force plus the labor inputs of Palestinian and foreign workers, in accordance with their share in the business sector.
[c] Productivity level is calculated as the residual by deducting the rise in inputs (labor and capital) from business-sector product weighted by the production function (see note d).
[d] A factor input unit is weighted at 68 percent labor and 32 percent capital.
[e] Taxes on non-wage income as share of non-wage income in business sector (including executives pay).
[f] From 1987.
[g] Weighted cost of unindexed credit, CPI-indexed credit, and foreign-currency-indexed credit; from 1993.
[h] Deflated by actual inflation.
[i] From 1997.
SOURCE: Based on Central Bureau of Statistics data.

increase was expressed in only a negligible increase in the share of imports, which went up from 3.1 percent in 2003 to 3.6 percent.

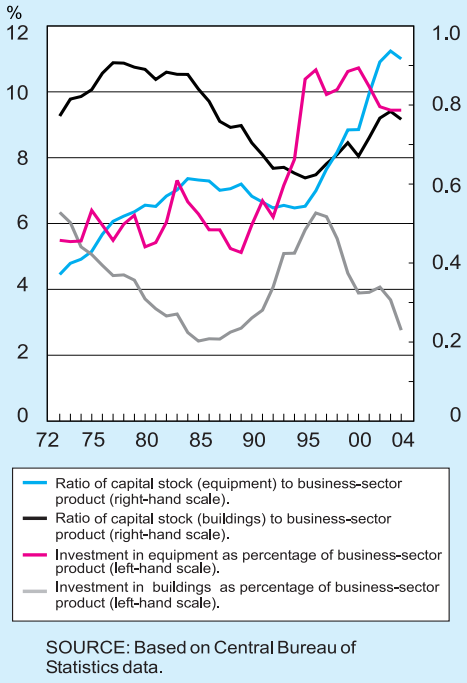
There was another reason for the moderate impact in 2004. In 2004:II Israel began to extract natural gas for the production of energy, and in the first half of the year natural gas accounted for 6.5 percent of total electricity-generation inputs,[17] compared with an insignificant rate (less than 1 percent) in previous years; this input served to produce 9 percent of the total electricity generated in the first half of the year, also attesting to the high level of efficiency of generating electricity from natural gas. As a result of the domestic production of gas, imports of crude oil for generating electricity

Figure 1.4
Price of Imports and Exports Relative to Price of Business-Sector Product, and the Dollar Exchange Rate Adjusted for Price of Business-Sector Product, 1986–2004 (1986=100)



SOURCE: Based on Central Bureau of Statistics and IMF data.

Figure 1.5
Composition of Ratio of Gross Capital Stock to Business-Sector Product, and Investment as Percentage of Business-Sector Product, 1972–2004



SOURCE: Based on Central Bureau of Statistics data.

plummeted in 2004, further reducing the impact of the rise in oil prices on national income.

For similar reasons the effect of the rise in oil prices on the global economy has been relatively small, so that the direct economic impact on Israel via the decline in global demand has also been limited.[18] Thus, for example, Europe's dependence on oil,

[17] In crude oil tonnes equivalent units.

[18] See: Bank of Israel, Inflation Report for the Second Half of 2004, Box 2, where the effect on prices of the rise in the price of oil is analyzed.

which is measured by the share of oil imports in national income, is half what it was in the 1970s. Today the rise in oil prices does not create uncertainty regarding inflation and apprehensions that this may cause a global price rise, as occurred in the 1970s and 1980s, because of many countries' commitment to price-stability targets. Additional explanations for the relatively low impact of oil prices on global economic activity are that these prices are largely the result of an increase in demand, so that the current price of oil is not perceived as lasting, and hence does not affect investment.[19]

Nevertheless, the deterioration in Israel's terms of trade may have a detrimental effect on demand due to the negative impact on national income, so that if oil prices had not risen private consumption and investment might have increased more.

3. DEMAND, SUPPLY, AND THE REAL EXCHANGE RATE

The level of the real exchange rate, measured by the ratio of export prices to the GDP deflator, does not appear to have deviated significantly from its long-term equilibrium level.

According to most indices, the changes in the real exchange rate in the last two years have been relatively small, so that its level is similar to what it was in 2002, when there was significant real local-currency depreciation (Figure 1.4). This level of the real exchange rate, measured from the price of exports relative to that of GDP, was not markedly different in 2004 from its long-term equilibrium level (Box 1.2), which is helpful for the tradable industries, and especially for the traditional ones, which are more sensitive to the exchange rate and to competition in the international markets. The real depreciation of 2004 was created without significant nominal depreciation against the currency basket (Table 1.6), and hence did not affect price stability.

The rise in domestic and global demand caused considerable supply-side expansion, with increased utilization of capital and labor, expressed in sharp rises in labor productivity in TFP. Although the rate of expansion of business-sector product was lower than that of demand for it, not only was there no excess demand, which generates pressure for appreciation, there was even slight depreciation, as is indicated by various indices of the real exchange rate (Figure 1.4). The main reason for the depreciation was the composition of demand, most of the increase in demand, about 10.6 percent, being directed to the tradable sector, and only 1.1 percent to the nontradable (Table A.1.8 in the statistical Appendix, available on the internet).[20]

The moderate increase in the demand for nontradables product at a time when the output gap was significant accounts for the decline in its relative price, as is reflected by indices of the real exchange rate. In addition, the depreciation may have expressed the response with a lag of business-sector product prices to the decline in the demand for nontradables product in 2003.

The rise in the relative price of exports was the outcome of the combination of higher export prices, which are determined primarily in world markets, and the decline

[19] In this context it is customary to note the sharp rise in China's demand for oil.

[20] The division of product into tradables and nontradables is somewhat outdated, and does not reflect the fact that industries such as the services became far more tradable in the 1990s than they were in the past.

Table 1.6
The Real Exchange Rate and World Trade, 1986–2004

(rate of change, percent)

	1986–89	1990–95	1996	1997	1998	1999	2000	2001	2002	2003	2004
Real exchange rate (export terms)[a]	–5.1	–3.8	–5.7	–2.8	0.5	1.0	–3.1	–1.1	6.6	–2.4	1.8
Real exchange rate (import terms)[b]	–6.8	–3.7	–8.8	–6.6	–2.4	0.3	–0.8	–1.8	7.5	0.5	4.7
Exchange rate in terms of imports excluding fuel, ships and aircraft	–5.4	–3.5	–9.7	–6.4	–0.7	–0.8	–3.5	–1.1	7.5	–0.1	2.9
Exchange rate adjusted by GDP deflator vis-à-vis US	–8.5	–2.9	–3.0	0.7	4.6	3.8	–0.7	3.1	10.0	–2.6	0.0
Exchange rate in terms of GDP prices relative to Europe[c]	1.7	0.5	–4.9	–11.7	3.4	–1.0	–14.8	0.3	16.6	14.7	10.2
Nominal exchange rate vis-à-vis currency basket	16.9	9.6	3.5	4.3	9.6	8.3	–4.7	1.4	14.2	1.2	2.2
Real exchange rate relative to basket[d]	–1.5	0.3	–5.5	–6.5	3.4	3.6	–7.5	0.2	11.2	8.5	7.2
Terms of trade[e]	1.8	–0.1	3.3	4.1	3.0	0.6	–2.4	0.7	–0.9	–2.9	–2.7
World trade, volume growth	6.4	5.9	7.1	10.5	4.4	5.9	12.5	0.2	3.3	5.1	8.8
World export prices	5.8	2.3	–1.8	–6.3	–5.6	–1.6	–3.9	–3.6	0.3	10.0	–
World import prices	2.7	2.2	–1.2	–5.4	–6.4	–2.0	0.2	–3.6	–0.7	9.1	–

[a] Ratio of export prices (excluding diamonds) to business-sector product prices (including housing services).
[b] Ratio of import prices (excluding diamonds) to business-sector product prices (including housing services).
[c] Members of the European Monetary Union.
[d] Calculated by the IMF by weighting the CPIs of the different countries according to the extent of their trade with Israel.
[e] Ratio of export prices (excluding diamonds) to import prices (excluding diamonds).
SOURCE: IMF, IFS, US Dept. of Commerce, Bureau of Economic Analysis, and based on Central Bureau of Statistics data.

in the price of business-sector product. Several short-term factors contributed to this: the output gap, which served to reduce prices; the deterioration in the terms of trade, which had an adverse effect on national income at the margin; the decline in demand for the product of the construction industry, which is particularly nontradable; and policy factors—the contraction of domestic public consumption and the lower interest rate—which also acted to generate real depreciation (see Box 1.2).

The rise in the relative price of exports was the result of the combination of an increase in export prices, which are determined primarily in the global market, and a decline in the price of business-sector product.

The real exchange rate against the dollar, i.e., the nominal exchange rate multiplied by the GDP deflator in the US and divided by the GDP deflator in Israel, remained unchanged despite the appreciation of the dollar. This is the result of the flexibility of the GDP deflator, so that nominal rigidities are not necessarily activated by economic forces, even in the short term. As a result of the change in cross rates between the euro and the dollar, real depreciation vis-à-vis the euro was very high (Table 1.6), and this may have been behind the increase in goods exports to Europe in 2004, especially in the second half of the year, when it outstripped the rise in exports to the US.

The slight real depreciation of 2004 slightly offset the real appreciation of 2003, so that the average level of the exchange rate in 2004 was similar to that in 2002, when there was significant real depreciation. As a result of the existence of long-term equilibrium ties between the levels of imports, exports, and the exchange rate, the level of the exchange rate has marked implications for both exports and imports. In fact, in 2004 exports expanded handsomely, and the fact that this encompassed all industries, including traditional technology ones, provides further evidence of the rise in global demand, explaining most of the rise in exports, even to a level where the real exchange rate has a positive effect on their development.

Due to the existence of long-term equilibrium relations between the levels of imports, exports, and the exchange rate, the level of the exchange rate has significant implications for both exports and imports.

The effect of the exchange rate on imports, which soared in 2004, appears to have been slighter, for several reasons. First, about half of total imports are of raw materials, which are also used to manufacture exports, so that an immediate positive relation is established between imports and exports. Second, several import-intensive uses which do not compete with domestic production rose in 2004; these include investment in machinery, equipment, and transport vehicles, and consumption of durable goods. Civilian imports expanded by a steep 13.1 percent in 2004, approaching the rate of increase of exports. In the long term the elasticity of imports and exports to exchange-rate movements are similar in absolute terms (see Box 1.2). The steep rise in imports was also affected by several short-term factors, such as inventory adjustment, which had plummeted in the last few years.

In spite of the similar growth rates of imports and exports in 2004, the level of the exchange rate created forces for equilibrium in the balance of trade, as is evinced by the fact that the civilian import surplus as a percentage of total income continued to decline in 2004, too, and its level, which was 2 percent, was the lowest in the last forty years. These forces made Israel's exports more competitive, and this was also expressed in the sharp decline in unit labor cost.

4. SAVING, INVESTMENT, AND THE CURRENT ACCOUNT

The expansion of gross domestic investment was fully financed by the rise in the national saving rate, so that the current account remained slightly in surplus for the second successive year.

The rise in gross domestic investment in 2004 was financed in full by the increase in national saving, so that the current account was slightly in surplus for the second year in succession. This development was the continuation of the trend that had begun in 1998, with saving and investment moving in tandem, and the difference between them continually narrowing until it was completely cancelled out in the last two years (Figure 1.6). The similar paths of saving and investment (a situation that generally characterizes closed economies) raises questions about the relative importance of capital flows. Below we will discuss their decisive effect on the present and future development of the current account.

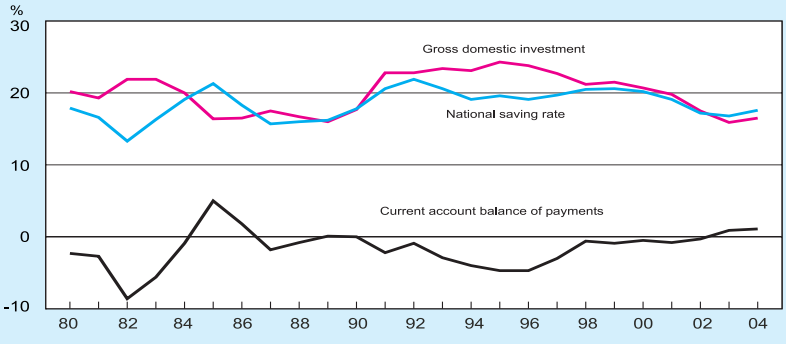
The forces which operated in 2004 on developments in the current account were GDP growth and the improvement in economic expectations, which served to create a deficit, as well as the output gap and tight fiscal policy, which acted to moderate these forces. The rise in demand did not generate excess import demand, and the contraction of the budget deficit eased the pressure to create a deficit in the current account at the margin.

The national saving rate rose by 0.8 percentage points in 2004 to stand at 17.6 percent of total income, alongside the characteristic substitution between private and public saving.

The national saving rate rose by 0.8 percentage points in 2004 to stand at 17.6 percent of total income, with the characteristic substitution between private and public saving (Figure 1.7). The private saving rate dipped by 0.7 percentage points, and the public saving rate rose by 1.5 percentage points.

The decline in the private saving rate was due to the improvement in consumer expectations, which may be observed directly from consumer surveys,[21] and to the rise in public saving, despite the reduction in direct and indirect taxation, as a result of the contraction in expenditure since mid-2003. Because of the absence of complete coordination between the private saving rate and the increase in public saving, the national saving rate rose during the year when expectations were that the economic recovery would persist.

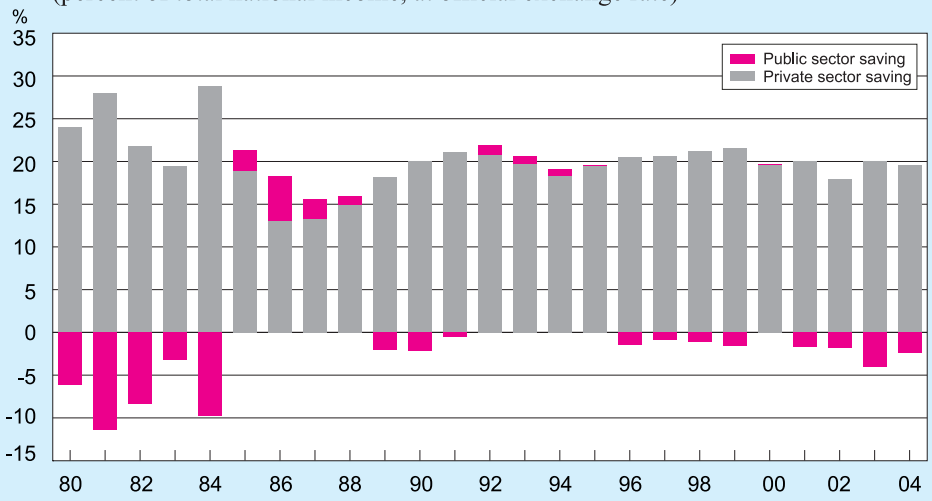
Figure 1.6
National Saving Rate, Gross Domestic Investment, and Current Account Balance of Payments, 1980–2004
(percent of total national income, at official exchange rate)



SOURCE: Based on Central Bureau of Statistics data.

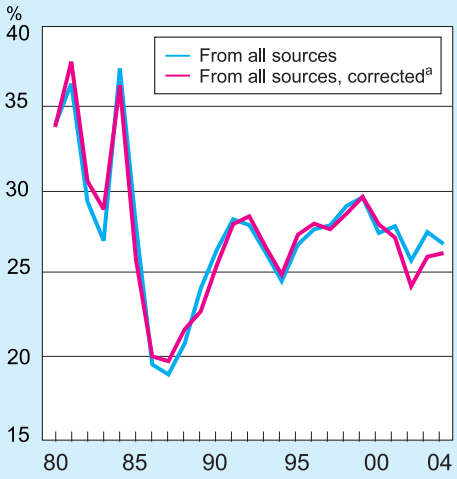
[21] In 2004 there was an improvement of 15 percent on average in three indices of consumer expectations, those of Yedioth Aharonoth, Ma'ariv, and Globes.

Figure 1.7
Gross National Saving Rate, by Sector, 1980–2004
(percent of total national income, at official exchange rate)



SOURCE: Based on Central Bureau of Statistics data.

Figure 1.8
Saving Rate of Private Disposable Income, 1980–2004



[a] In calculating the corrected saving rate, private consumption is replaced by the standard of living. The standard of living is defined as private consumption *minus* purchases of durables *plus* the estimated value of services deriving from the stock of durables.

SOURCE: Based on Central Bureau of Statistics data.

The investment rate in the principal industries continued to fall, and its level was lower than in the past.

The gross investment rate rose in 2004, but this was mainly the result of inventory renewal. The rate of investment in the principal industries continued to decline, and stood at less than 12 percent of GDP in 2004—a very low rate relative to the long-term trend, and similar to the rates in 1966 and 1967, the years of acute recession, and in the period between the ESP (Economic Stabilization Program) and the start of the influx of immigrants, 1985–90. One of the reasons for this was the significant decline in investment in structures, especially nonresidential ones which, according to the decline in the area of building starts, is even expected to continue. The downward trend of investment in housing, which began in 1995, has persisted, and is currently below the rate of population increase. Total infrastructure investment by both the private and the public sectors was down by 14.4 percent, as a result of the fall in investment in the roads and electricity infrastructure. Total transport infrastructure investment rose due to extensive railroad

investment, and investment in machinery and transport equipment increased by 9.1 percent (see section on the infrastructure).

Long-term trends in the current account and the financial account

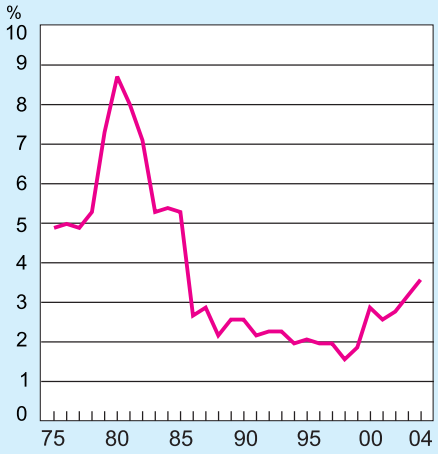
In the last two years a small surplus has been created in the current account of the balance of payments, but the deficit may increase again in the future.

In the last two years there has been a slight surplus in the current account of the balance of payments, in contrast with most of the years since Israel came into existence, when there has been a large deficit. Concurrently, Israel's (net) external debt has displayed a steadily declining trend since 1996, and reached zero in 2001, since when the debt has been negative (meaning that Israel's assets in foreign debt instruments exceeded its gross external debt); the negative debt at the end of 2004:III is estimated at $ 10 billion.

These developments would appear to indicate that the process of convergence of the current account deficit has come to an end, but the deficit may grow again in the future, for several reasons.

First, the balance in the current account is still achieved by means of extensive unilateral transfers, comprising over $ 6 billion. Some of the transfers, such as US civilian aid and restitution payments from Germany, are expected to shrink in the next few years. The latter still constitute a significant component, and amounted to about 12 percent of total current transfers in 2003.

Figure 1.9
Imported Intermediates, Fuel and Lubricants, 1975–2004
(percent of all income from all sources)



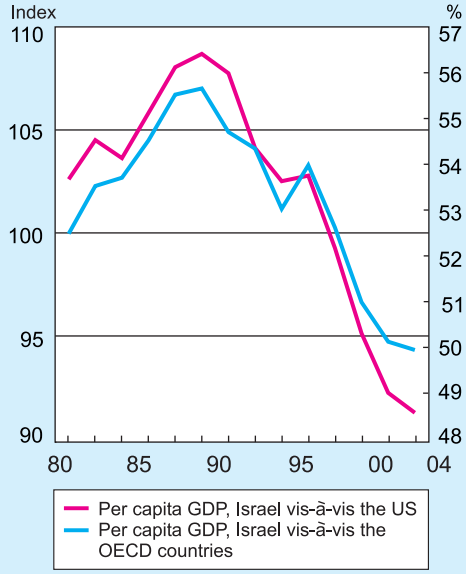
SOURCE: Based on Central Bureau of Statistics data.

Second, the balance in the current account in the last two years was, as stated, the result of the very low rate of investment in the principal industries, and does not reflect the optimum long-term investment rate. This is indicated by the continuous rise since 2000 in the average age of equipment in the business sector (Table A.1.10), and the low increase, only 1.3 percent, in net capital stock for 2005 (Table A.1.13), which will apparently lead to a decline in the capital/labor ratio next year.

Third, in order to finance the deficit in the current account in most years until 2002, domestic assets were sold on an ongoing basis, requiring a higher payments for factor ownership, and this will exert perpetual pressure for the creation of a future deficit in the current account. In the second half of the 1990s, when the globalization process accelerated, foreign investment in Israel rose incessantly,[22] and this trend is

[22] From $ 2.9 billion in 1995 to $ 7.3 billion in 2000; these sums do not include payments for foreign workers, which rose from $ 1.4 billion to $ 3.3 billion in that period.

Figure 1.10
Per Capita GDP, Israel, the OECD Countries, and the US, 1980–2004[a]



[a]Per capita GDP, Israel vis-à-vis the US: 2000, the data are from the Penn World Tables PWT 6.1; thereafter calculated on the basis of the real rate of change.

SOURCE: Based on Central Bureau of Statistics data.

expected to persist.[23] The sale of domestic assets was expressed in Israel's NIIP (net international investment position), which amounted to $ 30 billion.

In the last two years the current account has been in balance, so that the sale of domestic assets expresses their full substitution by assets abroad and does not serve to finance consumption or domestic investment. The reason for the rise in the debt of the rest of the world vis-à-vis Israel is that the sale of Israel's domestic assets creates liabilities but not debt, e.g., shares, and replaces them with debt instruments, such as bonds and deposits. This process of replacing domestic assets with foreign ones enables Israel to better disperse risk by partially insuring against two kinds of real shock—domestic shocks, which are not connected with shocks in the global economy, e.g., the Intifada, and global shocks in industries in which Israel specializes, such as the drop in demand for high-tech products in 2000. The importance of risk dispersal of this kind increases as the economy becomes more specialized.

The replacement of liabilities by debt instruments immunizes the economy to some extent against financial crises deriving from difficulties in financing the debt in the short run, by getting foreign investors to share the losses incurred as a result of a crisis of this kind, should it occur. This process appears also to be affected by the changes in the government's policy regarding the capital market, which included the gradual lowering of restrictions on investment abroad by institutional entities (mutual, provident, and pension funds). The termination of the issuance of earmarked bonds, so that their share in the asset portfolio declines to the proportion set by the government,[24] will also act to continue this trend.

[23] Since 2000 the payments have declined because of the recession. The cyclical volatility of this component is very strong, because it incorporates components whose elasticity to the business cycle is great, such as dividends.

[24] In March 2003 the government decided to cease issuing earmarked bonds for pension funds in deficit, for which a special administrator was appointed, and for the new pension funds, until they accounted for only 30 percent of their holdings. They accounted for 90 and 68 percent of the holdings of the veteran and new funds respectively. See also Ministry of Finance, Capital Market Department, Annual Report of the Commissioner of the Capital Market, Insurance, and Savings, 2003.

As a result of this process Israel's net external debt does not reflect the extent of domestic factor inputs which are foreign-owned or the extent of current and future payments resulting from this ownership: payments against foreign investments[25] amounted to $ 4 billion in 2004, while income from factor inputs was only $ 2 billion.[26] The difference derived from Israel's net foreign liabilities, and the resulting pressure on the current account in the next few years will be significant.

The three reasons given above indicate that Israel is still a long way away from sustainable equilibrium in the current account of the balance of payments, and the deficits in it may recur in the near future. However, this does not represent a dangerous situation as long as the deficits are sustainable.

5. THE PRINCIPAL INDUSTRIES

1. Main developments

The recovery trend was evident in most of the principal industries—manufacturing, commerce and services, business services, transport and communications.

The trend of economic recovery was evident in most of the principal industries—manufacturing, commerce, and services, business services, transport and communications—and was expressed in 2004 in the rise in product and employment in them. Since the recovery was led by the rise in demand for exports, the principal beneficiaries from it were the tradable industries. Economic activity in construction fell despite the general trend of recovery.

The product of manufacturing industry, which accounts for one quarter of business-sector product, rose by a steep 6.3 percent in 2004. Most of this increase stemmed from the sharp15.5 percent rise in manufacturing exports, while domestic sales expanded by far less, only 1.4 percent. The recovery of world trade led to a marked rise in electronics exports, the leading export industry, as well as to increases in the exports of many other industries. The expansion of Israel's exports encompassed those to both developed countries (the European Union and the US) and developing countries, mainly China, India, and Turkey. The ability of Israel's exports to respond to the expansion of world trade rapidly and forcefully derived primarily from the excess capacity which had accumulated in the industry in the previous three years, when domestic and global demand for manufacturing product plummeted, and utilization of labor and capital fell considerably. As a result of the surge in global demand, utilization of labor and capital rose in 2004, and this was reflected in a steep increase in labor productivity and TFP. The rise in productivity made it possible to increase wages and entrench the profitability of manufacturers, but this was not enough to lead to a genuine increase in labor input and investment in most principal industries, with the exception of electronics.

[25] Total payments for factor inputs less the return to labor (of foreign workers); these payments include profits from direct investments, dividends, and capital gains on investments in shares.

[26] In addition to payments against foreign investments, Israel pays for labor (foreign workers); total payments were $ 2 billion in 2004, so that the overall deficit on the income account was $ 4 billion.

Table 1.7
The Principal Industries, 1996–2004

(rate of change, annual terms, constant prices)

	Industry (weights)[a]	Product	Labor input	Capital[b]	Labor productivity	Total productivity	Capital productivity[c]	Capital/labor ratio	Monthly wage per employee post[d]
					1996–2000				
Manufacturing	25.5	5.8	1.0	8.0	4.7	2.2	–2.1	7.0	4.2
Agriculture[e]	3.2	4.2	2.3	–0.2	1.9	2.9	4.4	–2.4	3.5
Transport & communications	12.9	5.0	5.2	9.1	–0.2	–1.9	–3.7	3.7	1.0
Construction	10.0	–1.2	0.7	11.9	–1.9	–3.6	–11.7	11.1	2.1
Commerce & services[f]	45.6	7.0	7.6	18.4	–0.5	–4.2	–9.6	10.1	4.1
Electricity & water	2.8	5.2	0.2	5.5	5.0	2.7	–0.2	5.2	3.7
Total business sector	100.0	5.1	4.5	9.3	0.6	–0.8	–3.8	4.6	3.6
Goods	38.7	3.9	1.0	7.2	2.8	0.9	–3.1	6.1	3.5
Services	61.3	6.5	7.1	10.6	–0.6	–1.8	–3.7	3.2	3.3
					2001–2003				
Manufacturing	24.3	–0.3	–2.7	5.2	–1.1	–0.3	–8.5	8.1	–0.4
Agriculture[e]	3.5	–1.4	–3.4	0.2	4.6	0.5	0.9	3.7	2.2
Transport & communications	13.3	2.4	–0.5	6.9	3.0	–0.5	–4.2	7.5	–2.2
Construction	7.9	–1.3	–4.9	5.1	2.3	2.0	–7.4	10.5	–0.8
Commerce & services[f]	48.0	–1.0	1.7	6.1	–3.0	–4.3	–7.0	4.4	–2.5
Electricity & water	2.9	2.1	–0.9	3.0	2.9	1.3	–0.9	3.9	–1.4
Total business sector	100.0	–0.3	–0.5	5.5	–0.6	–1.7	–6.3	6.0	–2.1
Goods	35.7	–0.6	–3.5	4.7	0.4	0.3	–7.5	8.5	–0.2
Services	64.3	–0.2	1.4	5.9	–1.7	–3.3	–6.0	4.5	–2.5
					2004				
Manufacturing	24.4	6.3	2.5	3.3	3.7	3.4	2.9	0.8	2.5
Agriculture[e]	3.5	11.6	5.9	–0.1	5.4	7.9	11.7	–5.6	–0.0
Transport & communications	14.4	8.8	1.0	2.4	7.7	7.0	6.2	1.4	–0.8
Construction	6.8	–7.1	–6.4	0.2	–0.7	–1.9	–7.3	7.1	–0.9
Commerce & services[f]	48.0	6.3	1.7	3.0	4.5	4.0	3.1	1.3	2.9
Electricity & water	2.9	0.9	6.0	4.5	–4.8	–4.2	–3.4	–1.4	0.4
Total business sector	100.0	6.1	1.1	2.9	4.9	4.3	3.1	1.8	1.9
Goods	34.7	3.9	0.1	2.9	3.7	2.8	0.9	2.8	1.9
Services	65.3	6.6	1.7	3.0	4.8	4.3	3.5	1.2	2.4

[a] Excluding imputed banking services, errors and omissions.
[b] Intangible assets are included in commerce and services; this accounts for the difference from capital in the section on commerce and services.
[c] Annual flow to stock at beginning of year (both in NIS).
[d] Not including Palestinian workers, and from 2003 not including foreign workers.
[e] Gardening is not included, and hence this figure differs from the one in the section on agriculture.
[f] Including commerce, catering and hotel services, and financial, business, and personal services.

SOURCE: Based on Central Bureau of Statistics data.

Activity in the commerce and services industries soared, continuing the recovery trend evident since mid-2003, against the backdrop of the improvement in the security situation, which caused domestic demand to expand, and the rally in global demand. The product of the industry grew by 6.3 percent, so that its share of business-sector product rose to 51.7 percent, at current prices. Exports of the industry expanded notably, after rising moderately in 2003, and employment in it increased by 2.8 percent, compared with a 2.5 increase in the business sector, although investment in this industry continued to decline moderately. The industry's product grew markedly in 2004:I, and rose gradually in the subsequent quarters.

The product of the transport industry increased by 3 percent in 2004, after declining in 2001 and 2003. Investment in the industry was up by about 11 percent, expressing a marked increase in investment in passenger cars, and its labor input grew by 1 percent. The product of the communications industry went up by some 6 percent in 2004.

The product of the construction industry declined for the seventh consecutive year.

The dip in activity in the construction industry persisted in 2004, too. The product of the industry declined for the seventh consecutive year, by 7.1 percent. All the components of the industry's output contracted: nonresidential construction output plummeted by 15.3 percent, and residential construction output fell by 5.9 percent. Alongside the contraction of activity, there was a 5.1 percent drop in employment, encompassing both Israeli and foreign workers. The slump in the industry was particularly prominent in view of the growth of the rest of the economy and the improvement in the demand fundamentals. In residential construction there were signs of a rise in demand in the Tel-Aviv conurbation, but there was stagnation in the peripheral areas, a process which was expressed in the number of housing transactions and reflected in the real prices of apartments in those areas. As regards nonresidential construction, it may be assumed that the creation of excess supply caused investment in it to decline.

Box 1.1
Israel's Output Gap: A Comparative Report

One of the major factors explaining economic developments in Israel in 2004 was the gap between actual and potential GDP (as variously defined, see below). It would seem that largely because of this the high GDP growth rate of 2004 did not create upward pressure on prices and wages, the real exchange rate, and a significant balance of payments deficit. The output gap also made it possible to implement an expansionary monetary policy without generating inflationary pressures.

What is Israel's output gap today? The difficulty in answering this question stems to a great extent from a conceptual problem: the output gap and potential GDP are latent variables, and are definable only in theory. Consequently, they can be estimated only in an imprecise way, and this underlies the critical approach which claims that it is not advisable to attach undue importance to these variables, or even to relate to them at all.[1] Another problem is that

the ex- post updating of these variables is significant, so that the uncertainty surrounding the output gap, especially the present one, is particularly great.

The conceptual difficulty associated with the output gap may be partly overcome by using various estimation methods. Because of the considerable importance of the subject for understanding economic development, in recent years the Research Department has undertaken a number of studies aimed at getting to grips with the subject. The accumulation of knowledge about the output gap, based on differing and independent methods, makes it possible to ascribe a weight to the gap in analyzing developments, despite the reservations. Below we describe in brief three methods used for estimating the output gap, and the results of using them for 2004.

In the first method[2] the output gap is identified indirectly, via its effect on inflation, simultaneously with the natural unemployment rate, employing the assumption that a positive output gap causes inflation to rise. According to this approach, potential GDP is that which does not exert pressure on prices, and a positive output gap expresses excess demand. In this method the total output gap is calculated, and it is not possible to estimate the gap for the business-sector, because the labor market—and hence the unemployment rate—is common.

In the second method[3] the potential output of the business sector is estimated directly, by means of the production function. This is derived from incremental factor inputs—labor and capital, from the rate of utilization of factor inputs, and from an assumption regarding the development of TFP, based on its average development in the past, expressing the trend of technological change. The output gap is derived from the difference between the calculation of potential GDP and that actually measured. According to this approach, potential GDP is that which would have been created if factor utilization and TFP had been equal to their average long-term values.

In the third method[4] the output gap is calculated directly by integrating the deviations of labor productivity, the number of persons employed, and capital utilization from their long-term trends.

There are two substantial differences between the approaches. First, the first method estimates the output gap indirectly as a variable that represents excess demand, while the second and third methods estimate it directly by using the development of factor inputs—capital and labor—and productivity. Second, the methods are based on various assumptions regarding the nature of the

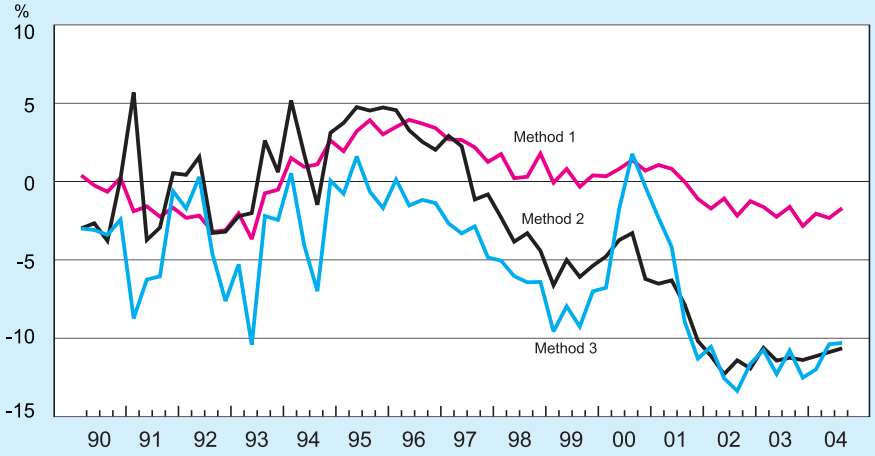
[1] J.K.Galbraith (1997), "Time to Ditch the NAIRU," Journal of Economic Perspectives, 11 (1).

[2] A. Friedman and T. Suchoy (2004), "The NAIRU in Israel: an Unobserved Components Approach," Israel Economic Review, Vol. 2 (2).

[3] A. Barnea and J. Djivre (2004), "Changes in Monetary and Exchange Rate Policies and the Transmission Mechanism in Israel: 1989:IV to 2002:I," Discussion Paper, Research Department, Bank of Israel.

[4] Y. Menashe and Y. Yachin (2003), "Mind the Gap," Israel Economic Review, Vol. 2 (2).

The Output Gap, Using Different Methods of Calculation, 1990–2004



development of potential GDP: in the first method the natural unemployment rate changes over time, while in the other two methods the assumption is that this rate remains constant over time. In conceptual terms, since the first method measures the output gap via its effect on inflation, it is particularly suited to the needs of managing monetary policy.

The quarterly output gaps from 1990 to today are presented in Figure 1. According to these indices, the output gap trend has been negative since the beginning of 1996, meaning that the economy grew at a rate that was below

The Levels of the Output Gap and its Development in the Last Recession

	Output gap 1996:I	Output gap 2004:II	Cumulative change in output gap in last recession (2000:IV–2003:III)
Method 1 (total output gap)	+3.0	–2.3	-3.5
Method 2 (business-sector product gap)	+4.7	-10.9	-5.2
Method 3 (business-sector product gap)	+0.0	-10.4	-12.1

its potential. The indices show that the high growth rate between 1999:II and 2000:II was purely a temporary deviation from the trend. Nonetheless, there are significant differences between the methods, so that the level of the output gap varies within a range of 2 percent (according to the first method) and 11 percent (according to the second method).

The first and second methods present similar levels of the output gap in 1990–96, after which they diverge significantly. The reason for this is that even though the calculation according to factor inputs attests to a high output gap, a deflationary process, which would be consistent with a gap of this kind, did not develop.

The second and third methods yield similar results regarding the present output gap, namely, that it is currently more than 10 percent of GDP, far greater than that yielded by the calculation under the first method. However, an examination of the behavior of the output gap during the recession shows that the changes in it in the first and second methods are similar, and most of the difference between them today stems from historical reasons—the level of the gap on the eve of the recession, at the end of 2000.

It is interesting to compare the output gaps that accumulated during the last recession with direct estimates of GDP lost due to the three years of the Intifada, which were in the region of a cumulative 10 percent by the end of 2003.[5] According to the first and second methods, it is possible to conclude that most of the damage attributed to the Intifada is permanent, and that part of the output gaps probably accumulated as a result of another independent shock—the global economic crisis which was caused by the fall in demand for the product of the high-tech industry. According to the third method, however, Israel's potential GDP continued to grow rapidly even during the years of the Intifada, so that most of the loss of GDP attributed to it was temporary.

The fact that three different and independent methods indicate similar trends—a negative output gap and its significant accumulation in the last recession (7 percent on average)—supports the hypothesis that the present output gap has a seminal impact on economic developments, and hence also plays a central role in understanding them.

As far as the significant differences between the methods regarding the present output gap are concerned, the first method appears to yield a gap that is too low, because it does not fully adjust for the expansionary effect of monetary policy, whereas the other two methods do not take into account the fact that as a result of structural changes in Israel's economy, including trade liberalization, parts of its physical capital stock, as well as of the labor force, are no longer effective, so that the gap that is obtained using these methods is too high. For these reasons it seems reasonable to assume that the output gap is somewhere in between.

An indirect indication of the output gap is the development of per capita GDP in Israel relative to other countries. This index shows that in 2004, too, the output gap continued to grow, because per capita GDP rose more rapidly in the US and the OECD countries than in Israel (Figure 1.10).

[5] See Bank of Israel, Annual Reports for 2001 to 2003, and also Z. Eckstein and D. Zidon (2003), "The Macroeconomic Implications of Terror: Theory and Practice in Israel" (Hebrew).

Box 1.2
The Level of the Real Exchange Rate Today

The real exchange rate, the current account, and the balance of payments are important indicators for examining a country's economic performance, especially in a small open economy such as Israel.

The level of the real exchange rate, defined as the ratio of export prices to the GDP deflator, was relatively high in 2004, in the wake of the sharp depreciation of 2002 which has been maintained to date (Figure 1.4). Although there was slight appreciation in 2003, there was depreciation in 2004, and according to some indices this was even greater than that of 2002.

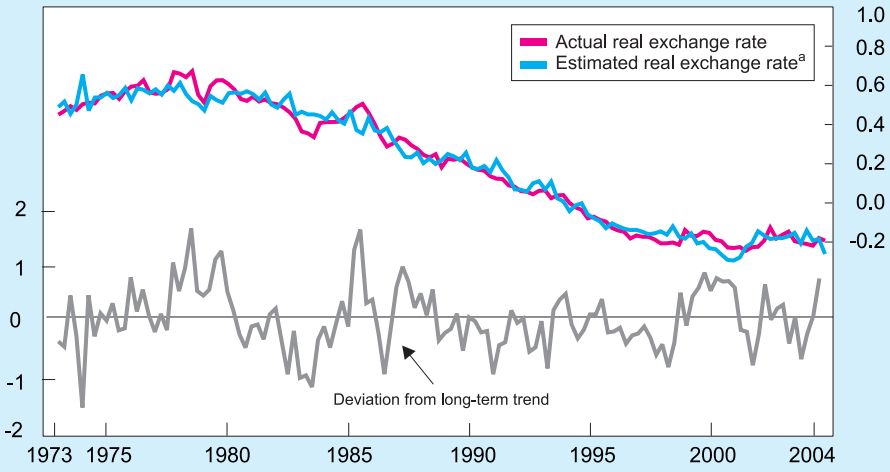
Several short-term factors—the output gap, contractionary fiscal policy, expansionary monetary policy, and the deterioration in Israel's terms of trade—as well as the asymmetric development of domestic demand, most of which was directed to tradables, served to create this depreciation (for an account of how these factors exerted an effect, see Section 3 below). However, a recent study[1] has shown that the level of the real exchange rate in the long run, measured by means of the ratio of export prices to the GDP deflator, is connected with the development of several variables, and the significance of this finding is that there is a level to which the exchange rate converges in the long run, irrespective of the effects of the short-term factors mentioned.

The study, which examined the development of the real exchange rate since the 1960s, showed that its level is associated with the technological development of the tradable industries, the rate of investment in GDP and, since the mid-1970s, the level of per capita GDP. Technological improvements in the tradable industries give rise to a trend of appreciation by having a positive impact on income and the resulting rise in demand for nontradables. It was found that the best measure of these improvements was manufacturing productivity in the US, indicating Israel's considerable openness to new technologies. The rate of GDP investment represents excess domestic demand, which tends to generate appreciation, indicating the range within which a young economy builds its capital stock. Per capita GDP represents the rise in the standard of living, most of which is directed to consumption of nontradable goods and services after a certain level. These variables explain the historical development of the real exchange rate—an inverted U shape (∩): until 1978 it was characterized by a depreciation trend, and since then by appreciation, until 2002 (see figure below).

[1] A. Friedman and Y. Lavi (2005), "The Real Exchange Rate and Israel's Foreign Trade: the Factors Determining Trends," (Hebrew, not yet published).

The fact that real depreciation was caused, as stated, by several cyclical factors, raises the question whether the real exchange rate today is in line with the factors that affect it in the long run, or whether depreciation has been excessive and is inconsistent with the underlying determinants of the exchange rate.

The Real Exchange Rate (the Relative Price of Exports), 1973–2004



[a] Using the fundamental variables.

SOURCE: Based on Central Bureau of Statistics data.

The figure shows the actual real exchange rate, as measured by the ratio of export prices to the GDP deflator, and the real exchange rate derived from the underlying factors determining its development. It can be seen that on average in 2004 the exchange rate did not deviate significantly from the long-term equilibrium level, and its slightly lower level is fully explained by the low investment rate and the current level of per capita GDP. This situation boosts the ability of Israeli exporters to compete in world markets, in contrast with the latter half of the 1990s, when there was a protracted deviation of the exchange rate (appreciation), which had a negative impact on them.

2. Manufacturing

a. Developments in 2004

Manufacturing product soared by 6.6 percent in 2004, due mainly to the rapid expansion of manufacturing exports.

Manufacturing industry continued to rally in 2004 and its product, which accounts for about one quarter of business-sector product, soared by 6.6 percent. The rapid expansion of manufacturing product began in 2003:IV and ended a long period of deep recession, which started with a steep drop in manufacturing production—between October 2000 and June 2001—followed by stagnation until September 2003. The rise in manufacturing product in 2004 stemmed primarily from the sharp increase in manufacturing exports, which grew by 16.3 percent, while sales to the domestic market rose by far less, 1.2 percent. Hence the global economic recovery made a very important contribution to the expansion of manufacturing exports, while the rally in domestic demand, which was largely due to the rise in manufacturing exports, made only a small contribution to the increase in manufacturing sales.

Table 1.8
Manufacturing Industry, Main Indicators, 1990–2004

(rate of change, percent)[a]

				2004	
	1990–2000	2001–2003	2004	Jan–Jun	Jul–Dec
Manufacturing product	5.9	–1.1	6.6	9.1	5.3
Domestic sales (volume)	4.3	–2	1.2	–6.9	8.7
Manufacturing exports (volume)	11.5	–1	16.3	28.1	6.1
Output of electronics industry	11	–5	11.4	17	10
Output of traditional industries	3.8	–3	2.4	4.3	0.9
Output of mixed industries	5.2	5.3	8.1	10.6	4.9

[a] Grouped years: average yearly rate of change. Half-years: change from previous half year.
SOURCE: Based on Central Bureau of Statistics data.

Manufacturing sales to the domestic market rose slightly, despite the marked increase in domestic demand.

There are several reasons for the low rate at which sales to the domestic market rose, despite the marked recovery in domestic uses in general and private consumption in particular. First, the recovery of private consumption was expressed mainly in the increase in consumption of durable goods, most of which are imported (and less in the rise in consumption goods). Second, the construction industry, which is a major purchaser of manufactures, continued to contract in 2004. Third, the long-term upward trend in the market share of imports at the expense of domestic manufactures continued because of the persistence of the long-term trend of reducing prices of imports relative to those of domestically-produced goods. In the second half of the year manufacturing sales to the domestic market rose notably, due to the increase in current consumption (most of which is manufactured in Israel) and because the moderating influence of the construction industry on manufacturing became weaker at that time.

The steep 16 percent increase in manufacturing exports stemmed primarily from the recovery of world trade.

The expansion of exports is explained above all by the recovery of world trade, which grew by 8.8 percent in 2004. This led to a sharp rise in the exports of the electronics industry, which is the leading manufacturing exporter, as well as to an increase in the exports of a large number of additional industries, including chemicals, rubber and plastics, transport vehicles, machinery and metal equipment, and even in the exports of traditional industries, such as food, textiles, and clothing. The expansion of exports encompassed exports to both developed countries (the EU and the US) and developing countries, primarily China, India, and Turkey. The ability of Israel's exports to respond to the rise in world trade rapidly and forcefully stemmed mainly from the excess capacity that had accumulated in manufacturing in the previous three years, when domestic and global demand for manufactures plummeted, as did the utilization of capital and labor. In addition, the demand slump of those years led to a relative fall in production costs in Israel's manufacturing industry, and this operated to increase exports (although according to manufacturing indices the depreciation was eroded somewhat in 2004, its level was still favorable). The domestic factors causing exports to expand were weakened during the year, foremost among them being the conclusion of the recession in domestic demand, the rise in capacity utilization, and the increase in wages. In fact, during 2004 as a whole the expansion of exports in most manufacturing industries was moderate, compared with the surge at the beginning of the year.

The steep rise in global demand removed the main effective constraint on increasing output during a recession—lack of demand. As a result, the utilization of capital and labor soared, and this was expressed in the sharp increase in labor productivity (product per hour worked) and TFP. The rise in productivity enabled the hourly wage to rise, and even bolstered manufacturers' profitability, bringing it to its highest level since the 1990s. However, the recovery was not enough to bring about a tangible increase in labor input and investment in most manufacturing industries, with the exception of electronics.

1. Manufacturing exports

The share of product destined for export in total manufacturing product has been rising over the years, and is currently 47 percent.

As stated, manufacturing exports expanded in 2004, by 16.3 percent, and this led to a steep increase in all manufacturing production. The share of exports in total manufacturing output has been increasing over time, and currently stands at 40 percent, compared with 29 percent in 1995. The expansion of exports in 2004, as in the entire last decade, was concentrated in human-capital-intensive and high-tech industries—manufacturing control and supervision equipment, medical and scientific equipment, electronic communications equipment, and pharmaceuticals. In these industries the share of value added in output is relatively high, so that their share in manufacturing product is greater than their share in output. According to our estimate, exports account for 47 percent of manufacturing product.

World trade expanded handsomely in 2004, making an important contribution to the growth of Israel's exports.

World trade expanded markedly in 2004, and made an important contribution to the rise in exports as, in common with global exports, Israel's exports are influenced by the improvement in global demand and the increased openness to international trade. A by-industry examination of the development of Israel's exports shows that its rapid increase relative to that of world trade was not due to the accelerated rise of world trade in advanced goods, in which Israel's exporters specialize, but rather to the increased market share of each individual industry. For the purpose of this examination we made use of US by-industry trade data, which served as an index of the development of global demand (because of the availability of these data and the high correlation between them and Israel's exports). We found that the increase in trade in pharmaceuticals and control and supervision equipment and in medical and scientific equipment, in which Israel's manufacturers have specialized, outstripped that in the trade between the US and the EU. However, trade in electronic components and in electronic communications equipment, which are also important export industries, grew more slowly. This indicates that the change in the composition of trade did not serve to increase Israel's exports. As Table 1.9 shows, the rise in Israel's exports in 2004 relative to the index of world trade encompassed most manufacturing industries, even including textiles, which have contracted severely in recent years, and the exports of the electronic components and electronic communications industries, which have lagged considerably behind the development of trade in the last two years.

The rapid growth of exports encompassed both those intended for developed countries (the US and the EU) and those destined for developing countries, mainly China, India, and Turkey.

An examination of the development of nondiamond exports by country of destination shows that Israel's exports to the US and the EU expanded by more than the increase in trade between them. Exports to the EU, which account for one third of Israel's exports, were up by 18.4 percent (in nominal dollar terms), while exports to the US, which constitute 30 percent of Israel's exports, rose by 16 percent. Altogether, Israel's exports to those two trade blocs grew by 17.3 percent, outstripping the growth rate of trade between the US and the EU, 11.9 percent. In addition to the rise in exports to the developed countries, there was a sharp increase in Israel's exports to the developing countries in 2004, and this stemmed primarily from the steep rise in exports to Turkey, India, China, Hong Kong, and Taiwan. Although those countries are experiencing rapid economic growth, and hence are increasing their imports from the rest of the world, Israel's exports to them expanded this year by far more than their imports (except China). Note that exports to those countries, which accounted for 7.8 percent of Israel's exports (in 2003), constituted 5 percentage points of the total rise of 16.3 percent in Israel's exports in 2004, most of the increase in exports to those countries being in electronics and chemicals, in which Israel has a comparative advantage, while some exports are of intermediates (e.g., electronic components) for products which will be marketed in the west.

One explanation for the expansion of manufacturing exports in 2004 (apart from the rise in world trade) lies in the macroeconomic level rather than in that of the individual industry, because the expansion of manufacturing exports incorporated most industries and most countries of destination. The main explanation is connected

Table 1.9
Israel's Total Exports and US Total Trade, 2004

(rate of change, percent)

	Share of manufactured exports	Israel's total exports Real	Nominal ($)	US trade EU	Total
Total manufactured exports	100.0	16.6	21.6	11.9	15.8
Total excl. electronics	68.7	13.8	21.5	11.9	15.9
Electronics (excl. electronic components)	23.5	25.4	25.0	15.3	18.6
Electronic communications	12.3	21.7	20.2	5.8	22.0
Equipment for control and supervision and medical and scientific equipment	11.2	29.3	30.2	17.5	15.3
Electronic components	7.8	15.7	12.1	0.3	8.4
Chemicals, fertilizers and pesticides	10.4	12.4	24.7	13.4	16.3
Pharmaceuticals	5.6	18.7	33.4	17.5	13.2
Rubber and plastics	6.6	10.4	17.2	14.2	14.2
Textiles	4.1	10.1	13.2	6.4	10.1

SOURCE: Based on Central Bureau of Statistics and US foreign trade data.

Table 1.10
Israel's Trade with China, India and Turkey, 2004

(rates of change, percent)

	Growth rate	Increase in total imports	Increase in imports from Israel (Israel's exports)	Increase in imports from Israel ($ million)	Increase in exports to Israel (Israel's imports)
China	9.0	36.0	30.6	214	33.7
India	6.4	33.6[a]	78.7	149	22.2
Turkey	7.0	27.2	73.3	336	22.6
Taiwan	4.1	31.9	96.2	274	29.4

[a] Last three quarters of 2004 compared with equivalent period in 2003.

SOURCE: Based on data from the Central Bureau of Statistics, and internet sites of the State Institute of Statistics of Turkey, the National Bureau of Statistics of China, and the Government of India Ministry of Commerce and Industry.

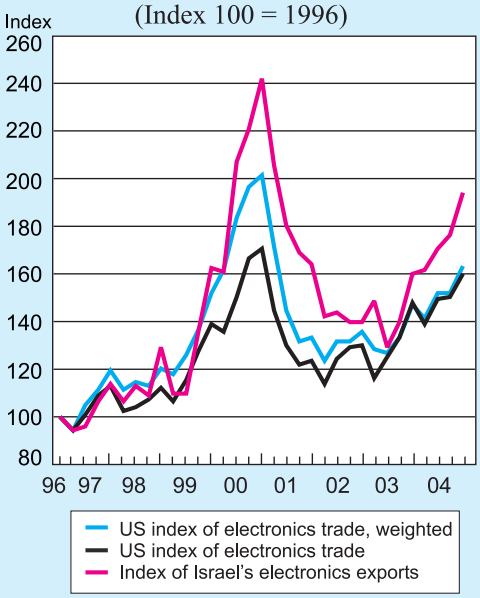
The sharp rise in the market share of Israel's exports in most industries and most countries of destination indicates that the explanation for this lies in the macroeconomic situation rather than in the individual industry.

with the weakness of domestic demand in the last three years, which enabled factor inputs—labor and capital—to shift from industries producing for the domestic market to export industries. Cheaper factor inputs in Israel relative to prices abroad (real depreciation) made Israel's exports more competitive, and hence Israel's market share in global markets grew. A complementary explanation is connected with security developments: Israel's market share in world markets fell in 2002 in spite of the slump in domestic demand and sharp real depreciation. The dip in exports at that time was explained by the exacerbation of the security situation, which caused buyers abroad to avoid visiting Israel and to fear that shipments of orders would be disrupted (see Bank of Israel, Annual Report, 2002). The security situation improved in 2004 and this may have made it possible to benefit fully from the real depreciation, which has been sustained since then. Thus, the depreciation served to increase the market share of Israel's exports in world markets. Another explanation, which was pertinent in the past, is that Israel exports products whose sensitivity to world economic slumps and peaks is relatively great (investment goods and other products whose income-elasticity is above average), so that in the years that world trade was depressed (as was the case in 2002) Israel's market share declined. In the electronics industry, for example, the goods that Israel exports were far more sensitive to the slumps and peaks of the 1999–2001 period than the other products of the industry.

The rising trend of the share of exports in total manufacturing product in the last decade derives primarily from Israel's growing economic openness to both imports (the process of tariff reduction) and world trade.

While the increase in the share of exports in total manufacturing product in 2004 was very impressive, this was not unique to 2004. In the last decade there has been a clear upward trend in the share of manufacturing exports in manufacturing output and product. There are several explanations for this (which have been discussed in this chapter in previous years). First and foremost, Israel's increasing openness to imports (the tariff-reduction process) and the greater exposure of the world to trade (reflected in the rise in the extent of world trade relative to product). These two trends have made it more worthwhile to utilize Israel's comparative advantage in high-tech manufacturing, causing labor-intensive manufacturing, in which Israel is at a comparative disadvantage, to be pushed aside, and eventually leading to the expansion of Israel's international trade (equivalent increases in imports

Figure 1.11
The Electronics Industry: Israeli Exports and US Trade, 1996–2004
(Index 100 = 1996)



SOURCE: Israel–based on Central Bureau of Statistics data; US–United States, International Trade Commission.

and exports). Another reason for the increased share of manufacturing exports is the steep rise in the supply of skilled labor in Israel. Many of these workers found employment in the high-tech industry, making the impressive increase in exports of this industry possible (see discussion below). The liberalization of the capital markets also contributed to the process of specialization, as the cooperation of foreign investors in capital ownership enabled the dispersal of part of the considerable risk incurred by specializing in a narrow and volatile industry such as electronics. Other reasons for the rise in the share of exports in product are the government's involvement, which helped the high-tech export industries by means of the grants extended by the Office of the Chief Scientist, the Capital Investments Encouragement Law (one of the criteria for eligibility under which is the contribution of the investment to increasing exports), and participation in international research funds. Note, too, the government's direct investment in the development of advanced military technology, which accorded Israel's industry a comparative advantage in products intended for both the military and civilian markets.

2. Manufacturing sales to the domestic market

The turnaround evident in domestic demand in 2004 caused manufacturing sales to the domestic market to improve over 2003.

Sales to the domestic market, which account for 60 percent of manufacturing sales, rose by 1.2 percent in 2004, an improvement over 2003, when they fell by 4.3 percent. The improvement is the result of the turnaround in domestic demand, expressed in the rise in domestic consumption (from a GDP growth rate of 1.3 percent in 2003 to 5.1 percent in 2004) and in the stabilization of fixed investment, after this had fallen in 2003. The turnaround, the reasons for which are given in the companion Research Department booklet, was due to several factors. Foremost among them was the recovery of exports, which served to increase national income, and the improvement in the security situation, which operated directly and indirectly to increase domestic demand; consumer confidence rallied, incoming tourism rose, and Israel's risk premium declined, serving to ease the national debt burden, increase the value of assets, and enabled the real interest rate to be reduced.

The expansion of domestic demand was met principally by an increase in imported goods, while manufacturing sales to the domestic market grew only slightly, because of the development of the composition of demand.

The increase in domestic demand was met primarily by a rise in goods imports, because of the development of the demand component in 2004: the expansion of private consumption was concentrated mainly in consumer durables, which are import-intensive, while current consumption, most of which is of domestic production, rose more moderately. The improvement in investment stemmed from the rise in investment in the principal industries (primarily in inventories), whereas the slump in construction investment persisted. The construction industry is one of the principal purchasers of domestic manufactures, and in 2003 these purchases accounted for 12 percent of total manufacturing sales to the domestic market.[27] The 8.7 percent decline in the output of the construction industry in 2004 caused the output of the industries

[27] This estimate is based on input/output coefficients for 1995, taking changes in the output of the construction and manufacturing industries in 1995–2003 into account.

producing raw materials for that industry—stone quarrying, sand extraction, carpentry and construction products, metal and mineral construction inputs (glass, ceramics, cement, plaster)—to fall; the sales of these industries, which constitute 10 percent of total manufacturing sales to the domestic market, were down by 5 percent in 2004. The slump in the construction industry also impacted on the electricity distribution industry, plastics, etc.

The long-term upward trend in imports of labor-intensive products at the expense of sales by traditional industries to the domestic market persisted in 2004.

Another factor that contributed to the decline in sales to the domestic market was the long-term upward trend in imports of labor-intensive products, at the expense of sales by the traditional manufacturing industry to the domestic market (see Bank of Israel, Annual Report, 2003). This process derives from the long-term trend of reducing the price of imports relative to domestically-manufactured products, a trend that continued in 2004.[28] The textile, clothing, and footwear industries are a prominent example of the decline in market share: despite the marked increase in domestic consumption of these items, sales of these industries to the domestic market plummeted. The increase in consumption of food, beverages, and tobacco led mainly to a rise in imports, while the industries' sales to the domestic market scarcely grew. Among the traditional industries whose sales to the domestic market expanded were printing, which is hardly affected by competing imports; its output, which is destined almost entirely for the domestic market, rose by 5 percent in 2004.

An examination of sales to the domestic market during the year shows that they dipped in the first half and rose in the second half. This development is not in line with the development of domestic uses, which grew rapidly in the first half of the year and more moderately in the second half. The disparity stemmed from the composition of uses: the slowdown in uses during the year encompassed a slower rate of consumption of consumer durables and investment in the principal industries (most of which are imported), whereas current consumption did not slow, and the decline in investment in construction moderated during the year.

3. Factor inputs, productivity, and profitability

Producers increased output sharply this year while hardly raising inputs of labor and capital, leading to a marked improvement in profitability.

Producers' profitability rose notably in 2004, by virtue of the increase in TFP: producers increased their output considerably while hardly expanding labor and capital inputs. The development of prices did not affect profitability because the increase in production costs (raw material inputs and labor inputs) was in line with the rise in output prices. The growth of productivity greatly increased producers' profits, and the rate of return on gross capital, which was low during the recession years, rose to 13.5 percent in 2004, slightly above the average for the 1990s (13.1 percent). In addition, producers' profitability from employment of labor increased in 2004, because labor productivity rose steeply, and real costs per hour worked (to the producer, at industrial

[28] In 2004 import prices (excluding fuel, diamonds, ships, and aircraft) rose by 3.4 percent, while prices of manufacturing output for the domestic market (excluding fuel) rose by 4.3 percent.

product prices)[29] dipped slightly. The worthwhileness of employing labor from the producer's viewpoint is measured from the ratio between real costs per hour worked and the return on it (product per hour worked). Compared with 2000 (just before the recession), product per hour worked grew by 9.8 percent, while the wage per hour worked rose by only 2.5 percent (in real terms, at manufacturing product prices); hence, it is more worthwhile to employ labor today than it was just before the recession.

Table 1.11

Domestic Sales, Private Consumption and Imports of Selected Industries

(rates of change, percent)

	Industry domestic sales	Imports	Private consumption
Food, drinks and tobacco	0.4	7.4	2.8
Clothing, footwear and leather	-17.4	15.0	7.1
Printing and furniture	6.2	8.4	

SOURCE: Private consumption—national accounts; imports —foreign trade data; sales—industry indices. Data from the different sources are not fully compatible.

Labor input and investment rose slightly relative to the extent of the rally in product and profitability.

The increase in labor input in manufacturing was very slight in 2004; the number of employees in it rose by only 1 percent, and the number of hours worked hardly grew at all (0.7 percent).[30] The extent and level of investment in manufacturing hardly differed from what it had been during the last three recession years either (despite the 9 percent increase). In view of the marked rise in profitability, the positive turnaround in economic and manufacturing activity, the notable decline in the level of uncertainty (see Box 1.2), the buoyancy in the capital market, and the weakness in the labor market (which lowered the costs of raising capital and recruiting labor respectively), and the pro-cyclical fiscal policy (expressed in the reduction of taxes on capital and labor), a palpable improvement in the demand for factor inputs could have been expected. The cautious behavior of firms in recruiting workers and making investments indicates that they were apprehensive about the extent and persistence of the recovery. In addition, the low capacity utilization of the recession years reduced the demand for factor inputs at the time of the recovery: for the moment firms are managing to increase utilization of labor and capital, and thus to meet demand. Another reason for the lack of demand for incremental labor and investment is connected with the fact that the increase in

[29] Although workers experienced a rise in real wages (at private consumption prices)

[30] The source of the data in this section is the CBS's survey of manufacturing indices, and these are not necessarily consistent with the labor force survey data used in Chapter 2.

Table 1.12
Manufacturing Industry, Selected Indicators of Activity, 1990–2004

(rate of change, percent)

	1990–2000	2001–2003	2004
Return on gross capital	13.1	11.8	13.5
Total productivity	1.3	–0.7	4.9
Input/output prices	–0.3	1.1	0.7
Costs per hour worked (real, output prices)	4.7	–1.6	–2.6
Labor productivity	3.4	1.9	5.8
Labor input (hours)	2.4	–2.9	0.7
Gross capital stock (end-year)	7.6	3.4	3.2
Investment	9.5	–6.4	9.0

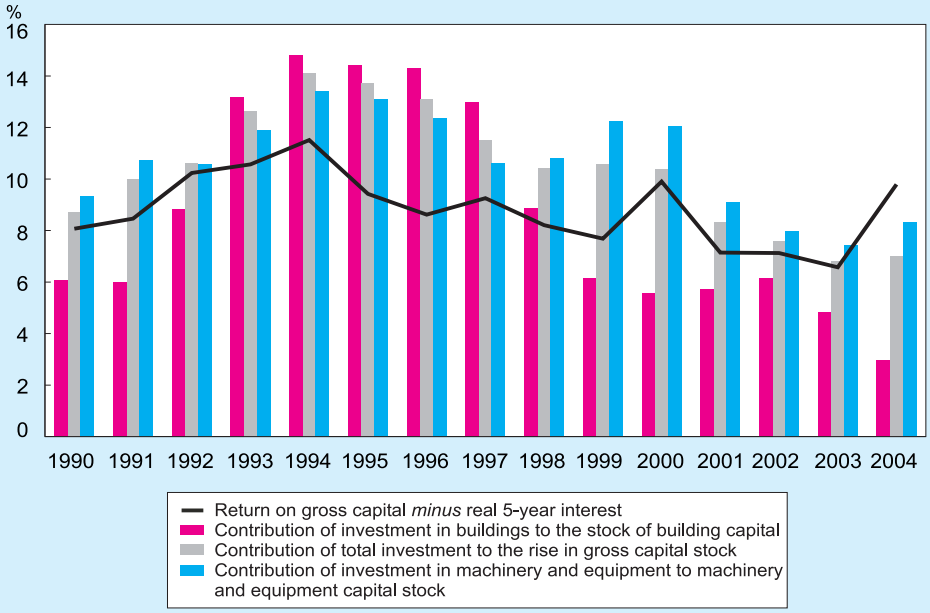
SOURCE: Based on Central Bureau of Statistics data.

manufacturing product did not encompass sales to the domestic market, and the rise in exports in most industries, except for electronics, has not persisted but has diminished in the course of the year. A more detailed examination shows that most of the growth in the number of employees in manufacturing was in the electronics industry, where investment also soared (42.3 percent). Note that even during a period of recovery employment in manufacturing cannot be expected to expand because the long-term trend is of a decline in employment in it. Thus, for example, in the last twenty years the number of persons employed in manufacturing has risen by only 2 percent (while the general population increased by 67 percent), and in the last ten years their number has even fallen (corresponding to trends in other developed countries). As regards investment, although its level in manufacturing has not deviated from that during the recession years (2001–03), capital stock in the industry continued to grow, rising by an annual rate of 3 percent in the last two years, a rate which is far below what it was in the past.

The terms of trade of manufacturing industry deteriorated in 2004, and the rise in input prices exceeded that in output prices.

The terms of trade of manufacturing industry deteriorated in 2004, and factor input prices rose more steeply than output prices. The increase in factor input prices this year stemmed from a sharp rise in prices of imported energy inputs (24 percent), and an increase in those of inputs in the metals, plastics, and paper industries. The greater cost of inputs reflects in part the increase in global demand for finished products; increased costs of this kind do not harm exporters, as the demand for exports has risen, and the increase in global prices of outputs compensates for the higher cost of inputs. Thus, for example, global demand for bromide, potash, and metal products has grown, and hence alongside the marked rise in the price of inputs, exports of these industries have expanded, as has their product prices. While the higher price of inputs affects relative prices and reduces domestic demand for products whose prices have risen (beyond the effect of the deterioration in the terms of trade, which serves to reduce domestic demand for all goods), the total effect in most industries—including chemicals, plastics, and metals—was positive; only the output of the paper industry, most of which is destined for the domestic market, hardly grew at all in 2004.

Figure 1.12
Rate of Return on Capital (*minus* Interest) and the Increase in Capital Stock, 1990–2004



SOURCE: Based on Central Bureau of Statistics data.

4. Developments in manufacturing in the US, and their effect on manufacturing in Israel

An examination of productivity indices in Israel and the US in the 1990s reveals considerable similarity between them as regards both TFP and labor productivity.

a. Productivity in manufacturing in Israel and the US: An examination of indices of productivity in Israel and the US in the 1990s reveals considerable similarity between them in both TFP[31] and labor productivity (product per hour worked). The similar growth rates of TFP and labor productivity could be disappointing, as product per employee in Israel is only two-thirds of that in the US,[32] and hence the growth potential of Israel's manufacturing is greater; on the other hand, this may be perceived as an achievement, however, because US manufacturing industry adopted new technologies in the 1990s which caused its labor productivity and TFP to soar, and Israel's manufacturing industry has not lagged behind.[33]

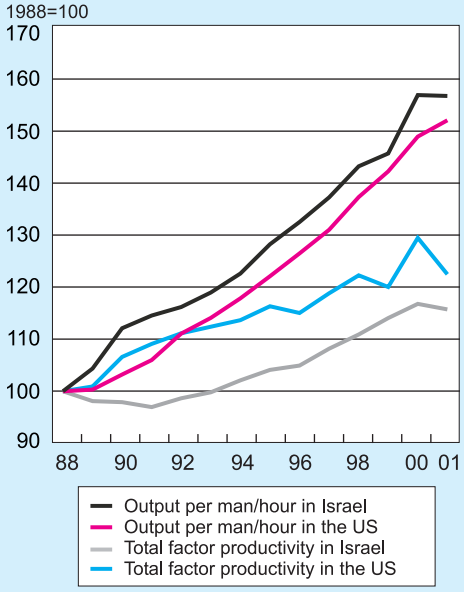
Labor productivity (product per hour worked) depends primarily on the quality of the workers. While the quantity and quality of capital is also very important, these factors are ultimately determined in accordance with the workers' ability to adopt new

[31] The data on US TFP are taken from the Bureau of Labor Statistics, and are calculated differently from those on Israel.

[32] The real gap in product per employee is smaller, because the differences in product per employee in manufactured goods whose tradability is low (food products, cement, etc.) also reflect differences in purchasing power.

[33] A discussion of the long-term link between productivity in Israel and the US can be found in A. Friedman and Y. Lavi (2005) (see footnote 27 above).

Figure 1.13
Total Factor Productivity and Labor Productivity in Israel and the US, 1988–2001



SOURCE: Based on Bureau of Labor Statistics and Central Bureau of Statistics data.

production technologies and maximize the technological advantages implicit in the equipment at their disposal. The quality of workers in manufacturing is important mainly in a situation where manufacturers from all over the world have access to both production technologies and finished product markets. Thus, for example, most of the capital in Israel's manufacturing industry is of imported equipment, in which 'off-the-shelf' technology is implicit, and almost half of Israel's manufacturing product is directed to exports (and the product intended for the domestic market generally competes with imported goods). The value added of Israel's manufacturing industry in producing tradables by means of imported equipment derives to a great extent from the quality and know-how of the labor force relative to that of workers in other countries, whose industries operate under the same conditions. A rise in the quality of the labor force relative to competing countries makes investing in equipment more worthwhile and enables productivity, wages, and the standard of living[34] to rise. An examination of productivity in Israel relative to that in the US in the 1990s shows that

Table 1.13
Total Productivity and Labor Productivity, Israel and the US, 1990–2000

(annual rates of change, percent)

	Total productivity		Labor productivity	
	Israel	US	Israel	US
Total manufacturing	1.3	1.7	3.4	3.7
Traditional industries	-0.3	0.1	2	1.7
Medium-tech industries	1.1	1.5	3.1	2.4
Electronics industries	1.7	4.7	4.6	8.5

SOURCE: Based on data from the Central Bureau of Statistics and the Bureau of Labor Statistics, U.S. Census Bureau.

[34] Investing in equipment could also become more worthwhile as a result of a decline in wages (relative to other countries), in which case capital per worker and product per worker would also rise, but this would be accompanied by a reduction in TFP, reflecting a worrying decline in the standard of living.

the differences in product per worker, capital stock per worker, and workers' ability to utilize the capital stock available to them (quality of workers) remained constant. A more detailed by-industry examination indicates that the increase in productivity in both countries was led by the electronics industries, while productivity stagnated in the traditional industries. The TFP of the electronics industry rose far more rapidly in the US than in Israel. Consequently, even though the share of the industry in total manufacturing product is far higher in Israel than in the US,[35] its contribution to the rise of TFP in manufacturing was much smaller—one third—compared with half the industry's increase in productivity in the US.

The rise in productivity in the US and Israel was led by the electronics industry, while the productivity of the traditional industries stagnated.

b. The quality of the labor force and productivity in manufacturing in Israel and the US: The similarity in the development of productivity indices in Israel and the US reflects the ability of the workers in Israel to compete successfully in a period of rapid technological change. In the last few years the share of educated and skilled workers has grown considerably, and the improvement in the quality of the workforce in manufacturing has contributed to the adoption of new technologies, making it possible to improve product per worker. One way of estimating the contribution of the improvement in the quality of the labor force to the improvement in product per worker is by assuming that the workers' contribution to product is reflected in their wages (i.e., that the value of their marginal output is equal to their wages).[36] For the purpose of the estimation, the workers in manufacturing were divided into four groups according to two levels of skill (skilled workers are those with a degree, members of the liberal professions, persons with technical qualifications, and managers) and two levels of education (educated workers are those with at least 13 years of schooling). We found that the wages of workers who are both skilled and educated is double the average wage in manufacturing (the average in 1995–2003), and that their share rose by 8 percentage points during the period reviewed. Thus, they increased product per worker by 8 percentage points (assuming they replaced 'average' workers). We used the same method to measure the effect of the decline in the share of workers who are neither skilled nor educated. The wage of these workers is 20 percent less than the average wage, so that the 12 percentage-point reduction in their share increased product per worker by 2.4 percent (because they were replaced by 'average' workers). All in all, the improvement in the quality of the labor force in manufacturing between 1995 and 2003 led to an 11.6 percent rise in product per hour worked (see Table 1.14). At the same time product per hour worked increased by 27 percent, so that about 43 percent of its growth stemmed from the improvement in the quality of the labor force.

According to our assessment, almost half the rise in product per hour worked in 1995-2003 derived from the improvement in the quality of the labor force in manufacturing.

[35] Israel's electronics industry accounted for 20 percent in 1990 and 30 percent in 2000, 8 percentage points higher than in the US.

[36] Another assumption is that the value of skilled workers' output does not decrease when their share in the total workforce increases (a justifiable assumption in an open economy).

Table 1.14
Contribution of the Change in the Compostion of Employees to the Rise in Labor Productivity[a]

(percent)

	Weight		Change in weight	Relative wage	Contribution to GDP
	1995	2003			
Skilled, with higher education	14	22	8	200	16
Skilled, without higher education	3	5	2	150	3
Unskilled, with higher education	19	21	2	90	2
Unskilled, without higher education	64	52	-12	80	-9
Total	100	100		100	12

[a] Estimate.

SOURCE: Based on Central Bureau of Statistics data.

The share of skilled and educated workers soared in 1995-2002, yet the wage gap between skilled and unskilled workers in manufacturing did not narrow.

c. Wage differences between skilled and unskilled workers in manufacturing in Israel and the US: The wage gap between skilled and unskilled workers in manufacturing did not contract between 1995 and 2003 even though the rate of skilled and educated workers in manufacturing soared: the share of skilled workers (persons with a degree, members of the liberal professions, persons with technical qualifications, and managers) rose by 10 percentage points to stand at 29 percent, and the share of educated workers (those with at least 13 years of schooling) rose by 11 percentage points, eventually reaching 47 percent at the end of the period.

One possible reason for the rise in the rate of skilled and educated workers while the (gross) wage difference remained stable is that the demand for these workers grew as a result of the rise in their relative productivity, primarily due to technological improvements that were biased towards skilled workers, just when the supply of these workers expanded considerably. It is true that during this period (1995–2003) the share of educated workers (with at least 13 years of schooling) within the prime working-age population (aged 25–54) rose by almost 6 percentage points. On the other hand, there is no evidence that the increased demand for skilled workers was motivated by a rise in their relative productivity, due to technological improvements. This is evinced by the fact that in the US, which leads in the adoption of advanced technologies, the relative wage of skilled workers in manufacturing actually fell in this period (1977–2003). While it is true that this decline was accompanied by a rise in the share of skilled workers in US manufacturing (up by 2 percentage points, bringing their share to 21 percent), this still cannot be considered to explain why the technological changes which were biased towards skilled labor caused the demand for these workers to soar in Israel.

Another explanation stresses the fact that manufacturing products are highly tradable, ascribing the stability of the return on education in Israel to the cessation of the rising trend of return on education elsewhere in the world (as has in fact occurred in the US). The existence of international trade guarantees the link between the relative wage of skilled workers in the rest of the world and that of skilled workers in Israel.

The existence of international trade guarantees the link between the relative wage of skilled workers elsewhere in the world and those of skilled workers in Israel, as well as explaining the stability of the return on education in Israel.

Since the value of the marginal output of skilled workers in Israel is determined by developments in the world as a whole, a rise in the share of educated persons in the labor force will not affect the return on education in Israel but will lead to a structural change in the industry—an increase in the share of persons employed in advanced industries and a decline in the share of persons employed in the traditional ones. An examination of the effect of the rise in the share of skilled workers on by-industry structure shows that 80 percent of the skilled persons employed in manufacturing work in skilled-labor-intensive industries, which are significantly export-oriented (electronics, transport vehicles, and chemicals). The skilled workers employed in these industries led to their expansion (their share in the manufacturing workforce rose by 7 percentage points) as well as to an increase in the share in them of human capital (the share of skilled workers in advanced industries rose from 39 to 53 percent). This increase makes it possible to develop innovative and more complex products (this also occurred within industries, as for example the chemicals industry increased its production of pharmaceuticals, and the military industry began producing unmanned aerial vehicles [UAVs], satellites, and other advanced products). These products are intended for export, so that an increase in the quantity produced does not cause their price to fall or reduce the labor productivity (or relative wage) of skilled workers. Thus, the marked increase in the share of skilled workers in Israel (far exceeding their increase in the US), while maintaining their relative wage, was made possible by the transition to the production of more sophisticated goods for the global market. Part of this change was expressed in a rise in the share of advanced industries in employment, and part in the transition to the production of more sophisticated goods within manufacturing. If a structural change of this kind is not accompanied by technological innovation that is biased towards skilled labor, it cannot be achieved in a closed economy.

Table 1.15

Proportion of Skilled Workers and Those with Higher Education, and their Relative Wages in Manufacturing, 1995–2003

(percent)

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Proportion of skilled workers	18.7	20.3	20.5	22.7	23.3	25.4	25.8	26.7	28.6
Proportion of workers with higher education	35.9	37.8	38.0	39.6	41.1	43.8	44.0	43.6	46.9
Skill ratio[a]	2.63	2.44	2.49	2.21	2.31	2.38	2.52	2.49	2.37
Education ratio[b]	1.68	1.67	1.68	1.69	1.82	1.75	1.85	1.85	1.87

[a] Ratio of wage of skilled workers to that of unskilled
[b] Ratio of wage of workers with higher education to that of workers without higher education
SOURCE: Based on Central Bureau of Statistics data.

The hypothesis that the structural change is a mirror-image, as it were, of a rise in the quality of the labor force in manufacturing enables us to estimate the contribution made by the increased share of skilled workers to the rise in labor productivity by estimating the contribution of the advanced industries—electronics, transport vehicles, and chemicals—in which most of the skilled workers (80 percent) found employment. The contribution of these industries is double—by virtue of the accelerated expansion of their product per hour worked relative to the industry average (a 38 percent increase vis-à-vis a rise of only 14 percent in the other manufacturing industries in 1995–2003), as well as via the increase in the share of persons employed in them; this rose from 25 to 30 percent, so that product per worker in these industries is 75 percent higher than in the other manufacturing industries (average during the period). Altogether, these industries accounted for almost 50 percent of the total increase in product per worker in manufacturing.

Israel's electronics exports were harmed by competition from developing countries, but the industry managed to divert its activity to more advanced and innovative products, where its main competitors are developed countries.

d. The countries competing in the US electronics market: Israel's electronics exports have been harmed by competition from developing countries, but its activity has been diverted to even more sophisticated and innovative products, in which the principal competitors are developed countries. In order to characterize the level of development of the countries with which Israel is competing in the US electronics market, we use US trade data. For this purpose we isolated 12 groups of products in which Israel's electronics exporters specialize, 4 groups from each three-digit industry (the 12 groups were chosen from the 200 of which the electronics industry is comprised). For each group we examined which of them export to the US, what is their market share, and whether the country concerned is developed or developing. We multiplied each country's market share (in each group of products) by its per capita GDP, thereby obtaining an index of the level of development of the average exporter (which we defined as the representative competitor) for each group of products. The results presented in the table summarize the results at the industry level (in order to avoid going into too much detail, we do not present the results at the group of products level; the transition from the group of products to the industry level was achieved according to the share of the group of products in Israel's exports to the US each year).

An examination of per capita GDP in countries which compete with Israel in the US electronics market shows that it is slightly higher than in Israel, and averaged $ 19,000 (in 2004).

An examination of the level of development of the representative competitor (average per capita GDP weighted by its share in US imports) in the various groups of products in 2004 shows that it is slightly higher than Israel's: the per capita GDP of these exporters averages $ 19,000, lower in the groups of products in the electronics components and electronic communications equipment industries and higher in the groups in the manufacturing control and supervision equipment and medical and scientific equipment industries. An examination of the trend over time in 1996–2003 reveals that the per capita GDP of the representative exporter in the electronic communications industry plummeted, but rose in the control and supervision equipment and medical and scientific equipment industries. The most notable decline was in the group of products of electronic components for land telephone lines

and telephone exchanges: the per capita GDP of the representative exporter in this group stood at $ 24,000 in 2000, but then the shares of Canada and Japan, which are wealthy (and also of Israel) plunged, while those of Malaysia and Mexico, which are poorer, soared. As a result, the per capita GDP of the representative exporter fell to $ 13,000. Concurrent with the fall in per capita GDP of the representative exporter in the electronic communications industry in 2000–04, the share of the industry's exports in Israel's total exports also dipped: the share of the four main groups fell from 28 percent of total electronics exports to only 18 percent, while the share of the four groups of products from the control and supervision equipment and medical and scientific equipment industries (which compete primarily with the developed countries) rose from 15 to 24 percent. The diversion of Israel's exports from products which compete with those from developing countries to products which compete with those from developed ones provides further evidence of the comparative advantage bestowed by technological innovation and the comparative disadvantage of producing goods in which it is necessary to keep production costs low.

Table 1.16
Per Capita GDP in Countries Competing with Israel in the US Electronics Market

($ '000)

	Number of product groups	Weight of product groups in electronic exports to the US		Per capita GDP of representative exporters		
		2000	2004	1996	2000	2004
Electronic components	4	28	24	15.7	15.9	15.2
Electronic communcations equipment	4	28	18	20.3	19.9	13.3
Control, supervision and scientific medical equipment	4	15	24	24.6	22.3	26.1
Total	12	71	66	20.4	18.9	18.9

SOURCE: Based on data from the IMF and US foreign trade data.

Box 1.3
Changes in the Encouragement of Capital Investments Law

In April 2004 the government decided to amend the Encouragement of Capital Investments Law. According to the amendment the condition for receiving government aid would be that at least one quarter of the factory's sales would be destined for export; thus, firms producing for the domestic market would not receive subsidies, and these would be diverted to investments in export

industries.[1] In our view, the principal consideration in granting government subsidies to the private sector should be the existence of positive externalities for the economy as a whole. The importance of this criterion was acknowledged in the Research and Development Law, and should also be applied in this case. While it should not be concluded that there is no justification for using government policy in order to help develop areas with high unemployment on the periphery, it should be pointed out that expanding exports does not embody positive externalities per se, so that one cannot advocate subsidizing capital investments merely because they increase exports.

Those who are in favor of the amendment might claim that the expansion of export firms constitutes a net gain to GDP and employment, while the expansion of firms producing for the domestic market comes at the expense of another domestic firm, so that subsidizing investment in export-biased firms yields a greater net contribution to the economy as a whole. This contention in effect advocates the subsidization of exports, something which is known to have an adverse effect on economic efficiency. An economy's exchange rate accurately reflects the substitution rate in production (between producing for the domestic market and for export) and consumption (between consuming a product that has been produced domestically or one that has been imported), so that subsidizing exports deflects the economy from the desired point to an inferior one, where there is excess import consumption (and excess export production) and a shortage of consumption (and production) of domestic nontradables. In the past the government deviated from this rule and subsidized exports of the traditional industries (e.g., textiles and clothing). This made it possible to employ unskilled workers in areas of high unemployment, and helped to generate income smoothing and to expand economic activity (because of structural unemployment in the peripheral areas). Today, however, the subsidization of exports is directed to industries that are skilled-labor-intensive (where wages are high and unemployment in the surrounding area is low), so that there is no justification for preferring export industries to others.

It has also been claimed that exports should be favored because competition in global markets creates perpetual pressure to improve and increase productivity, so that the export sector leads the economy in introducing new technologies and efficient production methods, processes which trickle down to other firms and increase productivity in the economy as a whole. The assertion that exporting firms generate positive externalities for the entire economy is to be found in the economics literature, and cannot be rejected without a far-reaching empirical

[1] In effect, diverting government subsidies in order to encourage export industries is the policy that has been implemented for several years. This is proved by the fact that the extent of investments approved in the export industries—electronics, pharmaceuticals, chemicals, and plastics—amounted to 75 percent of all investments approved in 1996-2000.

investigation. Nonetheless, it can be said that international competition operates not only on exporting firms but also on those that produce import substitutes, as the domestic manufacturing industry is hardly protected by import tariffs (most of the goods produced for the domestic market are import substitutes). In addition, it is not clear whether exporting firms in manufacturing have a genuine effect on non-manufacturing domestic firms in completely different industries, such as finance, commerce, services, transport, and communications. Furthermore, Israel has close economic ties with other countries and is open to new technologies, trade, and foreign investment, so that the potential contribution of increased exports by one manufacturing firm or another to the accelerated incorporation of new technologies or manufacturing processes in the economy as a whole seems negligible.

As has been stated here in the past, the Encouragement of Capital Investments Law distorts the allocation of economic resources by discriminating between manufacturing and non-manufacturing firms, and between large and small firms; it also distorts the allocation of sources between excess use of capital and under-use of labor. The new amendment will also give rise to a distortion in the allocation of production between the domestic market and exports. These distortions harm the economy and are financed by increasing tax rates on capital and labor, which is in itself distorting. The ability of the Encouragement of Capital Investments Law to contribute to the expansion of employment of unskilled workers is declining because the nature of Israel's manufacturing industry is changing: its share of total employment has shrunk considerably, as has the share of unskilled workers in total manufacturing employment (in addition, capital stock per manufacturing worker has soared). It is difficult to find any genuine justification for the extensive subsidization of investment in manufacturing (by excess taxation of the other industries), as the cases in which these investments have positive externalities are few and far between. Moreover, even if it is decided to extend subsidies of this kind, export-biased firms should not be favored over those producing for the domestic market. The purpose of government intervention (as we understand it) is to improve the economic situation of the periphery and to augment (and diversify) the demand for labor there. A good example of involvement of this kind is the government's decision last October to support the employment of new workers in the Sderot region. The program was managed by tender, and the main criteria for providing grants to entrepreneurs were the amount of aid requested in order to employ workers and the average wage they intended to pay.

Box 1.4
Effect of Uncertainty on Investment in Israel's Manufacturing Industry

Uncertainty has an extremely negative effect on investment. Once an investment has been made the situation is irreversible, and the investment may be lost. If, for example, new competitors with better technology emerge or if consumers' tastes change, output prices may fall, leaving the firm with surplus machinery and equipment which is difficult to sell. The theory of irreversible investment stresses the importance of the question of timing in making investments: the potential investor examines the profit he is likely to obtain from making the investment in the present (immediately) compared with the possibility of waiting until further information which will reduce uncertainty is available, and only then, in accordance with that information, does he decide whether to participate in the project.

Thus, for example, a study[2] which examined the effect of uncertainty on the rate of investment in manufacturing in Israel in 1980–1997 found that a rise in the index of uncertainty (standard deviation) from 0.1 to 0.2 led to a decline of 10–12 percent on average in the share of investment in GDP in that period. Uncertainty (as defined in the study) relates to shocks (standard deviation) in the value of the marginal output of capital, and to shocks which could derive from fluctuations in the price of output as well as in productivity. The study was based on the empirical application of the production function with constant returns to scale, and a competitive market which firms may enter freely but where investments are irreversible. Investment decisions are made in conditions of uncertainty regarding output prices, and this gives rise to uncertainty regarding future profits from the investment.

In order to quantify the effect of the increase in uncertainty on the rate of investment in manufacturing we extended the sample period in the model to 2003 and examined two periods: 1994–1998 and 1999–2003, the latter period characterized by many shocks (the second Intifada and the global crisis in the electronics industry). We found that in the second period uncertainty increased (standard deviation of the value of the marginal product of capital in manufacturing) to 0.22, compared with 0.1 in the first period. This rise in uncertainty may explain the 12 percent decline in the average rate of investment between the two periods. All in all, the rate of investment fell by more—17 percent—between the two periods. Hence, additional factors which changed between the two periods—the decline in the GDP growth rate ('the accelerating factor'), the moderation of the influx of immigrants, and the increase in interest rates—also served to lower the share of investment in manufacturing between the two periods.

[2] Menashe (1999), "The Effect of the Aggregate Uncertainty of Real Capital Costs on Investment in Manufacturing in Israel, 1980–1997," Bank of Israel, Research Department, Discussion Paper 99.02 (Hebrew).

Table 1.17
Factor Inputs, Productivity, and Cost Per Hour Worked in Electronics, 1990–2004

(rate of change, percent)

	1990–2000	2001–2003	2004
Production	10.6	–5.2	11.4
Exports	21.9	–10.8	23.2
Cost per hour worked	6.9	–2.8	–4.8
Labor productivity	4.6	–1.6	5.6
Hours worked	5.8	–3.6	5.5
Capital stock	14	6.8	8
Multi-factor productivity	1.7	–5.3	6.2
Investment	19.7	–10.6	42.3
Share in production (%)	21.8	26.3	26.7
Share in exports (%)	26.7	35.2	34.4

SOURCE: Based on Central Bureau of Statistics data.

Table 1.18
Factor Inputs, Productivity, and Cost Per Hour Worked in Mixed Industries, 1990–2004

(rate of change, percent)

	1990–2000	2001–2003	2004
Production	3.8	–2.8	8.1
Exports	8.0	6.5	12.7
Cost per hour worked	3.5	–2.0	–3.1
Labor productivity	3.1	5.8	9.4
Hours worked	2.0	–0.5	–1.2
Capital stock	7.1	–3.2	2.2
Multi-factor productivity	1.1	4.2	4.5
Investment	6.8	–3.2	4.4
Share in production (%)	29.7	32.5	34.6
Share in exports (%)	48.1	46.8	48.2

SOURCE: Based on Central Bureau of Statistics data.

Table 1.19
Factor Inputs, Productivity, and Cost Per Hour Worked in Traditional Industries, 1990–2004

(rate of change, percent)

	1990–2000	2001–2003	2004
Production	3.8	–2.8	2.4
Exports	4.5	–1.0	14.1
Cost per hour worked	3.4	–1.1	–2.6
Labor productivity	2.0	1.1	2.6
Hours worked	1.7	–3.9	–0.2
Capital stock	7.6	–0.4	1.3
Multi-factor productivity	–0.3	–1.8	2.0
Investment	5.9	–6.7	20.2
Share in production (%)	48.5	41.2	38.7
Share in exports (%)	25.2	18.0	17.4

SOURCE: Based on Central Bureau of Statistics data.

Table 1.20
Mixed Industries: Production, Exports, and Labor and Capital Input, 2004

(rate of change, percent)

	Share in manufacturing product (%)	Production	Real exports	Number of employees	Hours worked	Capital stock
Mixed manufacturing	34.6	8.1	12.7	-0.8	-1.2	1.6
Plastics and rubber	6.9	5.8	12.3	-3.1	-5.4	4.2
Mining and quarrying	2.5	-3.2	15.6	-0.9	-3.3	4.9
Miscellaneous	0.8	-0.6	7.2	0.7	-2.0	-2.2
Jewelry & objets d'art	0.6	-3.1	6.5	-5.7	-10.1	-2.2
Chemicals and oil	14.1	12.6	13.6	2.5	2.8	-2.0
Machines and equipment	2.9	-7.0	13.9	-5.6	-5.5	4.1
Transport equipment	6.9	16.6	10.3	3.4	5.3	0.2

SOURCE: Based on Central Bureau of Statistics data.

Table 1.21
Traditional Industries: Production, Exports, and Labor and Capital Input, 2004

(percent)

			Increase in		
	Share in manufacturing product (%)	Production	number of employees	hours worked	capital stock
Traditional industries	38.7	2.4	0.7	–0.2	1.2
Food, beverages, tobacco	10.6	1.3	1.9	0.9	2
Textiles & clothing	3.5	–2.8	–5.4	–3.6	–1.1
Footwear, leather & its products	0.2	–8.2	–9.2	–5.7	–6.3
Wood & its products (incl. furniture)	3	7.5	–0.2	–2.5	–0.7
Paper & its products	1.6	0.1	2.3	–1.1	–1.6
Printing & publishing	4.4	5	5.5	1.7	–3
Non-metallic minerals	2	–8.4	–4.3	–3.8	–0.6
Basic metals	1.6	7.8	1.2	0.2	1.7
Metal products	10	6.3	2.7	3.1	5.5
Motors & electric distribution apparatus	1.9	–3	–4.3	–8.4	–1.5

SOURCE: Based on Central Bureau of Statistics data.

3. Infrastructure industries: transport, communications, energy and water

Investment in infrastructure fell by 21 percent compared with 2003.

Investment in infrastructure, which in 2004 accounted for 22 percent of investment in the principal industries, fell by 21 percent compared with 2003 (Table 1.22). The decrease encompassed all main areas: investment in transportation dropped, and the downturn in investment in communications continued although at a more moderate rate; investment in energy; which is comprised mainly of investments of electricity and gas infrastructure, in which the variability between the years is considerable, fell appreciably, while investment in water increased. Transport and energy constituted the main elements of infrastructure investment in 2004, 38 and 27 percent respectively, as compared to the declining share of communications and the small share of investment in water and sewage (Figure 1.14).

The decrease encompassed all the principal infrastructure industries – transport, communications and energy

The proportion to total investment in infrastructures of infrastructure investments made by the private sector rose slightly in 2004

The proportion to total investment in infrastructures of infrastructure investments made by the public sector fell during the years 1996-2000, and rose again in 2001-2003 (Table 1.23). The public sector's share of total investment in 2004 declined—partly due to the transfer of the Bezeq company from the public to the private sector––despite the reduction in investment in gas, most of which is private, and in the Cross Israel Highway. In the public sector, which is comprised of the general government and government companies, the latter's share of investment in infrastructure increased in 2002-2003, mainly due to the decrease in the general government's investments in road.

Government companies' share in investment finance fell in 2004 as a result of the previously mentioned change in the status of Bezeq. The trend in the public sector towards investment via government companies will continue in 2005 due to the transformation of the Public Works Department from a subordinate unit of the Transport Ministry into a government company. The general government's share in the finance of infrastructure investment increased because of the growth in government grants to the railway company (Table 1.24).

Box 1.5
Definition of Infrastructure Industries

The infrastructure industries are the transport, communications, energy and water infrastructures. Transport infrastructure is comprised of roads, the railways (excluding locomotives and rolling-stock), the seaports and the airports. Communications infrastructure does not include the mail services, which are not regarded as an infrastructure industry. The energy industry encompasses electricity, the oil refineries, oil and gas exploration, and oil and gas pipelines. The water industry is comprised of the extraction and conveyance of water to the distributing authority, sewage and water purification. The infrastructure industries supply production inputs for other principal industries and for final

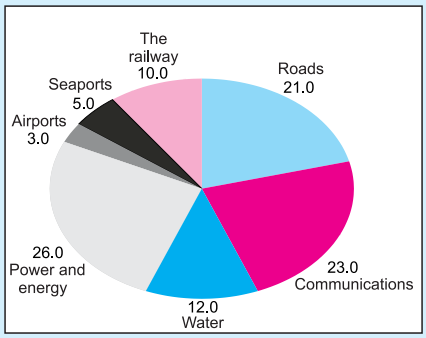
uses in households, and are capital intensive. The infrastructure industries are essential for economic activity and growth because they are responsible for the connection between economic units. For example, the connection of regions to centers of employment and abroad for the purpose of economic activity is overwhelmingly dependent on such essential services as electricity, water and sewage, transport and communications.

Since the infrastructure industries are notable for clear economies of scale, while natural monopolies whose activity is supervised by the State have a place in the areas of infrastructure, principally in the area of conveyance (fuel, water, electricity), it is desirable to encourage competition in these industries—mainly in the area of production (electricity, water, refinery products).

Because of the infrastructure industries' monopolistic structure and the external benefits inherent in them, regulatory coverage is necessary for their activity. Investment in infrastructures is one of the few areas in which direct government involvement in economic activity is justified. This is because in most of these industries, the return to the investor is less than the return to the economy ('external benefits'), and a private entity will therefore not invest in them to an adequate extent. The public sector is very prominent in infrastructure investment as a whole and in transport investment in particular, making such investment either directly, at its own initiative, or in partnership. Infrastructure investments in cooperation with the private sector have increased during recent years because the efficiency of the latter in carrying out investments appears to be greater than that of the government sector. Investment by means of government companies may also possibly be more efficient that that made via the general government.

The trend of structural changes and privatizations has increased during recent years. The Public Works Department has been transformed from a subordinate unit of the Transport Ministry to a government company. Bezeq has been turned from a government company into a privately-owned company concurrent with the imposition of regulatory coverage in the area. El Al has been privatized, part of the country's public transport has been privatized and its further privatization is planned. The seaports have been subjected to a structural change, a structural change in Mekorot has been

Figure 1.14
Composition of Infrastructure Investment, 2004
(percent, at current prices)



SOURCE: Central Bureau of Statistics.

partially implemented, and changes in the electricity company are being examined. In Box 1.6 we will review the structural changes and privatizations of recent years, and note negative external effects that need attention.

Table 1.22
Infrastructure and Investment in it: Energy, Water, Transport and Communications, 1995–2004

	Communications	Transport infrastructure	Energy	Water	Other[a]	Total infrastructure
	1	2	3	4	5	
(a) Capital stock at end 2004 (NIS billion, current prices)[b]		276.1	74.5	15.3		365.9
Composition (%)		75.5	20	4		100
Real change (%)						
Average 1995–99		7.51	7.5	–1.6		7.5
2000		7.02	3.58	–2		7
2001		6.19	3.85	5		6
2002		3.61	4.26	–1		4
2003		1.82	5.51	0		2
2004		1.68	3.63	0		2
(b) Gross investment in 2004 (NIS million, current prices)	3,255	5,397	3,818	1,733	174	14,377
Composition (%)	23	38	27	12	1	100
Real change (%)						
1998	16.0	9.5	–6.9	8.2	–22.4	3.8
1999	4.5	–11.0	–17.1	0.4	–15.1	–8.2
2000	32.9	13.5	–16.3	–7.3	–6.1	7.7
2001	–6.5	14.7	12.7	–12.5	4.9	4.2
2002	–27.2	8.5	5.3	–4.7	–4.5	–5.2
2003	–20.6	–6.2	38.1	38.1	0.5	6.0
2004	–1.3	–13.8	–43.4	11.6	–28.4	–20.6
(c) Share of gross investment in GDP (current prices, %)						
Average 1995–99	1.0	1.0	1.3	0.3	0.1	3.6
2000	1.1	0.9	0.8	0.2	0.04	3.1
2001	1.1	1.1	0.9	0.2	0.05	3.2
2002	0.8	1.2	1.0	0.2	0.04	3.2
2003	0.7	1.2	1.3	0.3	0.05	3.5
2004	0.6	1.0	0.7	0.3	0.03	2.7

[a] Investment involving preparatory development work.
[b] There is no decomposition of capital stock according to the new definition of infrastructure, so that the data in the table refer to communications and transport.
SOURCE: Based on Central Bureau of Statistics data.

Table 1.23
Investment by Implementing Sector, 1995–2004

(percent)

year	Public sector[a]	of which: General government	of which: Public corporations	Private sector[b,c]	Total public plus private sector
1995	87	27	60	13	100
1996	87	26	61	13	100
1997	86	24	62	14	100
1998	80	24	56	20	100
1999	75	22	53	25	100
2000	63	20	43	37	100
2001	64	21	42	36	100
2002	71	22	49	29	100
2003	74	22	52	26	100
2004[c]	73	22	51	27	100

[a] Public sector: roads (except for the Cross Israel Highway), railways, water, and sewage.
[b] Private sector not financed by state: communications, electricity, and sea- and air-ports.
[c] In 2004 Bezeq changed from a government corporation into a company in the private sector.
SOURCE: Based on Central Bureau of Statistics data.

Table 1.24
Investment by Financing Sector, 1995–2004

(percent)

year	Public sector	of which: General government	of which: Public corporations	Private sector[a,b]	Total public plus private sector
1995	87	30	57	13	100
1996	87	29	57	13	100
1997	86	29	57	14	100
1998	80	29	51	20	100
1999	75	28	47	25	100
2000	63	26	38	37	100
2001	64	27	37	36	100
2002	71	32	40	29	100
2003	74	31	43	26	100
2004[b]	73	37	36	27	100

[a] The private sector includes mainly the Cross Israel Highway in transport, most of the oil and gas infrastructure in energy, and all communications and sea- and air-ports.
[b] In 2004 Bezeq changed from a government corporation into a company in the private sector.
SOURCE: Based on Central Bureau of Statistics data.

Box 1.6
Recent structural changes and privatizations[1]

The trend of structural changes in the economy has increased during recent years, with the aim of increasing competition in the infrastructure industries and of transferring their management to private hands. A structural change is usually made as a stage before privatization, and its objective is to encourage competition in the economy and to increase the efficiency of the activity of government companies. In this box we will focus on the main privatizations and structural changes at government companies and the statutory authorities in recent years. During the last two years, the extent of privatization has increased, in a trend that will continue in 2005.

The transport industry

Structural change in the seaports: Until the beginning of 2005, commercial seaports in Israel were still operated by the Ports Authority. Because of the centralist structure and the form of decision-making process, a single port cannot be independent economically or commercially. Accordingly, no competition exists between the different ports. The lack of competition between the ports has negative implications for the economy and especially for foreign trade—high costs that users pay, low output compared with other ports, the need for ships to wait before loading/unloading and frequent disruptions in the ports' activity, and cross-subsidization between fees. Although the ports work nearly around the clock, during the night the exploitation of port infrastructure is very low because a large part of the cargoes are for immediate delivery (without storage at the port), and a large proportion of their customers do not wish to take receipt of cargoes at night. The road infrastructure is therefore also utilized less in the nighttime. This has negative external effects, such as road congestion by trucks during the daytime. There may be room for encouraging the use of the ports at night by offering reduced fees.

The organizational structure whereby the ports operate under a central authority is less usual worldwide. During the last decade, many of the world's ports underwent structural changes and most notably the granting of economic and commercial independence to every port. These changes led to a considerable rise in outputs, to a large decrease in costs to the users, and to a substantial improvement in the level of service, a trend that is spreading

[1] Based on the Government Companies Authority's report on the activity of government companies in 2004 (draft), and on Finance Ministry press releases concerning the privatization of Bezeq and Bank Discount.

worldwide. Recently, ports were privatized in Germany, Japan, the UK, Canada and a number of developing countries.[2]

In 2003 the Israel Government made a decision concerning structural change in the ports, the main elements of which are: the transformation of the ports into independent government companies; the establishment of a government company for asset management, which will lease the assets to the different port companies and will be responsible for the future development of the ports; the establishment of a government ports and maritime authority within the Ministry of Transport, which will be charged with long-term planning of the ports industry and that will act as a regulator for ensuring that the ports operate in an efficient and competitive manner. The decision implies a disconnection between ownership and operation, and thereby encourages competition and a growth in activity. The enactment of the Ports Authority Law was completed in 2004. The law prescribes a new legal structure for the ports and the asset companies. The move to the new structure was completed at the beginning of 2005.

The new structure will encourage the competition that is expected to develop between Haifa Port and Ashdod Port, mainly for cargoes whose destination (imports) or source (exports) is in the area between Haifa and Ashdod.[3] But the ports have a monopolistic power because competition between docks will not be possible under the new structure either, for shipments consigned to or deriving from the north or south of the country. It should be noted in this respect that were Ashdod's Hayovel Port to operate as a separate company from Ashdod Port, competition could also develop for shipments consigned to and deriving from the south of Israel. However, the port employees have prevented it from being operated as a separate company. It would appear that port workers' wages do not encourage competition. Since the wages of veteran port workers will remain in this format after the reform, the competition will develop slowly. However, new workers hired after the reform are likely to have a wage structure that is more related to labor productivity and that will therefore encourage competition.[4]

Apart from income from the use of the ports for import and local export activity, two other sources of income exist: transshipment—use of a port as an intermediate port for the dispatch of shipments between other ports; and transit—use of a port as a service provided for countries that do not have an outlet to the Mediterranean Sea, such as Jordan and Iraq. In 2003 approximately 20 percent of the cargo movements at Haifa Port derived from transshipment.

[2] See World Bank: Port Reform Toolkit 2001.
[3] Approximately 20 percent of all shipments according to Ports Authority data.
[4] An agreement on this matter has yet to be signed.

At Ashdod Port, the percentage was negligible.[5] Preferences at the ports are always given to local exports and imports, and only excess capacity is utilized for transshipment. Concurrent with the expected growth in capacity as the Hayovel Port is developed—if the uncertainty deriving from disruptions in the work of the ports and operational queue is reduced—other shipping companies may choose Israeli ports for transshipment. The potential for transit activity is not great: The Jordanian market is relatively small and in the Ports Authority's estimation, the transfer of shipments to Iraq is temporary.[6]

The structural reform should be accompanied by a reform in the area of port fees, in order for the fee structure to more or less reflect actual costs and in particular, to gradually reduce import fees and to gradually increase export fees. The fees must be determined in a manner that will assure a reasonable rate of return on capital. In addition, an efficiency coefficient for the reduction of fees should be determined in order to provide the port companies with an incentive to increase their efficiency.

The sale of Zim: In 2004 an agreement was signed for the sale of the State's holdings in the Zim Navigation company. The proceeds of the sale were NIS 504 million.

The break-up of the Public Works Department: The Public Works Department (PWD), responsible for the development and maintenance of Israel's inter-urban road networks, was a subordinate unit of the Ministry of Transport. The PWD is responsible for all stages of development, from the planning process, through the implementation stages to current maintenance over all the years in which a road is used, and therefore contains quite a few professional units. In 2003, the PWD had 770 employees. Over the years, the actual costs incurred in implementing projects exceeded the budgeted cost and in the absence of an incentive to complete projects rapidly, the benefit to the economy decreased. The government decided to transfer its activity to a new government company that will operate in the format of a management company. This company will fulfill the functions in question by means of outsourcing, and will have only 180 employees. In 2004 agreements were signed for its operation, finance and the transfer of assets and activity from the State and the new PWD company. An agreement has not yet been signed with the employees that will cover retirement and the transfer of part of the employees from the former Transport Ministry subordinate PWD to the new PWD.

The privatization of El Al: El Al is the main entity in the Israeli air transport industry. Since the mid-1990s, the industry has undergone a gradual structural change due to the implementation of a policy of gradual liberalization in the air

[5] See: Ports Authority, Economics and Finance Division. Policy on container transshipment and cargo transit to different countries at the Authority's ports, 2004.

[6] See Note 5 above.

transport sector, concurrent with the extension of a safety net for Israeli carriers. The liberalization process included the introduction of a number of reforms in the international air transport systems for passengers and cargo. These reforms were built around the following processes:

1. Approval for an additional Israeli carrier (CAL) to operate cargo flights in parallel with El Al.

2. Approval for charter flights for passengers on a relatively large number of routes on which scheduled flights are operated.

3. The appointment of the Arkia and Israir companies as denominated carriers on a number of international routes that were not operated by El Al.

However, the economic regulatory coverage in the air transport sector is still considerable.

At the end of 2004, El Al was transformed from a government-owned company to a privately-controlled company. The proceeds of the sale amounted to NIS 593 million.[7] In recent years El Al was hit by a serious crisis that threatened its very existence. The government privatized it with the aim of providing it with the tools necessary for coping with the growing competition in the industry and changing business conditions, including: the possibility of flights on Saturday; increased wage flexibility in the absence of the need to adhere to government companies' wage scales (when the collective agreement ends, the flexibility in employment may increase); and freedom of action in tenders, in the absence of the need to adhere to the Tenders Law. When El Al ran into difficulties in the past, the government injected money into it. Now that it has become a privately-owned company, such assistance will presumably no longer be given.

Structural change and privatizations in the bus industry: The opening up of the industry to competition continued. Up to the end of 2004, private entities had been permitted to operate on a scale equivalent to 12 percent of the activity of Dan and Egged. To date, a price decrease of up to 35 percent and an improved frequency along the bus routes in question have been achieved as the result of the tenders that were issued. In addition, in locations where new operators have begun their activity, the number of passengers using public transport has increased according to Finance Ministry data. The Finance Ministry intends to issue tenders for all public transport. As a result, every few years a tender will be issued for the activity of a specific operator. In Beer Sheva, where a private franchise-holder operates, a strike began at the end of 2004. The company cannot be fined due to the non-provision of the service because it is prohibited from hiring new employees.

[7] Part of the issue was in options. The proceeds were calculated on the assumption that the options will be fully exercised.

The privatization process continued in 2004: In July, a franchise-holder began to operate in the town of Elad. The franchise-holders in the areas of Ashkelon and Afula—with 4 percent of Egged's activity—and Modi'in will start to operate at the beginning of 2005. At the beginning of 2005, a tender will be issued for the operation of routes in the Petah Tikva area—8 percent of Dan's activity.

The transfer of Israel Railways from the Ports and Railways Authority to a government company: In 2003 the railways were separated from the Ports Authority and began to operate as a government company. Concurrently, a 5-year NIS 20 billion investment program for the railways was approved.[8]

The energy and water industries

The Israel Electric Corporation: A structural change followed by privatization are planned. (See Box 1.8 for more details.)

The privatization of Oil Refineries: In 2003 Oil Refineries franchise from the period of the British mandate, in a BOT format, expired. The company, which owns two production sites, in Ashdod and Haifa, has monopolistic power in the refining segment because of the high costs of transporting refinery products from abroad. The State wishes to split the oil refineries into two companies, and thereby promote competition in the oil refining segment. In 2004 the Ministerial Committee for Social and Economic Issues made a decision to split and privatize the oil refineries during the years 2004 and 2005.

The establishment of Israel Natural Gas Supply Co. Ltd.: The gas company, which was established in 2003, will operate in the format of a management company (like the new Public Works Department) and not as a contracting company.

The structural change at Mekorot: Mekorot is one of the largest infrastructure companies in Israel. The company engages mainly in the extraction of water and its supply to consumers, as well as a number of other water-related activities––principally work for external entities. The company has 2,100 employees. Under the Water Law, it is a national water authority that implements most of the budgets for the development of water plants in Israel.

In 2002 the government decided to implement a structural change at Mekorot. The principal objective of the new organizational structure is to create a clear distinction between water supply activity, which is a natural monopoly and that will be carried out within the framework of the Mekorot company, and other, competitive activity such as the construction and operation of purification plants and urban water systems, which will be carried out within the framework of the

[8] For more details, see the Bank of Israel Report for 2003, in the chapter on the composition of GDP, pages 71-73.

Hayizum VeHapituach Company (Initiative and Development Company) to be established. At the beginning of 2004, an agreement in principle was reached between the Ministry of Finance, the Ministry of Infrastructures, the Histadrut and the management of Mekorot for the implementation of a structural change in the company. The companies that will comprise the new Mekorot are in the process of formation. At the end of 2004, an agreement for the retirement of 260 employees was signed between Mekorot's management and the employees' organization. Following this agreement, Mekorot will start to implement its organizational change as required in its agreements with the government as early as 2005.

The post and communications industry

Mail: A mail company has been established and as at the beginning of 2005, the activity of the Postal Authority was being transferred to the company, which will make it possible to increase the efficiency of its activity. No agreement has yet been reached between the Postal Authority's employees and the Finance Ministry with respect to pensions. The area was opened up to competition at the beginning of 2003, but to a limited extent in order not to harm the continued nationwide supply of mail services. Competitors are permitted to supply relatively expensive services, principally delivery services, express post, registered mail, international mail and the dispatch of mail items weighing over 500 grams. The Postal Service remained the exclusive supplier of other services, including regular letters and mass-mailing.[9] A private company was recently permitted to supply a limited service for mass-mailing. In line with the report of the McKinsey consultancy company, the opening up to competition of 20-30 percent of mass-mailing and regular letters at the beginning of 2006 has been embodied in legislation.

Bezeq: The privatization of the company is continuing. Since the end of 2003, the State's holdings in Bezeq have been less than 50 percent. In 2004 it was decided that the majority of the State's holdings in the company would be privatized by means of a private sale, and the sale process is expected to end in mid-2005. Concurrently, the structural change in the industry has progressed, with the opening up to competition of the landline telephone market.

The opening up to competition of the landline telephone market has been delayed until now, possibly because Bezeq is a relatively efficient company: Bezeq's fees are declining as prescribed in the Gronau Report. During 2004 Bezeq's fixed-line telecommunication fees fell by an average of 17 percent and the fees are low by international standards (Figures 1 and 2). Over the

[9] Postal items that are brought in large quantities and that are zip-coded and sorted by the running order of the zip code.

years, Bezeq's profitability was higher than that determined by the regulator.[10] The cable TV companies have undertaken to provide a nationwide landline telephone service only in return for the merger of the cable companies into a single company. The cable companies began to provide a nationwide commercial landline telephone service at the end of 2004 (currently, to a limited number of customers).

The rules for the provision of non-nationwide service were subjected to regulatory coverage during 2004, and licenses for trial marketing have recently been issued to a number of companies.

Other privatizations (not in the infrastructures industry)

The privatization of Bank Discount: At the beginning of 2005 an agreement was signed for the sale of Bank Discount. The sale proceeds are NIS 1.3 billion for 26 percent of the bank's shares and an option that was granted to the buyer for the purchase of another 25 percent of the shares for NIS 1.25 billion.

Taas: Taas is a government company that is wholly owned by the State. Under the Economic Arrangements Law of 2003, it was decided inter alia that the company must undergo a structural change including the sale/closure of enterprises outside of its core area of activity, and streamlining measures: The Taas small arms factory was sold at the beginning of 2005. At the beginning of 2005, the Minister of Finance and the Minster of Defense decided to expedite the privatization of Taas via the sale of part of its activities to Rafael.

Ashot Ashkelon: Ashot Ashkelon is a subsidiary of Taas. In 2003 it was decided to privatize the company and an advertisement inviting bidders to submit offers for its purchase was published.

The Weapons Development Authority—Rafael: In 2002 Rafael was transformed from a subordinate unit of the Ministry of Defense into a government company.

The Company for the Development of the Lod Ramle Area: The company was privatized in 2004.

The National Coal Supply Company Ltd.: The State's holdings were sold to the Israel Electric Corporation.

The Government Medals and Coins Company: The company is due to be sold in 2005.

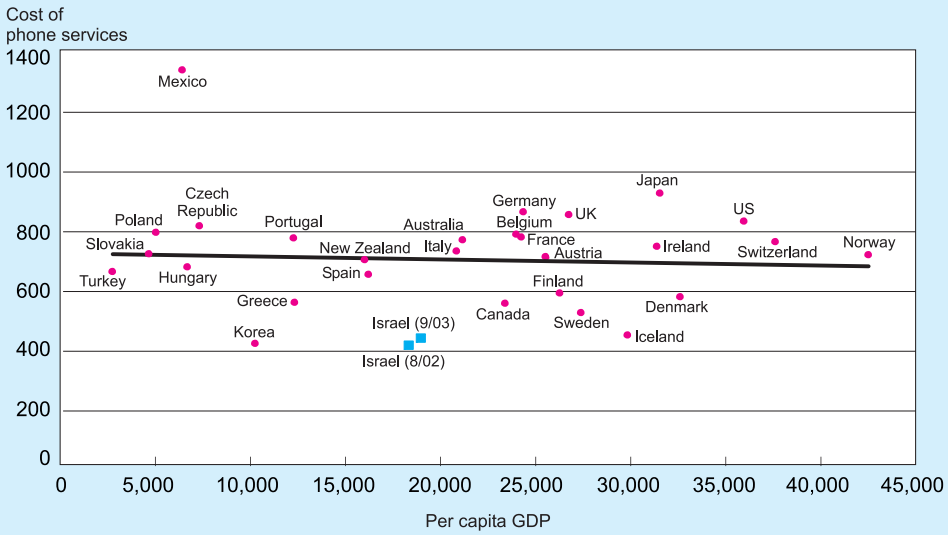
[10] Reuven Gronau, 2004, Supervision of the Telephony Industry in Israel, Sapir Forum.

Box 1.6 Table 1
Structural Changes and the Main Recent Privatizations

	Structural change	Privatization	Notes
Structural change in the seaports	Completed	Not at this stage	
Sale of Zim	No	Completed in 2004	
The break-up of the Public Works Department	In process	Not at this stage	The structural change due to be completed at the beginning of 2005
The privatization of El Al	In process	In effect completed	
Structural changes and privatizations in the bus industry	In process	In process	No date determined for completion of privatization
The transfer of Israel Railways from the Ports and Railways Authority to a government company	Completed	Not at this stage	
The Israel Electric Corporation	In process	At a later stage	
The privatization of Oil Refineries	In process	In process	
The establishment of Israel Natural Gas Supply Co. Ltd.	Completed	No	
Mail	In process	Not at this stage	The structural change due to be completed at the beginning of 2005
Bezeq	In process	In process	The change in the structure of landline communications is slow, and is related to technological developments
Privatization of banks: privatization of Bank Discount	In process (Bachar Committee)	In effect completed	
Structural change at Mekorot	In process	Not at this stage	
Taas	In process	In process	
Ashot Ashkelon	In process	In process	
The Weapons Development Authority—Rafael	In process	Not at this stage	

.SOURCE: The Government Companies Authority

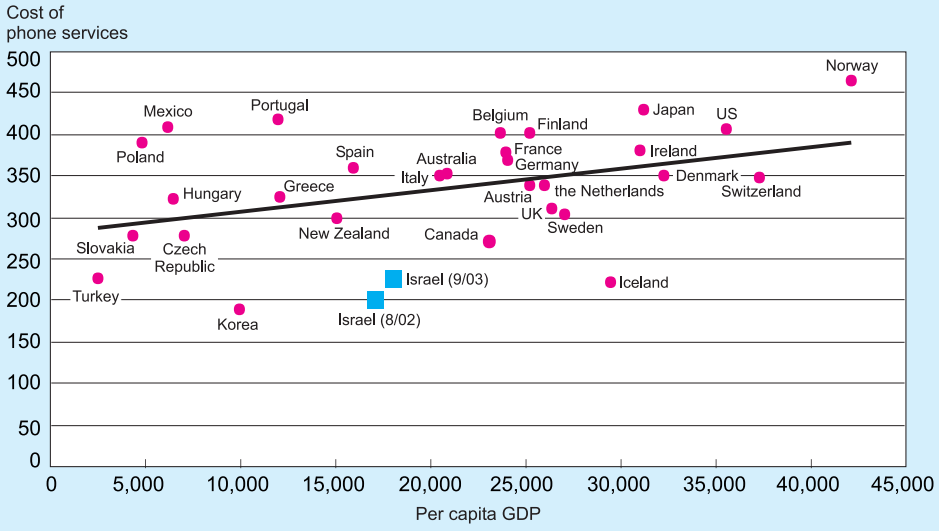
Per Capital GDP and the Cost of Telephone Services to Businesses in the OECD,[a] August 2002 ($)



[a] The telephone services are defined in OECD Communication Outlook 2003.

SOURCE: Israel Communications regulations (Bezeq and broadcasts); other countries - OECD Communication Outlook 2003; per capita GDP–UN National Accounts Main Aggregates Database.

Per Capital GDP and the Cost of Telephone Services to Households in the OECD,[a] August 2002 ($)



[a] The telephone services are defined in OECD Communication Outlook 2003.

SOURCE: Israel—Communications regulations (Bezeq and broadcasts); other countries—OECD Communication Outlook 2003; per capita GDP–UN National Accounts Main Aggregates Database.

a. The transport industry

The industry's product increased by 6 percent in 2004, investments in it rose by 6 percent in 2004, and labor inputs in the industry increased by one percent.

The industry's product increased by 6 percent in 2004 after growing by only 2 percent in 2003. Investments in the industry rose by 6 percent in 2004 after falling by 14 percent in 2003. The industry's stock of capital[37] continued to expand in the course of the year due to the large growth in investment in vehicles, and labor inputs in the industry increased by one percent (Table 1.25). Large projects were completed during the year—Ben Gurion Airport 2000 and the central section of the Cross Israel Highway.

The growth in the industry's product encompassed the principal sub-branches—land, air and sea transportation, and the port services. Activity in the industry increased in 2004 due to the upturn in activity in the economy and the improvement in the security situation. 1.2 percent of the transport product in 2004—NIS 280 million—is attributed to rise in incoming tourism.[38] The unit labor cost in the industry fell by 6 percent in 2004 as the result of a 4 percent growth in labor productivity (product per labor input) and a 2 percent decrease in real wages per employee post (FTE) (at the producer's prices).

Table 1.25
Transport, Main Indicators, 1995–2004

(annual change, constant prices, percent)

	1995–2000	2000	2001	2002	2003	2004
Total gross product	3	3	–2	1	2	6
Gross investment	4	9	13	–18	–14	6
Employees[a]	3	-0	–1	–5	6	3
Labor input	3	2	–4	–6	5	1
Labor productivity	0	1	2	7	-3	4
Cost to producers[b]	5	4	3	3	3	–1.9
Real wage[c]	2	2	2	–4	-3	1.2

[a] Including Palestinians.
[b] Adjusted for transport prices.
[c] Deflated by the CPI.

SOURCE: Based on Central Bureau of Statistics data.

The proportion of transport in business-sector product fell by approximately 7 percent.

Although the proportion of transport in business-sector product fell to 6.5 percent, the industry's importance is greater than that reflected by this proportion. Transport

[37] Stock of transport and communications capital.

[38] Assuming that the improvement in the security situation and this alone explains the growth in incoming tourism in 2004, it can be claimed that 1.2 percent of the 5.9 percent increase in the transport product can be attributed to the rise in tourism. The growth in tourism also led to an increase in the accommodation and food services product and to some extent, in the commerce product. Adding to these is the multiplier effect, which was not taken into account in the estimate. We used data on the average expenditure of a tourist on transport services in 2004 from the Incoming Tourism Survey 2004, balance-of-payments data on Israeli airline companies' income from tourists' travel fees, and data on the transport product as a percentage of output according to the Commerce, Services, Transport and Communications Survey 2001.

is an infrastructure industry with external benefits; the services generated by a large part of its capital—road capital—are included not in the transport product, but in the principal industries using it (except for the Cross Israel Highway, which is a toll road and is included in the transport product). For example, the long-term shift of passengers from public transport, whose product is included in the transport product, to private transport, whose product is not included in it, is recorded as a decrease in the industry's product.

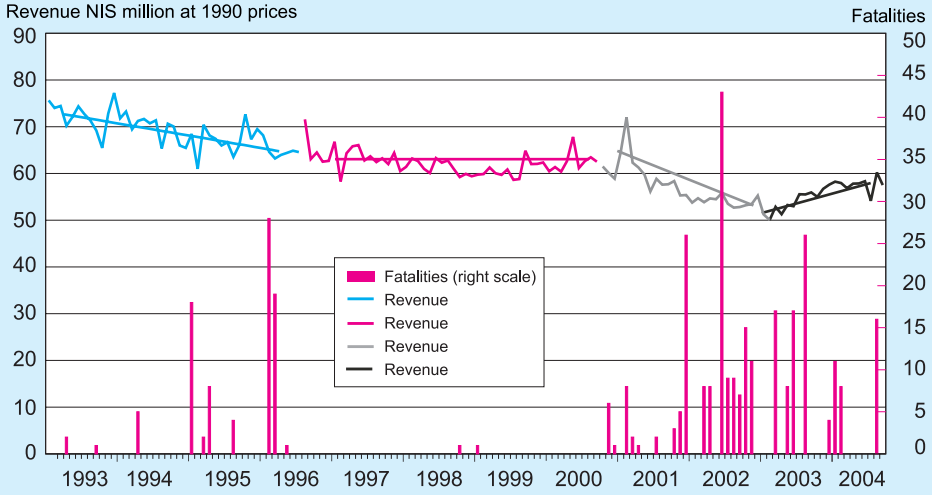
The product of buses rose by 7 percent in 2004 after falling heavily during the previous three years.

The product of buses rose by 7 percent in 2004 after falling heavily during the previous three years (Table 1.26). The product rose due to the improvement in the security situation and the growth in activity in the economy (Figure 1.15). The opening up of public transport to private operators may also have led to an increase in the product of buses. In contrast to the improvement in 2004, the use of buses to transport passengers is decreasing with time, due to the move to travel by automobiles and to some extent, by train as well. A decrease in the proportion of the use of buses for transporting passengers is characteristic of Western countries, and results mainly from the rise in the standing of living: A growth in the rate of private motoring increases the extent of suburbanization, which reduces the efficiency of public transport, a development that increases the rate of private motoring even more.

The railway product continued to rise in 2004.

The railway product continued to rise in 2004 due to the improvement in train services resulting from the large growth in investment in this area. The railway

Figure 1.15
Israeli Fatalities in Bus Bombings[a] and Revenue from Bus Services,[b] 1993–2004 (monthly data)



[a] In buses and at bus-stops.
[b] Revenue from passengers on public buses on fixed routes; monthly, seasonally adjusted data.

SOURCE: Counter-Terrorism Institute, Interdisciplinary Center, Herzliya.

network in Israel is not sufficiently well developed. The length of railway track relative to the country's area is less than half the average in Europe, and the gap in respect of the number of kilometers traveled by resident is even greater (Figures 1.16, 1.17 and 1.18). Accordingly, the railway yield is not high, because with a well-developed

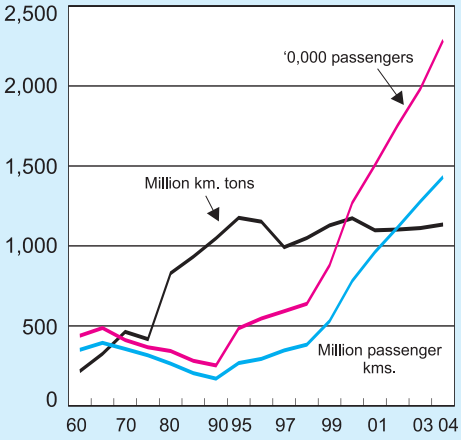
Table 1.26
Prices and Real Output in Transport, 1999–2004

(annual rate of change, percent)

	Share of GDP	Real output						Relative prices[a]					
	2004	1999	2000	2001	2002	2003	2004	1999	2000	2001	2002	2003	2004
Land transport	55	1	0	–1	1	0	5	–4	2	–2	–9	–5	3
Of which: Trucks	31	1	4	2	2	4	–2	–5	0	–1	–11	–8	6
Buses	8	–5	–8	–13	–8	–14	7	1	5	1	–3	3	–1
Taxis	17	5	–3	7	9	8	19	–6	4	–9	–9	–8	2
Trains	3	159	37	6	6	7	31	–15	–11	4	–9	–6	–1
Marine freight		7	7	1	7			–6	6	–10	–12		
Air services		13	12	–7	–3			–8	–17	4	5		
Other[b]	13	–3	4	–3	–1	–3	7						
Total transport	100	3	3	–2	1	2	6	–4	–2	–2	–6	–7	3

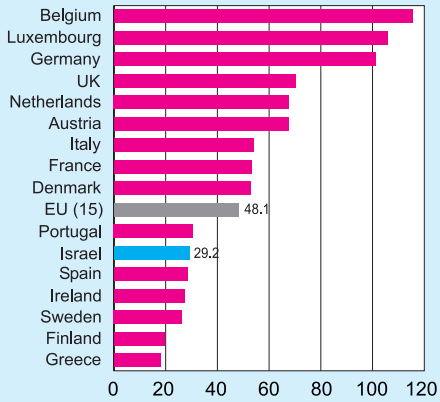
[a] Deflated by price index of business-sector product at factor prices.
[b] Including travel agents, storage and car parks.
For source, definitions and calculation method see notes to Appendix Table 1.A. 32.

Figure 1.16
The Use of the Railway,[a] 1960–2004



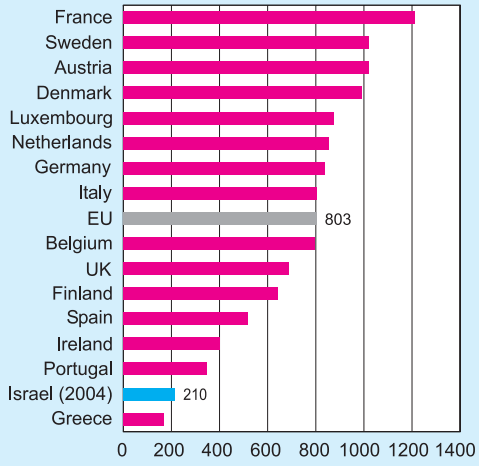
[a] Annual data from 1995; till then, every fifth year.
SOURCE: Central Bureau of Statistics.

Figure 1.17
Rail Intensity in Israel and Selected European Countries, 2003 (ratio of kms. of rails to area of country)



SOURCE: Central Bureau of Statistics and European Union, *Energy & Transport in Figures*, 2004.

Figure 1.18
Rail Kms. per Passenger in Israel and Selected European Countries, 2003 (per capita)



SOURCE: Central Bureau of Statistics and European Union, *Energy & Transport in Figures*, 2004.

railway network lines feed each other, thereby increasing their yield.

The growth in the aviation industry's product in 2004 was based on a 13 percent increase in passenger travel despite a slight decrease in Israeli airline companies' market segment. The product of the transport services not included here—mainly parking, storage and refrigeration services, travel agents' services, and the Cross Israel Highway––rose by 7 percent in 2004.

Investment in transport infrastructure, which does not include investment in transportation vehicles, dropped by 14 percent in 2004.

Investment in transport infrastructure, and road congestion: Investment in transport infrastructure, which does not include investment in transportation vehicles, dropped by 14 percent in 2004 after falling in the previous year (Table 1.27). Investment in roads decreased in line with the government's decision to focus on the completion of existing projects and as a result of the completion of the central section of the Cross Israel Highway. Investment in airports fell due to the completion of the Ben Gurion Airport 2000 project (Figure 1.19). In the railway system however, after many years of neglect recent years have seen a turnaround and investment in the system has increased substantially. Investment in the railways rose by 26 percent in 2004 after increasing by 143 percent in 2002-2003 from a low base point.

Road congestion in Israel is high compared with Western countries.

Road congestion in Israel is high compared with Western countries (Figure 1.20) despite a decrease in recent years. This is on the basis of a new index, which appears to provide an accurate measurement of congestion.[39] Despite the decrease in road investment during recent years, the road congestion situation appears to have improved in comparison with Western countries, due to an only moderate increase in the kilometers driven in those years. Israel does not have a well developed rail system and the existence of such a system would reduce congestion. The congestion obtained is an average value, and there are roads with much higher congestion than the average. Since the number of countries in the sample is small, it should be remembered that

[39] The new road congestion index is presented in Figure 1.20. The index is a result of the division of the kilometers driven, that is, the estimate of the kilometers driven nationwide weighted by vehicle types in road capital. Road capital is a result of the investment in roads, adjusted in respect of the level of prices of the investment in different countries. This index is preferable to the index of kilometers driven divided by the length of road, which was used for measuring congestion in the past, because in the latter a narrow road is counted like a wide road and a junction is not counted.

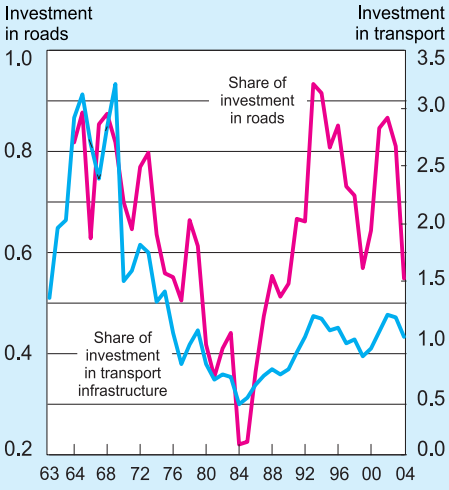
Table 1.27
Investment in Transport, 1998–2004

(current prices, percent)

	Investment in 2004		Real change						
	Actual (NIS bill.)	Percent	1998	1999	2000	2001	2002	2003	2004
1) Transport infrastructure (excl. vehicles)	5.4	33.2	9	–11	13	15	8	–6	–14
Of which: Airports	0.7	4.1	44	37	89	–63	81	–9	–28
Seaports	0.4	2.5	18	–24	-62	235	–3	–7	101
Land transport	4.3	26.7	7	–14	10	26	5	–6	–19
Of which: Roads	3.0	18.2	4	–18	18	30	-2	–12	–31
Trains	1.4	8.4	76	3	–13	–2	83	33	26
Other[a]	0.03	0.2	–40	25	-60	3	–36	–42	–1
2) Total vehicles	9.6	59.1	–16	40	4	13	–28	–23	20
Of which: Passenger cars	4.7	28.8	–4	–1	34	–9	–22	–12	24
Ships and planes[b]	0.1	0.5	–75	1199	–66	182	–61	–81	–69
3) Other[c]	1.3	7.7	–10	28	87	4	–36	53	15
4) Investment transportation (1)+(2)+(3)	16.2	100	–8	21	9	13	–18	–14	6

[a] Including bus-stops, central bus stations in Tel-Aviv and Jerusalem, and local authority bus services.
[b] Excluding exports, including interest and trains.
[c] Sea and air transport - the part not included in infrastructure, transport services and storage.
SOURCE: Based on Central Bureau of Statistics data.

Figure 1.19
Share in GDP of Investment in Roads and Transport Infrastructure, 1963–2004
(percent or GDP)



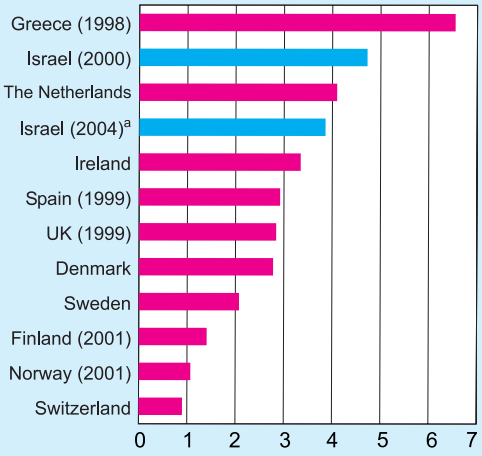
SOURCE: Based on Central Bureau of Statistics Data.

this figure is dependent to some extent on the method employed for the measurement of capital stock.

Other indexes of road congestion are the distance traveled per kilometer of road, which in Israel is two and a half times greater than the average in the West (Figure 1.21) although an improvement was recorded over the previous year. Road intensity[40] in the West is 60 percent greater than that in Israel (Figure 1.22), and highway intensity also greater (Figure 1.23). These additional indexes do not take into account differences in shape between the countries. Because of Israel's long narrow shape, the length of roads needed in order to provide a given level of kilometers driven per kilometer of road kilometer is less than in broader-shaped countries.

[40] Road kilometers relative to the country's surface area.

Figure 1.20
Index of Road Congestion: Traffic Volume to Road Capital, 2002



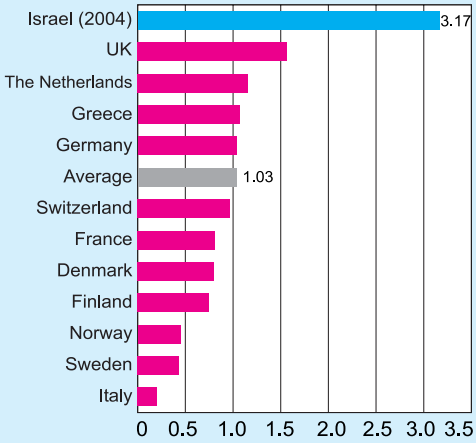
[a] Estimate.

SOURCE: Israel Based on Central Bureau of Statistics data;
Europe–IRF, World Road Statistics, 2004;
Denmark–Danmarks Statistik (Statistics Denmark) data;
Norway–Statistik Sentralbyrå (Central Bureau of Statistics).

Accordingly, the road length indexes in Figures 1.21 and 1.22 bias Israel's place in the scale downwards.

When planning land transportation services for the coming decades, due account should be taken of the expected growth in demand for travel as the population grows, economic activity expands and the standard of living rises and leisure requirements increase. The desirable solution is an expansion of public transport and its usage by developing the supply of services provided and increasing the efficiency of these services. Notable in this respect are the promotion of light railway systems in Tel Aviv—apparently with a delay compared with the original timetable—and in Jerusalem, and the development of public transport lanes, whose excess capacity will be sold to the private sector. See Appendix 1 for details of large transport infrastructure projects.

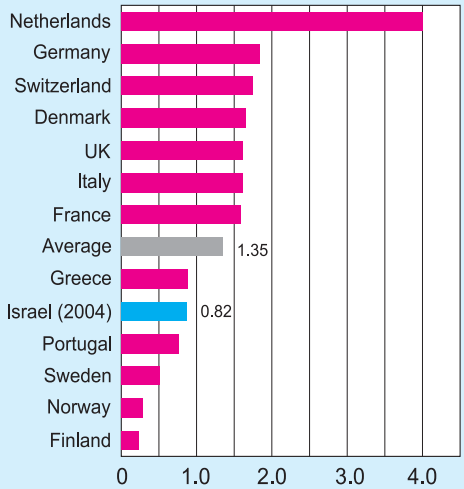
Figure 1.21
Traffic Volume per Km of Road,[a] 2002



[a] The number of kilometers traveled by all vehicles multiplied by the traffic disturbance coefficient.

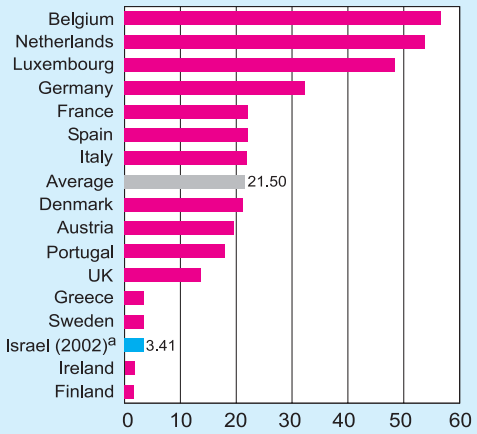
SOURCE: Data for 2004–the Central Bureau of Statistics; Europe–IRF, World Road Statistics, 2004.

Figure 1.22
Road Intensity, International Comparison, 2002 (ratio of kms. of road to area of country)



SOURCE: Central Bureau of Statistics and IRF, *World Road Statistics*, 2004.

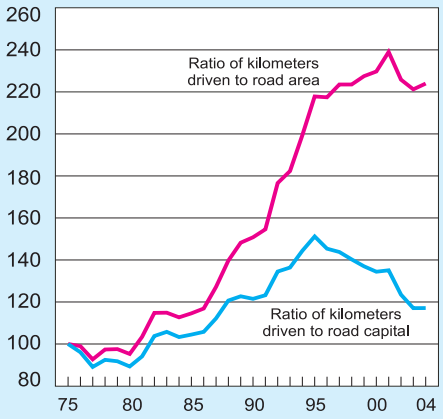
Figure 1.23
Intensity of Highways, 2002
(road meters/country size)



a If the Cross-Israel Highway is included, the figure for 2004 is 7.4. The definition of a highway covers on average 1.6 percent of the roads in Europe and about 0.9 percent of the road in Israel. The definition of a highway requires high-speed travel, wide hard shoulders, and at least two lanes in each direction.

SOURCE: Israel Based on Central Bureau of Statistics data;
Europe European Union, Energy & Transport in Figures, 2004.

Figure 1.24
Indices of Road Congestion, 1975–2004 (1975 = 100)



SOURCE: Appendix Table 1.A.36.

The railways' investment program

After many years of neglect, recent years have seen a turnaround in investment in railway infrastructure.

After many years of neglect, recent years have seen a turnaround in investment in railway infrastructure. This investment has increased considerably, with a focus on the transport of passengers rather than freight haulage. Investment in the railways is expected to grow further to an appreciable extent during the years 2005-2008 due to the Socio-Economic Cabinet's decision in 2003 to connect to the railway network all towns with over 50,000 inhabitants. According to an Israel Railway forecast, the number of rail passengers will increase from 23 million in 2004 to 54.2 million in 2008. An ambitious NIS 20 billion 5-year development plan has been approved for the railways. While this reflects a long-term view, it creates a rigid multi-year commitment to suppliers.[41]

The railways' estimate of the number of passengers, which is based on the current scale of travel charges, is of a relatively large number of passengers on the new lines in the center of the country while the number on the lines connecting the periphery to the center will be relatively small. The political echelon have decided to invest in the railways in order to bring the periphery closer to the center. The charges for traveling between the periphery and the center should be low, to enable unskilled and

[41] The commitment is financed from the State budget, part of it directly and part of it as capital subsidization for the purpose of repaying the loans that the company will take.

unemployed workers from the periphery to work in the center, and the well-being in the economy may increase even if the railways' revenue is reduced as a result.

See Box 1.6 for details of the structural change in the seaports.

Box 1.7
Examination of the Structure of the Airports Authority

Airport authorities worldwide have been undergoing reforms for over a decade. Part of these reforms have proved to be effective. In view of worldwide experience and an examination of the activity of the airports authority in Israel, which indicates that increased efficiency may be possible, we will discuss whether a reform is necessary in the authority.

Structure and activity

The Airports Authority is responsible for the management, operation, maintenance, construction and development of airports in Israel. The Ministry of Transport is responsible for prescribing overall aviation policy and for determining professional criteria relating to the airports. The authority is a statutory corporation that operates by means of the authority's board and its administration and employees. The airports under the authority's responsibility are Ben Gurion Airport, Eilat Airport and others, as well as land border crossing-points.

The authority's revenue derives from fees, franchise fees for the supply of services and commercial activities such as the rental of commercial areas and offices and the granting of rights for the operation of duty-free stores. Most of the Airport Authority's expenditures are on wage and subcontracting payments, and the authority pays the State royalties and tax as a business company.

Subcontracting: In the area of commercial activity, the authority is authorized to transfer activity to contractors, and many of the services at Ben Gurion Airport are now provided by private entities. The services in question consist mainly of commercial activity and part of the services that are provided to passengers and aircraft within the airport compound. Commercial activity such as duty-free services, passenger conveyance and advertising that are managed by commercial entities account for 53 percent of the authority's total revenue.

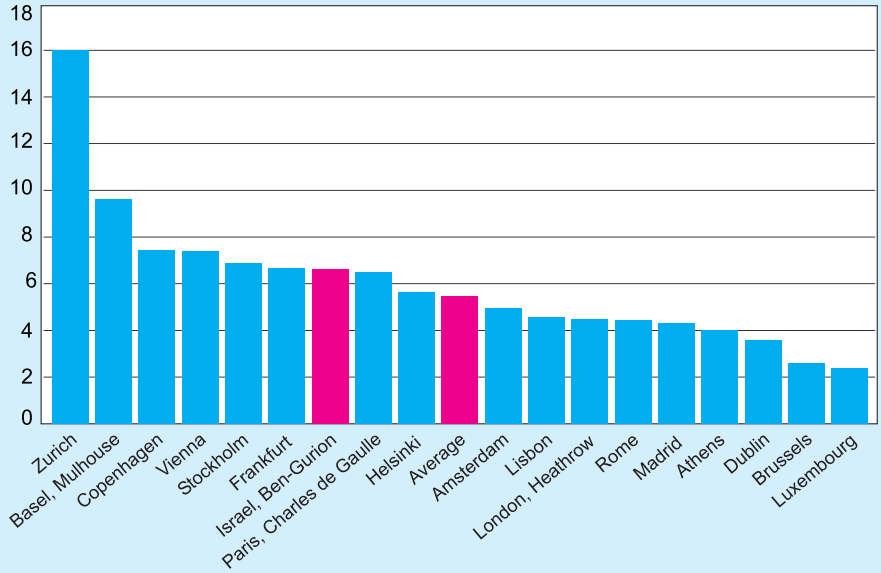
Although the track record in the area of commercial activity is good, the area of services is still problematic. The authority's employees provide ground services for passenger aircraft (loading and unloading), and part of the porters and cleaners are authority employees who are notable for a low degree of flexibility and mobility. Worldwide, these services are operated by franchise-holding companies. Although the transfer of cleaning and landscaping services

in Terminal 3 to franchise-holders was increased in 2004, passenger and cargo aircraft loading and unloading services should be further opened up to competition.

Personnel and wages: The Airports Authority has 2,760 employees, of whom 1,200 are permanent employees and the remainder are temporary. The flexibility and mobility of the permanent personnel employed at the Airports Authority are low. When a particular area of activity is outsourced, it is difficult to move part of the employees to other functions or to retire them because of opposition by the employees' union. The number of permanent employees at the authority is dependent on wage agreements, and is not expected to change in the next few years.

A report issued by the Director General, Wages and Labor Agreements, in the Ministry of Finance shows that the average wage at the airports authority is almost double the average wage in the economy.[1] The average wage cost for permanent workers is much higher than that for temporary employees. According to the Airports Authority, this is partly due to the need to remunerate those with special skills that are not employed elsewhere, and to the payment of shift workers.

Average Airport Tariffs, International Comparison, 2002
($, in terms of purchasing power parity of GDP)



SOURCE: International Civil Aviation Organization (ICAO), Tariffs for Airports and Air Navigation Services, 2003 Edition.

[1] Report of public entities' wage expenditures in 2002, Report No. 10. Part 1, Jerusalem, December 2003.

Fees: The fee rates that the authority charges its customers, such as the outgoing passenger fee, the incoming passenger fee, landing fee and parking fee are denominated in regulations that are determined by the Minister of Transport with the approval of the Knesset Economics Committee.

A comparison of the fees charged at Ben Gurion Airport with those at airports in Western Europe that supply similar services at a similar level shows that the charges in Israel are 20 percent higher. However, El Al receives a large 'discount' and the authority claims that part of the high fees are intended to cover the deficit of the small airports such as Eilat. It can be assumed that the gap between Israel and West European countries will contract in 2004 due to the rise in the exchange rate of the euro.

Unlike other western countries, Israel has no regulatory mechanism that requires the airports authority to increase its efficiency.

Worldwide trends

During recent years many countries have privatized airports by transferring their ownership and/or management to the private sector. The advantages of belonging to the private sector are reflected by an increase in the airports' efficiency and profitability and by a reduction in costs. The privatization of airport authorities was usually necessary for one of two reasons—the public sector's inability to invest the amount needed in the airports or the desire for more efficient management.

To date, privatizations have been carried out in about forty countries, including Australia, New Zealand, Denmark, Austria, Italy, Germany and Latin American countries. (This refers to the privatization of airports themselves, not of air traffic control services.)

Although changes in airports' ownership are a quite common occurrence, relatively few studies have examined the effect of these changes and the extent to which the privatizations have succeeded. However, International Civil Aviation Organization publications show that in most case, these changes have increased profitability, reduced operating costs and led to a growth in labor productivity.[2] As an example, in its ten years of activity as a private company the British Airports Authority has increased its profitability while reducing costs per passenger. The data also show that since the privatization the number of passengers per employee has risen and operating expenses have fallen.[3] An analysis of the

[2] ICAO, Privatization in the Provision of Airports and Air Navigation Services, p. 12, March 2002

[3] Ofelia Betancor and Roberto Rendeiro, Regulating Privatized Infrastructures and Airport Services, World Bank Policy Research Working Paper Series, no. 2180, p. 21, 1999.

activity of airports in Australia also reveals a large drop in expenses.[4] However, there are many cases where privatizations were unsuccessful and actually harmed the economy because they were not planned properly and were not subject to regulatory mechanisms.

In most places, the privatizations were gradual.[5] In many cases, airports initially become government companies and shares were then sold gradually. The possibilities for reform are:[6]

1. Share flotation of the authority or company, in different ratios of private ownership.

2. Long-term leasing or franchise under the trade sale model: The State sells its ownership of the airports to an entity that has won in a tender. The winning entity in the tender replaces the present authority and takes responsibility for all the management and operational tasks in the airport.

It is obviously possible to privatize only certain services (outsourcing) or to outsource certain management functions of the entire airport or part of it to a private entity by means of management contracts.

An examination of the reform in Israel

Given the extensive experience gained in various reforms worldwide, a more in-depth study of the subject should be encouraged in Israel in order to examine whether the efficiency of the authority can be increased and whether this could be achieved by means of a share flotation.

At the present juncture, an improvement in the regulatory coverage in the industry would be desirable. The Knesset Economics Committee is currently responsible for the supervision of the authority's fees. It would be preferable for a public authority to be in charge of the supervision of a monopoly, like the 'Authority for Public Services: Electricity', or the committee that supervises Bezeq's fees, which have succeeded in increasing the efficiency of these monopolies. The common method of supervising airport fees, which is practiced in the UK, is indexation of the fees to the CPI less a predefined amortization coefficient, which thereby amortizes the fees over the years. The size of the amortization coefficient is updated once every few years, taking into account major projects in the area of aviation and the development of the industry. In other European countries, variations of this method are practiced that take into account changes in the volume of air traffic. The amortization coefficients on

[4] Charles Sander, Vice President of Airport Operations, Airport Privatization: Trends and Opportunities, Unisys Global Transportation, p. 7.

[5] See the previous footnote.

[6] Danny Morag, The Privatization of Airports Worldwide, Ministry of Transport, Civil Aviation Administration, International Unit, December 2004.

the fee scales could gradually lead to more efficient personnel management in the authority.

The regulator must endeavor to ensure transparency with respect to expenditures, revenues and consumer protection (the passengers and the airlines), create conditions for growth, and reduce the risks to the investor in view of the long term nature of investment in the airports.

b. The communications industry

The product of the communications industry (which includes communications, mail and deliveries) rose by 8 percent in 2004 due to increases in product of 6 percent in communications and 26 percent in the mail and deliveries sector (Table 1.28). The industry is dynamic, due to its openness to competition and technological improvements—two facts that feed each other. Since the industry is capital intensive, a change in the number of employees has an only minor effect on product. The return on capital is determined also by the regulatory procedures in the industry. In the long run, investments in infrastructure and technology are leading factors in the development of GDP.

The product of the communications industry (which includes communications, mail and deliveries) rose by 8 percent in 2004 due to increases in product of 6 percent in communications and 26 percent in the mail and deliveries sector.

In previous years investment in the industry grew due to the openness to competition in the areas of mobile telephony, international calls and multi-channel TV. But during recent years, investment in these areas has declined, with the result that investment in the industry dropped by 5 percent in 2004. Although there is currently a move to new technologies such as third generation mobile telephony, digitalization of multi-channel TV—which progressed slowly in 2004—fixed-lined telephony on the cable TV infrastructure and an expansion of broadband infrastructure, investment in them is less than in the past.

In previous years investment in the industry grew due to the industry's openness to competition in the areas of mobile telephony, international calls and multi-channel TV. But during recent years, investment in these areas has declined.

International comparisons of usage rates and prices in the communications industry show that the usage of communications products in Israel—fixed-line telephony, mobile telephony and fast internet—is relatively high and that prices are relatively inexpensive. In a comparative study of 21 OECD countries, Roller and Waverman found a positive and significant relationship between investment in communications infrastructure and growth.[42] Chakraborty and Banani found that the privatization of communications increases growth.[43]

[42] Roller, Lars Hendrik; Waverman, Leonard, Telecommunications Infrastructure and Economic Development: A Simultaneous Approach, American Economic Review. September 2001; 91(4): 909-23.

[43] Chakraborty, Chandana and Nandi, Banani, Privatization, Telecommunications and Growth in Selected Asian Countries: An Econometric Analysis, Communications and Strategies, Special Issue, 4th quarter 2003; (52): 31-47.

Details of sub-industries

The expansion of broadband internet service continued apace in 2004.

Internet: The expansion of broadband internet service continued apace in 2004 due to the growth that followed the cable companies' receipt of a permit to supply the service. The market foothold of the service rose from 27 percent of households in 2003 to 43 percent in 2004, a high rate by international standards. 55 percent of the population had internet access in 2004, which is also a high rate.

Mobile telephony: Mobile telephony fees remained practically unchanged in 2004 and the number of subscribers rose by 9 percent. In 2004 an examination was made of the issue of reciprocal connection fees in outgoing calls from one mobile network that are received in another network, and in outgoing calls from the Bezeq network that are received in a mobile network. Currently, a mobile operator enjoys a monopoly in incoming calls. The connection fee was reduced from 45 agorot in 2004 to 32 agorot in 2005, and will be reduced to 22 agorot in 2008.

The Ministry of Communications has begun to examine a process of creating a uniform and overall fee scale, with the result that the fee for a consumer within the network will be the same as the fee for a call between two networks. This issue needs to be addressed together with the issue of number mobility in the area of mobile telephony, that is, the retention of the same mobile telephone number when moving to another network. Number mobility without a move to a uniform fee scale will not enable a caller to know to which company he is connecting and what fee scale he is paying.[44]

Table 1.28
Communications, Main Indicators, 1995–2004

(annual change, constant prices, percent)

	1995–2000	2000	2001	2002	2003	2004
Total gross product	8	0	6	–2	19	8
Of which: Communications	9	–1	7	–2	19	6
Mail & deliveries[a]	1	8	–6	–3	17	26
Gross investment	4	33	–6	–27	–21	–1
Employees	14	30	12	4	–0	0
Labor input	14	33	9	4	–1	–2
Labor productivity	–5	–25	–3	–5	20	9
Wage cost to producers[b]	2	–3	–1	–4	–4	4
Real wage[c]	–0	0	–2	–8	–2	4

[a] Estimate, because the Postal Authority Report was not available.
[b] Adjusted for communications prices.
[c] Deflated by transport and communications prices.
SOURCE: Based on Central Bureau of Statistics data.

[44] It is possible for a caller to obtain information as to which network he is connecting.

International calls: Traffic rose by 10 percent in 2004. Most of the growth was recorded in incoming calls following a more moderate increase in 2003. Three more licenses for the supply of international communications services were granted during the year. As a result of the growth in competition in the area, prices of international communications began to fall in 2004 after rising in each of the years 2000-2003. In the future, competition will emerge from internet communications, which will exert a downward pressure on prices.

Three more licenses for the supply of international communications services were granted during the year.

Regulation of the communications market: At the beginning of 2003 the government approved a change in the regulatory procedures covering the communications market. As in most western countries, this will be done via a national communications authority instead of by means of a government ministry. The advantage of this is that an authority providing regulatory coverage of all the areas will be able to gain a better overall view given the unification of the telecommunications and broadcasting infrastructures, since regulation in each area has implications for the other areas. The authority will be responsible for regulating communications activity, including the formulation of regulatory and general policy. The authority is meant to function and apply its authority independently, thereby reducing the power of the political echelon responsible for communications. Although a draft of the Communications Authority Law was submitted in 2004, the process of establishing the authority has been delayed.

The procedures for establishing a communications authority are being delayed.

Mail: See Box 1.6

c. Energy-related issues

The energy industry is comprised of the electricity, oil and gas sub-branches. The industry is notable for clear economies of scale. Accordingly, while the existence of a natural monopoly is justified, principally in the area of pipelines whose activity is controlled by the State, competition should be encouraged, mainly in the area of production and distribution. Since energy inputs are a vital resource for the functioning of the economy, it is necessary to regulate the industry's activity and to assure supply in an emergency. The industry is capital-intensive and in 2004 accounted for 5.8 percent of investment in the principal industries, mostly by the government. In 2004 investment in electricity fell by 32 percent and in gas and oil, by 85 percent (Table 1.29). The reduced investment in gas and oil is mainly attributed to an exceptional investment in gas infrastructures in 2003 and to a decrease in investment in oil exploration.

In 2004 investment in electricity fell by 32 percent and in gas and oil, by 85 percent.

Table 1.29
Investment in Energy Infrastructure, 1996–2004

	Total	of which: Electricity	of which: Gas and Oil
Composition of investment in 2004			
NIS billion	3.8	3.6	0.2
Share of investment	100	95	5
Real change (%)			
1996	9	19	–13
1997	23	30	–62
1998	–7	–7	–63
1999	–17	–19	–51
2000	–16	–23	0
2001	13	6	60
2002	5	9	–13
2003	38	28	97
2004	–43	–32	–85

SOURCE: Based on Central Bureau of Statistics data.

Box 1.8
The Reform in the Electricity Industry in view of the very Limited Success of Reforms Abroad

In 2003 the Ministry of Finance decided to apply a reform in the electricity industry in Israel. This box is intended to examine the proposed change in view of the experience gained in this area worldwide, and to learn from the lessons of the reforms that were implemented in countries with an electricity industry similar to that of Israel.

Israel's electricity industry currently comprises three entities: the Israel Electric Corporation, which is the sole supplier of electricity, the Public Utilities Authority, Electricity (henceforth the Electricity Authority), which serves as a regulatory body, and the Ministry of Infrastructures, which prescribes policy in the electricity industry. The Electric Corporation is a controlled monopoly that operates in three segments: the generation, transmission and distribution of electricity, and is a vertical monopoly in all of them. The capital stock of electricity accounts for 19 percent of the infrastructure capital stock. Capacity in 2004 was 10,170 megawatts. Consumption of electricity increased by 2.9 percent in 2004 after rising by 4.5 percent in 2003. The surplus capacity at peak demand in 2004 was 15.4 percent and at the beginning of 2005 fell to 13.6 percent. It should be remembered that not all capacity is available for generation.[1] Although the number of workers at the corporation has decreased

[1] In 2004, an average of 7.7 percent of capacity was unavailable for electricity generation.

over the years, supply reliability has increased, and supply as well as the number of employees relative to output are currently close to the average for West European countries.[2]

Efficiency-drives at the Electric Corporation: For a long time now, the Electric Corporation has been running efficiency-drives that are reducing the cost per kilowatt hour. The Electricity Authority determines the corporation's efficiency coefficient, from which changes in electricity fee scales are derived in accordance with an analysis of the costs of its services and on the basis of an international comparison. In order to avoid cross subsidization and to prepare the ground for a structural separation, the Electricity Authority divided the corporation, on paper, into three segments—generation, transmission and distribution—each with separate efficiency coefficients that reflect the corporation's efficiency in each segment. The Electricity Authority adjusts electricity charges to the consumer in accordance with these coefficients. The efficiency coefficient determined in the generation segment is medium, in the transmission segment the coefficient is low while in the distribution segment, which includes services to the consumer, the efficiency coefficient is high.[3]

An international comparison of average electricity prices for industry and households, excluding indirect taxes, in countries that use technology similar to that in Israel could be taken as indicative of the Electric Corporation's efficiency (Figures 1 and 2). The diagrams show that overall, electricity prices in Israel are close to the average. In industry, prices in Israel are slightly higher than the average and in the household sector they are slightly lower than the average. Electricity prices are only one indicator of the corporation's efficiency. Moreover, prices are affected by the ratio between capacity and peak demand and by the cost of transmitting and distributing electricity, which vary between different countries according to the geographical dispersal of electricity consumers. Additional efficiency indexes are therefore necessary, such as the return on capital divided by kilowatt-hours per year, an index that in Israel is relatively low, and the return on labor input divided by kilowatt-hours per year, which in Israel is higher than the world average. The higher are these indexes, the greater is the production efficiency that they indicate. Other indexes are capacity per kilowatt hour while retaining supply reliability, which in Israel is reasonable, input for the production of a kilowatt hour and the number of employees per kilowatt hour.

[2] According to the Central Bureau of Statistics Manpower Survey, the number of employees in the electricity generation, transmission and distribution in 2004 was 14,600.

[3] An international comparison made by the Electricity Authority supports the conclusions of the analysis. In the segment where the corporation was found to be least efficient in the cost analysis it was also found to be less efficient than other corporations. See Nissim Ben Aderet, Prof. Zila Sinuani-Stern, 2003, International Electric Utilities Benchmarking Study, Public Utilities Authority: Electricity.

We can conclude by saying that during the last decade, the Electric Corporation's efficiency increased materially although the corporation failed to achieve the returns on capital determined by the Electricity Authority, and the actual increase in efficiency was less than that desirable.

The conclusion to be drawn here is that supervision, good as it may be, cannot lead to greater efficiency than competition. This is why in its electricity policy guidelines, the European Union has prescribed a move to a controlled competitive regime in the electricity industries.

The reform in the electricity industry: The objective of the reform that was approved by the Knesset in June 2003 is to increase the efficiency of the electricity industry by creating a competitive structure in line with the prevailing worldwide structure. The reform is reflected by the structural separation of the segments in the electricity chain, followed by privatization and the creation of competition. The stages of the reform are as follows:

1. By 2006 the Electric Corporation will be split into three independent segments: electricity generation, transmission and distribution.
2. During the years 2006-2012 generation activity will be split into three or four companies and will be privatized.
3. During the years 2006-2012 transmission and supply activity will be split into four or five companies on a regional basis.
4. The transmission company will function as a holding company that will hold shares in the generation and distribution companies until they are sold to private investors. Since transmission is a natural monopoly, it will remain in government hands.

The plan to reform the electricity industry in Israel is similar in general terms to the reforms that have been carried out in many countries, but its timetable is slower and more cautious than usual.

Simulations examining the electricity prices that are expected in line with the planned reform processes show that at the first stage, charges can be expected to increase and only at the second stage are reductions in charges and increased efficiency in operating costs expected.[4] Similar trends were observed during the structural changes in electricity industries abroad. In view of the conclusion that the profit expected from the reform is not high relative to the risks, those running the simulations recommended delaying the implementation of the reform.

Reforms in the electricity industry worldwide: The objectives of the reforms in the electricity industry worldwide are price reductions, a secure supply and an increase in the consumer's well-being. The basic condition for real competition

[4] A. Tishler, J. Newman, I. Spekterman and C.K. Woo, 2004, Cost-Benefit Analysis of Reforming Israel's Electricity Industry, Energy Policy, forthcoming.

is an adequately high ratio between capacity and peak demand, which could prevent the creation of demand surpluses in the industry. A number of other lessons have been learned from reforms worldwide:[5]

1. Since the demand for electricity is very rigid, a large number of suppliers and buyers are necessary, and it is important to prevent a concentration of extensive marketing power in the hands of a single supplier.
2. The existence of developed markets for trading in electricity, in which the risk in the spot markets[6] is hedged by futures contracts, should be assured.
3. Information on changing electricity charges should be made available to consumers rapidly and consumers should internalize the fee scale.
4. Transparency in supervision should increase the certainty regarding the return on investment in capacity and encourage investors.

The reform in California, which failed, did not adhere to most of the previously mentioned conditions. Worldwide experience shows that most of the reforms did not achieve the expected increase in efficiency.[7] The opportunity for choosing between retail electricity suppliers led to an increase in prices for small consumers and to a decrease in prices for large consumers. The split in electricity generation and the introduction of a spot market for electricity did not reduce the price of electricity, while the privatization of generation led to an only small decrease in the price to the consumer.

In order to learn from the experience and the very limited success that accompanied reforms worldwide, it is important to focus on countries with similar features to Israel (a small and closed electricity industry based mainly on coal energy), such as South Korea, Singapore and Taiwan, where the reforms did not always lead to the desired results.

South Korea: The controlled prices of electricity to household and industrial consumers in South Korea are lower than in Israel, and are determined on the basis of production cost and not according to marginal cost. The electricity supply is reliable and electricity charges are lower than in other countries.

Until 1997, the electricity industry in South Korea was a state-owned vertical monopoly. The reform process included the separation of production from the monopoly and its split into six generating companies.[8] As a result of the failures of the reforms elsewhere and the uncertainty over the benefit of the reform for

[5] Chi-Keung Woo, Debra Lloyd and Asher Tishler, 2004, Electric Market Reform Failures: UK, Norway, Alberta and California, Energy Policy 31, 1103R1115.

[6] A market in which the price is for immediate closure.

[7] Toru Hattori and Miki Tsutsui, 2004, Economic Impact of Regulatory Reforms in the Electricity Supply Industry: A Panel Data Analysis for OECD Countries, Energy Policy 32, 823-832.

[8] This stage did not led to substantial competition in generation because all the companies remained as government companies. In any event, the extent to which competition increases the efficiency of generation is unclear.

the South Korean economy, the generating companies have not been privatized and the continuation of the reform, which is intended to include the separation of transmission from the monopoly and its split into six companies, has been suspended. Instead, it was decided that each segment will be managed as a business profit center that will report on its activity separately.

Taiwan: The Taiwan electricity company is a vertical government monopoly, but 25 percent of generation is in private hands. Controlled electricity charges are lower than in Israel. Under the reform proposed, the vertical monopoly will remain and its business functions will be split for reporting purposes alone. The reform includes the transfer of the management of transmission from the electricity company to an independent authority, and the creation of competition in the distribution of electricity. It is also planned to allow private electricity producers to sell electricity directly to medium-sized consumers. Once the reform is complete, every consumer will be able to buy electricity that is not price-controlled. The reform is still at the preparation stage; it is very cautious and takes into account mistakes that were made in the past.

Singapore: Until 1998 the electricity industry was a vertical monopoly held by the government. The electricity fee scale in Singapore is slightly higher than in Israel due to a much higher capacity than peak demand.

In 1995 the monopoly was divided into three companies, for generation, transmission and distribution. From 1998 to 2001 the generating units sold electricity at a controlled price to a network (a single buyer) that would sell the electricity to marketers. A further liberalization was implemented in 2000, which included the removal of retail marketing and generation from the monopoly. Additional stages in the reform, in 2001 and 2003, gradually enabled large and medium-sized consumers to select a retail supplier or to buy electricity from the monopoly.

Conclusions: Our proposal is to adopt, at this juncture, a model that divides the Electric Corporation into business profit centers, to separate the management of transmission activity from the Corporation, and to encourage generation by private electricity producers. This is a cautious proposal, which conforms to the trend of cautious reforms that stagger changes over a long period of time. Since the Electric Corporation is not efficient in distribution, this area of activity should be removed from it and then split into regional monopolies.[9] The information that will be gathered from a number of distribution companies will make it possible to obtain better information on the costs of distribution, and thereby ensure more effective control. Investment in private electricity

[9] The Electric Corporation issues bonds that pledge all of the corporation's assets, including distribution. It is not possible to detract from the terms of the bonds, and the split will make it necessary to address this issue.

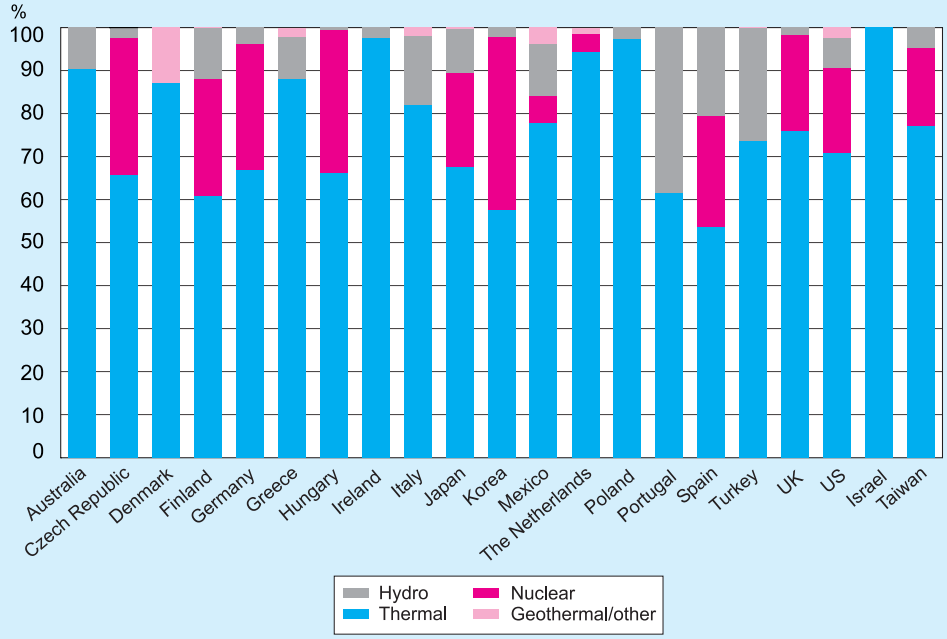
production companies should be encouraged. This will only be possible if they are supplied with natural gas and are permitted to sell electricity not only to particularly large consumers and to the Electric Corporation, but also to the distribution companies, that is, compete with the Electric Corporation in the supply of electricity to these companies as well.[10,11,12] At this stage, worldwide experience from the reforms, according to at least part of the literature, shows that the separation and split of generation have not led to the results that were expected.

[10] When competition between the private electricity production companies and the Electric Corporation is created, it will be necessary to examine whether the private companies should pay the Electric Corporation remuneration for the back-up that the Electric Corporation provides.

[11] Subject to the receipt of a license for the supply of electricity.

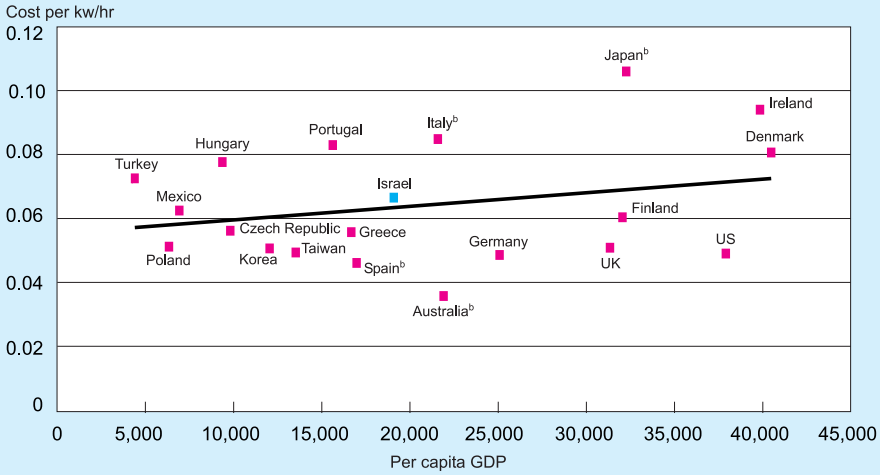
[12] Although problems caused by price differences will emerge, since electricity distribution to a high-density region is less expensive than distribution to a low-density region, there are ways of averaging the prices in order that the payments that will be charged from the consumers will be uniform.

Electricity Production by Source of Energy, 2003



SOURCE: International Energy Agency, Monthly Electricity Survey, 10/2004.

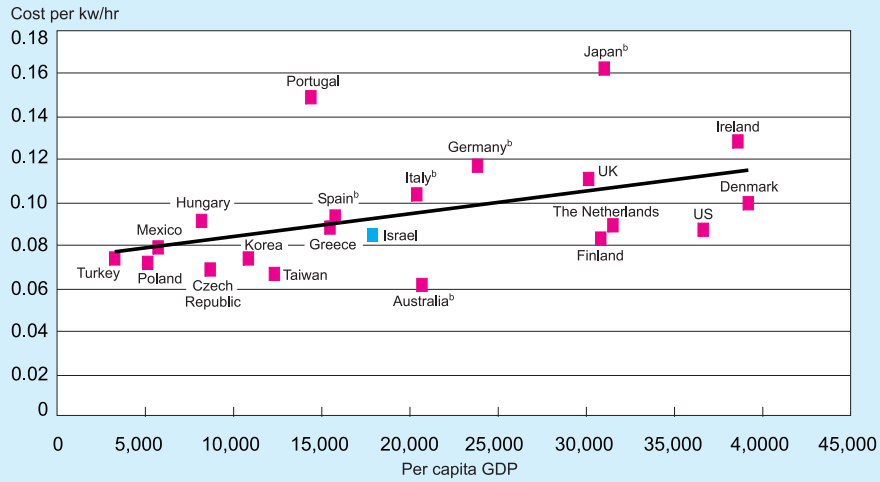
Per Capita GDP ($) and the Average Price of Electricity[a,b] for Industry ($ per kw/hr), 2003



[a] The price of electricity per kw/hr is calculated from the average income of the electricity company per kw/hr supplied to industry, or from the average cost to industry per kw/hr purchased. Prices are exclusive of purchase taxes (VAT and other).
[b] Per capita GDP and average prices of electricity to industry, 2002.

SOURCE: Israel Statistical Report of the Israel Electric Corporation, 2003;
other countries–The International Energy Agency, Energy Prices and Taxes, 3/2004.
Per capita GDP–UN National Accounts Main Aggregates Database.

Per Capita GDP ($) and the Average Price of Electricity[a,b] for Households ($ per kw/hr), 2003



[a] The price of electricity per kw/hr is calculated from the average income of the electricity company per kw/hr supplied to households, or from the average cost to households per kw/hr purchased. Prices are exclusive of purchase taxes (VAT and other).
[b] Per capita GDP and average prices of electricity to households, 2002.

SOURCE: Israel Statistical Report of the Israel Electric Corporation, 2003;
other countries–The International Energy Agency, Energy Prices and Taxes, 3/2004.
Per capita–GDPUN National Accounts Main Aggregates Database.

Private electricity producer regulations and the regulations regarding co-generation (the production of energy for own consumption and electricity together): The private electricity producer regulations enable these producers to obtain from the government protection at the value of the loan that the entrepreneur takes for the purpose of financing the construction of a power station. The entrepreneur therefore only places his equity capital at risk. The co-generation regulations provide the producer with greater protection, because co-generation is more efficient than production by means of private electricity producers. The co-generation regulations, which were enacted at the end of 2004, are intended to increase the efficiency of the electricity industry

Natural gas: Natural gas adequate for 7-10 years supply is located in the Meri Field, which is under Israeli ownership. This provides the State with bargaining power with respect to the price of gas in negotiations with foreign suppliers. During 2004 the Electric Corporation began to use natural gas instead of oil, which is much more expensive, at the Eshkol power station in Ashdod. As a result, the Electric Corporation's consumption of oil is expected to drop by half.

During 2004 the Electric Corporation began to use natural gas instead of oil, which is much more expensive, at the Eshkol power station in Ashdod.

Regulatory coverage: In 2003 the Natural Gas Law was amended in order to enable a carrier's license to be granted to a government company. The Natural Gas Supply company was established, and this company is expected to construct and operate the natural gas system in Israel.

The reform in diesel taxation: At the beginning of 2005 the Knesset Finance Committee approved a reform that is directed at equalizing within five years the tax imposed on diesel with the tax imposed on gasoline. This is concurrent with selective diesel tax rebates to a limited number of user groups (in transportation and industry). The reason for the reform is the tax differential between gasoline and diesel (three times as at the beginning of 2004)—for which there is no economic justification, since the overall damage of both to infrastructure, to the quality of the environment and to public health is similar. This situation creates a distortion in the allocation of resources, intervention in the consumer's considerations and inefficiency in the energy economy.

At the beginning of 2005 approval was given for a reform that is directed at equalizing within five years the tax imposed on diesel with the tax imposed on gasoline.

d. Water

The water industry suffered a serious crisis during the years 2001 and 2002 due to continued over-pumping, principally in the 1990s. Although the winter rains of 2002-2003 improved the hydrological balance, in 2005 it will still be necessary to restrain demand for fresh water in agriculture and to increase saving in the urban sector in order to limit the damage to water sources as far as possible.

The water shortage requires a composite solution, primarily an increase in water charges and production levies in order to regulate demand, as well as an increase in the supply of water. Despite this, charges remained practically unchanged in 2004.[45]

The water shortage requires a composite solution, primarily an increase in water charges and production levies in order to regulate demand, as well as an increase in the supply of water.

[45] The change in water charges derived from an automatic price-change formula which reflects changes in the prices of inputs, that is, the cost of energy and labor, and not from a decision to increase the cost of water.

Water charges, principally for agriculture, do not reflect the marginal cost of water and should be gradually adjusted to this cost.[46] In the draft Economic Arrangements Law for 2005, a real increase in the cost of water for agriculture and household users is planned. Investment in water enterprises—the development of existing water sources and an expansion in the supply of water—accounted for 2.6 percent of investment in the principal industries in 2004. In 2003 the Socio-Economic Cabinet decided to order the desalination of 315 million cubic meters of seawater—22 percent of fresh water consumption in 2003. In 2004 investment in water enterprises rose by 9 percent, mainly due to increased desalination. Had water charges been real, it would have been possible to reduce this investment. A growth in the supply of water can be achieved by means of brackish (salt) water desalination, which is usually the least expensive method, seawater desalination or the import of water, which is the most expensive method.

The import of water from Turkey: In 2003 the government decided to import water from Turkey to the amount of 50 million cubic meters a year for 20 years. No progress was achieved in the import of water during 2004. The cost of importing water is much higher than the cost of desalination: The price of a cubic meter of imported water is 105-115 cents while the price of desalination at the entry to the national system is at the very most 60 cents, and in one of the plants—50 cents. Accordingly, the excessive cost of importing 50 million cubic meters of water a year as compared to desalination is between NIS 100-140 million a year for 20 years.

The desalination of sea water: A plant for the desalination of 100 million cubic meters of seawater a year has been constructed at the Eilat-Ashkelon pipeline site in Ashkelon. The site will be operated under the BOT method for 25 years, and is expected to supply water at partial output from mid-2005. The government has signed an agreement for the construction and operation of two seawater desalination plants with an output of 30 million cubic meters a year each that will be financed and operated under the BOO method, in Palmahim, where the entrepreneurs are close to concluding the financial agreements , and in the Western Galilee, where the entrepreneurs have not yet succeeded in reaching this stage.[47] The construction of a 45 million cubic meter a year desalination plant in Ashdod is being delayed. An international tender has been issued for a 100 million cubic meter a year desalination plant in Hadera.

The desalination of brackish (salt) water: Since 2003 agreements have been signed for the desalination of more than 23 million cubic meters a year of brackish water. At present, more than 16 million cubic meters a year are being produced as a result of the agreements, and the remaining projects are in the process of implementation.

Structural change at Mekorot: See Box 1.6

[46] The Bank of Israel press release (on the Bank's site): The Desired Water Policy, Bank of Israel 09/2003 (Hebrew), which emphasizes that it is possible to protect cultivated areas by directly subsidizing the cultivation of the land rather than by means of water subsidization.

[47] Under the BOO—Build Operate and Own—method as opposed to the BOT method, the entrepreneur does not transfer the asset to the State at the end of the period of usage.

Appendix 1
Large Transportation Infrastructure Projects

Transport—overall

Route 6, the Cross Israel Highway: The entire length of central section of the highway, from Gedera to the Ir'on Interchange, is now open. Work began in November 1999, and the partnership with the private sector in building the road resulted in a high level of performance, in terms of both quality and speed of implementation. The government decided to extend the road from the central section northwards (from the Ir'on junction to the Elyakim junction) and from the central section southwards (from Gedera via Kiryat Gat to Beer Sheva). Work on the project is now well underway and its finance has been budgeted.

Lateral Route 431: in partnership with the private sector. A tender was issued in 2004 and selection of the winning bid is expected during 2005.

The Carmel tunnels: The tunnels are planned under the BOT format. Construction is being delayed due to prolonged statutory proceedings, and the financing entity has meanwhile withdrawn from the agreement.

Public transport

Public transport lanes: The addition of lanes for public transport at the entries to Jerusalem and to Tel Aviv are planned in two major projects. Construction of the entry to Tel Aviv is to be carried out by a private franchise-holder and during 2004 four bids were received at the initial selection stage. The tender is due to be issued in 2005. The excess capacity that will not be used by buses will be offered for the use of private vehicles in return for payment. No progress has been made in the public transport lane at the entrance to Jerusalem

The light railway in Jerusalem: A BOT project—a franchise-holder has been selected, and the financing arrangement for the project is almost complete. The construction of the line, from Pisgat Zeev in the north of the city, through the city center to Mount Herzl, will take 36 months. The cost of construction is NIS 1.9 billion. The State is participating in an NIS 1.4 billion construction grant. The removal of the infrastructures along the rail line is scheduled to end before the franchise-holder obtains the finance, and the operation of the line is due to start at the beginning of 2008.

The light railway in Tel Aviv: A BOT project: A detailed tender for the 21 km. light railway line along the Petah Tikva–Tel Aviv–Bat Yam route was issued at the end of 2003. The winner will be selected by the end of 2005, after which construction is expected to start. Concurrently, the project administration is expediting the statutory procedures and the removal of infrastructures from the rail line (except for the underground section). Construction is expected to last for 6 years, until 2011, with a

delay from the original timetable. The cost of the alternatives selected for this first line is estimated at about $ 1,500 million. The possibility of an additional line, most of it over-ground, from Holon to the Arlozoroff station in Tel Aviv, has been examined.

Ben Gurion Airport 2000: Stage 1 (Terminal 3) of the Ben Gurion Airport 2000 project was opened at the end of 2004, with a delay from the original timetable, following an overall investment of $ 800 million. At the initial stage, the terminal will serve some 9 million passengers a year, at conditions far superior to those prevailing today.

Haifa Airport: No progress was made in 2004. If the airport is constructed, it is expected to be in a BOT format. The project will double the length of the runway in the existing airport. The project is to be based on the complementary services of other projects, such as the Carmel tunnels and the Krayot–Haifa bypass road.

Seaports: The Hayovel port in Ashdod is due to open in mid-2005, with a delay from the original timetable.

4. The construction industry

a. Main developments

The downward trend in the activity of the construction industry continued in 2004. Hopes of a recovery, based on indications evident in the first half of the year, were dashed, and the product and output of the industry even declined for the seventh year in succession, by 7.1 and 9.8 percent respectively. The slump in the industry was particularly prominent in view of the general growth trend in the economy as a whole and the improvement in demand fundamentals.

The product and output of the industry declined for the seventh year in succession, a decline that was particularly prominent in view of the general growth trend in the economy as a whole.

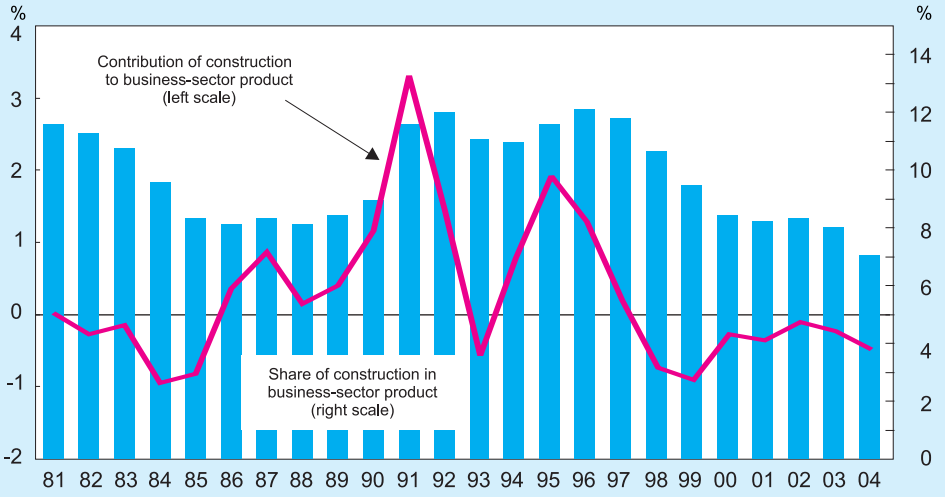
The industry's share of business-sector product continued to contract, and reached 6.9 percent, similar to its share prior to the influx of immigrants, and almost half its share in the peak year of 1996 (12.3 percent). The industry's contribution to business-sector product in 2004 was negative, a 0.5 percentage-point decline, further to the 0.3 percentage-point dip of the preceding year.

All the components of the industry's output contracted: in nonresidential construction the decline accelerated and comprised a decline of 15.3 percent in nonresidential construction and of 15.7 percent in earthworks. Residential construction, which accounts for over half the industry's output, contracted by 6 percent. The rate at which defense construction grew slowed markedly (apparently due to the slower rate at which the security fence was erected), and its output stabilized at the previous year's level.[48]

Alongside the contraction of construction activity, there was a decline in the extent of factor inputs employed in the industry and a slight increase in equipment capital stock, while the number of persons employed (Israelis and foreign workers) fell by about 5.2 percent.

[48] In 2003 the steep rise in defense construction (38.1 percent) moderated the decline in total output.

Figure 1.25
Direct Contribution of Construction Product to Business-Sector Product, 1981-2004 (at factor cost, 1995 prices, percent)



SOURCE: Based on Central Bureau of Statistics data.

Table 1.30
Output and Product in Construction, 1990–2004[a]

				Annual average change (percent)				
	2002	2003	2004	1990–96	1997–2002	2002	2003	2004
Total output (NIS million, 2000 prices)	45,569	43,987	39,693	13.3	–3.8	0.1	–3.5	–9.8
Residential	20,954	20,013	18,805	12.0	–5.4	0.0	–4.5	–6.0
Nonresidential	21,092	19,750	16,721	18.0	–3.0	–0.3	–6.4	–15.3
Other[b]	3,524	4,225	4,167	2.0	2.4	3.9	19.9	–1.4
Of which Defense construction	1,877	2,592	2,603	0.7	4.3	9.7	38.1	0.5
Apartments under construction ('000)	63.9	59.5	57.1	18.8	–8.5	–9.0	-6.9	–3.9
Construction time for residential construction (months)	23.8	24.1	22.9	–0.8	2.8	8.2	1.3	–5.0
Total area of building starts ('000 of sq. m.)	7,948	6,533	5,956	16.9	–6.9	4.1	–17.8	–8.8
Residential	5,497	4,920	4,640	15.4	–7.0	4.1	–10.5	–5.7
Nonresidential	2,450	1,613	1,315	19.1	–6.8	4.2	–34.2	–18.5
Total area of building completions ('000 sq. m)	8,463	7,995	6,588	12.8	–3.2	–5.7	–5.5	–17.6
Residential	6,165	5,525	4,825	11.8	–3.0	–0.6	–10.4	–12.7
Nonresidential	2,298	2,470	1,764	15.3	–3.9	–17.1	7.5	–28.6
Residential starts ('000 units)	33.3	31.1	28.4	17.0	–9.2	4.3	–6.5	–8.9
Residential completions ('000 units)	38.8	34.3	31.7	13.0	–4.9	–1.3	–11.6	–7.6
Apartments offered for sale ('000)[c]	22.5	20.8	19.1			–11.3	–7.4	–8.4
Change in construction product[d]				15.2	–3.5	–1.1	–2.9	–7.1

[a] Calculated from unrounded figures.
[b] Includes defense construction and an estimate of maintenance.
[c] End-period figures.
[d] The definition of the construction industry was changed in 2002, and the equipment-assembly industry was added. Retrospective product figures changed in consequence, and there may be discrepancies between those given here and those in previous reports.
SOURCE: Based on Central Bureau of Statistics data.

For the first time this decade the increment in households exceeded the supply of new units.

For the first time this decade the increment in households exceeded the supply of new units, a development that could find expression in demand pressures, leading to a rise in prices in the near future. The situation could be further aggravated because pessimistic expectations regarding future economic activity have led to a decline in building starts: the number of starts in 2004 was lower than in the equivalent period in 2003 also in the private sector, which is usually characterized by the construction of medium-sized and large apartments in the Tel-Aviv conurbation.[49] In the public sector too, where new units are generally smaller and built in national priority and peripheral areas, there was a particularly steep 40 percent decline in government-initiated construction. Total building starts amounted to only 28,400—a relatively small number in view of the population growth rate and increment in households expected in the next few years.

In 2004 both the demand constraint and the supply constraint contributed to the contraction of the industry's output.

In contrast with previous years, the reduction of the industry's output in 2004 cannot be attributed solely to the demand side. Whereas Israel's GDP growth rate has not generated a significant shift in demand (as reflected by the relative stability of housing prices), and the demand constraint has remained high, it would appear that the supply constraint—a shortage of professional workers,[50] the higher price of labor inputs, and increased financing difficulties—also prevented the expansion of companies' construction activity. This hypothesis is borne out by the Bank of Israel's Companies Survey, which attests to the effectiveness of the supply constraint.

Although demand for residential construction was higher in the first half of 2004 than in 2003, this does not mean that activity in this sphere rallied, as in 2003 the level of activity reached its nadir in the last few years. In the second half of the year demand dropped again.

During the year the effect of the basic factors determining the level of demand in the long and short term was mixed. Most of these factors improved—the general wage level rose, permanent income increased, and mortgage interest fell—but according to various sources[51] the effect of the improvement was restricted to certain segments of the population. It is reasonable to assume that the demand of most of the public for housing was affected primarily by pessimistic expectations regarding personal economic stability, based on the high unemployment rate and occupational uncertainty, inter alia in view of the steep rise in the extent of part-time jobs. This was supplemented by changes in government policy which were detrimental to persons eligible for housing subsidies. In addition to the differential effect of the economic growth process, in 2004 the housing market was also characterized by regional heterogeneity in construction activity: alongside clear signs of a recovery of demand in the Tel-Aviv conurbation, there was total stagnation in the periphery.

[49] Private sector building starts dipped moderately, and in the last two years their share of total starts has been relatively stable.

[50] Based on contractors' reports to the Bank of Israel's Companies Survey.

[51] See, for example, Dr. Shlomo Swirsky and Ettie Connor-Attias, A Portrait of the Social Situation, Report of the Adva Center, 2004.

As regards nonresidential construction, it may be assumed that the conclusion of the process of adjusting capital stock to changes in economic activity and the creation of excess supply in various spheres caused the reduction of this construction category in the industry's output.[52]

b. Residential construction

In the development of real housing prices there was a pronounced difference between regions.

In the housing services market (renewed rental contracts) real prices fell by 1.6 percent, despite the rise in permanent disposable income, which is the main factor affecting demand. The decline in demand for housing services is ascribed to the demographic changes of the last few years (see below). The relative price of owner-occupied housing (deflated by the CPI) remained stable, after declining continuously in recent years,[53] and local-currency appreciation vis-à-vis the dollar, especially in 2004:IV, checked a further rise. In the development of real housing prices there was a pronounced difference between regions: the price of average-size apartments (2.5-3 rooms) in the Tel-Aviv conurbation were up by 4.4 percent over 2003, while in the periphery they were down by 2.2 percent due to low demand levels, which led to a steep drop in construction activity. Data on prices and quantities indicate that there was a slight improvement in activity in the first half of 2004, with a renewal of the decline in the second half. The main demographic and economic factors affecting the level of housing demand will be discussed below.

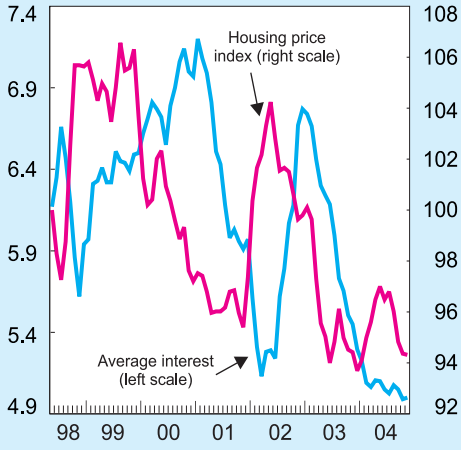
The population growth rate slowed in 2004 because the rate of natural increase stabilized and the rate of immigration to Israel, which amounted to only 21,000 immigrants in 2004, similar to the number prior to the mass immigration of the 1990s, continued to contract. The increment in households expected in the coming years is not significant either, because of the stability of the share of the 25-34 age-group, the group which accounts for the majority of additional households and those moving to bigger homes in the last few years. On the one hand, these developments, together with low expectations regarding the extent of immigration to Israel, should act to dampen demand pressures and prevent the expansion of investment in accommodation. On the other, however, the gap between the increment in households and the supply of new units could create pressures of this kind in the near future, thereby causing prices to rise.

The improvement in individuals' economic situation was expressed in a 2.4 percent rise in disposable income and a 2.7 percent increase in the real wage. These variables attest to the ability to pay back mortgages and hence their increase serves to indicate a rise in the potential demand for housing.

[52] Exact data on prices and quantities are not available for nonresidential construction, hence it is not possible to undertake a direct analysis of demand. According to the Levi Yitzhak price list the prices of commercial areas have fallen. See also the publications of Eshkol Business Information on rental housing.

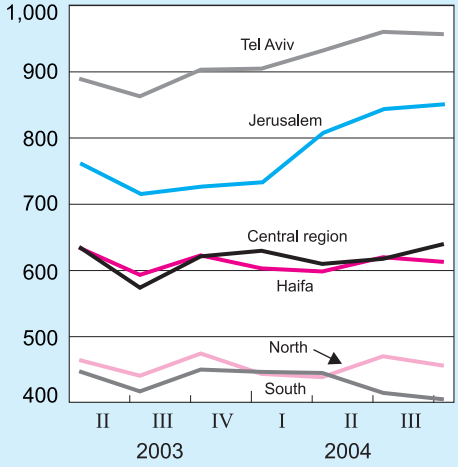
[53] This situation appears to contradict the equilibrium state condition because the price of owner-occupied housing should decline in line with that of rents; note, however, that in 2004 there was a marked change in interest rates, and their decline affected the price of owner-occupied housing.

Figure 1.26
Average Mortgage Interest and the Housing Price Index, May 1998 to November 2004



SOURCE: Based on Central Bureau of Statistics data.

Figure 1.27
Housing Prices, by Regions, March 2003 to September 2004
(NIS '000)



SOURCE: The Central Bureau of Statistics.

Average mortgage interest reached its lowest level in the last ten years.

Average mortgage interest, which fell monotonically for the second consecutive year, reached its lowest level in the last ten years and stabilized at around 5 percent at the end of 2004. This decline stemmed mainly from the fall in short-term interest rates (up to 5 years). Because the elasticity of the demand for housing is estimated as being high,[54] it is reasonable to assume that the lower interest rate acted to increase demand. Nonetheless, it is doubtful whether it is possible to regard the rise in the extent of mortgages as underpinning the recovery of housing demand, as interest-rate developments led to a sharp increase in remortgaging, and this activity accounted for over half of mortgage transactions during part of the period.

Data on the number of housing transactions (new and second-hand units) attest to a significant increase in the first half of 2004, with a monthly average of 8,019 transactions, up by 11 percent over 2003. The number of transactions amounted to about 96,000 in 2004, the highest figure for four years. Although the share of new units in total transactions fell,[55] the 6 percent increase in sales of new apartments in the private sector was notable. By contrast, there was a sharp 26 percent decline in sales of new apartments whose construction was initiated by the government, as well as of those under construction.

[54] Zvi Eckstein, Ami Barnea, and Menahem Fellerman (2001), "The Demand for Credit in the Construction Industry," Bank of Israel Discussion Paper 98.01.

[55] According to data from the Ministry of Construction and Housing, this dropped from 36 percent in 2000 and 2001 to 26 percent in 2004. This figure attests to the deterioration in the situation of contractors and the prosperity in the market for second-hand apartments.

Note that in comparison with the first half of 2003, the data could indicate a rise in demand, but it would be a mistake to draw this conclusion. There are two reasons for this: first, security tension increased (the war in Iraq), serving to reduce the level of activity in the first half of 2003; and second, because of the strike in the public institutions at the end of 2003 many transactions undertaken then were recorded only at the beginning of 2004, so that the final reports of transactions by the tax authorities might be biased upward.[56] In addition, in the first half of 2004 demand was affected by further exogenous factors, such as the rise in investment in Israeli real estate by French Jews,[57] due to the increase in anti-Semitic acts there.[58] Investment in real estate by French Jews consists mainly of purchases of large and luxurious apartments in the Tel-Aviv conurbation, along the coastal plain, and in Jerusalem—which could partly explain the rise in prices in those areas at the beginning of the year.

In the second half of 2004 it transpired that the signs of recovery evident in the first two quarters were ephemeral, as expressed in the trend shift in the principal indicators—the 10 percent decline the number of apartment transactions and the 15 percent drop in the extent of mortgages taken—in the second half of the year, and the slowdown or fall in real housing prices throughout most of Israel.

The differential effects of growth together with the change in the rules of entitlement served to dampen housing demand.

In view of the persistent economic growth, the question arises why demand for housing did not expand. The differential effects of growth, together with the high unemployment rate, which increases uncertainty regarding the ability to pay back loans,[59] served to dampen demand and deter many people from embarking on housing transactions. Other factors which acted to restrain demand during the year were the low inflation environment, which reduced the demand for apartments as an investment asset,[60] and the increased attractiveness of investment in the financial markets.

To the differential effect on the growth rate of the various population groups was added the cancellation of aid grants awarded to eligible persons and their replacement by subsidized loans at the beginning of 2003,[61] The effects of this move were felt mainly by the low- and medium-income socioeconomic classes, as well as by persons living in the peripheral areas. The number of eligible persons taking up mortgages plummeted by 27.6 percent in 2004. This decline encompassed new immigrants, who

[56] Purchase tax regulations permit a transaction to be registered within 50 days of its implementation.

[57] Based on reports from contractors and real-estate agents.

[58] The depreciation of the NIS vis-à-vis the euro also served to increase inward real-estate investment.

[59] Although the unemployment rate has declined, part-time and temporary employment has risen, and hence uncertainty has not been reduced.

[60] A deeper analysis of this subject may be found in Yona Rubinstein, "Housing Prices in Israel, 1974—96: a Financial Bubble?" in Leo Leiderman (ed.) Inflation and Disinflation in Israel, Bank of Israel, 1999.

[61] In August 2003 the 'Eitam Program,' which had a moderating effect on the market response to the cancellation of the grants, was instituted. For an analysis of the effect of the aid program, see Bank of Israel, Annual Report 2001, the section on construction and the discussion of the effect of the 'Scharansky Law.'

displayed a high rate of mortgage-taking in recent years,[62] as well as veteran residents (a 21.7 percent decline). As regards newly-weds (with few eligibility points), many of them may have chosen to take mortgages on the open market because of their attractiveness and the narrowing gap between interest rates on mortgages for eligible persons and those offered by the banks. The effect of the policy of replacing aid grants by loans, together with the cancellation of the location grant, on other eligible persons was significantly negative. It was reflected by a marked decline in the number of eligible persons taking mortgages, especially in the peripheral areas, where the loans accounted for a large proportion of an apartment's price, alongside the intensification of demand pressures in the Tel-Aviv conurbation.[63] The low level of demand in the peripheral areas may also be explained by the fact that the population is waiting for the policy to be brought up to date. Even though, according to estimates, the housing aid grants item in the budget of the Ministry of Construction and Housing will be halved, statements made during the year have mentioned the possibility of reinstating some of the benefits. As a result, the public's expectations have been adjusted, and suppressed demand, a feature that has been seen in the past when temporary aid programs were introduced, has developed. The sudden cancellation of the benefits which compensated in the past for the lack of attractiveness and high risk of investing in housing in the northern part of Israel, in Galilee, and in the Negev, led to the erosion of the relative advantage of these areas and had an adverse effect on activity in the industry. However, as there is no long-term plan, which would require the creation of new employment opportunities, the erection of an infrastructure, etc., it is doubtful whether reinstating the benefits can constitute an adequate solution to the problem of demand in the peripheral areas.

The increase in demand in the first half of the year appears to have been perceived as temporary, and hence did not lead to adjustment on the supply side. It may also be assumed that the rate at which demand rose was not sufficient to justify an adjustment of this kind. This is borne out by contractors' expectations of demand developments, which are derived from many different sources of data: the number of building starts, which has been declining for four consecutive years, fell by 8.9 percent in 2004, a process which will determine the level of activity in the coming years; the number of private-sector building permits, which serves as another indicator of expectations regarding future activity in the industry, rose by only 1.2 percent; the number of building completions continued to contract in 2004, a result of the low number of starts in the last two or three years and of the longer construction time (which has risen to an average of 26.1 months per project).[64] These factors served to accelerate

[62] According to Ministry of Housing data, about 72 percent of eligible immigrants who arrived in the 1990s took up mortgages.

[63] Ministry of Housing data support this contention, and according to them sales in peripheral areas (where most of the eligible population is situated) has fallen by 70 percent since the program went into effect in April 2003. The extent of mortgages taken up in the Negev fell by 41 percent in 2004, and in Galilee by 34 percent.

[64] Two factors which may have influenced the rate of construction are the decline in demand and the shortage of skilled workers.

the decline in the stock of apartments in the final stages of construction and, together with the erosion of stocks, caused prices to rise.

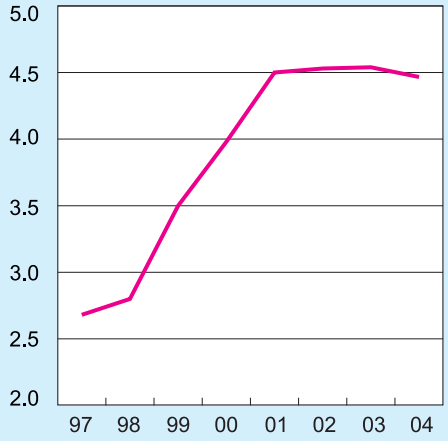
Another indicator of weaker activity in the industry was the decline in the amount of credit taken from the banking system by contractors. According to data supplied by the Supervisor of Banks, real credit fell to NIS 131 million in 2004, compared with NIS 137 million at the end of 2003. This trend attests to both the contraction of activity and financing difficulties—a constraint which according to the Bank of Israel's Companies Survey was aggravated in 2004. There was also an increase in the ratio of total credit to the construction industry and credit to the public at the banks' cognizance (including off-balance-sheet credit) in 2004, and this was in the vicinity of 20 percent, a high level which requires loan-loss provision in accordance with the directives of the Supervisor of Banks. The proximity to the limit causes closer scrutiny of projects and makes it particularly hard for small contractors to raise funds. The ratio of total

Table 1.31
Indicators of Supply and Demand, the Housing Market, 1990–2004

	Annual average					Annual average change (percent)		
	1990–96	1997–2002	2002	2003	2004	2002	2003	2004
Permits for private residential construction	30,061	25,018	22,917	23,191	0.3	–8.4	1.2	
Number of transactions[a]	116,051	93,631	83,441	86,519	96,232	–13.0	3.7	11.2
Residential land (units)[b]	38,853	21,312	14,375	15,205	16,594	2.1	5.8	9.1
Private-sector apartments[c]	13,455	14,739	14,599	11,477	12,188	0.4	–21.4	6.2
Population ('000)	5,232	6,204	6,570	6,690	6,806	2.0	1.8	1.7
Households ('000)[d]	1,392	1,723	1,847	1,881	1,914	2.0	1.8	1.7
Per capita GDP (NIS million, 2000 prices)	64,000	71,750	70,492	70,121	71,887	–2.7	–0.5	2.5
Housing loans taken by eligible persons	52,025	39,006	32,111	30,123	21,808	–12.1	–6.2	–27.6
Of which Immigrants	22,166	9,741	6,757	6,028	4,515	–16.8	–10.8	–25.1
Young couples	18,971	23,126	20,093	20,035	15,686	–6.8	–0.3	–21.7
Total mortgage loans (NIS million, current prices)	12,997	18,636	20,024	16,167	19,053	14.3	–19.3	17.9
of which Nondirected	7,479	14,150	15,537	12,048	15,886	11.2	–22.5	31.9
Average interest on nondirected mortgages[e]	6.06	5.75	6.02	5.06	5.75	6.02	5.06	

[a] By date of implementation of transaction; including new and second-hand apartments, and unrequited gifts to relatives; excluding bequests, apartments sold as part of a farm, protected-rental apartments occupied when the sale went through, some apartments in industrial or commercial buildings sold as a package deal, and the 'Build your own home' program.
[b] According to number of transactions implemented (as distinct from those offered), excluding units as yet unplanned; data from Israel Lands Administration.
[c] Until 1998, in the 24 largest towns; as of 1998, in the entire country.
[d] Excluding institutions, student dormitories, Kibbutzim, and individuals not residing in a settled community (Beduim in the south, etc.), and immigrant absorption centers.
[e] As of 31.10.2002, the interest is the average effective interest calculated as the weighted average of the interest on new loans (whether supplementary or not) extended by banking corporations for home purchase, or by mortgaging a home. Until 31.10.2002 the average interest was calculated as the weighted average of nondirected loans from bank sources extended or renewed by the mortgage banks.
SOURCE: Based on data from the Ministry of Construction and Housing, the Israel Lands Administration, the Income Tax Commission, and the Central Bureau of Statistics.

Figure 1.28
Ratio of Credit to Product in Construction and Real Estate,[a] 1997–2004



[a] Ratio of credit to the construction and real estate industry to the product of the construction industry.

SOURCE: The Central Bureau of Statistics and data of the Banking Supervision Department in the Bank of Israel.

credit to the industry's product, which indicates the risk level of construction companies, was down in relation to the preceding year, but remained high—a development which might lead to the higher cost of credit in the future (Figure 7). Nevertheless, nonbank financing substitutes increased in 2004, especially bonds. Many of the companies which went public in 2004 were construction and real-estate companies.

As regards the geographical distribution of building projects, there is a discernible trend for contractors to move their activity to the central region. This is due to the slowdown in sales and the erosion of profits in the peripheral areas, increasing both the financing burden and credit difficulties.

Land sales policy also has a clear effect on activity in the industry. The government controls most of the land, and hence determines the supply of units in the long run. The low extent of land allocation relative to the rise in the number of building starts causes the stock available for construction to contract, thereby making land more expensive as demand increases. In recent years the trend has been to increase the supply of land for residential construction, and this rose again in 2004, by 9.1 percent, but in quantitative terms it is still less than the target set by the government. In the context of the economic recovery, preparing an adequate stock of land at this stage is essential in order to enable the market to respond rapidly once demand revives, as well as to moderate the expected increase in prices. Planning is no less important: The elasticity of the industry's response to fluctuations in demand in the various regions should be assessed in order to ensure that the incremental quantity will be in line with changes in demand. Releasing land and redefining land uses or amending the intensity of its use, will enable the supply of available land to rise so that costs and prices may decline. The utilization of tenders in 2004 indicates that there is a lack of adjustment between the extent of land sold, on the one hand, and the development of activity in the industry and shifts in demand, on the other. This is a clear indication of surplus supply of land in the peripheral areas and maximum utilization in the principal demand areas, where the land component accounts for 61 percent of apartment prices.[65]

[65] See Zvi Eckstein and Menachem Perlman (1996), "The Privatization of Land in Israel," Applied Economics, June.

c. Nonresidential construction

The output of nonresidential construction fell by 15.3 percent in 2004, despite the increase in business-sector product, representing a cumulative drop of over 20 percent in the last three years. This may be explained by the adjustment of the stock of structures to the level of product and employment in the business sector in recent years, alongside the conclusion of the impact of mass immigration and the creation of surplus supply of structures in various sectors (manufacturing, commerce, and offices).[66] Declines in the area of completions in nonresidential structures and of rents, in view of the rise in business-sector product this year, may indicate the existence of a surplus of built-up areas, due to the drop in demand.

A positive development in the area of nonresidential construction is the rise in investment—in both structures and roads—at the end of the year, although this does not indicate a trend.

Table 1.32
Factor Inputs and Productivity in Construction, 1990–2004

				Annual average change (percent)				
	2002	2003	2004	1990–96	1997–2002	2002	2003	2004
Total employees ('000)[a]	208.7	204.8	194.2	9.8	–2.7	–5.3	–1.9	–5.2
Israelis	119.1	129.8	128.7	11.2	–3.8	1.8	9.0	–0.8
Palestinians	15.0	18.7	17.0	–7.2	–12.4	–48.3	24.7	–9.1
Foreign workers	74.6	56.3	48.5		3.1	0.4	–24.5	–13.9
Construction equipment capital stock (NIS million, 2000 prices)[b]	11,653	11,899	11,926	12.4	8.9	4.8	2.1	0.2
Cement sales ('000 tons)	4,379	3,931	3,692	13.6	–4.2	–0.1	–10.2	–6.1
Labor productivity				0.7	–0.8	2.4	1.2	–0.8
Real wage per employee post,[c d] (2000 prices)								
Deflated by output prices	5,708	5,286	5,006		1.5	–3.6	–7.4	–5.3
Deflated by CPI	5,705	5,529	5,478		1.5	–4.0	–3.1	–0.9
Total factor productivity[e]				0.7	–2.7	1.0	0.1	–1.9

[a] Includes an estimate of unreported foreign workers.
[b] Capital stock at beginning of year.
[c] Until 2002 the data were derived from the wages of Israeli and foreign workers, and after 2002 only from the wages of Israelis.
[d] Real wage deflated by the change in output prices or by the CPI.
[e] Product per hour worked weighted by capital and labor: average weight of labor, 84 percent.
SOURCE: Based on data from Central Bureau of Statistics.

[66] The area of building completions of nonresidential structures fell by 29 percent, another sign of a surplus of built-up areas.

The supply side

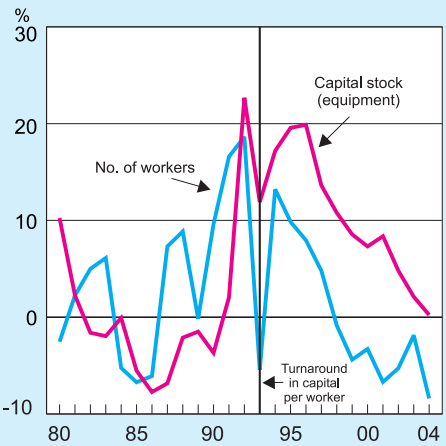
Employment

In 2004 there was a decline in the number of employed persons in all groups, including Israelis.

The number of persons employed in the construction industry fell by 5.2 percent and reached 194,200. Employment in the industry in the last few years has been characterized by marked changes in the number and composition of employees. The shift in 2004 was expressed in a decline in all groups of employed persons, including local workers. Against the backdrop of the ongoing reduction in activity and growing pessimism, there was a growing tendency among employers to reduce the number of Israeli workers, whose employment costs are relatively high. Concurrently, the policy of deporting foreign workers persisted this year, and in the last two years their number has fallen by a cumulative 38.5 percent. Since dismissals of foreign and Palestinian workers exceeded those of Israeli workers, the composition of employment changed, and the industry's dependence on non-Israeli workers fell from about 36 percent in 2003 to 34 percent in 2004.

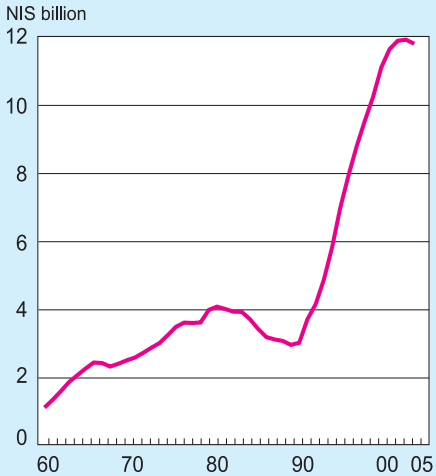
Starting in 2004:III signs of substitution between groups of workers began to emerge. The number of Israeli workers declined while that of Palestinians rose (apparently due to the relaxation of the closure policy), as did that of foreign workers.

Figure 1.29
Rate of Change of Capital Stock (Equipment) in Construction and in Number of Construction Workers, 1980–2004



SOURCE: Based on Central Bureau of Statistics data.

Figure 1.30
Capital Stock of Construction Equipment, 1960–2005
(2000 prices)



SOURCE: Central Bureau of Statistics.

Production costs

Although the real wage (per employee post) of Israeli workers was 1 percent lower in 2004 than in 2003, the change in the composition of workers and the rise in the wage of non-Israeli workers (due to the reduction of their supply) led to an increase in the average wage in the industry. All the components of the index of construction inputs rose, including wages. Prices of building materials, and haulage services rose steeply as a result of the depreciation of the NIS vis-à-vis the euro.

Capital stock and productivity

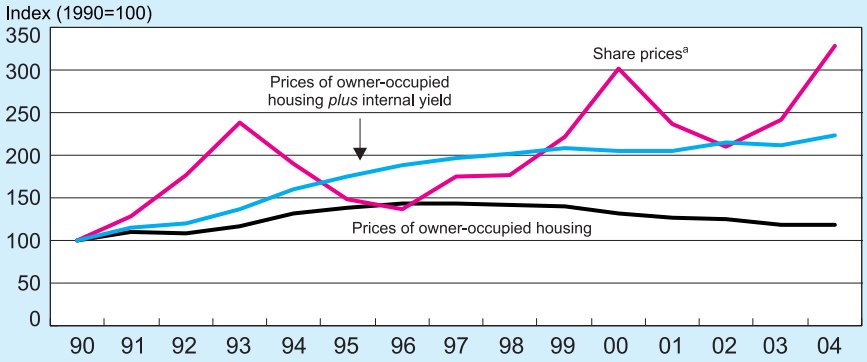
Capital stock per worker rose further in 2004, a positive indication that the process of mechanization is continuing. Investment in construction equipment, however, continued along the downward trend of the previous year, and declined by 6 percent.

Labor productivity went down in 2004 because labor inputs declined by less than did production capacity. Total factor productivity, which takes capital inputs into account, decreased by 1.9 percent. However, there are at least two reasons for regarding these results with some misgivings, namely, the lack of statistical data on the number of persons (both legal and illegal) employed in the industry, and the sensitivity of productivity to changes in the composition of output.

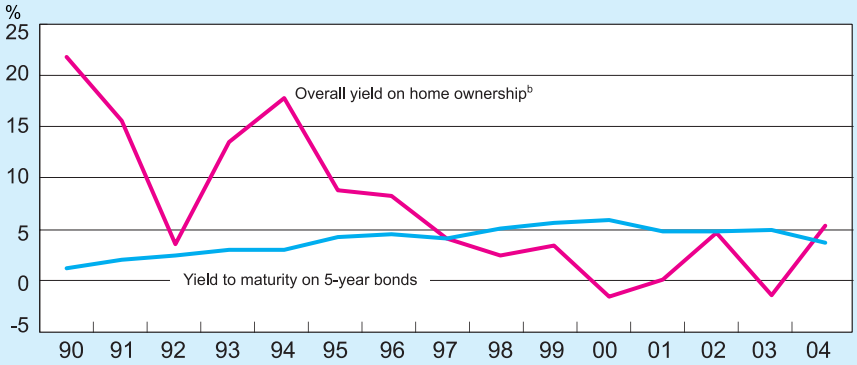
Purchase of apartments for investment

Relative to the alternatives, apartments were not considered an attractive component of the investment portfolio in 2004 either. Total yield (from rent and capital gains) was 6.71 percent, less than that on shares, which soared by 17.6 percent. Although the yield on shares, which are risky assets, is not comparable with that on an apartment, the relatively low liquidity of real-estate assets and the lack of elasticity in the distribution of the real-estate portfolio require a premium similar to that of shares.

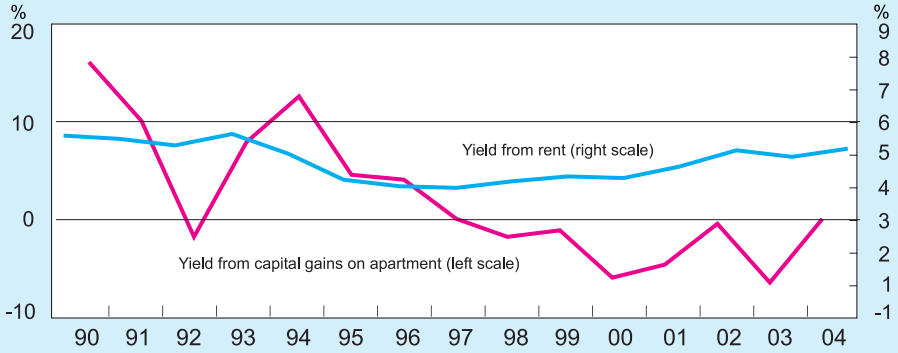
Figure 1.31
Real Indices: Prices of Housing and Shares,* 1990–2004



Real Yield on Home Ownership and on CPI-Indexed Bonds, 1990–2004



Yield from Capital Gains on Owner-Occupied Housing and from Rent, 1990–2004



* Prices and yields deflated by CPI. All figures are annual averages.
[a] Share prices were calculated without deducting the dividend included in the General Share Price Index.
[b] The yield on home ownership includes yield on rent and from capital gains, calculated from change in housing prices, according to average apartment price as calculated by CBS. Rent is calculated according to the CBS survey (October 1994), referring to average rental apartment.

SOURCE: Based on Central Bureau of Statistics data.

Table 1.33
Selected and Relative Construction Prices, 1990–2004

(change over previous period, percent)

		Apartment prices according to owner-occupied housing survey[a]			Rent		Owner-occupied housing component of CPI		Prices		
	Apartment prices	Relative to CPI[b]	Relative to input price index	Relative to $	Relative to CPI	Relative to $	Relative to to CPI	Relative to $	Input[c]	Output	Product
1990–96 (annual average)	21.8	7.6	9.3	13.2	13.1	19.1	7.9	13.6	13.4	13.3	13.5
1997–2002	2.2	–2.2	–2.0	–4.3	2.5	0.4	0.3	–1.8	4.4	4.8	4.3
2001	–3.5	–4.6	–4.8	–6.4	2.3	0.3	3.0	0.9	1.3	1.5	1.3
2002	5.3	–0.4	0.8	–6.6	5.6	–0.9	5.8	–0.8	4.5	5.3	3.3
2003	–5.7	–6.3	–9.5	–1.8	–4.1	0.5	–5.8	–1.3	4.2	5.0	3.6
2004	–0.4	0.0	–5.0	1.1	–1.6	–0.5	–2.5	–1.4	4.8	4.0	4.8

[a] The changes in apartment prices are obtained from the survey of housing prices (which are not included in the CPI since 1999).
[b] The method of calculating the CPI and the index of residential construction input prices is based on the calculation of these indices for the relevant period. The average of the price index was calculated for each period. As of January 1999, the CBS has calculated the CPI in a new way, with a different weighting system for the goods and the services included in the basket, and a different way of measuring the housing item. According to the new method, changes in rent (according to renewed contracts only) are used as an estimate of the use made by the occupant in the housing services of the apartment owned.
[c] According to the index of prices of construction inputs.

SOURCE: Central Bureau of Statistics.

Box 1.9
Investment Cycles and the Housing Shortage

The main question in the area of residential construction is how many available apartments are needed in order to guarantee adequate housing. The point of departure for any assessment of this kind is the ratio between the number of households and the number of housing units, as this should give an initial indication of the balance between supply and demand.[1] An analysis of the development of this index is essential for identifying potential demand pressures, which could influence relative prices of apartments as well as activity in the sphere of residential construction.

Demand for housing is affected by a variety of factors, both economic and demographic. The main economic factors determining long-term demand include permanent income and the interest rate; the demographic factors include shifts in the rate of natural increase and the composition of the population. In the short run a wide range of events and other variables are likely to have an effect; these include demographic shocks (immigration), exchange-rate movements, developments in the area of rental housing, government intervention, speculative trends, expectations of the public, etc.[2] The heterogeneity of the population and the effect of changes in economic conditions gives rise to greater variance in the probability that an individual or group of individuals will establish a household and purchase an apartment. When this probability grows, pressure on the existing stock of apartments increases, and as the gap between the population and the supply of new apartments widens, the shortage of potential housing rises, and may be reflected in higher prices.

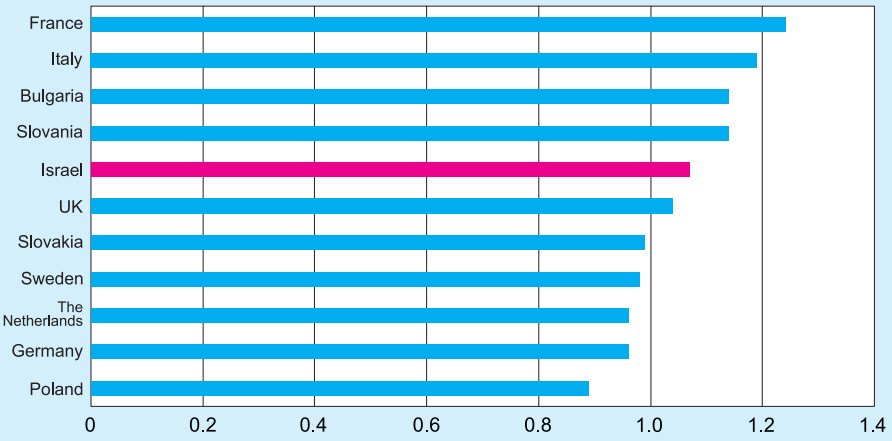
According to data for 2003, Israel's population numbered some 2 million households and the stock of housing was 2.1 million units. The ratio between these two parameters, which is derived from those data, was 1.07 units per household—a situation that is no different from that of most European countries and better than some. However, in the last five years this ratio has been trending downward, and in view of the continued growth of the population and the number of households in recent years this can be ascribed to the reduction of the supply of new housing units.

The development of the series on building completions over the years is in line with the demographic and cyclical changes evident in Israel, with two episodes in which supply responded to the decline in immigration in the first half of the 1990s (Figure 2) featuring prominently. Since the increment in new

[1] Assuming that one unit is required per household.

[2] According to a report by ERCG, a research and economic consultancy which has developed a model for forecasting prices and quantities in the residential construction industry in Israel, issued in February 2003.

Number of Apartments per Household, 2002

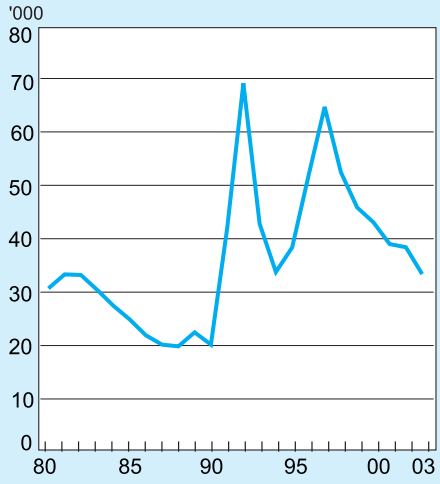


SOURCE: Eurostat, and based on Central Bureau of Statistics data.

apartments is largely a function of two variables—building starts, which are derived from expectations of the level of future demand, and construction time—the supply of apartments is lagging two years (the average construction period) behind starts.

The aggregate data, which show the gap between the supply of apartments and demand in the country as a whole, do not indicate the regional distribution of potential supply. It would appear, however, that developments in the housing market can be more readily understood on the regional than on the national level, because economic and demographic factors have differential effects in different areas.

Total Apartment Completions, 1980–2003



SOURCE: The Central Bureau of Statistics

Figures 3-5 present the distribution of building completions and incremental population in Israel by region in three periods. The absolute numbers derived from these two series made it possible to calculate the ratio between them, constituting an indication of the potential housing shortage in various regions.[3] The main findings are as follows:

[3] It is not possible to analyze the ratio between the increment in households and the flow of apartments because there are no by-region data on households.

In the 1980s the growth rate of the stock of housing was low, only about 1 percent, compared with 5 and 6 percent in the 1960s and 1970s respectively. The population growth rate was also lower than previously, but still higher than that of apartments, and averaged 1.5 percent. The areas in which the ratio between the incremental population and additional new apartments was high were the Jerusalem region and the central and southern parts of the country.

In the first half of the 1990s the shortage of potential apartments was greater than in the 1980s, both nationally and regionally. This was the result of extreme demographic shifts and the delay in adjusting the supply of apartments to supply shocks in the initial stages. The distribution of the population appears to have been affected only slightly by the various incentives such as subsidized loans, grants, the availability of government-initiated housing, etc. Evidence of this may be found in the attitude of the population to the supply of apartments, as these were plentiful in the peripheral areas, which benefited from government support, as well as in the Tel-Aviv conurbation, which attracted many of the immigrants because of better employment opportunities.

Table 1
The Ratio of the Rise in Population to the Rise in the Number of Apartments, 1980–2003

	1980-1989	1990-1994	1995-1999	1990s	2000-2003
Jerusalem	4.64	6.87	4.74	5.81	6.03
The North	2.69	4.90	3.33	4.11	3.32
Haifa	2.23	6.98	3.19	5.08	2.49
Central area	3.34	5.53	2.94	4.23	3.59
Tel Aviv	1.17	5.60	0.15	2.87	1.59
The South	3.16	6.62	3.27	4.94	3.71
Judea and Samaria		4.38	5.12	4.75	4.46
Total	2.89	4.36	2.88	3.62	3.48

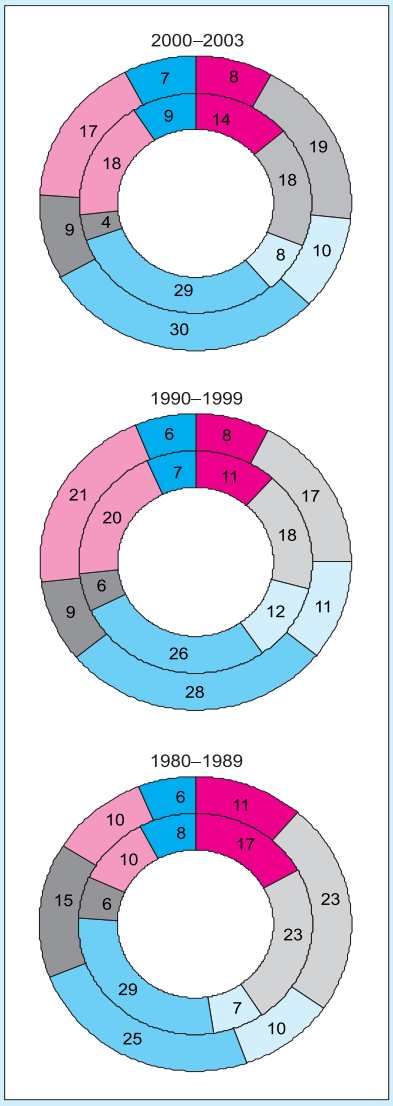
SOURCE: Based on Central Bureau of Statistics data.

In the second half of the decade the ratio between population growth and the number of apartments fell by almost 40 percent, and in some regions it was down by 50 percent from the preceding period. The reason for this was the industry's ability to fulfill expectations regarding the continued immigration and the increase in households. In regard to the Tel-Aviv conurbation, it may be assumed that emigration, explained by high housing prices, caused this index to plummet by 98 percent.

2000-2003: since the mid-1990s immigration to Israel has been declining constantly, as has the rate of natural increase. These two variables were expressed in moderate population growth—an annual rate of 1.8 percent. Concurrently, the

number of building completions contracted from 43,440 a year in 2000 to 31,700 in 2004. This decline in the supply of apartments means that the available stock required to check the market response to internal changes or external shocks, which cause demand to rise and affect prices, has contracted. The development of the index was not uniform in the various regions during this period: in the north it stabilized at a level similar to that evident in the preceding period, and in Haifa it even declined, while in the main areas of demand (the Tel-Aviv conurbation) the situation deteriorated. This development could lead to critical demand pressures, as most of the population with the highest potential for setting up households and improving accommodation is in the Tel-Aviv conurbation. Note that the average size of households in the Tel-Aviv conurbation is smaller than in the rest of the country, so that this index, which is based on population size, may even be biased downward in that region. Another indicator of potential demand pressure may be derived from the ratio between apartment prices and monthly income in the various regions, as this attests to the public's ability to buy apartments. In 2002 the purchase ability in the Tel-Aviv conurbation was estimated to be high.

Composition of Population Increase and Apartment Completions,[a] by Region, 1980–2003



[a] Outer rings–Composition of apartment completion.
Inner rings–Composition of population increase.

SOURCE: Based on Central Bureau of Statistics data.

Changes in the level of housing shortage in recent years should be regarded from the perspective of the future. Thus, for various reasons (cost of land, demand-side effects, etc.) the Tel-Aviv conurbation is characterized by high prices, so that the intensification of the housing shortage could be translated into a further increase in prices when demand is realized (as in fact occurred in 2004). The case of Jerusalem is notable, because the shortage there, as indicated by the index, was exacerbated by the low increment in apartments and in the stock of housing. Although Jerusalem is characterized by large households (serving to bias the index upward) and a relatively low ability to purchase (relative to the rest of the country), the improvement in the security situation may heighten demand there and cause prices to rise, especially since it continues to remain attractive to buyers from abroad.

In the peripheral areas, where the stock of unsold apartments is relatively large, it is doubtful whether the supply of new apartments will increase in the near future. The population in these regions will continue to grow as a result of natural increase, although it is expected that the shift to the Tel-Aviv conurbation will persist because the deterioration in individuals' economic situation reinforces their tendency to move in search of work. The effect of these factors on the housing shortage index is not clear, but it is expected to remain high.

In conclusion, the index of the ratio between the increment in the population and the stock of apartments is a rough indicator of the potential housing shortage. Nevertheless, because of the dearth of data on the utilization of the stock of housing by uses,[4] and the possibility of a circular relation between the establishment of households and the housing stock, using indices of the availability of housing would seem to be insufficient. The true extent of the housing shortage may be obtained from analyzing the various factors in combination, namely, population areas, household size, apartment prices, the composition and distribution of the population, and expectations regarding future economic developments in Israel.

On the one hand, in the last few years the housing stock has been higher than the number of households, density has been low, and demographic shocks similar to those of the years of mass immigration are not expected. On the other, a decline in the ratio of housing stock to households, the contraction of the supply of new apartments, the decline in household size, and the erosion of the stock of unsold apartments, reflected in a rise in real prices, are all initial indications of the creation of a potential housing shortage. In view of the pace at which the industry has adjusted to shocks of various kinds (such as the influx of immigrants in the 1990s), it would appear that demand pressures could cause prices to rise, especially in the short term, when the existing stock is eroded.

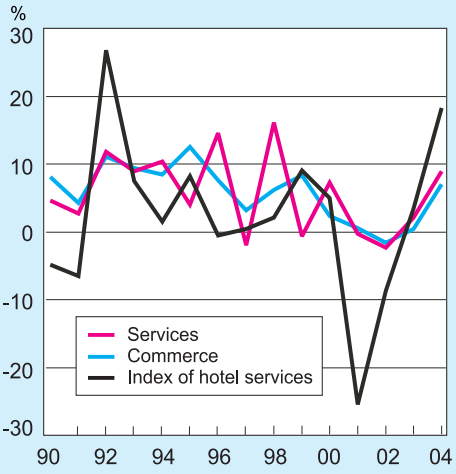
[4] Latest data on the utilization of the stock of housing and its uses are taken from the last population census, 1995.

5. Commerce and services

Commerce and services activity increased significantly in 2004, pursuant to the recovery that began in the second half of 2003 as the relative easing of security tension and the recovery of global demand allowed domestic demand to improve. Commerce and services product increased by 8.4 percent after a slight upturn in 2003 (Table 1.34 and Figure 1.32). Because gross product of the business sector expanded by 6.2 percent, the share of commerce and services in business-sector gross product climbed to 51.7 percent. Commerce and services exports (exports of services excluding transport services), which accounted for 23 percent of total exports in 2003 (excluding diamonds), increased by 14.2 percent in volume terms after 7 percent growth in 2003. Employment rose by 3 percent, outpacing the business sector at large, but investments continued to decline moderately.

Commerce and services activity increased significantly in 2004, pursuant to the recovery that began in the second half of 2003 as the relative easing of security tension and the recovery of global demand allowed domestic demand to improve.

Figure 1.32
Real Increase in Commerce and Services Product, 1990–2004



SOURCE: Appendix Table 1.A.41.

The product of the services industries (hotels and catering, business and financial services, education and health business services, etc.) increased by 9 percent in 2004 after a slight upturn in 2003. The improvement was powered by stronger global demand for high-tech production, leading to a perceptible increase in exports of computer and R&D services, and by an increase in the activities of business and financial services, which, among other things, cater to ICT companies. The security improvement, the resulting increase in tourism, global growth, and the domestic economic improvement all abetted the expansion of activity in hotel and catering services. Hotel and catering services, which are considered luxuries, are noted for high domestic demand elasticity and are consumed mainly by high-income persons. Thus, the increase in domestic consumption of these services may be due partly to an improvement in the situation of those of high income.[67]

Service product increased by 9 percent after modest growth in 2003.

The growth of services product over the years has been powered by rising standards of living and also, in respect to education and health, by the gradual contraction of government involvement and the partial privatization of service delivery. The business sector accounts for 10.7 percent of employment in education services and 40 percent of employment in health and welfare services—an estimate in which most hospitals are included. Activity in education, health, and welfare services delivered by

[67] The Central Bureau of Statistics' Household Expenditure Survey finds that the share of meals away from home in total household consumption is high in upper deciles and low in lower deciles.

business[68] increased in 2004 due to the upturn in per-capita disposable income[69] and the concomitant demand for these services.

Table 1.34
Commerce and Services, Main Indicators, 1995–2004

(annual change, percent)

	1995–98	1998	1999	2000	2001	2002	2003	2004
Product	8.2	13.1	1.6	5.8	–0.4	–2.1	1.6	8.4
Product excluding start-ups	7.8	12.5	1.9	2.1	1.0	–0.7	2.4	8.1
Of which: Commerce	5.6	6.2	8.3	2.4	0.6	–1.6	0.4	7.0
Services	9.3	16.1	–0.7	7.3	–0.7	–2.3	2.1	9.0
Labor input	5.2	3.9	5.1	8.8	–0.9	2.4	3.4	1.9
Capital stock[a]	13.7	13.6	10.9	9.3	7.7	5.7	3.8	2.8
Labor productivity	2.9	8.8	–3.1	-2.8	0.5	–4.4	–1.8	6.4
Multi-factor productivity	–0.5	5.0	–5.4	-6.8	–1.3	–4.3	–1.2	5.9
Real wage	1.9	0.8	6.2	9.4	2.2	–6.6	3.6	2.9
Real labor cost[b]	1.7	-0.8	-0.2	5.9	1.7	–4.0	-1.0	0.8
Relative price[c]	0.2	0.1	0.5	2.8	0.4	–0.8	–3.1	2.0
Exports[d]	7.7	15.0	26.7	36.1	–20.8	–11.0	7.2	14.2
Investment	31.5	–4.1	–1.7	–4.1	–10.8	–12.6	–3.6	3.2

[a] At beginning of year.
[b] Deflated by production prices.
[c] Relative to business-sector prices.
[d] Including export of tourist and other services. Deflated by index of services exports. Current prices.

Table 1.35
Business Services Revenue, 1996–2004

(percent)

	Share in business-sector product						Real rise in revenue							
	1996	2000	2001	2002	2003	2004	1997	1998	1999	2000	2001	2002	2003	2004
Computer services and R&D[a]	17.2	33.4	30.5	26.8	27.5	28.1	12.0	33.4	21.8	57.8	–12.3	–10.1	–4.8	12.8
Employment services	9.2	9.1	9.0	8.2	7.3	6.8	0.9	18.0	12.4	3.7	–5.2	–11.6	–12.6	2.9
Security and cleaning	7.9	7.0	8.2	9.2	9.7	9.5	17.4	5.2	-3.2	4.2	11.7	9.1	3.6	7.7
Other business services[b]	47.7	33.8	35.6	36.3	37.0	36.0	–4.7	18.7	–7.1	–5.6	1.3	–0.6	–0.8	7.6
Real estate and equipment rental	17.9	16.6	16.8	18.2	18.5	19.6	–1.2	25.5	4.4	0.3	–2.4	5.1	–0.7	16.9
Total	100.0	100	100	100	100	100	1.1	21.4	3.1	10.8	–3.7	–2.7	–2.5	10.4

[a] Including software companies and ICT start-ups and biotechnology start-ups.
[b] Including legal, accountancy, market research, engineering, architecture, advertising and public relations, photography, and other services.

SOURCE: Central Bureau of Statistics.

[68] Including independent institutions that operate on a business basis; not including not-for-profit institutions and those owned by central government, municipal government, and the Zionist National Institutions.

[69] The share of the business sector in national health expenditure climbed from 23 percent in 1990 to 28 percent in 2003. Welfare services have been partly privatized by central and municipal authorities. (Joseph Katan, "Partial Privatization of the Personal Social Services—Dilemmas and Main Issues," in Yaakov Kop (ed.), Resource Allocation for the Social Services 2001, Center for Social Policy Studies in Israel.

Table 1.36
Commerce and Services by Type: Product, Employment and Wages, 1995–2004

(annual change, percent)

	Share in GDP							Output				Labor input[d]				Real wage[a,d]				Relative price[b]			
	1995	1999	2000	2001	2002	2003	2004	1996–2000	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
Total	100	100	100	100	100	100	100	6.4	–0.4	–2.1	1.6	8.4	–0.9	2.4	3.4	1.9	2.2	–6.6	3.6	2.9	0.4	–0.8	–3.1	2.0
Of which: Commerce	30.8	30.5	29.5	29.8	30.0	29.6	29.3	5.5	0.6	–1.6	0.4	7.0	–0.8	5.0	–0.3	2.9	1.8	–6.3	4.0	0.0	1.0	1.1	1.0	1.0
Services	69.2	69.5	70.5	70.2	70.0	70.4	70.7	6.8	–0.7	–2.3	2.1	9.0	–0.9	1.1	5.2	1.4	2.4	–6.8	3.5	4.0	0.1	–1.7	–4.8	2.5
Of which:																								
Hotels and catering	5.9	5.0	5.1	4.5	4.7	4.5	4.6	3.5	–11.7	0.8	–2.2	11.1	–5.6	–5.2	–0.5	2.0	–0.5	–6.4	5.2	0.3	–9.3	20.2	–11.0	3.4
Business services	29.8	33.4	35.0	33.8	33.6	32.3	32.9	9.9	–3.7	–2.7	–2.5	10.4	–1.2	1.5	11.4	2.6	3.2	–8.6	3.6	4.3	6.1	–8.3	–4.3	1.2
Insurance and financial institutions[c]	19.2	18.3	18.1	18.5	17.9	20.1	20.1	5.1	1.9	–5.4	14.5	8.4	1.4	4.9	1.6	1.3	1.2	–6.8	1.4	9.8	–8.4	0.3	1.5	0.3
Health	4.5	4.3	3.9	4.3	4.5	4.4	4.2	3.7	8.6	2.9	–0.4	4.1	–0.6	3.1	1.9	–3.7	1.4	–6.3	7.3	2.4	7.3	1.0	–3.3	–2.8
Education	2.8	2.6	2.5	2.5	2.5	2.3	2.3	3.9	0.1	–2.9	–5.2	6.2	2.3	4.0	2.5	3.5	2.9	–1.9	–0.7	2.7	–3.2	–0.3	–5.2	–1.7
Personal and other	7.0	5.9	5.8	6.5	6.9	6.7	6.6	2.7	11.9	2.8	-0.5	6.7	5.5	4.1	-1.1	0.1	1.2	–5.0	–0.7	0.7	2.6	–0.4	–2.4	0.5

[a] Per employee post deflated by the CPI.
[b] Deflated by business-sector-product price.
[c] Including banks.
[d] Including Palestinians and foreign workers (reported and unreported).

SOURCE: Central Bureau of Statistics data.

The increase in service product outpaced the growth of labor input, meaning that labor productivity improved.

Labor productivity in the services increased as product expanded more rapidly than labor input. The upturn in labor productivity was perceptible in the main service industries and evidently traced, among other factors, to the improvement in demand. Many foreign workers were replaced by Israelis in 2004; foremost among them were about 5,200 workers in hotel and catering services, 15 percent of the total population of foreign workers. Replacement of foreign workers also seems to have occurred in cleaning and welfare services (Table 1.36).

Commerce product grew by 7 percent in 2004.

Commerce product increased by 7 percent after three years of standstill due to the recovery of private consumption. Employment in commerce industries expanded even though employment in the retail food trade edged upward modestly for the second consecutive year, possibly as consumers changed to shopping in large cut-rate outlets on the outskirts of cities, where turnover per person employed is high.

The balance of active businesses in commerce and services continued to improve.

Pursuant to the improvement in commerce and services product, the balance of active businesses—the number of businesses opened less those that closed down—continued to improve. Businesses open and close on the basis of long-term considerations. Thus, more businesses opened than closed in 2003 in view of indications of recovery and the balance of active businesses continued to improve in 2004 in response to the improvement in commerce and services product. The number of businesses in most commerce and service industries increased relative to 2003 (Table 1.37).

Table 1.37
Number of Commerce and Services Businesses, 2003 and 2004[a]

(percent change from previous year)

	2003	2004	2004 No. of businesses
Commerce, vehicle and other repairs	–0.3	2.4	84,727
Hotels and catering services	2.2	4.6	16,907
Real estate, machine, equipment and goods hire	–2.7	1.1	21,325
Computer services and R&D	3.0	8.7	9,919
Manpower agencies, security and cleaning	–0.2	2.0	4,884
Education	0.6	1.7	11,290
Health and welfare services	1.5	2.4	28,304
Personal and other services	–0.2	2.6	28,047
Entertainment, leisure, culture and sports	1.9	3.4	15,353
Banking, insurance and other financial institutions	3.8	1.7	11,018
Other business activities	3.5	5.8	60,933
Total commerce and services	1.0	3.1	292,066

[a] Going business, excluding nonprofit organizations and financial institution, that reported turnover greater than zero in at least one month in the year.

SOURCE: The Central Bureau of Statistics VAT file.

Investment in commerce and services (Table 1.34) increased by 3.2 percent in 2004 due to the improvement in economic activity—representing a turnaround after a downtrend since 1998—in contrast to stagnation in nonresidential investment. The upturn in commerce and services investment was composed of a steep decline in

investment in buildings and an appreciable recovery of investment in equipment. The latter increase may have traced to firms' belief that uncertainty was declining and activity would continue to grow, coupled with an easing of the restriction on credit for the expansion of activity, as shown in the Bank of Israel Companies Survey (Figure 1.34). Decisions in favor of investing in equipment apparently require expectations of a protracted improvement in economic activity. Prices of buildings for commerce and services use rose in 2004, probably due to the decline in building investment.

Investment increased by 3.2 percent.

Hotel and catering services

Hotel and catering services product increased by 11.1 percent, due to the improvement in security and economic conditions, but remained 3.3 percent lower than the 2000 level (Table 1.36). Turnover improved perceptibly in the first half of the year and continued to rise more gently in the second half due to improvements in incoming tourism and domestic demand for hotel and catering services. Industry employment increased by 2.7 percent after declines in 2001 and 2002 and flat performance in 2003. The number of active businesses continued to expand and the pace of the increase quickened. Due to the upturn in activity, the industry's indebtedness to banks increased but did so more slowly than the growth of product, so that the ratio of problem loans to industry product declined.

Hotel and catering product increased by 11.1 percent in 2004.

The improvement in tourism allowed hotel and catering services product to increase much more rapidly than business-sector product. Some 4.9 percentage points—about NIS 410 million—of the total upturn in hotel and catering services product is attributable to the improvement in incoming tourism.[70] [71]

Hotel services product increased by 14.3 percent and hotel employment, accounting for about one-fourth of total employment in hotel and catering services, increased perceptibly after three years of noticeable decline. In early 2004, the hotel industry concluded a labor agreement stipulating a gradual return to the wage level that preceded the incoming-tourism crisis in 2001, after an accord concluded in 2002 included wage cuts to help hoteliers to cope with the crisis. The number of hotel rooms hardly changed in 2004. Available rooms increased by 1.4 percent as some rooms that had been closed for security reasons were put to alternative uses or restored to guest use from the second quarter onward (Table 1.38).

Hotel services product grew by 14.3 percent.

[70] The improvement in tourism also abetted a 1.2 percent increase in transport product (as explained in detail in the transport section in the chapter on infrastructure industries) and, to some extent, an increase in commerce product. The multiplier effect that augments these growth rates was not taken into account in this estimate.

[71] Assuming that the entire 11.1 percent increase in hotel and catering services product originates in the security improvement, it is arguable that 4.9 percentage points of the increase should be credited to the upturn in tourism resulting from the security improvement. To make this calculation, we used data on the average per-tourist expenditure for hotel and catering services in 2004 as presented in Ministry of Tourism, Incoming Tourism Survey 2004, and data on hotel and catering services product as a share of turnover as presented in the 2001 Survey of Trade, Services, Transport, and Communications.

Table 1.38
Hotel Services, 1990–2004

(annual rate of change, percent)

	1990–97	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Tourist entries by plane	8	–4	–3	–1	18	26	7	–46	–27	25	38
Tourist bed-nights	3	12	–6	–9	–5	18	4	–60	–31	22	50
Israeli bed-nights	5	9	11	9	11	6	2	13	5	–1	4
Total bed-nights	4	11	1	–1	3	11	3	–23	-4	4	14
Revenue	2	7	–1	2	6	13	8	–26	–11	2	20
Index of hotel services	3	–0	–0	1	5	13	7	–25	–9	3	19
Employment[a]	4	5	–1	0	1	5	0	–22	–13	–2	10
Labor input[a]	5	–4	0	–1	–1	6	1	–23	–15	–1	9
No. of rooms[a]	2	6	4	5	5	6	8	2	2	–1	0
No. of closed rooms					–17	–4	97	123	31	–14	–15
Multi-factor productivity	–2	8	–2	1	5	7	5	–11	–1	4	14

[a] In tourist hotels.
SOURCE: Table 1.A.43.

Hotel bed-nights increased by 14 percent due to a modest increase in nights by Israelis and a significant upturn in nights by incoming tourists.

Total hotel bed-nights increased by 14 percent in 2004 as Israelis' use of hotels increased slightly and incoming tourists' bed-nights rose significantly. Incoming tourists accounted for 28.4 percent of hotel bed-nights in 2004, a much larger fraction than in 2003 but much less than the 48.4 percent level recorded in 1999. Hotel rates for Israelis increased by 5.6 percent in 2004 after declining in 2001 and 2002 and leveling off in 2003.

Exports of tourism services increased perceptibly in 2004.

Exports of tourism services (excluding consumption in Israel by foreign workers) increased by 39 percent in 2004, mostly in the second and third quarters, and came to NIS 6.7 billion after a slight upturn in 2003. Global tourism services accounted for 7.3 percent of exports of goods and services in 2002, whereas in Israel in 2004 they were only 3 percent of goods and services exports and 3.6 percent of nondiamond exports. Over the years, global tourism has grown more quickly than global growth and has gathered strength at times of rapid global GDP growth.

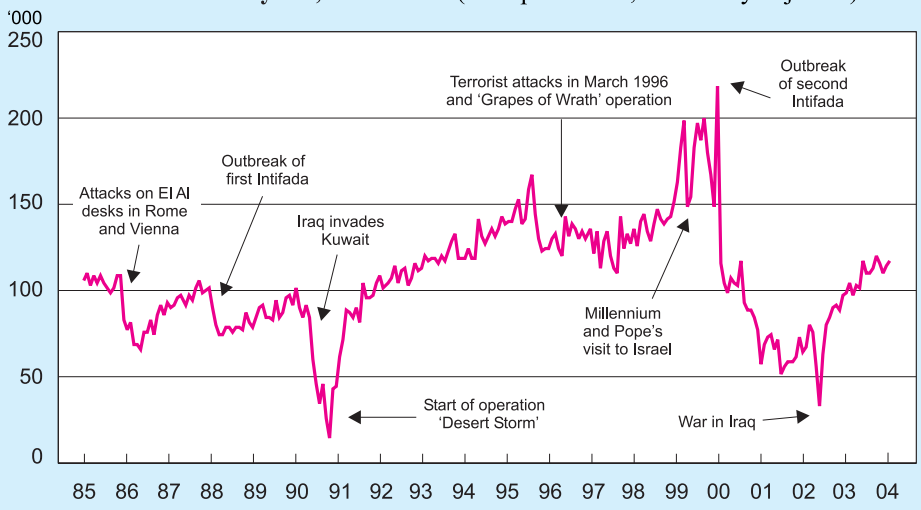
Hotel bed-nights increased more rapidly than incoming-tourist arrivals in 2004 (Figure 1.33) due to a change in the composition of the incoming tourism—a decline in the proportion of tourists who came to visit relatives and make little use of hotels, and of those on business visits, which are relatively short, and an increase in the proportion of visitors for leisure, pleasure, sightseeing, or pilgrimage purposes.[72] For this reason, in 2004 the average tourist spent more during the visit and more per day of the visit.

Hotel occupancy improved considerably in all districts, foremost Tel Aviv and Jerusalem. The increase in Tel Aviv traced initially to a sizable upturn in tourist bed-nights and, later on, to the economic improvement, which caused business and Jewish tourism to expand. In the Jerusalem District, where occupancy was very low in 2003,

[72] Ministry of Tourism, Survey of Incoming Tourism, semi-annual report, 2003 and 2004.

the improvement originated in an increase in incoming-tourist bed-nights that offset a decline in bed-nights by Israelis. The improvement at hotels in Eilat and on the Dead Sea, where occupancy in 2003 was relatively high, was less vigorous.

Figure 1.33
Tourist Arrivals by Air, 1985–2004 ('000 per month, seasonally adjusted)



SOURCE: Central Bureau of Statistics.

How the Ministry of Tourism is coping with the tourism crisis

To cope with the crisis that has beset tourism since the beginning of the security unrest, the Ministry of Tourism has been applying an array of tools on both the supply and the demand sides. In 2001 and 2002, and to some extent in 2003, assistance from the ministry focused on the supply side, i.e., on reducing hotels' costs; in 2004, the levels of aid decreased and were focused on stimulating demand. The tools include a marketing fund for hotels and an incentive fund for incoming-tourism organizers that reimburses organizers for their expenses. The size of these funds decreased in 2004, relative to 2003, to NIS 9 million and NIS 10 million, respectively.

The ministry has focused its overseas marketing activities in recent years on several identifiable market segments (Jews and Christian pilgrims) and on promoting Eilat as a tourist destination. The ministry also helps by expanding the resources of tourism organizers in Israel and Israeli-tourism wholesalers abroad and by increasing domestic tourism operators' participation in overseas expositions.

Catering services product increased by 9.1 percent in 2004 due to the upturns in disposable income and tourism. This is consistent with the long-term growth trend, which for years has been driven by rising standards of living.

Computer and R&D services, including ICT firms and start-ups and biotechnology start-ups

Computer and R&D services product increased by 12.8 percent in 2004.

Product of the computer and R&D services industry increased by 12.8 percent in 2004 after having contracted in 2003. Product excluding start-up companies rose by 9.5 percent and product of start-ups increased by 23.6 percent after steep declines in 2001–2003. Product increases were recorded by start-ups in both ICT and biotechnology. Industry exports (including start-ups) expanded by 14.3 percent, employment increased by 5 percent, and wage per person employed rose, evidently due to an increase in demand for labor and a perceptible upturn in labor productivity.

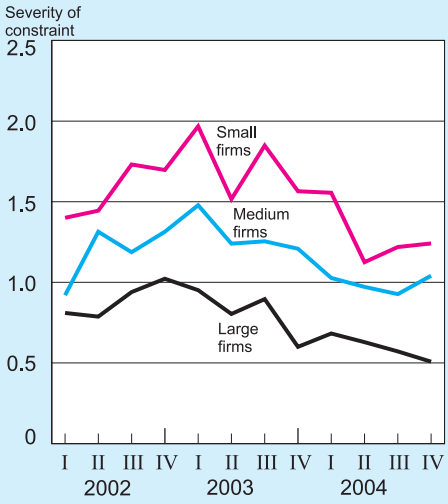
Banking services[73]

The banking industry continued to improve as the banks' value added and earnings increased.

The banking industry continued to improve in 2004. Value added[74] increased by 13 percent—contributing 1.1 percent to commerce and services product, after a 23 percent increase in 2003—and profitability grew. The combination of moderate increases in lending and use of bank resources allowed the banking activity index[75] to advance by 4.3 percent after declining in 2003. Lending increased in 2004 in real terms after contracting in 2003[76] (Table 1.39).

Bank earnings increased, revenues from lending activity before loan-loss provisions grew and the loan-loss provision contracted, evidently due to the general economic improvement and the rather large provisions that had been made in the past. Thus, earnings from lending activity after loan-loss provisions increased. Due to the upturn in total profitability (from ordinary activities) and wage payments, the banks' standardized value added[77] increased by 13 percent (Table 1.39).

Figure 1.34
Financing Difficulty Constraint in Manufacturing Firms, 2002 and 2004



SOURCE: Bank of Israel, Companies Survey, 2004: IV.

[73] The analysis in this section treats the banking industry as part of the services industry and as an input for other industries; it does not examine all implications of the industry's activity. For a detailed analysis of developments in the bank, see the 2004 Banking System Survey.

[74] Calculated from banks' reports up to September 2004; therefore, annual value added will be different. Value added is composed of salaries and related expenses—maintenance and depreciation of buildings and equipment plus pre-tax earnings from ordinary activities.

[75] See Table 1.39 for definitions.

[76] 2004 average on 2003 average.

[77] See Table 1.39 for definitions.

Revenues from operating charges increased by 8.4 percent. The labor input continued to decline, pursuant to a trend that began in 2000 for reasons that evidently include mergers in the industry, wider use of electronic banking, and a slight decrease in the number of branches. Labor cost increased, probably as a reflection of the upturn in banks' earnings.

Developments in the banking industry had different effects on the business sector. Credit started to expand again and mobilization of non-banking sources of finance grew vigorously (during the first nine months of the year). By implication, the supply of banking credit was apparently diverted mainly to small companies, which depend on the banks because they have no access to alternative sources. The Bank of Israel Companies Survey reinforces this estimation by noting that the restriction on sources of finance for the development of activities eased in 2004 for all companies—small, medium, and large (Figure 1.34).

Table 1.39
Development in Banking Activity, Main Indicators, 1997–2004

(annual rate of change, percent)

	1997	1998	1999	2000	2001	2002	2003	2004
Credit to public[a]	4.5	10.4	12.1	13.4	12.7	5.6	–3.6	3.9
Labor input	0.6	–0.4	–1.8	0.6	0.4	–1.6	–4.0	–0.7
Labor costs	6.0	1.6	4.3	9.0	0.3	0.6	–0.6	3.6
Value added (adjusted)	5.5	15.5	0.5	14.5	–7.8	–13.2	23.0	13.0
Stock-market turnover	25.1	31.1	34.2	32.6	–8.3	36.8	11.0	44.8
Number of debits	1.2	2.2	2.1	0.7	3.5	6.6	–4.6	–1.9
Mortgages	–5.1	–12.1	8.3	–4.7	0.5	–0.7	–20.1	18.3
Number of branches	–3.7	0.5	1.6	–2.3	–1.8	–2.3	–2.7	–1.2
ATMs	7.9	2.6	2.4	0.1	2.4	–1.6	0.2	0.8
Requests for information via internet						46.8	76.7	24.2
Banking transactions via internet						49.2		
Index of banking activity[b]	3.5	6.4	8.6	7.6	6.9	7.2	–4.4	4.3
Labor productivity	2.9	6.8	10.6	7.0	6.5	9.0	–0.4	5.0
Multi-factor productivity	2.8	6.1	9.0	7.8	6.7	9.1	–1.3	4.9

[a] Total commercial banking system based on annual average according to real end-month data.
[b] Weighted average of credit to public, number of debits, labor input, total new loans, and securities turnover.
SOURCE: Table 1.A.44.

6. Information communication technology[78]

The information communication technology (ICT) industry is a conglomerate of production and service industries for the electronic absorption, presentation, and transmission of information. It incorporates manufacturing industries—communication equipment; supervisory, measurement, and control apparatus; and electronic components—and service industries: communications and computer and

The ICT industry incorporates manufacturing industries and service industries.

[78] Reference to the ICT aggregate in this section does not replace reference to the components of ICT in the principal industries as customarily defined (services, manufacturing, communications).

R&D services, including start-ups. ICT production, mainly by high-tech industries, is typified by international competition. Since ICT services are distinguished by a mobile labor force and international investment, the industry plays an important role in the globalization process. Expenditure on ICT as a share of GDP reflects the massive investment in ICT products and services by principal industries such as financial institutions and telephone companies. This expenditure is an important component of Israel's integration into the global economy and it accelerates the growth of productivity. The global ICT industry grew in 2004, after slowing in 2001 and 2002 and showing no change in 2003.

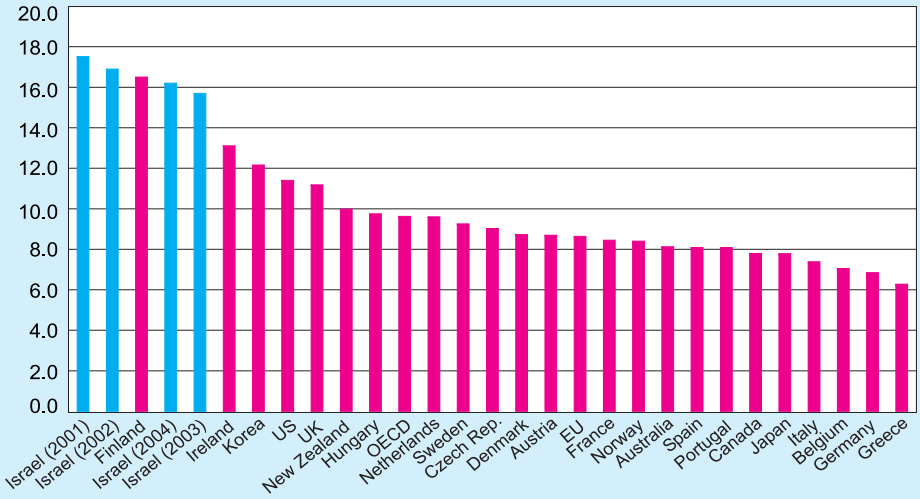
Israel's ICT product increased by 9 percent in 2004 after recovering in 2003.

Israel's ICT product increased by 9 percent in 2004 after recovering in 2003. All subindustries—computer and R&D services, and manufacturing—took part in the growth. Exports increased by 20.4 percent (Table 1.40). Investments in ICT companies via venture-capital funds rose briskly over 2003 and turned upward steadily during the year. Industry employment improved after a decline in 2002 and 2003. Nominal wage increased by 1.8 percent after sizable decreases in 2001–03 due to an oversupply of labor in the industry. The upturn in wage also traces to stronger demand for labor, occasioned by the upturn in global demand for ICT products, and the increase in labor productivity.

Israel's ICT product is very large by international standards.

ICT product in Israel is very large by international standards: 16.2 percent of business-sector product in 2004 (Table 1.41) as against less than 9 percent on average in the European Union countries and 11.4 percent in the United States in 2001 (Figure 1.35).[79] Since the small size of Israel's economy limits domestic expenditure for ICT,

Figure 1.35
Share of ICT[a] in Business-Sector Product, International Comparison, 2001



[a] Information and computer technology.

SOURCE: Israel - based on Central Bureau of Statistics data; OECD countries - OECD Information Technology Outlook, 2004.

[79] OECD Science, Technology and Industry Scoreboard 2004.

Table 1.40
The ICT Industry, Product, Employment and Exports, 1999–2004

		Computer & R&D services			Communication	
	Total	Total	Total excl. start-ups	Start-ups	services	Manufacturing
1) Change in product (current 1995 prices, percent)						
1999	8.5	21.6	20.2	27	0	8
2000	33.4	51.1	5.5	216	–1	47
2001	–13.7	–13.1	–3.0	–25	7	–24
2002	–7.0	–9.8	8.5	–39	–2	-8
2003	4.2	–4.9	4.1	–30	19	–0
2004	9.0	12.8	9.5	27	6	10
2004 product (NIS million, current prices)	50755	18969	14838	4132	14212	17573
2) Employment (annual rate of change, percent)			Including start-ups			
1999	11.3		19.6		17.4	2
2000	26.0		40.7		26.0	11
2001	6.2		7.2		19.4	–0
2002	–4.0		–6.6		6.1	–6
2003	–2.1		–4.4		2.9	–2
2004	8.1		5.1		19.6	5
2004 Employment ('000s)	164.6		71.3		38.5	54.8
3) Exports (annual rate of change, percent)			Including start-ups			
1999	13.8		11.9		–10.5	17.0
2000	58.5		82.1		–9.4	57.7
2001	–15.3		–20.2		–27.8	–13.2
2002	–12.2		8.6		–16.9	–17.9
2003	7.0		15.4		–3.2	4.3
2004	20.4		14.3		15.5	23.1
			($ million, current prices)			
2004 Exports	13414		5145		140	8129

SOURCE: Based on Central Bureau of Statistics data.

the share of exports in industry product is immense, at 56 percent in 2004.[80] The proportion of exports in product increased in 2004 after declines in 2001–2003—almost certainly due to the improvement in the global economy, which boosted demand for and prices of ICT products.

ICT product in Israel is more service-oriented than the OECD average.

Israel's ICT production is more service-oriented than the OECD average. Other countries that have large ICT industries relative to GDP are biased toward manufacturing. Since Israel's ICT production is strongly oriented toward new-product development by means of R&D services and start-up companies, its share of start-ups

[80] About 71 percent of ICT product is for export. This does not include communication services, which, although included in ICT, account for a negligible share of exports.

Table 1.41
The ICT Industry, Main Indicators, 1999–2004

		Computer & R&D services			Communication	
	Total	Total	Total excl. start-ups	Start-ups	services	Manufacturing
Share in ICT products (current prices)						
1999	100	35	28	8	26	39
2000	100	42	23	19	19	39
2001	100	42	26	16	22	32
2002	100	37	27	10	23	36
2003	100	35	29	7	29	35
2004	100	37	29	8	28	35
Share in business-sector products						
1999	15.0	5.3	4.1	1.1	3.9	5.9
2000	18.7	7.8	4.3	3.5	3.6	7.3
2001	17.5	7.4	4.5	2.9	3.9	5.6
2002	17.0	6.3	4.6	1.7	3.9	6.1
2003	15.7	5.6	4.5	1.1	4.6	5.5
2004	16.2	6.1	4.7	1.3	4.5	5.6
Contribution to rise in business-sector product (1995 prices, percent)						
1999	1.3	0.7	0.5	0.2	0.0	0.6
2000	4.8	1.8	0.2	1.7	–0.0	3.0
2001	–2.7	–0.7	–0.1	–0.6	0.3	–2.3
2002	–1.2	–0.5	0.3	–0.7	–0.1	–0.6
2003	0.7	–0.2	0.1	–0.3	0.9	–0.0
2004	1.4	0.5	0.3	0.2	0.3	0.6
Change in product prices (percent)						
1999	11.9	19.7	19.7	19.7	2.0	9.4
2000	5.4	10.6	10.6	10.6	4.8	–5.1
2001	6.9	7.8	7.8	7.8	0.1	–0.5
2002	3.6	–6.6	–6.6	–6.6	2.4	17.4
2003	–8.2	–4.0	–4.0	–4.0	2.8	–5.6
2004	0.9	3.0	3.0	3.0	–1.1	–1.0

SOURCE:Based on Central Bureau of Statistics data.

in industry product and GDP surpasses the global average by far. Israel is among the world's leaders in R&D, for reasons including well-schooled human resources and high output per worker.

ICT production in Israel seems to have outpaced the global rate of increase in 2004. This reflects the special composition of Israel's ICT industries, which leans toward extensive new-product development, usually by start-up companies. Global demand for new ICT products recovered during the past year, partly explaining the 27 percent increase in production by Israeli start-ups in 2004 after a 68 percent decrease from 2001 to 2003. Net of start-ups, production increased by 8.1 percent. The focus on start-ups, however, substantiated the risk of specializing: after benefiting from the rising ICT tide in 1999, 2000, and to some extent 2004, Israel was exposed to particularly extensive damage when the global high-tech bubble burst.

The ICT industry relies on raising capital from nonbank sources.

The ICT industry (including start-ups) relies on raising capital from nonbank sources. In 2004, ICT firms raised $ 1.46 billion from venture-capital, 46 percent more than in 2003,[81] and the amount of capital raised per transaction continued to trend up, as it had since the second quarter of 2003, although the sum was much smaller than the 2000 level (Table 1.42). Israel's ICT industry also outperformed its American counterpart in terms of the strength of the recovery in capital raising; thus, capital raising in Israel stood at 9.8 percent of the U.S. level in 2004 as against 9.6 percent in 2003.[82] In 2004, the software industry accounted for a larger share of capital raised. For a more detailed analysis of the ICT subindustries, see the sections on Manufacturing, Commerce, the Services, and Communications.

Table 1.42
Issues by High-Tech Companies, 1997-2004[a]

($ million))

	1997	1998	1999	2000	2001	2002	2003	2004
Israeli and foreign venture-capital funds	430	600	1012	3092	1985	1134	1011	1460
Stock-exchange issues by companies backed by venture-capital funds	292	160	1176	1713	83	0	0	...

[a] For 1997-2000. including issues involving at least one Israeli venture-capital fund; for 2001-2003 also including issues without the participation of an Israeli venture-capital fund.

SOURCE: IVC Research Center.

Government assistance for start-ups

Government subventioning of seed companies has decreased.

In Israel, as in other countries, the government subventions the establishment of seed companies. Since the private sector tended in 2001 and 2002 to invest in more proven technologies, the pace and size of its investments in seed companies plummeted during those years (from 10 percent of total venture-capital fund investment in 2000 to 2 percent in 2002). Therefore, the government saw fit to provide incentives for investment in such firms, which engage mainly in R&D and play an important role in encouraging growth. For this purpose, a "seed fund" was established in late 2002 as part of the assistance mechanism of the Chief Scientist of the Ministry of Industry, Trade, and Employment. The purpose of the fund is to provide investors with an incentive by sharing risk at the initial investment stage in return for shares, up to a sum not exceeding NIS 5 million per investment. The model resembles that of private

[81] Including biotechnology.
[82] National Venture Capital Association (NVCA), 2004.

investment in start-ups, but the government fund gives the investor the option of buying the shares owned by the Fund.

After private investment in seed companies recovered in 2003 and continued to improve in 2004, the number of applications to the Seed Fund decreased and investments by the fund declined commensurably. The Fund was budgeted at NIS 25 million in 2004, most earmarked for commitments made in 2003 and the remainder invested in three companies during the budget year. The Fund has not yet been budgeted for 2005.