the construction of high-rise housing. The justification for intervention of this kind is that individuals and developers who benefit from land-intensive uses do not internalize the full extent of the damage incurred by society through the reduction of open spaces and restriction of farming.

While these measures are required in order to curb the extent to which the land-use designation of open spaces is changed, incentives for farmers should be deployed as a supplementary procedure which will focus on preventing the neglect of farmland whose purpose has not been changed.

A recent policy document (see note 1) proposes *inter alia* that subsidies be given for the cultivation of farmland, and that fines be imposed on failure to do so. Resorting to both positive and negative incentives will increase the efficiency of the incentive, given the budget limitations. The document even describes steps taken elsewhere to encourage cultivation of farmland.

It is important to use such incentives wisely so that they can achieve their aim at a reasonable cost. First, the incentive should be limited to the cultivation of open farmland, since the objective is to preserve open spaces and the landscape. Hence, the incentive should be restricted to field crops, orchards, etc., and not extended to agricultural activity that damages the landscape (e.g., greenhouses, chicken-coops, and cow-sheds). Second, since the purpose is to cultivate as large an area as possible (in those regions marked as suitable), it is necessary to give the subsidy in accordance with the land area cultivated rather than for inputs or other factors of production. For example, the subsidy should not take the form of a lower price for water, as this would encourage cultivation of water-intensive crops whereas the idea is to encourage the cultivation of land-intensive crops. Third, the incentive should be focused on areas which would probably not be cultivated without a subsidy and on those where agricultural activity is particularly important in order to preserve open spaces, e.g., those whose location would enable the preservation of a continuous open area or an uncultivated area adjacent to a built-up one. Note that in some cases part of the functions of open spaces are also achieved by uncultivated ones. Budgetary limitations will make it necessary to find the correct balance between the generosity of the incentive per dunam of land and the extent of area to which incentives may be applied.

4. The infrastructure: transport, communications, energy, and water

The infrastructure industries are essential for economic activity and growth because they serve to connect economic units with one another—e.g., outlying regions with centers of employment—and with abroad, and also because economic activity depends on the provision of such vital services as electricity, water, sewage services, transport, and communications.

Box. 1.5
Infrastructure Investment Policy

Government policy

Infrastructure industries are characterized by notable economies of scale, so that while, on the one hand, there is a tendency towards natural monopolies in them—albeit under government supervision (e.g., conducting water, fuel, sewage)—on the other, competition should be encouraged, especially in production (electricity, water, desalination). Because of the industry's monopolistic structure and external benefits, it is necessary to regulate it: investment in the infrastructure is one of the few areas in which direct government intervention in economic activity is justified, as its return to the investor is generally lower than to the economy as a whole, so that a private entity will not invest enough. The public sector plays a major role in investment in the infrastructure in general, and in transport in particular: it invests in it directly, initiates it, and is a partner in it. In recent years more infrastructure investment has been undertaken in cooperation with the private sector, whose efficiency in implementing investment is apparently greater than that of the government sector. It may also be more efficient to undertake investment by means of government corporations than via the general government.

Although most infrastructure investment is initiated—and usually also financed—by the government, the government does not have a blueprint for infrastructure development as regards either the extent of investment in the long term or its path in each infrastructure sphere. As a result, the level of the infrastructure is far from what it should be. It is the government which should determine the extent and composition of this investment as well as the timetable for its implementation. However, despite the crucial importance of the infrastructure for both economic activity and the quality of life, the government does not have an orderly framework for this sphere. It has not discussed the extent of infrastructure investment required in the long term to attain the appropriate and feasible level of service. In the absence of a clear-cut definition of needs, it is impossible to prescribe the composition of investment required to attain them, and without goals it is impossible to monitor the extent to which they are attained.

Constant budgetary pressures have a particularly deleterious effect on infrastructure investment, both because there is no lobby to expand it and because it bears fruit only in the long run whereas policymakers seek results in the short term. The outcome is that there is a cumulative backlog regarding the infrastructure.

The infrastructure is currently dealt with by a decentralized authority structure. Each minister is responsible for the infrastructure relevant to his or her ministry. This approach hampers the determination of priorities for infrastructure investments. A unified policy regarding these investments should therefore be formulated. A national authority should be set up, e.g., a ministerial committee for the infrastructure, to set up priorities for the various infrastructure projects, determine their general framework, and, together with developmental entities, draw up and review detailed investment plans.

Another problem associated with infrastructure investment is the fact that projects do not progress as planned, and almost always exceed the timetable set for them (e.g., the *Natbag* 2000, Jubilee Port, Carmel Tunnels, and gas infrastructure projects will be completed far behind time). In order to ensure that timetables are kept, the future infrastructure authority should monitor progress, pinpoint and remove blockages, and submit frequent progress reports to the government—possibly even on a quarterly basis. At present, the socio-economic cabinet is responsible for projects defined as national, and a minister has recently been appointed to the Ministry of Finance with responsibility for initiating and monitoring government tenders concerning the infrastructure and removal of any blockages which arise. Nevertheless, as stated, it would be better if a national authority for the infrastructure were set up.

In order to enable infrastructure investment to be increased, it is necessary to expand the stock of projects that have been approved and make land available for them. The approval of projects takes time, involving a long-term planning process which must take all the various future national needs into account. This could be speeded up by abbreviating the process by which planning permission is granted.

Infrastructure reforms proceed more slowly in Israel than in the advanced economies, although recently some progress has been made in this area. The reform of the railway was begun in 2003; the Public Works Department has been disbanded and its activities transferred to a public corporation; in 2003, in the framework of the Economic Arrangements Law, it was decided to privatize the electricity industry, and the government decided to alter the structure of the ports, turning them into independent public corporations.

The regulation of activity in the various infrastructure spheres, such as electricity, gas, and communications, must be done via a national authority (which is not financed by one or another of the ministries) rather than via a government ministry, as an independent authority is less subject to political pressure and is able to take a long-term view. It is necessary to regulate the electricity industry, which is currently partly under the Electricity Authority and partly under the aegis of the Ministry for Infrastructure, and place it entirely under the control of the Electricity Authority.[1] The Gas Authority in the Ministry of Infrastructure is responsible for the gas network. At the beginning of 2003 the government undertook to change the regulation of the communications market which, as is customary in most advanced economies, will henceforth be under the responsibility of a national communications authority rather than a government ministry.

The various infrastructure spheres

There has been under-investment in the infrastructure in Israel for many years, and the recommended annual investment in the coming years is NIS 18 billion.[2] Investment in the transport infrastructure is insufficient, so that by western standards road and rail intensity is low, and road congestion high. The development of inter-urban and suburban railways lags behind accepted western standards, the airport infrastructure is in need of improvement, and ships are obliged to wait in line outside the ports. In order to close the gaps, it is necessary to increase investment in the transport infrastructure to about NIS 9 billion a year.[3]

Progress should be made on the construction of access roads to the Cross Israel Highway in order to increase the return on it, and this should be done subject to considerations of economic viability. It is not clear whether investment in the inter-urban railway will yield the appropriate return. Investment in the railway has soared in recent years, and further development is imminent in the wake of the decision of the socio-economic cabinet in 2003 to connect all towns with over 50,000 inhabitants to the railway. An ambitious development plan for the railway that has been approved involves investment of NIS 20 billion over five years. On the one hand, this expresses a long-term approach, while on the other, it creates a long-term commitment to suppliers. Note, however, that yield per kilometer of track is relatively high on the railways when the network is developed, and low when it is not.

Most investment in communications is private, and the government's task is regulatory. The use of the communications networks for mobile

[1] See Box 1.6.

[2] According to an estimate in Bank of Israel (2003), *Recommendations for Economic Policy, 2003–2008*.

[3] See previous note.

phones, broadband technology, and TV digitization is relatively extensive in Israel by international standards.

Israel has reserves of natural gas that will suffice for 7–9 years, so that it is in a position of strength when negotiating the price of gas with suppliers abroad. In order to maintain this position later on, Israel must maintain a stock of natural gas. The use of natural gas, even taking the investment in the gas infrastructure into account, is very worthwhile on a national economic level as it is far cheaper than the alternatives. Although natural gas was discovered in 2000, it began to be used only at the beginning of 2004, the delay being due to the dispute regarding the route of the pipeline. The Eshkol power station began to use natural gas instead of crude oil in early 2004.

The shortage of water requires a comprehensive solution, combining the regulation of water rates and production fees, in order to manage demand as well as to increase supply. In 2003 water rates for agriculture rose by 9.2 percent, and for households by 7.4 percent. Water rates, especially for agriculture, do not reflect its marginal cost, and should gradually be brought into line with this. Investment in the water system rose by 34 percent in 2003, mainly because of the increase in desalination.

In 2003 the government decided to import 50 million cubic meters of water a year for 20 years from Turkey. The cost of this is far higher than that of desalination: 1 cm. of imported water costs 105–115 US cents, while desalination costs 60 cents, and 50 cents in one of the plants. Hence, the excess cost of imported water is NIS 100–150 million a year for 20 years.

The infrastructure industries comprise transport, communications, energy, and water. The transport infrastructure consists of roads, railways (excluding rolling-stock), and sea- and air-ports. The communications infrastructure excludes mail services as these are not considered part of the infrastructure. The energy infrastructure includes electricity, the oil refineries, gas and oil exploration, and gas and oil pipelines. The water infrastructure includes water pumping and desalination, the pipelines bringing water to the distributory authority, and the sewage network. The infrastructure industry provides inputs for production for the other principal industries and final use by households, and is capital-intensive.

In 2003 investment in the infrastructure accounted for 28 percent of total investment in the principal industries, up by about 9.1 percent over 2002, when it declined (Table

Table 1.24
The Infrastructure and Investment in it, 1995–2003

	Communications	Transport and infrastructure[a]	Energy	Water	Other[a]	Total infrastructure
Capital stock at end 2002[b] (NIS billion, current prices)						
Composition (%)	258.7		64.7	14.1		337.5
Real change (%)	76.7		19	4		100
Average 1995–99	7.5		6.4	–1.6		7.5
2000	7.02		3.78	–2		7
2001	6.51		4.05	–2		7
2002	3.67		4.41	–2		4
2003	1.83		7.92	–1		2
Gross investment in 2002 (NIS billion)	3,248	6,071	7,335	1,302	232	18,188
Composition (%)	18	33	40	7	1	100
Real change (%)						
1998	14.1	9.5	–6.9	7.8	–22.4	3.4
1999	4.4	–11.0	–17.1	–7.4	–15.1	–8.7
2000	32.3	13.5	–16.2	–7.9	–6.1	7.8
2001	–6.6	14.7	12.2	–13.5	4.9	4.1
2002	–25.1	9.0	6.2	1.8	0.0	–3.7
2003	–24.8	–5.4	53.6	35.0	0.9	9.1
Share of gross investment in GDP (current prices, %)						
Average 1995–99	1.0	1.0	1.3	0.3	0.1	3.6
2000	1.2	0.9	0.8	0.2	0.04	3.1
2001	1.1	1.1	0.9	0.2	0.05	3.2
2002	0.9	1.2	1.0	0.2	0.04	3.2
2003	0.7	1.2	1.5	0.3	0.05	3.6

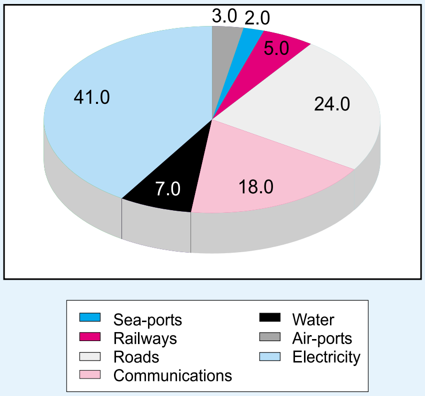
[a] Investment involving preparatory development work.
[b] There is no decomposition of capital stock according to the new definition of infrastructure, so that the data in the table refer to communications and transport.
SOURCE: Based on Central Bureau of Statistics data.

Infrastructure investment accounted for 28 percent of nonresidential investment in 2003—up by 9.1 percent over 2002, when the latter declined. In 2003 investment fell in transport, and plummeted in communications, whereas in energy and water it soared.

1.24). Investment in transport dipped in 2003, and plummeted in communications, but soared in energy and water. As a share of GDP, infrastructure investment declined consistently in the late 1990s, stabilized in 2000, and rose again in 2003, to 3.6 percent of GDP. With regard to the composition of infrastructure investment in 2003, a major role was played by transport, which accounted for 33 percent, and energy, which constituted 40 percent, while the share of communications diminished, and that of water and sewage was very small (Figure 1.19).

The proportion of total infrastructure investment financed or implemented by the public sector declined in 1996–2000, stabilized in 2001, and has risen in the last two years, to stand at 76 percent in 2003 (Tables 1.25a and 1.25b). The decline in the share

Figure 1.19
Distribution of Infrastructure Investment, 2003 (percent, current prices)



SOURCE: Based on Central Bureau of Statistics data.

The share in total infrastructure investment of infrastructure investment financed or implemented by the public sector rose, to stand at 76 percent in 2003, while the share financed by the private sector declined.

of finance and implementation not in the hands of the public sector was due mainly to the contraction of investment in communications, which is in private hands. Private finance and implementation of investment in the transport infrastructure also dipped in 2003, with the conclusion of work on the Cross Israel Highway, and the rise in private investment in gas did not offset the decline in communications and transport. In the public sector there was an increase in the share of public corporations in both financing and implementation of infrastructure investment in 2002–2003, largely because of the marked expansion of investment by the Israel Electric Corporation. In the next few years the financing and implementation of infrastructure investment via public corporations will soar as a result of the expected growth in investment by the Israel Railway.

Table 1.25a
Investment by Financing Sector, 1995–2003

(percent)

	Public sector			Private sector[a]	Total public *plus* private sector
	Total	General government	Public corporations		
1995	87	29	58	13	100
1996	87	29	57	13	100
1997	86	29	57	14	100
1998	80	30	50	20	100
1999	75	28	47	25	100
2000	63	26	37	37	100
2001	63	27	36	37	100
2002	72	32	40	28	100
2003	76	31	45	24	100

[a] The private sector includes mainly the Cross Israel Highway in transport, most of the oil and gas infrustructure in energy, and all communications and sea- and air-ports.

SOURCE: Based on Central Bureau of Statistics data.

Table 1.25b
Investment by Implementing Sector, 1995–2003

(percent)

	Public sector[a]				Total public
	Total	General government	Public corporations	Private sector[b]	*plus* private sector
1995	87	20	67	13	100
1996	87	21	65	13	100
1997	86	19	67	14	100
1998	80	19	61	20	100
1999	75	17	58	25	100
2000	63	16	47	37	100
2001	63	18	46	37	100
2002	72	18	53	29	100
2003	76	17	59	24	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.
SOURCE: Based on Central Bureau of Statistics data.

Transport

The product of the transport industry contracted by 1 percent in 2003, after its growth had been halted in the two preceding years. Activity in the industry declined, primarily in public transport, due to the security situation.

The product of the transport industry dipped by 1 percent in 2003, after its expansion had been checked in the preceding two years. Investment in this industry declined by 7.6 percent, after falling by 7.7 percent in 2002. Nevertheless, the industry's capital stock continued to rise during the year, and its labor input increased by 5 percent (Table 1.26). Prices in the industry fell by about 1 percent relative to the rest of the business sector (Table 1.27).

Activity in the industry contracted in 2003, despite the recovery of tourism and the turnaround in economic activity, due primarily to the decline in the product of public transport as a result of the security situation. The unit cost of labor in the industry rose by about 3.5 percent in 2003, because of the 5 percent fall in labor productivity and 1.5 percent decline in the real wage (deflated by producer prices) per employee post.

Table 1.26
Transport, Main Indicators, 1995–2003

(annual change, constant prices, percent)

	1995–2000	2000	2001	2002	2003
Total gross product	4	6	2	0	–1
Gross investment	8	6	16	–8	–8
Employees	3	0	–1	–5	6
Labor input	3	2	–4	–6	5
Labor productivity	1	3	6	7	–5
Cost to producers[a]	4	3	4	2	–1.5
Real wage[b]	2	2	2	–4	–2.5

[a] Adjusted for transport and communications prices.
[b] Deflated by the CPI.
SOURCE: Based on Central Bureau of Statistics data.

Table 1.27
Prices and Real Output in Transport and Communications, 1999–2003

(annual rate of change, percent)

	Share of GDP	Real output					Relative prices[a]				
	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Land transport	33	1	3	1	1	–1	–4	1	0	–8	1
of which Trucks	19	1	4	2	2	1	–7	0	0	–11	0
Buses	7	–3	2	–6	–4	–6	0	3	2	–2	4
Taxis	7	6	0	7	9	–1	–8	–4	1	–7	3
Trains	1	32	25	28	6	18	65	–2	–19	–15	–14
Marine freight		4	9	–3	9		1	0	–4	–8	
Air services		9	8	–9	0		–6	–14	1	6	
Other[b]	10	2	8	16	–9	3					
Total transport	60	2	6	2	0	–1	–3	–1	–2	–4	–1

[a] Normalized by the business-sector-product deflator.
[b] Including travel agents, storage and car parks.
For source, definitions and calculation method see notes to Appendix Table 1.A. 32.

The share of transport in business-sector product fell to some 7.6 percent, but the significance of this industry is greater than this ratio indicates. This infrastructure industry yields considerable external benefits; the services of a large part of its capital—roads—are not included in the product of transport, but in that of the industries which use it (excluding the Cross Israel Highway, which is a toll road). Thus, for example, the shift of passengers from public to private transport is recorded as a decline in the industry's product.

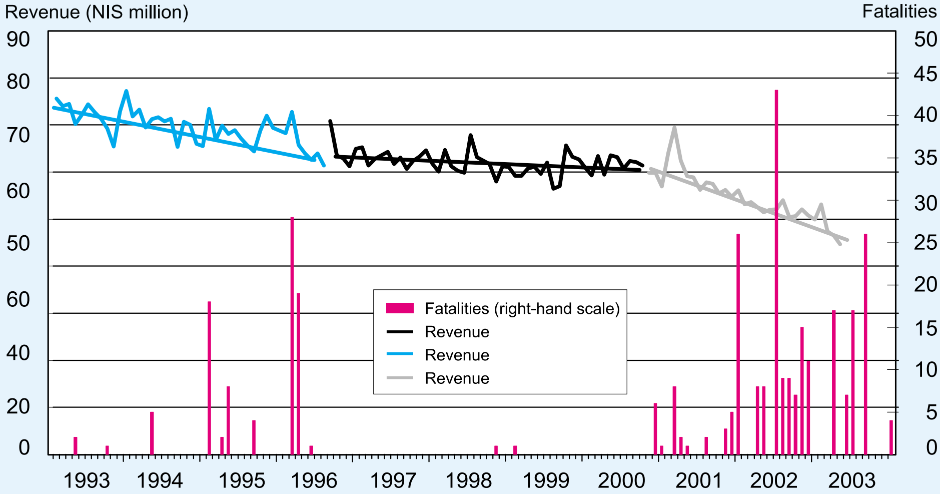
Table 1.28
Investment in Transport, 1998–2003

(current prices, percent)

	Investment in 2003		Real change					
	Actual (NIS bill.)	Percent	1998	1999	2000	2001	2002	2003
1. Transport infrastructure (excl. vehicles)	6.1	40.8	9	–11	13	15	9	–5
of which Air-ports	0.3	2.1	44	37	89	–63	81	–12
Sea-ports	0.5	3.5	18	–24	–62	235	6	–15
Land transport	5.2	35.2	7	–14	10	26	5	–4
of which Roads	4.3	28.9	4	–18	18	30	–2	–7
Trains	0.9	6.1	76	3	–13	–2	83	18
Other[a]	0.02	0.1	–40	25	–60	3	–36	–50
Total vehicles	7.7	51.5	–16	40	4	13	–28	–23
of which Passenger cars	3.6	24.2	–4	–1	34	–9	–22	–12
Ships and planes[b]	0.2	1.6	–75	1,199	–66	182	–61	–81
Other[c]	1.1	7.7	–10	28	85	6	–39	69
Total	14.9	100	–8	21	9	13	–18	–13

[a] Including bus-stops, central bus stations in Tel-Aviv and Jerusalem, and local authority bus services.
[b] Excluding exports, including roads and railways.
[c] Including mail and package delivery, transport services, storage.
SOURCE: Based on Central Bureau of Statistics data.

Figure 1.20
Israeli Fatalities in Bus Bombings[a] and Revenue from Bus Services,[b] 1993–2003 (monthly data)



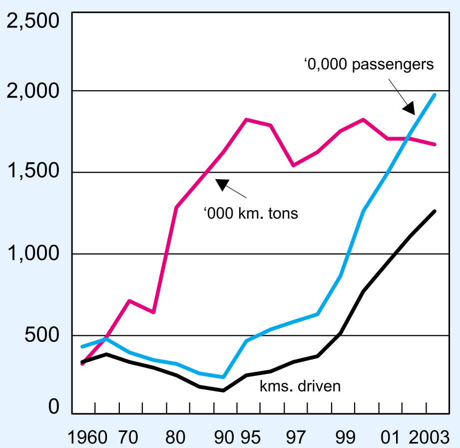
[a] In buses and at bus-stops.
[b] Revenue from passengers on public buses on fixed routes; monthly, seasonally adjusted data at 1990 prices.

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

The product of buses fell by about 6 percent in 2003, an acceleration of its long-term trend (Table 1.28). The share of bus use in passenger transport is declining constantly, due to the greater resort to private transport. This is characteristic of advanced economies, and stems primarily from the rise in the standard of living: the increase in the number of private automobiles per person increases suburbanization, which makes public transport less efficient, further exacerbating the number of private automobiles per person. In Israel the security incidents have also contributed to this, and in the last three years the product of buses has fallen by about 16 percent (Figure 1.20). Greater use of trains also serves to reduce bus product to some extent.

In contrast with the contraction of the product of most spheres of land

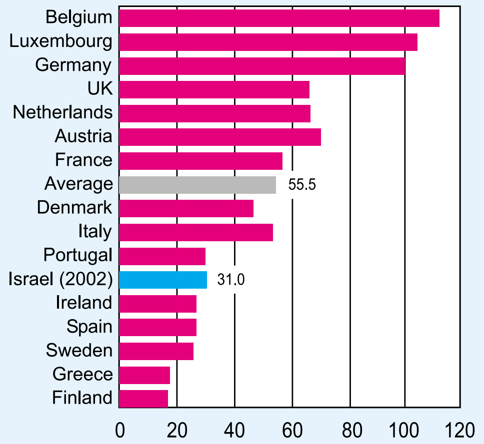
Figure 1.21
The Use of the Railway,[a] 1960–2003



[a] Annual data from 1995; till then, every fifth year.

SOURCE: Central Bureau of Statistics.

Figure 1.22
Rail Intensity in Israel and Selected European Countries, 2001 (ratio of kms. of rails to area of country)



SOURCE: Central Bureau of Statistics and European Union, *Energy & Transport in Figures*, 2003.

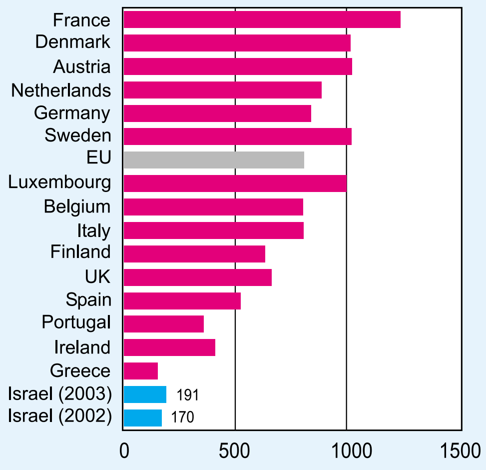
transport, that of trains soared in 2003, due to a combination of growing road congestion and improved rail services, following the vast increase in investment in them (Figure 1.21). Israel's railway network is not sufficiently developed; rail area per square kilometer is about half the average in Europe, and the number of kilometers traveled by train is lower still (Figures 1.22 and 1.23). Consequently, the return on the railway is not high either, because in a developed network the lines benefit one another, and the return on them rises. The product of the transport services not specified here—mainly parking, storage, cold storage, and travel agencies—rose by about 3 percent in 2003.

The product of the railway rose steeply in 2003.

Investment in the transport infrastructure—which does not include transport vehicles—declined by 5.4 percent in 2003, after rising slowly in 2002 (Table 1.28), while investment in roads fell. There was a turnaround in investment in the railway, after many years of neglect, and this increased significantly; the railway was separated from the ports authority and became a public corporation, making its accelerated development possible. Investment in the railway grew by 18 percent in 2003, after an increase of 83 percent in 2002 (see section below on investment and structural change in the railway). On the other hand, investment in the sea- and air-ports fell, and the construction of the principal projects—*Natbag* 2000 and the Jubilee Port—is behind schedule. Investment in the railway is expected to increase in 2004, and to fall in roads and ports. Regarding roads, the emphasis in 2004 will be on completing existing projects (Figure 1.24).

Investment in the transport infrastructure declined by 5.4 percent in 2003.

Figure 1.23
Rail kms. per Passenger in Israel and Selected European Countries, 2002 (average per passenger)



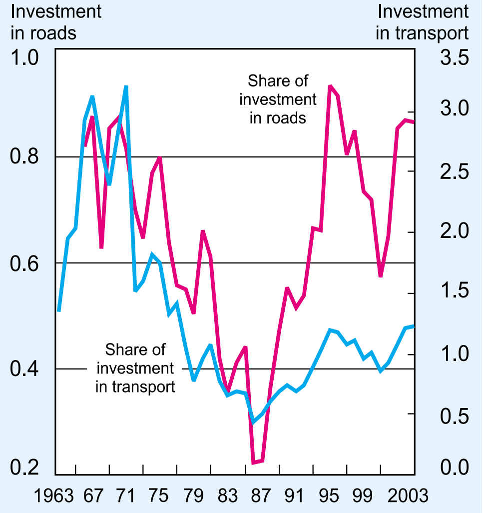
SOURCE: Central Bureau of Statistics and European Union, *Energy & Transport in Figures*, 2001.

Road congestion and intensity, and lane intensity

Road congestion is higher in Israel than in the advanced economies, in spite of the improvement of the last year.

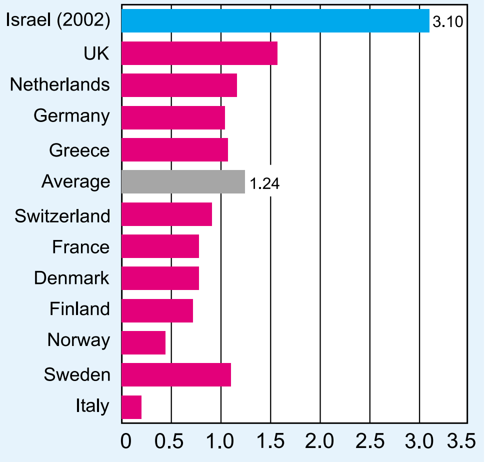
Road congestion in Israel is higher than in the advanced economies: kilometers driven per kilometer of road are two and a half times as great as the average in the west (Figure 1.25), although this is an improvement over 2002. Road intensity[27] in the advanced economies is 60 percent greater than in Israel (Figure 1.26), and highway-intensity is also greater (Figure 1.27). When making comparison, however, it should be borne in mind that because of Israel's long, narrow shape, the length of the roads needed in order to provide a given level of kilometers driven per kilometer of road is lower than in countries which are broader. Hence, the indices of road length in Figures 1.25 and 1.26 bias Israel's place in the scale

Figure 1.24
Share in GDP of Investment in Roads and Transport, 1963–2003 (percent or GDP)



SOURCE: Based on Central Bureau of Statistics data.

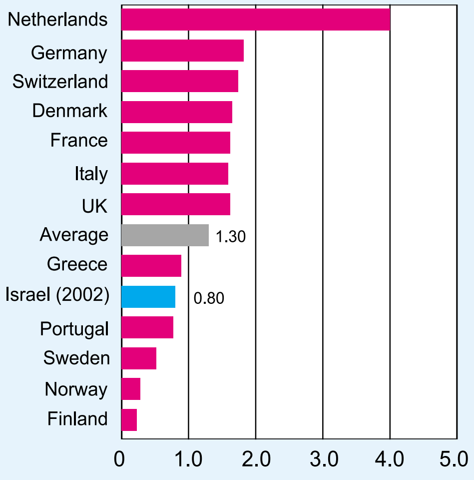
Figure 1.25
Index of Road Congestion, International Comparison, 2000 (adjusted[a] journey per km. of road)



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

SOURCE: Central Bureau of Statistics and IRF, *World Road Statistics*, 2003.

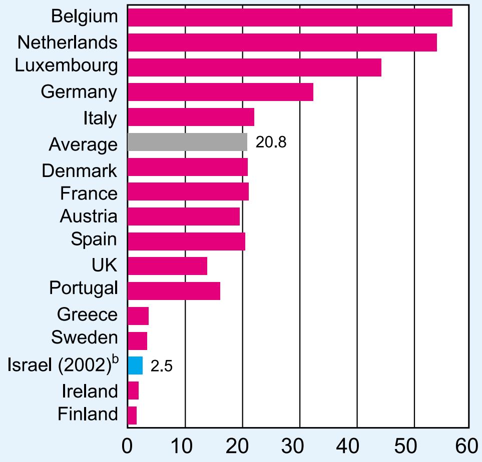
Figure 1.26
Road Intensity, International Comparison, 2001 (kms. of road divided by surface area of country)



SOURCE: Central Bureau of Statistics and IRF, *World Road Statistics*, 2003.

[27] Road kilometer per land area.

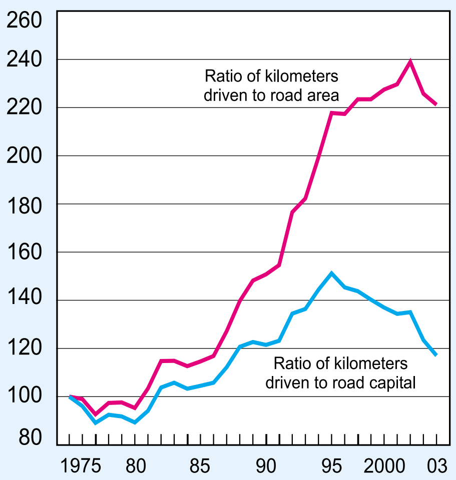
Figure 1.27
Intensity of Highways,[a] 2001 (road meters/country size)



[a] A highway is defined as follows: high speed limit, wide shoulders on road, and at least two lanes.
[b] In 2003, with the construction of the Cross Israel Highway, the figure for Israel is 6.

SOURCE: Israel: Based on Central Bureau of Statistics data; Europe: European Union, *Energy & Transport in Figures*, 2003.

Figure 1.28
Indices of Road Congestion, 1975–2003 (1975 = 100)



SOURCE: Appendix Table 1.A.36.

downwards.[28] In effect, much of the incremental road surface in Israel in recent years represents expansion of existing roads rather than the construction of new ones. The rise in road capital has also exceeded that in road area, as in the last few years investment has focused on building intersections (Figure 1.28).

The railway: investment and structural change

After many years of neglect, there has been a turnaround in investment in the railway infrastructure in recent years and this has risen significantly. Investment in the railway is expected to continued rising appreciably in 2004–2008, in the wake of the decision of the socio-economic cabinet in 2003 to connect the railway in a network serving all towns with over 50,000 inhabitants. According to estimates made by the Israel Railway, the number of passengers is expected to increase from 19.9 million in 2003 to 54.2 million in 2008. An ambitious plan to expand the railway, involving expenditure of NIS 20 billion over five years, has been approved. While this expresses a long-term view, it also creates an inelastic long-term commitment to suppliers.[29] In order to advance the development plan, the railway was separated from the ports authority and became a public corporation, enabling it to raise capital independently (under government guarantee, Table 1.29)

Investment in the railway infrastructure has risen substantially in recent years, and is expected to continue to grow in 2004–2008.

[28] A more appropriate scale—kilometers driven per road surface area, or road surface area per total land area—is not available for all countries.

[29] Part of this commitment is financed from the national budget, and part is recorded as investment in share capital.

Table 1.29
Long-Term Program for the Railway, 2003–2008

(cash disbursement, NIS million)

	Estimated cost	Financing under development agreement	Completion date
Railway lines, Project A	321	123	2003
Railway lines, Project B	1,122	668	2004
Railway lines, Project C	2,124	2,109	2005
Railway lines, Project D	1,444	1,444	2006
Railway lines, Project E	2,366	2,366	2007
Freight infrastructure	9,410	9,410	2008
Improvement of control & supervision system	120	120	2004
Other	3,860	3,860	2008
Total		**20,000**	

SOURCE: Israel Railway, Development Program, 2004.

The railway line affects transport both directly and indirectly. It brings the periphery closer, optimizes land use, creates less damage to the environment than roads, and causes fewer accidents than private automobiles. There is greater resort to trains in western Europe than in Israel. In Europe the ratio of railway kilometers per passenger to average per capita use of inter-urban public transport is very high, and in some cases accounts for one third, whereas in Israel it is relatively small. It is not clear, however, whether the optimum share in Israel is the same as it is in the advanced economies.

The Ministry of Finance is currently examining the economic viability of transport projects, including the railway. It has found that the rate of return on roads is generally higher than that on public transport projects, especially railway lines. Nevertheless, investment in railway lines, especially in the central region, may be preferable to investment in roads, because the accepted viability criteria are more appropriate for roads than for the railway. Thus, for example, the criteria do not take into account the fact that the relative return per railway line is greater if the rail network is developed and lower if it is not, as is the case in Israel. In Israel the length of the railway line relative to land surface is about half the average in Europe, and the number of kilometers traveled by rail per person is lower still. Consequently, the return on the railway is not high given the current state of the railway, as in a dense network the lines nourish one another, causing the return on them to rise.

For objective reasons, the viability criteria do not incorporate all the benefits which derive from using public transport, and the railway in particular. These include freeing economic sources, e.g., through purchasing fewer private automobiles and taking less parking space, while adding more roads actually reduces resort to public transport. According to the criteria, lines in the central region have a higher rate of return, while that of lines in the periphery is lower. Note, however, that the criteria do not take the benefit of bringing the periphery closer to the center into account. Consequently, the criteria should be reviewed and revised in order to better reflect transport projects within the framework of a comprehensive, long-term national investment program. The criteria should not be applied to all aspects of the program, because even if the policymakers have their own set of priorities, such as bringing the periphery closer to the center, the rate of return on all the projects should also be taken into account.

Regulation and privatization of the transport industry (structural changes)

Privatization of El Al: the company is a major element in Israel's air travel industry. In recent years it has been undergoing a severe crisis which has imperiled its very existence. The government privatized it in order to provide it with the tools it needs in order to withstand the growing competition in the industry and the changing business environment.[30]

El Al was privatized in 2003, in order to enable it to contend with growing competition in the airline industry. It was decided to privatize the Public Works Department and transfer its activities to a new public corporation to deal with the planning, development, construction, and maintenance of inter-urban roads on an outsourcing basis.

Sale of Zim: at the beginning of 2004 an agreement was signed to sell the State's holdings of the Zim shipping company, in return for $ 115 million.

Dismantling the Public Works Department: the Department is a support unit of the Ministry of Transport and is responsible for developing and maintaining Israel's network of inter-urban roads. It is in charge of all the development stages—planning, implementation, and long-term maintenance—and hence incorporates many professional units, currently comprising 770 employees. For many years the actual costs of implementing projects have exceeded predicted costs and, in the absence of an incentive to complete projects rapidly, utility to the economy declined. The conclusion was that the Department's organizational structure prevented it from operating efficiently, and the government decided to transfer its activities to a new public corporation which will operate along the lines of a consultancy, dealing with the planning, development, construction, and maintenance of inter-urban roads on an outsourcing basis.

Structural change in the sea-ports: Israel's commercial sea-ports are currently operated by the Ports Authority. Because of its centralized structure and decision-making process, the ports are not economically or commercially independent, so that there is no competition between them. This has negative repercussions on the economy, especially as regards foreign trade, including high costs paid by users, low output relative to other ports, low and inefficient utilization of the infrastructure, ships having to wait in line outside the ports, frequent interruptions of the activity of the ports, and cross-subsidization of rates.

It is not generally considered appropriate for the activity of ports to be conducted within the framework of a central authority. In the past decade many ports all over the world have undergone structural changes making each one of them economically and commercially independent. These have led to a marked increase in their output, significant drop in costs to users, and notable improvement in the level of service.

[30] Options to purchase El Al shares were issued on the TASE in 2003. The government's ownership of the company will start to decline from early 2004.

In 2003 the government decided to change the structure of the sea-ports.

In 2003 the government of Israel decided to introduce structural changes in the ports, the main ones being: the various ports will become independent public corporations; a public corporation was set up to lease government assets to the port corporations and be responsible for the future development of the ports; a Ports and Shipping Authority, responsible for long-term planning of ports and for regulating their efficient and competitive activity, was established within the Ministry of Transport. This meant that ownership was separated from operational activity, thereby encouraging competition while increasing activity. However, because of opposition from the workers and the Federation of Labor, it is not clear whether the structural change will in fact be implemented. Note, in this connection, that the Jubilee Port should operate as a separate company from Ashdod Port.

The bus transport industry continued to be opened up to competition.

Buses: the opening of the industry to competition is continuing. By the end of 2003 the activity of private bus lines was permitted in some 8 percent of the activity of the Dan and Egged cooperatives. The tenders opened to date have resulted in prices which are up to 35 percent below those previously in force, as well as an improvement in the level of service, and in the frequency and size of buses.[31] In addition, according to Ministry of Finance figures, wherever new operators have entered the market the number of passengers using public transport has risen.

Communications

The product of the communications industry rose by 17 percent in 2003 due to the marked increase in the return on capital.

The product of the communications industry (which includes communications, mail, and deliveries) rose by about 17 percent in 2003, due to the notable increase in the return on capital (Table 1.30), compared with the 1.8 percent growth of business-sector product as a whole. This industry is dynamic, due to its openness to competition and technological improvements—two factors which feed one another. In 2003 competition in the broadband internet sphere, multi-channel and satellite TV, and the transmission and communication of data continued. In recent years labor input in the industry has expanded more than product, so that its labor productivity has declined. The industry is capital-intensive, so that a change in the number of employees has only a slight effect on its product; in the long run investments in the infrastructure and technology lead changes in GDP.

Investment in communications expanded notably in recent years because it was opened up to competition, but it has fallen in 2001–2003.

In previous years investment in the industry rose due to its openness to competition in the spheres of mobile telephony, international calls, and multi-channel and satellite TV, but recently investment in these areas has diminished. As a result, total investment in the industry fell by 24 percent in 2003. Although currently there is a swing to new technologies, such as 2G mobile telephony and the digitization of multi-channel and satellite TV and broad-band data transmission, whose infrastructure has expanded considerably, investment in them is less than in the past.

Three-digit industries

Internet: broad-band internet service has expanded considerably, thanks to the competition created by awarding the cable companies a permit to supply the service so

[31] See Box 1.6 in Chapter 1 of Bank of Israel, *Annual Report* 2002.

Table 1.30
Communications, Main Indicators, 1995–2003

(annual change, constant prices, percent)

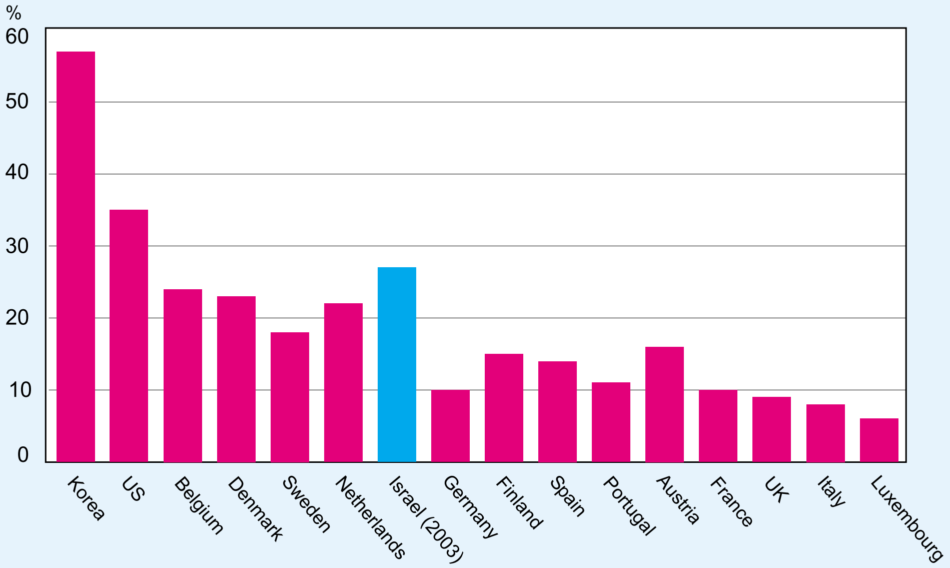
	1995–2000	2000	2001	2002	2003
Total gross product	7	–2	3	1	17
of which Communications	9	–1	4	2	20
Mail & deliveries	–2	–8	–2	–3	–1
Capital stock	12	33	–8	–25	–24
Employees	14	30	12	4	0
Labor input	14	33	9	4	–1
Labor productivity	–6	–26	–5	–2	18
Cost to producers[a]	2	–4	–1	–4	–2
Real wage[b]	0	0	–2	–8	–1

[a] Adjusted for transport and communications prices.
[b] Deflated by the CPI.
SOURCE: Based on Central Bureau of Statistics data.

that its penetration rate rose from 11 percent of households in 2002 to 27 percent in 2003, a high rate by international standards (Figure 1.29). 51 percent of the population had access to the internet in 2003, compared with 68 percent in the US and 48 percent

The broad-band internet service expanded considerably in 2003.

Figure 1.29
Penetration of Broad-Band Technology into Households, International Comparison, 2003



SOURCE: Ministry of Communications data, based on USA and Korea: Nielsen Net Ratings, September 2003; Europe-ECTA, September 2003.

in the UK.[32] The proportion of persons in Israel who made purchases via the internet was relatively high—18 percent, compared with 15 percent in the rest of the world.

Fixed phone lines: the rates charged by the Israel Telecommunications Corporation (Bezeq) are declining in accordance with the path delineated in the Ministry of Communications' Gronau Report. Most of the change is in the cancellation of the minimum rate per call, and reduction of peak rates. The combination of these measures reduced the overall rate by 23 percent. The total effect on Bezeq's revenues, combined with the hike in the monthly usage fee and reduction of mutual call rates, was to lower rates by 6 percent. Bezeq's revenues also fell as a result of greater use of mobile phones.[33]

Regulation prior to opening the fixed phone market to competition, apparently in September 2004, continued.

Regulation continued prior to the opening of fixed line telephony to competition, apparently in September 2004. The Kroll Committee appointed by the Minister of Communications in the wake of the failure to open the domestic communications sphere to competition to date, recommended that the conditions for the immediate opening up of this sphere be relaxed, and this was accepted by the government. Furthermore, the cable companies were allowed to unify, and in return undertook to provide a universal (national) telephony service. The unified company has undertaken to provide a commercial service (to a limited number of customers) as of end-2004.

Mobile telephony: rates in this sphere rose in real terms in 2003, and the number of subscribers grew by 3 percent. Rates for calls between different cellular providers and between them and Bezeq will continue to be reviewed in 2004. Cellular providers have a monopoly over incoming calls, and the Ministries of Communications and Finance will take economic advice as regards pricing this service.

International calls: the volume of movement rose by 9.3 percent in 2003, after soaring in 2002. The price of international communications rose every year from 2000 to 2003, despite the reduction of the access fees the providers pay Bezeq. In spite of the government decision to open the sphere to additional providers in January 2004 (after postponing it for a year because of pressure from the communications companies), competition did not increase because of decisions made by the responsible minister.

At the beginning of 2003 the government decided to change the regulation of the communications market.

Regulation of the communications market: at the beginning of 2003 the government approved a change in the way this market is regulated. As in most advanced economies, this will henceforth be done by a national communications authority instead of a ministry. This means that the authority which regulates all aspects of the subject will have a better all-round view of the situation due to the unification of the telecommunications and broadcasting infrastructures, and will be able to determine regulatory policy and

[32] The figures are based on the GO international internet survey undertaken in 2003:IV by the TNS research group. The figures in the table refer to the adult population in all countries. The proportion of Israelis surfing the internet is calculated for those aged 18 or over. The survey was undertaken in Israel by TNS Telephone Surveys. The question referred to internet access, which need not necessarily be via a subscription. Consequently, there is a marked discrepancy between its results and the rate of internet subscribers (Table 1.31), according to the CBS survey of family expenditure.

[33] According to the Gronau Report, Bezeq's rates are among the cheapest in the world, and its profitability is not low.

rules. It should be able to discharge its functions independently, as well as to reduce the power of the political echelon responsible for communications. The process of

Table 1.31
Household Ownership of Communications Equipment, 1997–2002

(percent)

	1997	1998	1999	2000	2001	2002
Computer	33.5	36.6	40.7	47.1	49.8	53.8
At least one phone line	95	94.3	94.4	94.4	91.7	90.9
At least one mobile phone	37.8	44.5	52.3	63.5	73.8	78.8
Two or more mobile phones	7.2	9.2	14.5	26.8	37.7	44
Cable or satellite TV subscription	62.9	61.9	65.7	70.1	73.2	71.9
Internet subscription	4.6	8.2	11.9	19.8	22.5	25.4

SOURCE: Based on Central Bureau of Statistics data.

establishing it has been delayed, and the bill is scheduled for its first reading in the Knesset only at the end of 2004, with implementation during 2005.

Mail: a mail company has been established, and the activity of the Postal Authority will be transferred to it at the beginning of 2004, enabling efficiency to be increased. In March 2003 the sphere was opened to competition, albeit to a limited extent so as not to impair the continued provision of postal services throughout the country. Competitors may provide relatively expensive services, mainly deliveries, express, registered, and international mail and packages weighing over 500 grams. As regards the remaining services, including regular mail and mass mailings, the Postal Authority retains exclusive rights. In accordance with the recommendations of the Mackenzie Consultancy, the government decided that the next step will be to open 20–30 percent of the mass mailing and regular mail services to competition in mid-2005.

A mail company was established, and the activity of the Postal Authority will be transferred to it early in 2004, making mail processing and delivery more efficient.

Issues concerning energy

The energy industry comprises electricity, oil, and gas. It is characterized by marked economies of scale, so that while there is some justification for the existence of natural monopolies, primarily in the sphere of pipelines, whose activity is controlled by the State, competition should be encouraged, mainly as regards production and distribution. Since energy inputs are a vital resource for economic activity, and most of them are imported, it is necessary to regulate the activity of the industry and ensure that there are adequate reserves. The industry is capital-intensive, and in 2003 it accounted for 11.3 percent of total nonresidential investment, mostly by the government. In 2003 investment in electricity expanded by 47 percent, and in gas and oil by 93 percent (Table 1.32).

The share of investment in energy (electricity, gas, and oil) in total nonresidential investment was 11.3 percent in 2003, most of it by the government. Investment in the electricity industry rose by 47 percent, and by 93 percent in oil.

Table 1.32
Investment in Energy Infrastructure, 1996–2003

	Total	Electricity	Gas
NIS billion			
Composition of investment in 2003	7.3	5.9	1.4
Rate of investment	100	81	19
Real change (%)			
1996	9	19	–13
1997	23	30	–62
1998	–7	–7	–63
1999	–17	–19	–51
2000	–16	–23	0
2001	12	6	57
2002	6	9	–8
2003	54	47	93

SOURCE: Based on Central Bureau of Statistics data.

Box 1.6
The Electricity Industry: Structure and Reforms

Israel's electricity industry currently consists of two entities: the Israel Electric Corporation, which is the sole provider of electricity, and the Public Utilities Authority, Electricity (henceforth the Electricity Authority), which serves as a regulatory body.

The Electric Corporation, the largest infrastructure company in Israel, is a controlled monopoly which operates in four segments: establishing power stations, and generating, transmitting, and distributing electricity, in all of which it has a monopoly. Its generating power in 2003 was 10,000 megawatts. Consumption of electricity rose by an annual 7 percent in 1998–2000, and fell by 2.8 percent in 2001 and 2002. According to data provided by the Electric Corporation, the number of its employees[1] has declined over the years, the reliability of supply has risen (according to a weighted average of the number of minutes of power outages, whether initiated or not), and in the two spheres of implementation Israel is currently close to the average in the advanced economies. The capital stock of electricity accounts for 19 percent of the infrastructure capital stock.

[1] According to the Labor Force Survey of the CBS, in 2003 some 15,000 employees worked in generating, transmitting, and distributing electricity.

The Electricity Authority was set up in 1996 along the lines of similar authorities elsewhere. It is an independent body with a budget allocated directly by the State. The role of the Authority is to determine electricity rates and regulate the relations between the supplier (the Electric Corporation) and the consumer. The Ministry for the Infrastructure sets policy regarding the electricity industry, determining the Electric Corporation's development plans and allocating permits to entities operating within the industry.

For several years the Electric Corporation has been undergoing a process intended to increase efficiency and reduce costs per kilowatt hour. The rate at which efficiency is to be increased is determined by an analysis of the cost of its services and an international comparison of its performance.

From 1991 to July 2002 a special committee for the electricity industry, the Fogel Committee, set the overall efficiency coefficient for the company. In July 2002 the Electricity Authority introduced a new method: *by-segment efficiency coefficients*. The Authority divided the corporation, on paper, into three segments: generation, transmission, and distribution. The efficiency required of the Electricity Corporation in inputs is intermediate in the generation segment, low in the transmission segment, in which the Corporation is relatively efficient, and high in the distribution segment, where it is less efficient. The coefficient of reduced consumer costs, such as reading and installing meters, issuing bills, and the call service (103), was high because the Corporation was not found to be efficient in that segment.[2] The system of by-segment efficiency coefficients is preferable to the overall efficiency coefficient recommended by the Fogel Committee, as it distinguishes between segments, at least theoretically, in order to avoid cross-subsidization, and prepares the ground for structural differentiation.

In the last decade there has been a real increase in efficiency in the Electric Corporation. It is almost certain that its rating on the efficiency scale of companies of its kind elsewhere was better in 2002 than in 1990. The Corporation has not attained the return to capital set by the Authority, however, because of expenditure that is not recognized by the Authority. Hence, the actual increase in efficiency is less than would have been attained had the Corporation achieved the required return on capital. Regulation, no matter how good, cannot be better than competition. The EU has also determined in its policy guidelines on this subject that controlled competition should be instituted in the electricity industry.

[2] An international comparison of electricity corporations undertaken by the Authority upheld its conclusions: in the segment where the Corporation was found to be least efficient as regards costs, it was less efficient than other companies elsewhere. See N. Ben-Aderet, Z.S. Stern (2003), "International Electric Utilities Benchmarking Study," Public Utilities Authority, Electricity.

The reform of the electricity industry: the purpose of the reform, which was approved by the Knesset in June 2003, is to make the electricity industry more efficient by creating a competitive structure, in accordance with the trend elsewhere.[3] The reform is expressed in the structural differentiation between segments in the chain of electricity, followed by privatization and the creation of competition in the industry. The stages of the reform are as follows:

1. The Electricity Corporation will be divided into three independent segments: a. generation of electricity; b. transmission of electricity; c. distribution and supply of electricity. The segment of a company to set up a new infrastructure for generating electricity is specifically excluded from the law.
2. Three or four companies will deal with the generation of electricity.
3. Four or five companies will deal with the transmission and distribution of electricity, on a regional basis.
4. The transmission company will be registered as a holding company, which holds shares in generating and distributing companies until it sells them to private investors and the public.

Timetable: by 2006, division into three independent segments; in 2006–2012, gradual division of the generating company into three or four companies and their privatization; division of the distribution and supply company into five regional companies, and their privatization.

The plan to reform the electricity industry in Israel is in line with the trend evident in several advanced economies in the last twenty years. The reforms implemented in many countries included the structural reorganization of the industry, its division into several competing companies, and their privatization.

On the basis of the proposed reform process, Tishler et al.[4] examined prices of electricity in a simulation of competition in Israel's electricity industry, and reached the following results: at the first stage rates are expected to go up, because of the increase in the return on private capital; at the second stage rates will go down and operating costs, especially those associated with manpower, will decrease significantly. Similar trends emerged when structural changes were made in the electricity industries of other countries.

The experience of other countries has shown that the reform of the electricity industry incurs risks that are unique to it—such as the inability to accumulate stocks—so that considerable production capacity is necessary.

[3] See preceding note. The international comparison bore out the conclusion that a competitive structure is more efficient than a non-competitive one.

[4] Consultant to the Electric Corporation, A. Tishler, J. Newman, I. Spekterman, C.K. Woo (2003), "Cost-Benefit Analysis of Reforming Israel's Electricity Industry," Tel Aviv University.

The transmission system must have excess capacity, and this requires a high level of investment in it. The cost of failing to supply electricity is very high (100 times as great as generating costs).

When only one company generates, transmits, and distributes electricity and its central control is capable, an uninterrupted supply of electricity can be guaranteed at a relatively low cost. On the other hand, sub-dividing the industry requires increasing the generating and transmission reserves in order to compensate for the absence of central control, expected difficulties in coordinating activities, and conflicts of interest between producers as well as between the generation and transmission of electricity. The private generating companies will not want to increase the reserves, as unutilized reserves reduce the return on capital, so that it is important to divide generation laterally (this should be examined at the privatization stage, it is not relevant at the structural change stage). Similarly, the private generating companies will not favor the existence of a perfect transmission system, as the absence of such a system reinforces their market power in the supply areas close to the power station. Transmission is a natural monopoly and should therefore remain in the hands of the government.

The timetable for reform in Israel is slower than that considered acceptable elsewhere, and for a very long time—2006–2011—the Electric Corporation will continue to be the dominant body. Under the planned reform, the transmission monopoly will be responsible for a small share of generation, 5–10 percent, to enable it to manage the load efficiently. It is evident that if demand exceeds supply true competition will not exist. Consequently, in order to create competition of this kind in the electricity industry there must be an unutilized reserve.

Note that Israel's experience in the field is limited, there has been little public discussion of the subject, and only one study of it has been undertaken.[5]

Issues which are not tackled under the reform

1. The relations between the controlled entity (the Electric Corporation) and the Authority, and the concentration of authority in the electricity industry: at present it is difficult to control the monopoly because the apex of the system is twofold, with some authority in the hands of the Ministry for the Infrastructure and some in the hands of the Electricity Authority. A single body, with an overall view of the situation, should supervise the monopoly, so that the authority to set rates and allocate generating permits is in the hands of a single entity. One possibility is to dismantle the Electricity

[5] The study recommends delaying the reform because the advantages it provides are small relative to the risks involved (see preceding note).

Authority and transfer its authority to the Ministry for the Infrastructure, another is to transfer the authority of the Ministry for the Infrastructure to the Electric Corporation. Currently, the favored option in other countries is to concentrate responsibility for the electricity industry in the hands of an independent Authority which is less susceptible to political pressure from a ministry and takes a long-term view. This has been recommended by the various committees which reviewed Israel's electricity industry, and a similar suggestion was also included in the first version of the Public Utilities Authority: Electricity Law.

2. Combining private electricity generators: the existing system of tenders does not promote competition because it does not involve entrepreneurial risk. According to this system, the entrepreneur should be repaid for the capacity to generate electricity in any event, irrespective of whether the generating station produces electricity or not, on the basis of a 20-year contract which, if signed, will hold back the introduction of competition into the field. In order to promote competition, it is advisable to transfer some of the risk to the entrepreneur, e.g., require it to sell some of the electricity it generates to consumers, thereby creating competition with the Electric Corporation. The sole advantage of the current situation is that a private entity constructs the power stations, so that the Electric Corporation's debt/capital ratio does not increase.[6]

3. The infrastructure company segment: an important segment within the Electric Corporation which has been omitted from the structural changes introduced in the law is the infrastructure segment. The infrastructure department is responsible for planning the infrastructure (for generation and transmission) and is experienced in managing large projects. This department should be privatized so that it competes with other entities involved in infrastructure construction. This will prevent the Electric Corporation from benefiting from cross-subsidization, bringing about greater transparency and rationalization of its manpower.

[6] It is almost certain that a power station does not cost a private entrepreneur less.

The natural gas industry

It was decided that the Electric Corporation would construct the undersea natural gas pipeline.

Natural gas, in an amount sufficient for 7–10 years, has been found at the Israeli-controlled Marie Field. This gives Israel bargaining power regarding the price of gas when negotiating with foreign suppliers.

Piping gas by sea or by land: a tender for sea and land gas pipelines failed, and it was decided that the Electric Corporation would construct the sea pipeline. The pipeline from Ashdod to the Dor Beach has received statutory approval, and will cost $ 250–300 million. An alternative to the sea pipeline is the land pipeline from Gezer to Hagit, which will cost only about $ 100 million, and is currently in the process of obtaining statutory approval. This path will enable large consumers other than the Electric Corporation (of which there are only a few) to consume natural gas. Both options are very worthwhile for the economy, as natural gas is much cheaper than the other fuels currently used by the Electric Corporation. However, according to the assessment made by the Ministry for the Infrastructure, the process of approving the land alternative will take longer than that of the sea option. Two calculations, one made by the Ministry for the Infrastructure, and the other by the Ministry of Finance, neither of which take either the benefit of the land path to large consumers or to the quality of the environment into account, conclude that under the existing circumstances the two options have the same present value.

Regulation: in 2003 the Natural Gas Law was amended to enable a pipeline license to be granted to a public corporation. The Natural Gas Pipe Company was established and is expected to set up and operate the natural gas system in Israel. At the beginning of 2004 gas began to be piped to the Eshkol power station at Ashdod.

The government wants to split the oil refineries up into two companies, thereby leading to competition in the oil refining segment. It has decided to appoint a team to make recommendations about this.

Competition in the oil refining segment: in 2003 the franchise granted by the British Mandate to the Oil Refineries under the B.O.T. system[34] came to an end. The company, which has two centers, in Haifa and Ashdod, has a monopoly in the oil refining segment because the costs of transporting refining agents from abroad are very high. Israel wishes to split the refineries into two companies, thereby introducing competition into this sphere. This is the conclusion that arises from the Gronau Report of 1996, which states that a split of this kind can lead to annual savings of $ 20–40 million by annulling the loss of welfare due to the existence of a monopoly and lower likelihood of a strike.

The welfare arising from annulling the monopoly will almost certainly grow, as supervising a monopoly—no matter how beneficent—cannot be as efficient as competition. Thus, the controlled price of refining agents in other refineries (which is international) is significantly higher than that at which the oil companies import them. The monopoly prefers to export refining agents at a relatively low price, i.e., to reduce the amount on the domestic market, rather than to sell them in that market at a price below that paid by other refineries.

There is no way to split the refineries without the agreement of the Israel Corporation, which holds 26 percent of its shares, compared with the 74 percent of them that are controlled by the State of Israel. The split is being held up by a dispute over the assets used by the refineries. The State claims that all the assets belong to it, and the corporation disputes this. If not all the assets are the State's, the value of the refineries increases, as does the compensation the State must pay the Israel Corporation. An agreement with the Israel Corporation has been prepared in the Ministry of Finance, but the State Comptroller has criticized it, and a suit has been filed with the Supreme Court on the subject by the Movement for the Quality of Government. The main criticism of the agreement is that the State is making the Israel Corporation a gift of the fee for the right to use its assets and that the franchise for fifty years is too long. The government decided to set up a team to examine the issue and make its recommendations regarding the split.

[34] Build, Operate, Transfer.

Water

The water shortage requires a composite solution, comprising chiefly the regulation of water rates and pumping fees, and the management of supply, as well as the expansion of the water supply.

The water industry was in crisis in 2001 and 2002, due to protracted over-pumping, especially in the 1990s. The plentiful precipitation of the winter of 2002–2003 improved the hydrological balance, although in 2004 it will still be necessary to restrict demand for sweet water in agriculture and induce saving in the urban sector in order to limit damage to water sources as far as possible.

The shortage of water requires a composite solution, including first and foremost the regulation of water rates and pumping fees to manage demand,[35] as well as an increase in the water supply. The price of water for agriculture rose by 9.2 percent in 2003, and for household consumption by 7.4 percent. The price of water, especially for agriculture, does not reflect its marginal cost, and should gradually be brought into line with it. Investment in water systems—developing existing sources and expanding supply, which constituted 2 percent of nonresidential investment in 2003—was up by 35 percent due mainly to the expansion of desalination.

In 2003 the government decided to import water from Turkey, even though this is far more expensive than desalination.

The expansion of the water supply is made possible by desalinating brackish water, which is generally a cheaper option than desalinating sea-water or importing sweet water.

Importing sweet water from Turkey: in 2003 the government decided to import 50 million cubic meters of water at a cost of 105–115 cents per cm. The cost of desalinating water is 60 cents at the most, and as little as 50 cents in one of the plants. Hence, the excess cost of importing water rather than desalinating it is NIS 100–150 million a year for twenty years.

Desalinating sea-water: in 2003 the social cabinet decided to desalinate sea-water to the extent of 315 million cm. It is worth examining this decision as the main way of dealing with the water problem is by rates. A sea-water desalination plant to process 100 million cm. a year is being constructed at the head of the Eilat-Ashkelon pipeline in Ashkelon. The plant is financed under the B.O.T. system for 25 years, and is expected to start providing water at the beginning of 2005. The government has signed agreements to build and operate three sea-water desalination plants, each to produce 30 million cm., at Palmachim, the Haifa Bay area, and western Galilee. Another agreement is expected to be signed for a plant in the Ashdod area. The plants will be financed and operated under the B.O.O. system.[36] The developers have not yet managed to finalize the transactions financially, mainly because of the conditions imposed by the financing banks. Two more desalination plants are in various stages of being planned.

Desalinating brackish water: in 2003 an agreement was signed between the Ma'agan Michael kibbutz and the Mekorot water company whereby the company will buy 8.5 million cm. of desalinated brackish water annually from the kibbutz for piping to the national water supply. Similar agreements, accounting for up to 6 million cm. of water, are expected to be signed in the Carmel beach area and at Neveh Yam. Another five

[35] See press release, The Desired Water Policy, Bank of Israel, 09/2003 (Hebrew).

[36] Build, Operate, Own. Under this system, in contrast with B.O.T., the developer does not transfer the asset to the State at the end of the agreed period.

plants for desalinating brackish water under the ownership of Mekorot are in various stages of the planning and execution process.

Structural change of Mekorot: the company is one of the largest infrastructure companies in Israel. It deals primarily with pumping and supplying water to the various consumers, as well as dealing with certain other aspects of the water industry, mainly implementing projects for external entities. The company employs some 2,100 workers and, under the Water Law, constitutes the national water authority which disburses most of the budget for developing water projects in Israel.

In 2002 the government decided to make a structural change in the Mekorot company. The main object of this was to establish a clear distinction between supplying water, which is a natural monopoly and will be implemented by Mekorot, and other activities which should be competitive, such as establishing and operating projects for purifying and piping urban water, within the framework of a development company. At the beginning of 2004 an agreement was reached in principle between the Ministry of Finance, the Ministry for the Infrastructure, the Federation of Labor, and Mekorot to implement this structural change.

Appendix 1
The Major Transport Infrastructure Projects

General

The Cross Israel Highway (Highway no. 6): the entire main section of the highway is open. Work began in November 1999, and the cooperation with the private sector yielded a high level of construction as regards both quality and speed. The government decided to extend the highway northwards (from the Iron Junction to the Elyakim Junction), and work on this, which is financed from the budget, has begun. The possibility of extending the highway southwards (from Gedera via Kiryat Gat to Beersheba) is being discussed.

Carmel Tunnels: work on the tunnels (under the B.O.T. system) has been delayed because of the protracted statutory process involved, and in the meantime the financing body has withdrawn from the agreement. At the beginning of 2004 initial contacts were made with an alternative financing entity.

Public transport

Public transport lanes: two major projects to add public transport lanes at the entrances to Jerusalem and Tel Aviv are planned. The entrance to Tel Aviv will be implemented under a private concession, and the preliminary tender was published at the end of 2003. The excess capacity that is not utilized by the buses will be offered for paid use by private vehicles.

Jerusalem light railway: under the B.O.T. system a concession has been granted. The installation of the infrastructure is expected to be completed by the time the concession obtains financing, and the operation of the railway is expected to begin in late 2006.

Tel Aviv light railway: under the B.O.T. system, a tender was published at the end of 2003 for a 21-kilometer light railway on the Petach Tikva-Tel Aviv-Bat Yam line, and construction is expected to begin a year later. Concurrently, the project administration is working on the statutory processes and the installation of the infrastructure for the railway line (apart from the section that will be underground). Construction is expected to take about six years. The cost of the first line being examined is in the region of $ 800 million. An additional light railway, from Holon to the Arlosorov station in Tel Aviv, most of it above ground, is under examination.

Natbag 2000: development of the first stage of this project (Terminal 3) will be completed in mid-2004, behind the original timetable, with a total investment of some $ 800 million. Initially, the terminal is intended to serve about nine million passengers a year, affording far better conditions than those currently available.

Haifa airport: no progress was made on this in 2003. Under the B.O.T. system, the project is expected to double the length of the landing strip. It is also intended to make use of the supplementary services of other projects, such as the Carmel Tunnels and the Haifa Bay Highway.

Sea-ports: the Jubilee Port is expected to open at the beginning of 2005, behind the original timetable.