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

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).

Investment in infrastructure fell by 21 percent compared with 2003.

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 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.

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

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

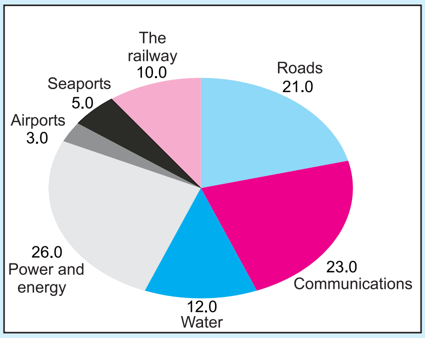
The infrastructure industries are the transport, communications, energy and water infrastructures. Transport infrastructure is comprised of roads, the railways (excluding locomotives and rolling-stock), the seaports and the airports. Communications infrastructure does not include the mail services, which 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.

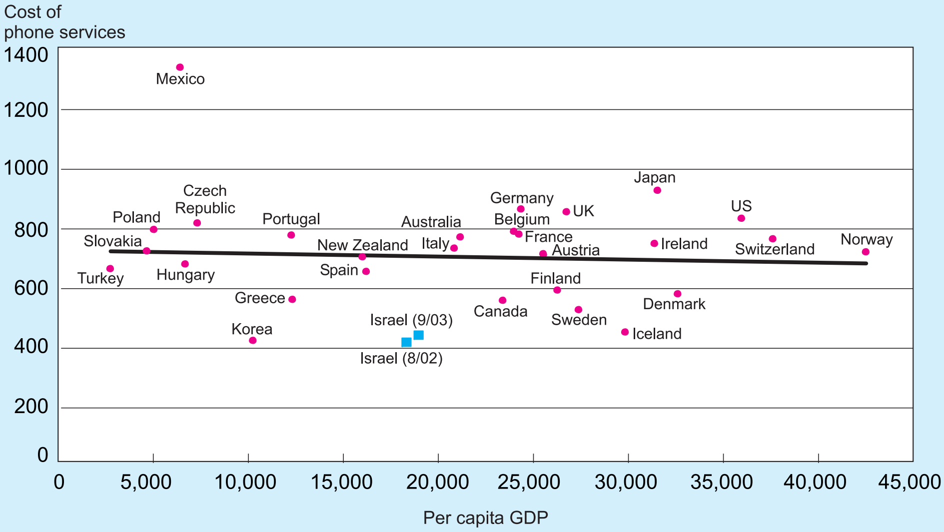
[10] Reuven Gronau, 2004, Supervision of the Telephony Industry in Israel, Sapir Forum.

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 goverment 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

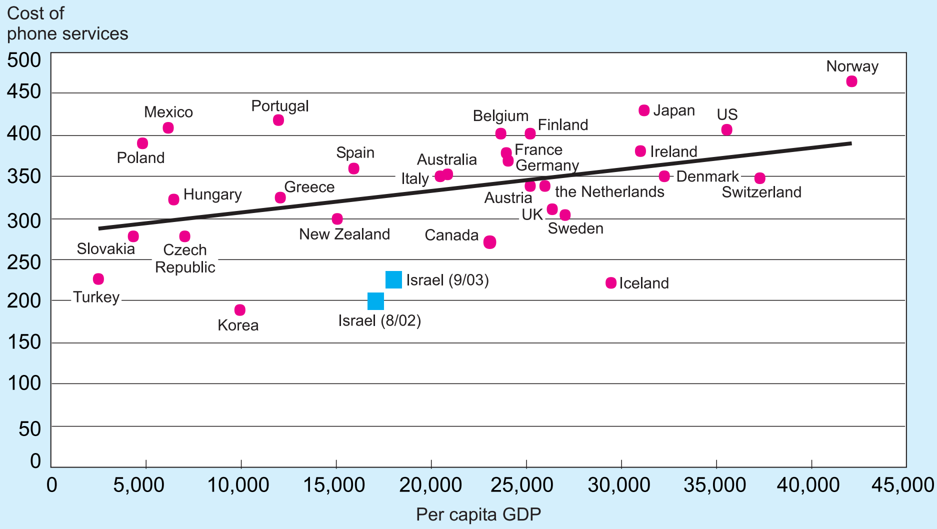
Per Capital GDP and the Cost of Telephone Services to Businesses in the OECD,[a] August 2002 ($)



[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.

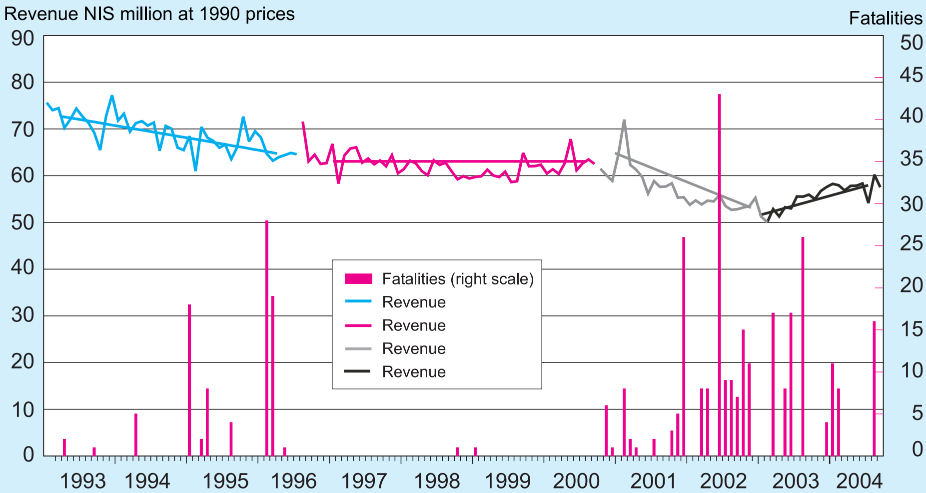
The product of buses rose by 7 percent in 2004 after falling heavily during the previous three years.

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

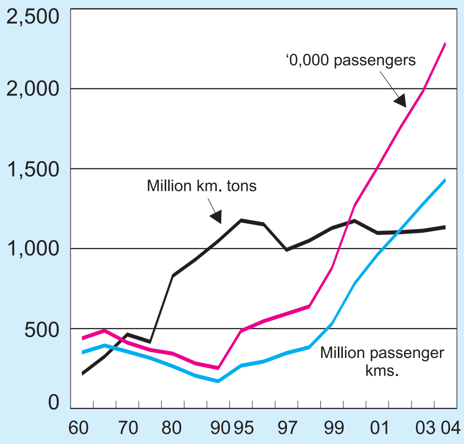
Table 1.26
Prices and Real Output in Transport, 1999–2004

(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.

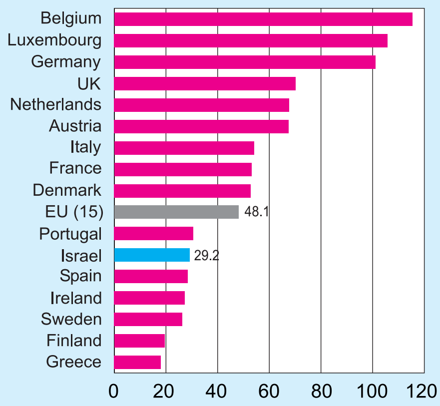
Figure 1.16
The Use of the Railway,[a] 1960–2004



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

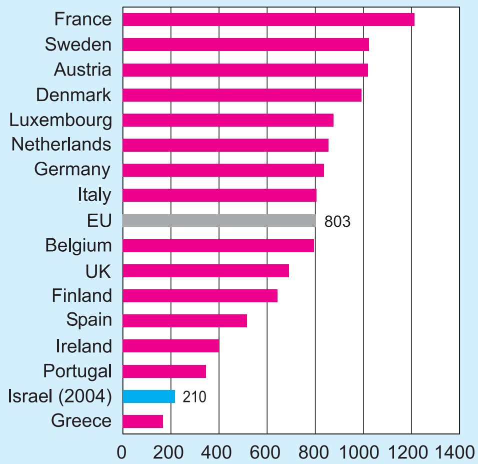
SOURCE: Central Bureau of Statistics.

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.

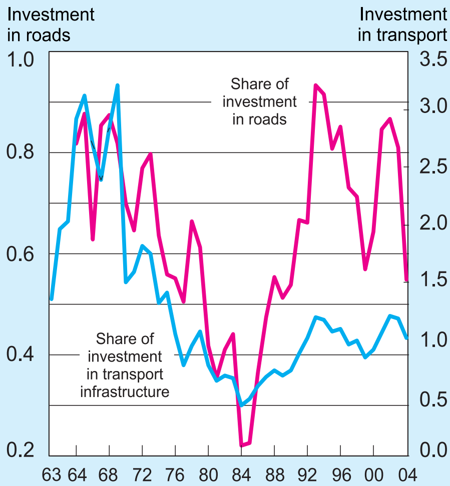
Table 1.27
Investment in Transport, 1998–2004

(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)



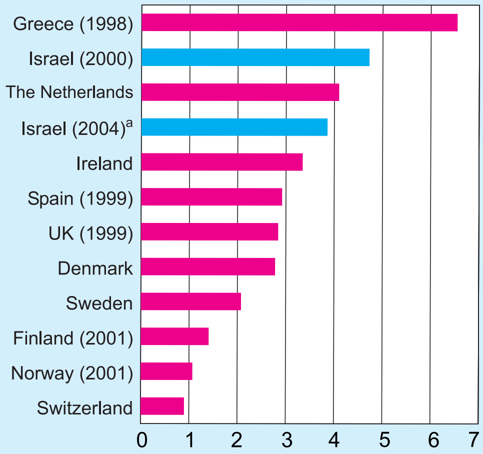
SOURCE: Based on Central Bureau of Statistics Data.

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



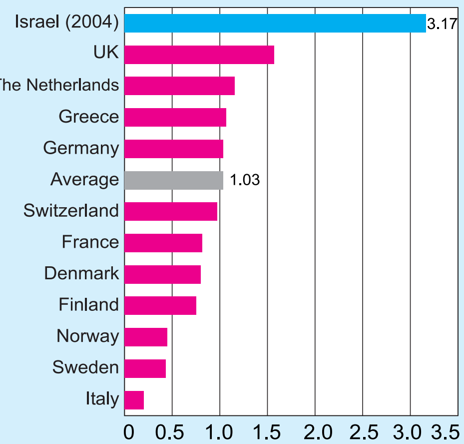
[a] Estimate.

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.

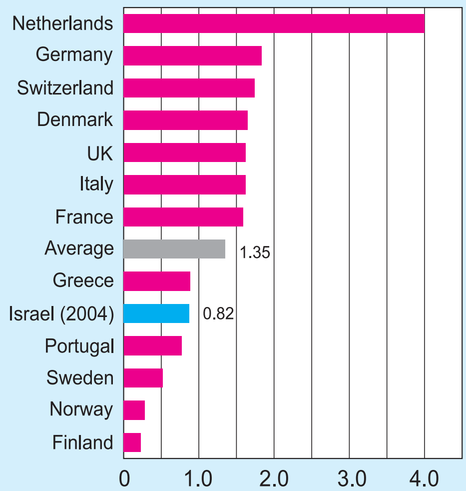
Figure 1.21
Traffic Volume per Km of Road,[a] 2002



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

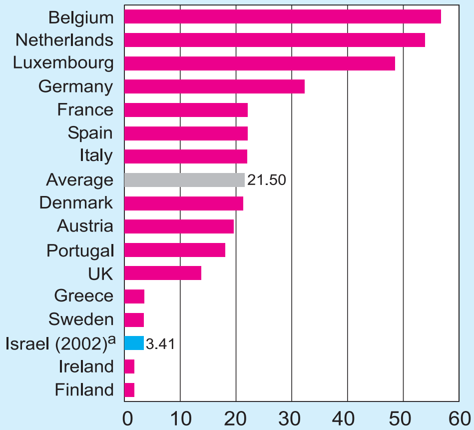
SOURCE: Data for 2004–the Central Bureau of Statistics; Europe–IRF, World Road Statistics, 2004.

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.

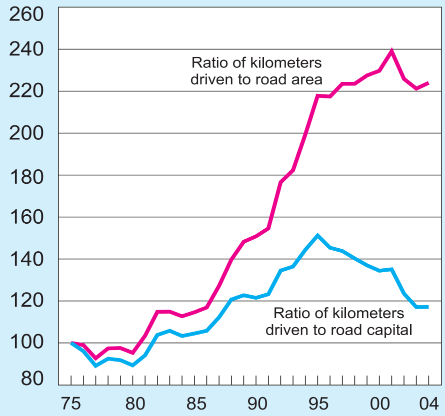
Figure 1.23
Intensity of Highways, 2002
(road meters/country size)



[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.

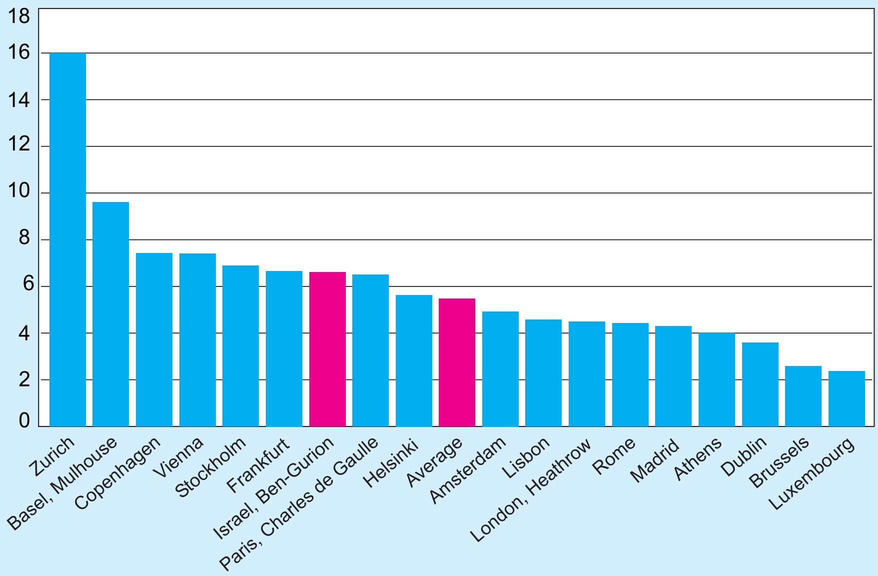
Subcontracting: In the area of commercial activity, the authority is authorized to transfer activity to contractors, and many of the services at Ben Gurion Airport are now provided by private entities. The services in question consist mainly of commercial activity and part of the services that are provided 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.

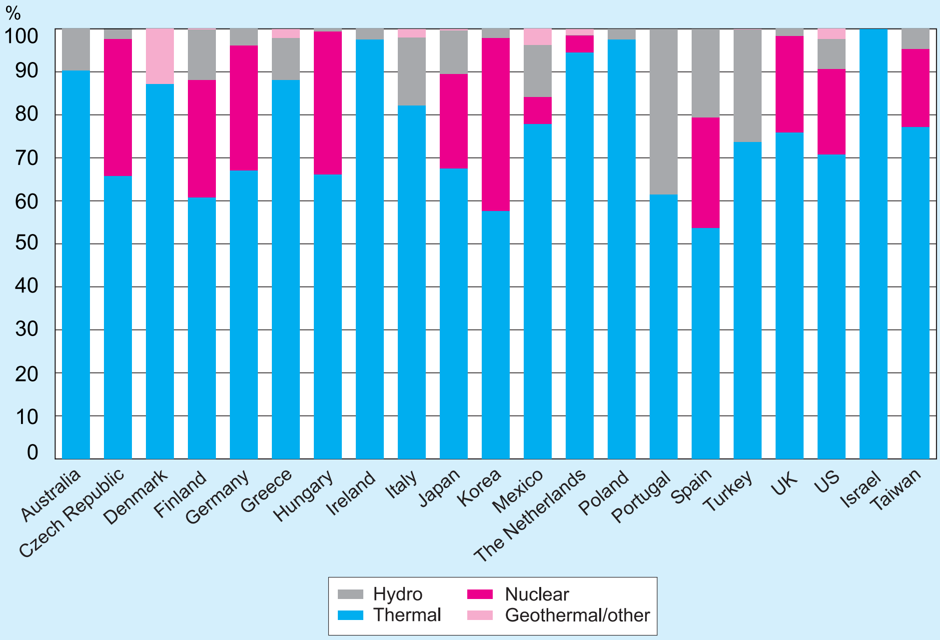
production companies should be encouraged. This will only be possible if they are supplied with natural gas and are permitted to sell electricity not only to particularly large consumers and to the Electric Corporation, but also to the distribution companies, that is, compete with the Electric Corporation 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.

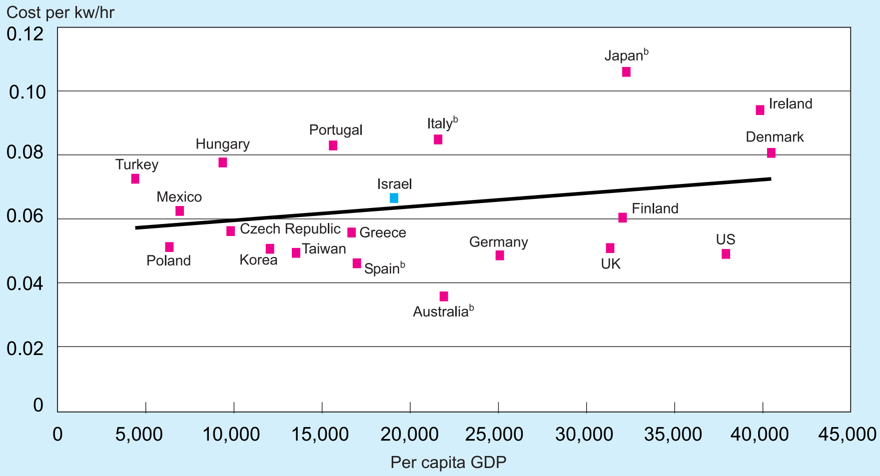
[12] Although problems caused by price differences will emerge, since electricity distribution to a high-density region is less expensive than distribution to a low-density region, there are ways of averaging the prices in order that the payments that will be charged from the consumers will be uniform.

Electricity Production by Source of Energy, 2003



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

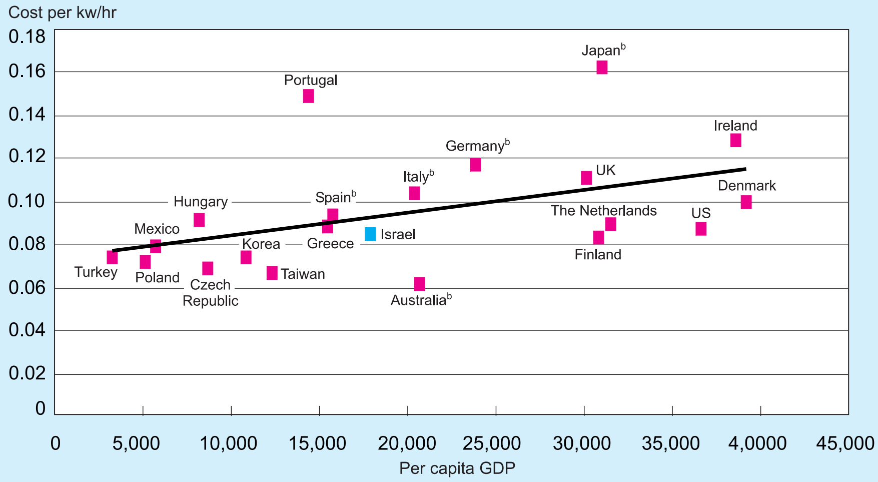
Per Capita GDP ($) and the Average Price of Electricity[a,b] for Industry ($ per kw/hr), 2003



[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.