Recent Economic Developments

135

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Recent Economic Developments will be appearing in a new format. Beginning with the current publication, it will be published every half year. The first part includes a macroeonomic review and a fiscal survey. The macroeconomic review will describe the main economic developments which occurred during the period covered in the publication, and will then focus on a major economic issue during that period, rather than continue to present a wide-ranging description and analysis of current economic developments. The fiscal survey will analyze fiscal developments in light of the budget targets, and from a long term perspective. This is intended to complement, rather than replace, the comprehensive analyses which appear in the Bank of Israel Annual Report. The second part of the publication continues to present analyses by the Research Department of relevant topics in Israel's economy.

Part 1: Economic Developments and Fiscal Survey

The Israeli economy continued growing at a moderate rate (2.7 percent) during the past two quarters (October 2012–March 2013), against the background of the slowdown in global economic growth, and particularly the economic crisis in the European Union. Private consumption and civilian public consumption continued to grow during this period, but the growth in demand was moderated by the sharp decline that took place in defense consumption during the first quarter of 2013; a large part of this decline apparently reflects the effect of government cash flow due to the delay in approving the budget. Investment declined throughout the reviewed period, inter alia against the background of pessimism in the business sector and a decline in building starts compared to the first half of 2012.

Business sector activity was moderate toward the end of 2012, and strengthened somewhat at the beginning of 2013. Industrial production and domestic sales in the goods and services industries declined toward the end of 2012, but began recovering at the beginning of 2013, which was also expressed in the rate of increase in the Composite Index, which accelerated slightly. Activity reports in the Business Tendency Survey also showed moderate improvement, particularly in the services industry, alongside expectations of a minor improvement in this sector in the near future.

At the beginning of 2013, the government operated without an approved budget because the elections took place at the end of January and coalition negotiations lasted into March. Compared to the beginning of 2012, expenditures in the framework of the continuance budget increased, with a marked increase in civilian expenditures and a decline in defense expenditures. In parallel, there was a moderate growth in government revenue from taxes with some acceleration in indirect tax collection starting at the beginning of 2013. The combination of expenditure and revenue developments in the past 12 months led to a cumulative deficit of 4.2 percent of GDP. The high level of the deficit led the new government to decide upon a large fiscal adjustment, which will be reviewed later in this report (see the fiscal review, p. 8).

The moderate growth was accompanied by stability in the number of employed persons since the middle of 2012, and in light of the growth in the population, this is expressed in a slight decline in the employment rate. The low unemployment rate also declined somewhat (to 6.5 percent in the first quarter of 2013), but in parallel, the job vacancy in the business sector rate also declined slightly. These developments were supported by growth in employment in the public services, as employment froze in the business sector industries. Alongside these developments, there was an accelerated increase in real wages since the middle of 2012, particularly in the business sector industries. This unusual combination—an increase in the real wage and the slowdown in employment, which seemingly characterize soaring demand coupled with a shortage of workers, alongside moderation in demand—are discussed from a sectoral point of view in the next section of this report.

The current account of the balance of payments returned to a surplus at the end of 2012 and the beginning of 2013. Goods and services exports (excluding diamonds and start-ups) increased in the first quarter of 2013, following a sharp decline in the last half of 2012. In parallel, the decline in goods and services imports that characterized 2012 was halted. During the next year, the surplus in the current account is expected to gain support from the fact that natural gas from the "Tamar" field will replace the expensive fuels being imported to the electricity grid, and from the decline in the prices of fuel and commodities around the world. Throughout the period, until the reduction of the Bank of Israel interest rate in May and the declaration of the extended foreign currency purchasing program, the appreciation of the shekel continued, and even accelerated during the second quarter of 2013.

Inflation during the reviewed period was low, and moderating demand in the economy apparently contributed to its slowdown. In contrast, the increase in home prices resumed. In order to reduce the risks in this market, the Supervisor of Banks limited the loan-to-value ratio as of November 2012, and instructed the banks to increase their capital adequacy ratio for mortgages and their doubtful debt provisions in February 2013.

The Bank of Israel lowered the interest rate four times during the reviewed period (for November 2012, for January 2013, mid-May 2013, and for June 2013) against the background of low inflation and the marked appreciation in the shekel during the first few months of 2013. Monetary policy was also affected by the continued expansionary monetary policy in the US, in the eurozone, in the UK and in Japan, as well as by the reduction in the interest rates in both other advanced economies and in emerging economies. The effect of the lower interest rate on mortgage rates was moderated by the aforementioned measures that the Bank of Israel took in relation to housing credit.

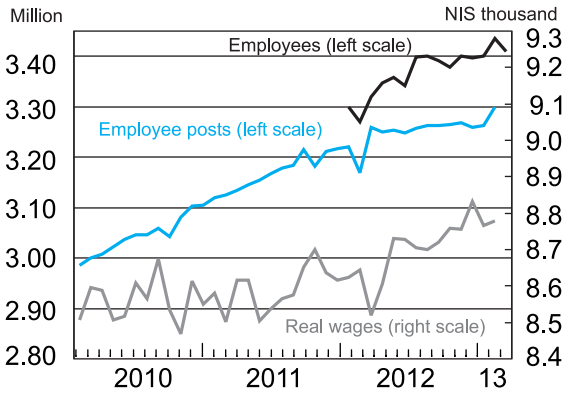
The Slowdown in Employment and the Increase in Real Wages in Business Sector Industries

- The slowdown in the growth of employment in the economy derives from employment in business sector industries essentially standing still in the last 3 quarters of 2012, and declining in the first quarter of 2013, against the background of the slowdown in economic activity and in exports. Continued employment growth in the economy derives from an increase in employment in public services (the public sector and non-profit institutions).
- The real wage in business sector industries increased beginning in the middle of 2012, after standing still in 2010–11. This increase derives from, among other things, a halt in hiring new employees at lower entry level wage.

During the reviewed half-year (October 2012–March 2013), the labor market was characterized by both a slowdown in employment growth and an increase in real wages. The slowdown in the growth of the number of employees[1] was noted starting in the second half of 2012, and the number of employee posts (salary slips) was about 3.25 million from April 2012 until February of this year. This followed the rapid increase in the number of employees in the first half of 2012 and growth in the number of employee posts in 2010, 2011 and the first part of 2012. In contrast, real wages increased moderately during 2011 and the first part of 2012, and between the beginning of 2012 and the beginning of 2013, they increased by a rate of about 2 percent (Figure 1.1); thus, returning to their level prior to the 2008–9 global crisis.[2] This analysis assesses developments in employment and wages from a sectoral perspective.[3]

Figure 1.1

Israeli employees, employee posts and real wages in the economy, 2003-11



SOURCE: Central Bureau of Statistics.

The slowdown in employment in the business sector industries

Both the slowdown in employment growth and the increase in real wages in the economy are derived mainly from developments in the business sector industries.[4] The growth in the number of employee posts in these industries was halted in the first half of 2012, and in companies—which constitute most of the business sector[5]—growth had already been halted toward the end of 2011. This halt took place a few months after the freeze that took hold in global trade, including Israeli goods exports. Even so, employment in the business sector continued to expand moderately toward the end of 2011 and in the beginning of 2012, due to growth in activity among small businesses.[6] In the beginning of 2013, a trend of decline in employment in business sector industries is observed, leading to a decline in employment in companies. (See Figure 1.2.)

The freeze in the number of employee posts in the business sector industries masks moderate changes in employment in various industries, which offset each other. For instance, there were about 350,000 employee posts in the manufacturing industry in the past year (January–February 2012 until the same period this year), but employment in the division-level industries (2 digits) changed. Employment in the pharmaceuticals industry, for instance, increased with the growth in the industry's exports, while employment in the base metals industry declined with the decrease in exports

1 According to Labor Force Surveys.

2 During this period, the growth in nominal GDP per employee post is about 5 percent higher than the growth in wages per employee post, and this fact hints to a reduction in the share of labor in GDP.

3 Since the move to the new industry classification (2011 classification) during the reviewed period, the analysis of employment at the industry and sector level is not based on Labor Force Surveys, but rather on employee post data, for which there are historical data according to the new classification.

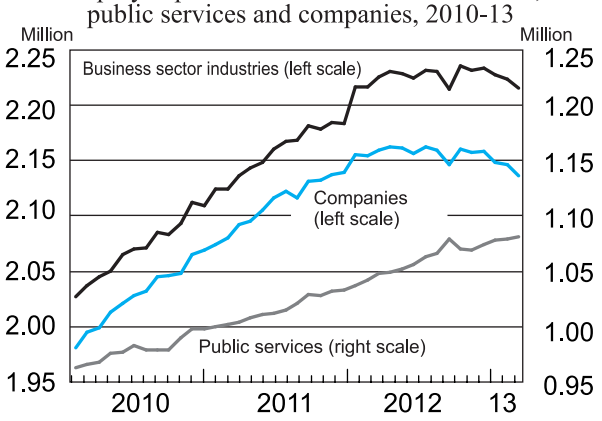
4 Overall employment in all industries, other than employment in public administration, education, health and a number of secondary industries (Industries 37, 38, 72, and 94).

5 Employee posts at companies (typically companies that employed more than 5 workers) constituted about 89 percent of total employee posts in the business sector industries in 2012.

6 "Household sector" in Central Bureau of Statistics publications, meaning businesses that employed less than five employees and whose sales were less than NIS 5 million, or businesses that employed less than ten employees and whose sales were less than NIS 1 million.

Figure 1.2

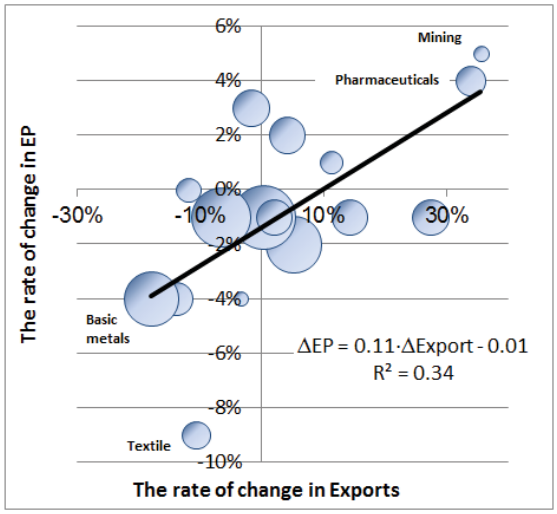
Employee posts in business sector industries, public services and companies, 2010-13



SOURCE: Central Bureau of Statistics.

Figure 1.3

Rate of change in employee posts and in goods exports in the principal manufacturing and agricultural industries, January-February 2012 compared to January-February 2013



Notes:
1) The industry classification is according to the new classification (2011).
2) The size of the circles and weights in the regression represent the number of employee posts in 2012:Q1.
3) ΔEP - The rate of change in employee posts between January-February 2012 and the same period in 2013.
4)ΔExport - The rate of change in nominal export value between January-February 2012 and the same period in 2013.
SOURCE: Based on Central Bureau of Statistics.

of that industry. Employment also increased in the mining industry, whose exports increased, while employment in the textiles industry contracted with its exposure to competing imports following a reduction in customs duties (Figure 1.3). The correlation between the change in exports and the change in employment in the manufacturing industries suggests that a change in the composition of foreign demand for Israeli products has an effect on the composition of employment. However, this demand is not growing at a sufficiently high pace in order to increase total employment in these industries.

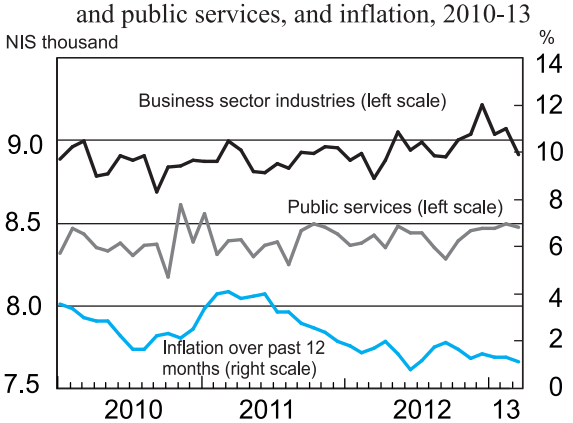
The increase in real wages in the business sector industries

Real wages in the business sector increased rapidly since May 2012 by about 3.8 percent (in annual terms)[7] when the number of employee posts in this sector stagnated. This increase took place despite the growth in the share of employee posts in small businesses ("household sector"), a sector in which wages are lower than in companies. Notably almost the entire increase in real wages is derived from the increase in wages in the division-level industries (2 digits) themselves, while the change in the composition of the business sector industries explains only a tiny portion (1.6 percent) of this increase.

The increase in real wages was particularly prominent in domestic demand oriented industries, including construction (5.5 percent), finance (5.5 percent) and information and

Figure 1.4

Real wages in business sector industries and public services, and inflation, 2010-13



SOURCE: Central Bureau of Statistics.

[7] Wages in the business sector declined in the first quarter of 2013, compared to the extraordinary increase in wages that took place in December 2012. This extraordinary increase is noted in Figure 1.4.

communications (4.3 percent).[8] In contrast, the 5 percent increase in the minimum wage that took effect in October 2012 did not have a marked effect on wages in the industries that are characterized by low wages, including manpower company services, guarding services, building maintenance, and telephone call centers. There was also no marked increase in work hours per employee in the business sector industries, which may explain the increase in real wages in this sector.

Apparently, the combination of wage increases in parallel with the freeze in employment in the business sector as well as a low unemployment rate, could be interpreted as a result of a lack of workers (supply constraints). However, indications of weakening demand—the continuous decline that has taken place in the past year in the number of job vacancies in the business sector (Table 1.3), the rate of growth in business sector product and in investment, and the stagnation in exports (until the beginning of 2013)—hint that this is not the case.

Another possible explanation of the phenomenon, which reconciles with the decline in the number of offered job vacancies, is that due to the moderation in growth of demand, companies have maintained longer-standing employees, whose nominal wages continued to increase as in previous years in parallel with a decline in inflation that began in 2012 (Figure 1.4, right scale). This decline in inflation was not expected according to the expectations measured in surveys or by the capital market. However, due to low economic activity, and in contrast to previous years, this wage increase was not offset by the widespread absorption of new workers, whose initial low wages would have brought down the average wage; such new workers were not recruited as there was no expansion of total employment in the business sector industries.[9]

Employment and wages in the public services

In contrast with the freeze that took hold in the business sector industries, employment in the public services industries (public administration, education, health etc.) continued to expand, as in previous years, but real wages increased moderately (Figures 1.2 & 1.4). An assessment of employment in the public services by sectoral breakdown shows that the number of employee posts in the government sector (central government, local authorities, universities, health funds etc.) expanded, while in private non-profit organizations, they expanded more rapidly. The continued growth in the public services is explained by the growth that has taken place in public expenditures; these expenditures finance a significant portion of public services activity—either directly through employment in the government sector, or indirectly through the financing of private non-profit organizations' activities.

Real wages in the public services increased moderately, inter alia as a result of the entry of new workers—particularly to private non-profit organizations, where wages are low. The moderate increase in real wages in the public services was slower than the increase in wages in the business sector industries, despite the collective agreements with teachers' unions, which increased wages in the education industry. The difference between the average wage per employee post in the business sector industries and the average wage in the public services increased from about 6 percent in previous years to about 8 percent at the beginning of 2013.

The Government's Proposed Budget for 2013–14, from the Perspective of the Fiscal Targets for Coming Years

- The proposed budget for 2013–14, which was approved by the government, includes a reduction of NIS 18 billion in the government's expenditure programs in 2014, and an increase in tax rates valued at NIS 15 billion.
- The government decided to raise the expenditure ceiling for 2013 by NIS 6.5 billion (about 0.7 percent of GDP) and to set the deficit ceiling at 4.65 percent of GDP, higher than the target of 3.0 percent of GDP set by law in August 2012. The need to change the targets derives from the expectation that the Knesset will approve the budget, and most of the measures associated with it, only at the end of July 2013. Thus they will only affect part of this year.
- If all of the government's decisions are approved, the plan is expected to reduce the deficit in 2013 and 2014 in accordance with the new targets set by the government.
- The tax increases and the marked revision in the expenditure path were necessary. Although in the short term they act to slow economic growth, without those measures the deficit in the coming years would have increased to over 6 percent of GDP, and the debt to GDP ratio would have neared 100 percent by the end of the decade. This process would have endangered Israel's financial stability and greatly increase the burden of interest payments in the budget.

[8] See the industry classification according to exposure to domestic demand or export orientation, Bank of Israel Annual Report, 2012, p. 69.

[9] Had employment in the business sector continued to expand in 2012 at the rate at which it expanded in 2011 (3.4 percent), and had the starting wage in the business sector industries been NIS 4500 per month, then the average wage in these industries would have been 1.7 percent lower.

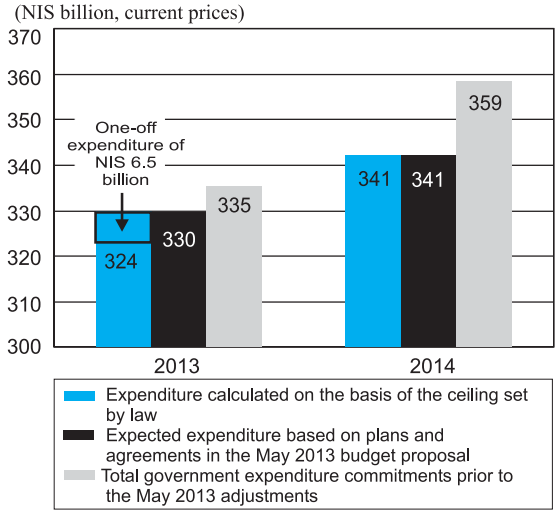
- The government's expenditure commitments for 2015 and onward are already greater, by several NIS billions, than the ceiling set by law. If growth will not be especially rapid, then even if the government reduces its expenditure commitments to be in line with the ceiling, there will be a need to raise tax revenues further in order to meet deficit targets in 2015 and 2016.
- Since the current need for adjustments derives to a large extent from the gap between the cost of multiyear programs that the government adopted and the expenditure ceiling, it is important to adopt a mechanism that will monitor the development of such gaps on a continuous basis and will require them to be dealt with in a timely manner.

1. The budget and the fiscal aggregates

On May 13, the government approved the proposed budget for the next year and a half. Since in previous years a wide gap developed between government expenditure commitments and the maximum annual expenditure allowed under the expenditure rule (Figure 1.5), and since the expected deficit in 2013 and 2014 was considerably greater than the deficit targets set by law , the government was forced to raise taxes and reduce expenditure programs by an approximate total of over NIS 30 billion, which is about 3 percent of GDP (Figure 1.6). Since the budget and most new policy steps will only be approved by the Knesset at the end of July, the government set the fiscal aggregates for 2014, not 2013, as the anchor for its program. The government decided to reduce its expenditure commitments in 2014 by about NIS 18 billion—thus returning its expenditure to the original level set by the fiscal rule—and to increase tax rates in order to meet the deficit target of 3 percent of GDP. This followed an increase in tax rates—decided on in the summer of 2012 and implemented in the beginning of 2013—which is expected to generate revenues of NIS 9 billion. In 2013, due to the elections which led to the late approval of measures in the economic plan, the deficit ceiling was raised from 3 percent of GDP to 4.65 percent of GDP, and the government decided to deviate, on a one-time basis, by NIS 6.5 billion from the expenditure ceiling set in law. Due to this deviation, in addition to an increase in the expenditure ceiling itself, expenditures in the government budget for 2013 are greater, in real terms, by about 7 percent from those in the 2012 budget.

Figure 1.5

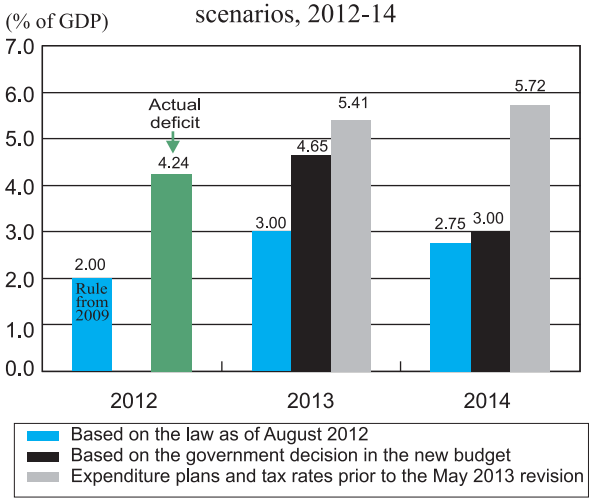
Expenditure ceiling in the 2013-14 budget and the expenditure derived from government programs (gross, excluding credit)[a]



[a] The data in this figure are presented in terms of total government expenditure, excluding credit, and including an estimate of contingent expenditures. This is in line with the expenditures used to calculate the budget deficit and represents total central government activity. It differs from the expenditure ceiling used for the fiscal rule, since that includes credit granted by the government and does not include contingent expenditures.
SOURCE: Bank of Israel Research Department.

Figure 1.6

The budget deficit under alternative policy scenarios, 2012-14



SOURCE: Bank of Israel Research Department.

Table 1 details the main adjustments adopted by the government in 2013 and 2014, and their expected effect on the budget. On the revenue side, the main sections are an increase of 1 percentage point in the Value Added Tax (VAT), to 18 percent; an addition of 1.5 percentage points to income tax and company tax rates; a marked contraction of pension savings tax benefits received by those with high incomes; and increases in indirect taxes in specific areas. On the expenditures side, the main reductions are in the defense budget, child allowances, and public sector salaries. This was along with a partial curtailment of the increase of the

Table 1.1
Measures in the 2013–14 proposed budget

Measure	Effect in 2013	Effect in 2014
Taxation measures	(NIS million)	
Direct taxes		
Raise all tax brackets by 1.5 percentage points		4,470
Reduce tax benefits for pension savings of high wage earners		1,160
raise corporate tax rate by 1.5 percentage points		950
Other changes in direct taxes		1,225
Total direct taxes		7,805
Indirect taxes		
Increase VAT rate by 1 percentage point beginning June 1, 2013	2,300	4,620
Other changes in indirect taxes	600	1,695
Total indirect taxes	2,900	6,315
Real estate taxes		
Reduce betterment tax benefits, unless its owner's only home		60
Cancel purchase tax exemption on owner's only home, unless it's a first lifetime home purchase		1,050
Total real estate taxes		1,110
Total additional statutory taxes	2,900	15,230
Reduced expenditure		
Reduction in defense budget		3,000
Transportation infrastructure	390	1,290
Reduce child allowances	975	2,975
Defer wage increase of 1 percent to 2015	500	1,000
Forego signing wage agreements[a]		1,500
Reallocate payments in pension fund agreement	2,300	1,500
Additional reductions in various expenditures	2,997	6,475
Total expenditure reductions	7,162	17,740

[a] An estimate of the salary cost savings assuming that the wage agreement would have been based on maintaining the real wage in the public sector.

SOURCE: Bank of Israel.

education and infrastructures budgets. In comparison with 2013, the expected changes in 2014 are projected to increase the share of tax revenue in GDP by more than 1 percentage point. The revisions are also projected to reduce, by almost 2 percentage points, the share of public expenditure in GDP, compared with that which was expected beforehand based on programs adopted by the government. However, the expenditure plans taken on by the government for 2013 and 2014 were so large, that despite the sharp reduction in those plans, the share of public expenditure in GDP in 2014 is expected to be similar to its share in 2012, about 43.5 percent of GDP.

Based on Research Department estimates, and given the current assessments regarding the macroeconomic environment expected in coming years, full implementation of the steps included in the plan will allow the government to stay within the expenditure ceiling and meet the deficit targets set for the 2 years reviewed. However, since the margin for meeting the targets is small, if significant components of the plan are not approved, or if there will

be an additional deterioration in the macroeconomic environment, attainment of the targets would be at risk. The risk component in the forecast is especially great, as such big turnarounds in policy are rarely undertaken in Israel, and thus it is difficult to precisely predict their influence on corporate and individual behavior in the economy. On the two previous occasions that large fiscal adjustments were made in Israel—1985 and 2003—economic activity responded more positively than expected to the revised fiscal path. However, this time, the economy is beginning from a different point—economic activity is at a high level relative to potential and global growth is moderating.

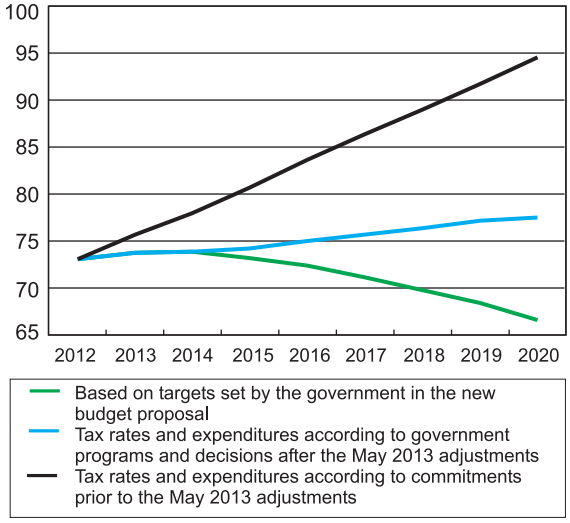
The fiscal adjustment in the approved budget proposal is expected to moderate growth in 2014 by about 0.7 percent compared with estimates made prior to the plan. The main channel of influence is reducing disposable income through increased taxes, the reduction in child allowances and the restraint of public sector salaries; the decline in demand due to the decline in 2014 in public defense and civilian expenditures will also have an effect.

Despite this cost, a plan to reduce the deficit was necessary, since without it the deficit was projected to reach almost 6 percent of GDP in 2014 (Figure 1.6), and to continue to rise in the following years. A deficit of this level would rapidly increase the debt to GDP ratio, and by the end of the decade it would have neared 100 percent of GDP (the black line in Figure 1.7). A deficit level like that, especially given the relatively good state of the Israeli economy and the calm security situation, would have negatively impacted the credibility of the government's commitment to low deficits. As a result, there would have been an increased probability of a financial crisis—the medium term outcome of which could be considerably worse than the current budget's effect on growth. Furthermore, even without a financial crisis, as a result of the increased ratio of debt to GDP, the country risk premium would have increased, which would have pushed up the interest rate on government borrowing. This increase, and with it the rapid increase in the size of the debt itself as a result of the large deficit, would have raised, over time, the government's interest expenditures—which are already high by international comparison, at 4 percent of GDP—reducing the sources available to it to provide public services or support for various population segments.

When analyzing the expected expenditures in 2015 based on the plans approved by the government, it can be seen that spending is about NIS 6 billion above the expenditure ceiling for that year. The ceiling allows the government a real increase in 2015 expenditure by 3.2 percent compared with 2014 expenditure, while current projections indicate an increase of more than 5 percent, even assuming that public sector salary increases in 2015 will be moderate and will not include compensation for deferring the wage agreements from 2013. This gap derives from the one-off nature of some of the steps adopted by the government to reduce expenditure in 2014, as well as from the agreed upon increase in the defense budget. Since there is another year and a half until the beginning of budget year 2015, this is a significant gap. It means that in the coming year and a half, the government will not be able to decide on new expenditures without, at the same time, either reducing other expenditures or enhancing the risk of exceeding the expenditure ceiling again. Even without decisions on new expenditures, the deviation from the expenditure ceiling is not expected to contract in 2016 either, because of, inter-alia, a further increase in the defense budget, according to the multiyear framework already agreed on.

Figure 1.7

Debt to GDP ratio under alternative policy scenarios, 2012-20



SOURCE: Bank of Israel Research Department.

A major factor in the size of the fiscal problem with which the government has to deal now and which threatens meeting the expenditure rule in 2015–16 is the lack of monitoring of the excess of the cost of programs approved by the government in recent years relative to the expenditure ceiling set by the fiscal rule. This gap has grown wider as the government adopted additional plans in elementary and high school education, the academic institutions, as well as infrastructure, health, and other areas. As a result, expenditures in 2012 were greater than the original budget, the fiscal rule for 2013 was broken, and the need for a large adjustment in the budget was generated, and due to that, a withdrawal from some of the programs adopted by the

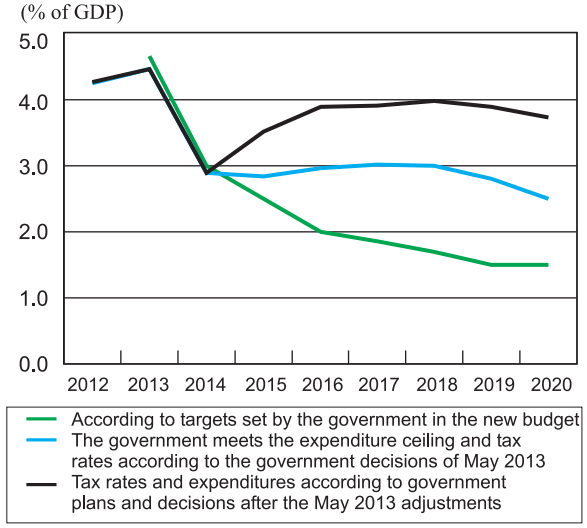
government in the past. In light of the risk that developed this year to the credibility of fiscal policy, which forced the adjustments, it is important that the government quickly adopt an effective system to control its expenditures for coming years in order to prevent a repeat of the process which led to the current problem. This is particularly the case in light of the commitments which have accrued for 2015, as described above. A system like that would track government commitments for coming years and require immediate handling of deviations from the expenditure ceilings. It would contribute considerably to the credibility of the government's commitment to its fiscal goals and help reduce the repeated deviations from them.[10]

In order to enhance that credibility, it is important that the government begin to publish, in a clear manner, the price assumptions which serve as the basis for coming budgets, as later adjustments of these assumptions impact markedly on the magnitude of changes in future budgets.[11] Alternatively, due to the average rate of price increases ranging in the past decade around the center of the inflation target range, and since inflation expectations are well anchored in this range, the government can switch to a nominal budget, which would make price adjustments unnecessary.

The challenge facing the government is not only reflected in control of expenditure. Even if the government carries out all the required adjustments in order to meet the expenditure ceiling in 2015, the deficit in 2015—and especially the years following—is still expected to be greater than the deficit targets set by law. While the deficit targets decline gradually to 2 percent of GDP in 2016, the deficit without an additional increase in tax revenues is expected to stabilize at a level of around 3 percent of GDP until 2018 (the blue line in Figure 1.8).[12] This path of the deficit is expected to be reflected in a debt to GDP ratio essentially not declining before the end of the decade (the blue line in Figure 1.9). In order to stay within the deficit ceiling in 2015 and 2016 there will be a need for additional revenues of about NIS 4 billion (0.4 percent of GDP) in 2015 and an additional NIS 7 billion (0.5 percent of GDP) in 2016. Such a decline in

Figure 1.8

The budget deficit under alternative policy scenarios, 2012-20



SOURCE: Bank of Israel Research Department.

the deficit, in accordance with the targets set by law, will allow the debt to GDP ratio to return to a declining path (the green lines in Figures 1.8 and 1.9). In contrast, if the government will increase its expenditure in accordance with the existing plans (the costs of which, as noted, are above the ceiling), but will not raise tax rates, the deficit is expected to stabilize at a rate of 3.5–4 percent of GDP, and the debt to GDP ratio will increase moderately but consistently (the black lines in Figures 1.8 and 1.9). Despite the need for additional adjustment in order to meet the targets, Figure 1.7 above indicates the importance of the adjustment that the government decided upon: there is a marked gap between the blue line in this graph—the line which represents the debt to GDP ratio expected after the current adjustment, without further adjustments—and the black line, which represents the increase in the debt to GDP ratio which was expected without the adjustment.

If the government does not raise statutory tax rates (or does not reduce exemptions) in 2015 and 2016, then even if it meets the expenditure limitation, an average growth rate of over 4.5 percent will be needed during those two years in order to compensate for the shortfall in revenue and to allow the government to meet the deficit targets (the black line in Figure 1.10). In such a case, the average growth rate required in 2013–20 in order to meet the deficit targets set in law for the coming decade is 4 percent (compared with 3.2 percent in the original assumption). However, in contrast, if the average growth rate through 2020 will be around 2 percent, it will cause the deficit to increase to a level above

[10] A discussion of how the lack of control of the costs of government budget plans influences missing fiscal targets is found in Brender, A. (2008) "If You Want to Cut, Cut, Don't Talk: The Role of Formal Targets in Israel's Fiscal Consolidation Efforts, 1985–2007", in *Fiscal Policy: Current issues and Challenges,* Banca d'Italia, pp. 348-376.

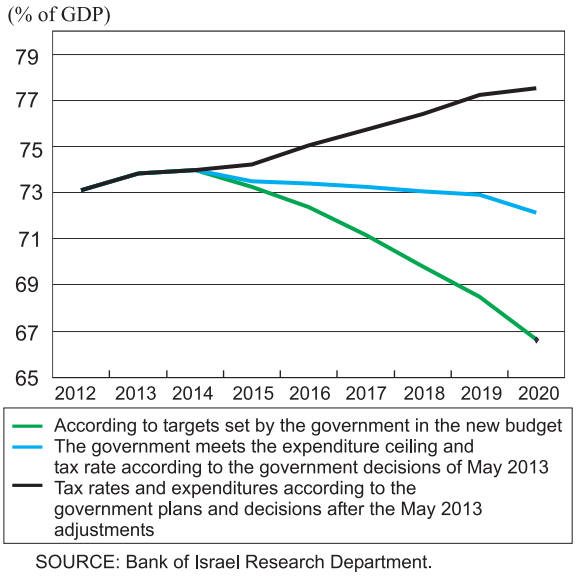
[11] For example, the 2013 budget includes an addition of NIS 3.9 billion, or 1.3 percent of total expenditures, as compensation for the fact that from the approval of the previous budget, until the end of 2012, prices increased by more than the projection at the time the previous budget was approved.

[12] The deficit in the base scenario is calculated based on the assumption that in the years 2013–20, growth will average 3.2 percent.

4 percent of GDP toward the end of the decade (the blue line in Figure 1.10), and will thus lead to a monotonic increase in the debt to GDP ratio, to a level of over 80 percent in 2020.

Figure 1.9

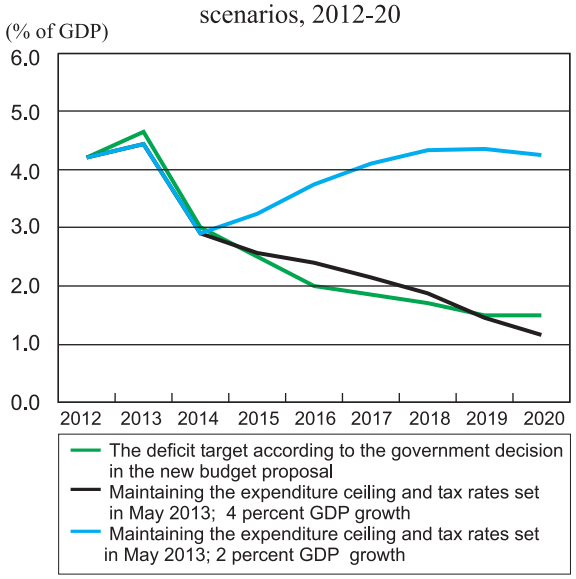
Debt to GDP ratio under alternative policy scenarios, 2012-20



SOURCE: Bank of Israel Research Department.

Figure 1.10

The budget deficit under alternative growth scenarios, 2012-20



SOURCE: Bank of Israel Research Department.

Part 2: Broader Review of Selected Issues

Health Expenditure in Israel—An International Comparison of Demographic Factors and Cost Structure

- When compared internationally, health expenditure in Israel as a share of GDP is low, even when removing the effect of the young age of the population. This is in parallel with the fact that the indices obtained for the state of national health indicate good results when compared internationally.
- Savings in expenditure in Israel are derived in part from the fact that growth in expenditures on those above age 70 (compared to those younger) is relatively moderate. In contrast, health expenditures on those of intermediate age (50-64) are not particularly low when compared internationally.
- The expected increase in the rate of the elderly as a share of the population will act to increase the national health expenditure, but international experience hints that there is a far greater risk of increased expenditure in the growth of the volume and price of treatments per elderly person and in the general increase in treatment costs within the system.
- The public sector finances 85 percent of health expenditures for young children and about 70 percent of health expenditures for adults over the age of 75. In contrast, private financing in the 19–49 age group is more significant and covers half of health expenditures.

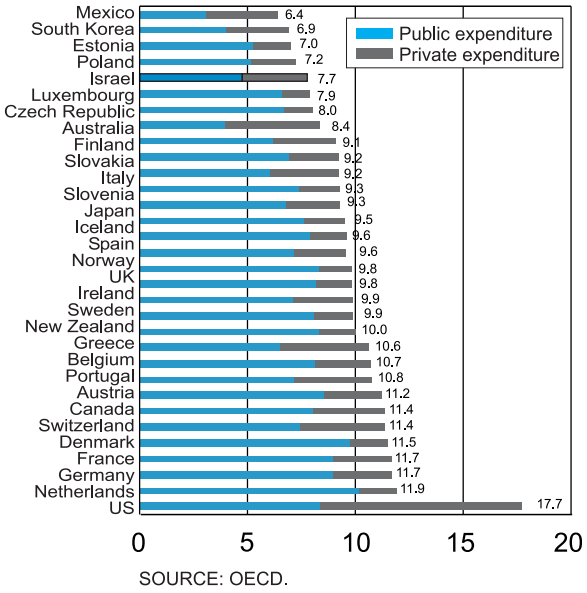
Introduction

When compared internationally, health expenditures in Israel are low (Figure 2.1). This is true both in terms of public expenditure, which is financed through the government budget and health insurance fees, and in terms of total national expenditure, which includes private expenditure—the expenditure financed by households directly out of pocket or through the purchase of private insurance.

There are a number of factors that can lead to health expenditures in a country being relatively low. Among them is low demand for healthcare services as a result of the fact that the population generally enjoys good health. This might be the situation particularly thanks to the young mix of ages, but also due to genetic factors, cultural factors leading to a healthy lifestyle, and past investments in preventive medicine. Second, there may be a "saving" in expenditures due to the low quality or low level of availability of healthcare services, as well as from low investments in infrastructure and in preventive medicine, whose effects may appear in the future. Finally, low expenditure may be the result of the fact that the provision of healthcare services has a particularly low cost structure due to the system's efficiency (for instance, thanks to the purchase of inexpensive pharmaceuticals and equipment, avoiding superfluous examinations and treatments, harnessing salary expenses and service prices, and so forth).

Figure 2.1

National expenditure on health in OECD countries, 2009, divided into public and private expenditure (% of GDP)



SOURCE: OECD.

This work assesses the contribution of a number of these factors to the low health expenditure in Israel through an international comparison that isolates the effects of the demographic factors from the effects of the cost structure. This work thus updates previous studies[1], which compared public health expenditures, and adds a more in-depth test of private health expenditure in Israel.

[1] Braude, Jacob, "National Health Expenditure in Israel Compared Internationally," Internal Memorandum, Bank of Israel, 2001; Falkovich, Irina, "An International Comparison of Health Expenditure", Central Bureau of Statistics, 2005; and "Israel: Selected Issues Paper", IMF Country Report No. 12/71, April 2012.

This work makes use of the methodology of Hagist & Kotlikoff (2005)[2] in assessing three factors whose aggregate enables a calculation of health expenditure in the country[3]:

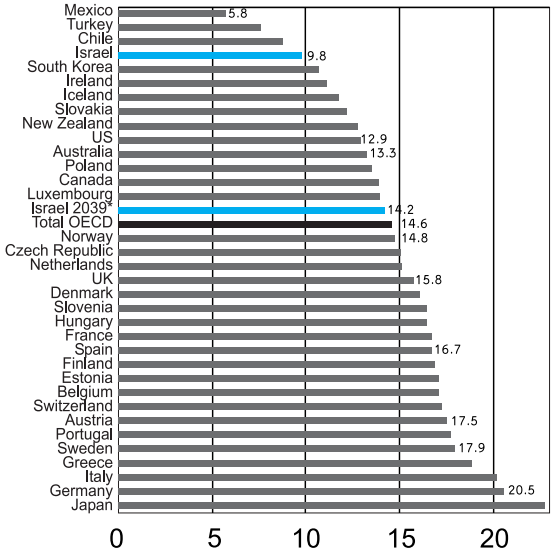
1. Health expenditure per standardized individual, as a share of per capita GDP. A standardized individual is an average individual in the base group, which is defined as the group aged 50 to 64. This index serves as an indicator of the base costs in the healthcare system, costs that are affected by the volume, quality, availability and price of services.

2. The profile of health expenditure per person in the other age groups, compared to an individual in the base group. The profile determines the standardization scale of individuals in each of the 8 age groups: 0–14, 15–18, 19–49, 50–64 (the base group = 1), 65–69, 70–74, 75–79, and 80+. The path of the profile rises with age, meaning that the health expenditure of adults is higher than that of young people (other than the first years of life).

3. The age composition of the population. The population in Israel is relatively young (see Figure 2.2), and since health expenditure increases with age (other than the first years of life, as stated), this composition currently enables low expenditures. But in the next few decades, the population of Israel is expected to age and to spur growth in health expenditure.

Figure 2.2

Those over age 65 as a share of the population, OECD countries, 2009 (percent)



* Demographic structure in 2039 based on Central Bureau of Statistics Population Forecast (intermediate scenario)
SOURCE: OECD, Central Bureau of Statistics.

Public health expenditure

Let us first break public expenditure (in 2009) in Israel and in the ten developed economies that were examined by Hagist & Kotlikoff (2005) down into the factors mentioned above. In terms of the expenditure profile by age, the data of the ten countries appears in the stated study. In order to extract the profile in Israel, we used the capitation formula[4]—the formula through which the distribution of health basket funds to the HMOs is determined—since this formula also reflects the profile of actual costs by age to a large extent. We adjusted this formula to the age groups that appear herein. Table 1 shows the profile of health expenditures in each age group compared to per capita expenditure in the base group. For instance, public health expenditure for a person aged 80+ in Israel is 2.58 times higher than expenditure for a person aged 50–64, while in Canada it is 7.54 times higher, and in Sweden it is only 1.99 times higher. Compared to most of the countries examined, expenditure in Israel is relatively low for the younger age groups, and particularly low for the very advanced age groups.

By using the profile of expenditure by age, the age composition of the population, and the public expenditure measured in the national accounts of each country[5], we can derive the size of public health expenditure per standardized individual, meaning per person in the base group of those aged 50–64. (See Figure 2.3.)

As stated, this index is an indicator of the base costs in the health system—costs that are affected by the volume and price of services. The index neutralizes the effect of

2 Hagist, Christian and Laurence Kotlilkoff, "Who's Going Broke? Comparing Healthcare Costs in Ten OECD Countries", NBER Working Paper No. 11833, 2005.

3 We emphasize that the healthcare expenditure under discussion here does not include expenditures for long-term care services.

4 We adjusted the capitation formula that was valid until the end of 2010 before taking into account gender and peripherality. We note that the resources that the formula distributes constitute just 70 percent of total public healthcare expenditure. Additional funds are transferred to the HMOs according to the number of patients with serious illness, or are spent directly out of the Ministry of Health's budget. Part of the Ministry's budget is slanted toward certain age groups (for instance the mother and baby care budget or the budget for long-term care hospitalization), but for the purpose of this article, we assumed that the relative costs per age derived from the capitation formula apply to the total public expenditure.

5 The composition of ages and the volume of healthcare expenditure are taken from OECD data. The volume of expenditure is the updated data published by the Central Bureau of Statistics for 2009 (with identical definitions).

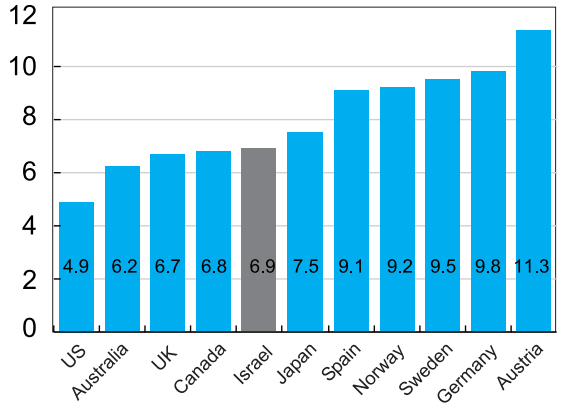
Table 2.1
Profile of public health expenditure relative to expenditure per person aged 50-64, by age group

	14-0	19-15	49-20	64-50	69-65	74-70	79-75	80+
Sweden	0.43	0.43	0.63	1.00	1.50	1.50	1.96	1.99
Spain	0.57	0.39	0.48	1.00	1.50	1.50	1.96	1.99
Austria	0.28	0.28	0.46	1.00	1.42	1.75	1.98	2.17
Germany	0.48	0.43	0.58	1.00	1.52	1.80	2.11	2.48
Israel	0.47	0.27	0.43	1.00	1.95	1.95	2.43	2.58
Norway	0.57	0.34	0.52	1.00	1.70	2.21	2.69	3.41
Japan	0.44	0.22	0.43	1.00	1.70	2.20	2.76	3.53
Australia	0.60	0.57	0.64	1.00	1.81	2.16	3.90	4.23
UK	1.08	0.65	0.76	1.00	2.07	2.07	3.67	4.65
Canada	0.43	0.61	0.65	1.00	2.45	2.44	4.97	7.54
US	0.88	0.82	0.77	1.00	5.01	5.02	8.52	11.53

SOURCE: Based on Hagist & Kotlikoff (2005) and Bank of Israel.

Figure 2.3

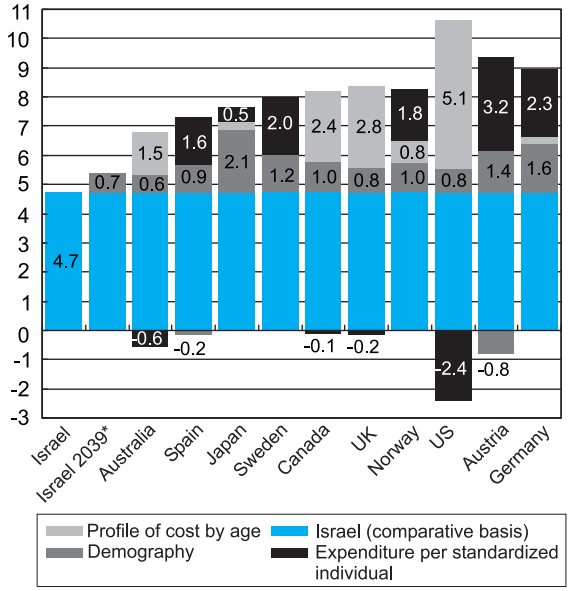
Public expenditure on health per standardized individual (average individual in the 50-64 age group), 2009 (percent of per capita GDP)



SOURCE: Bank of Israel.

Figure 2.4

Public expenditure on health - dissembling the difference compared to Israel by components: profile of cost by age, demographic composition and expenditure per standardized individual,2009 (percent of GDP)



* Demographic structure in 2039 based on Central Bureau of Statistics Population Forecast (intermediate scenario)
SOURCE: Bank of Israel.

the age composition of the population (although other external factors, such as genetic and cultural factors or past investments in preventive medicine, may still have an effect). We can see that in relation to per capita GDP, expenditure per standardized individual (in the intermediate age group) in Israel is relatively low, but similar to what is obtained in four out of the ten countries examined (Australia, UK, Canada and Japan). In this index, therefore, Israel has no extraordinary advantage or disadvantage.

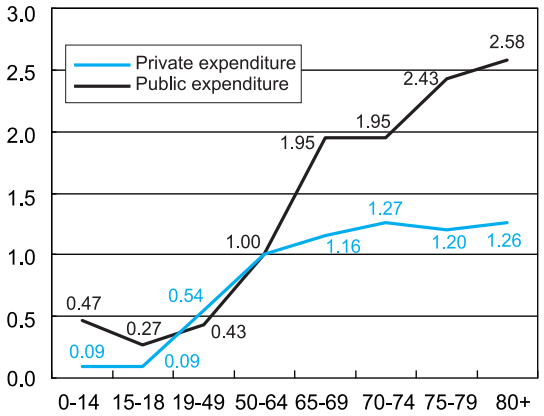
To sum up this section, Figure 2.4 shows an international comparison, which breaks the difference between Israel and the other countries in terms of the size of public health expenditure into three factors. In other words, the Figure separately shows the effects of each one of the three factors examined. For instance, public health expenditure in Norway, compared to GDP, is 3.6 percentage points higher than expenditure in Israel—one percentage point of this is the result of the fact that the population in Norway is older; 0.8 percentage points are the result of the (relatively) higher expenditure on the elderly; and 1.8 percentage points are the result of higher expenditure per standardized individual. The comparison shows that public health expenditure in Israel is lower due to the young population composition, but also due to the cost structure that moderates the growth in health expenditure on young people and the elderly.

Figure 2.4 also compares public health expenditure in Israel in 2009 and the expenditure derived from the Central Bureau of Statistics Population Forecast (middle scenario) for 2039.[6] Growth of 0.7 percentage points in public health expenditure as a share of GDP is derived from the expected aging of the population.

Breaking public health expenditure down into factors shows that the non-demographic factors are very important in the development of health expenditure. This conclusion is in line with empirical studies, which found that in many countries, the aging of the population had only a small effect on the growth of public health expenditure. For instance, the OECD recently published a working paper that assessed the growth that took place between 1995 and 2009 in public health expenditure in OECD countries. This study found that demographic factors explain only about one-tenth of the 4.3 percent real annual growth in expenditure. The rest of the growth was the result of an increase in income, a relative increase in healthcare prices, the absorption of new technologies, and changes in the organization of the health system.[7]

Figure 2.5

Profile of public health expenditure relative to expenditure per person aged 50-64, by age group



SOURCE: Bank of Israel.

National expenditure

The public system finances most of the national health expenditure in almost all of the OECD countries. It is therefore the focus of international comparisons and projections of future expenditures. However, in order to assess the efficiency of the overall health system, we must not ignore private expenditure, because the public and private systems are intermingled, compete for limited resources and, for the most part, serve the same population. Therefore, restraining expenditures in one system could lead to increased expenditures in the other. However, since when all is said and done, it is the citizens who finance both types of expenditure, whether through taxes to the public system or out of pocket, it is worth assessing the national expenditure as a whole as well. In Israel, there is a special reason for conducting such an assessment, since the share of private expenditure in financing health expenditures in Israel (39 percent) is higher than the OECD average (about 28 percent).

In order to break the total national health expenditure down into factors, we must first clarify what the expenditure profile by age is in private expenditure. We therefore assessed household health expenditures according to the Central Bureau of Statistics Expenditure Surveys from 2007

[6] This work focuses on an international comparison for 2009, and not on building a forecast of future expenditures. The effect of the aging of the population until 2039 is estimated here on the conservative assumption that aging will not be accompanied by a change in the profile of healthcare expenditure. According to an alternative assumption, the high expenditures will be deferred to a later age due to "healthy aging", which leads to delayed morbidity, and due to a later age of death, which also delays the high expenses of treatments in the final year of life. Another hidden assumption is that healthcare expenditure per standardized individual will grow at the same rate as per capita GDP.

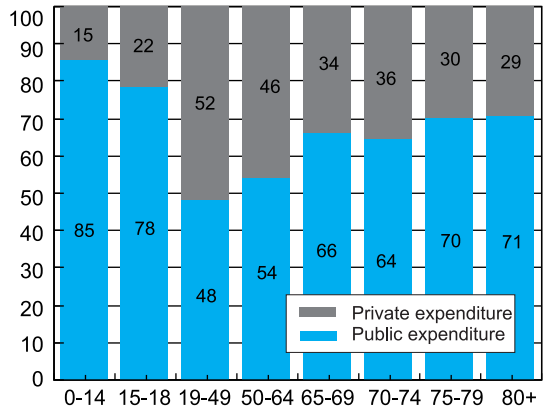
[7] De la Maisonneuve, Christine & Joaquim Oliveira Martins, "Public spending on health and long-term care: A new set of projections", OECD, 2013.

to 2011.[8,9] The private health expenditure profile is shown in Figure 2.5, and it differs from the public expenditure profile: In terms of household health expenditure per person in the base group (aged 50–64), expenditures on children and teens are very low. Contrary to the public expenditure profile, relative private expenditure increases only gradually at an older age, and basically remains quite stable after age 70.

Given the two profiles, we can calculate the rate of both private and public financing of per capita health expenditures in each of the age groups (Figure 2.6).

Figure 2.6

Public and private financing as a share of total national expenditure on health in Israel, by age group, 2009 (percent)



SOURCE: Bank of Israel.

In 2009, the public sector was dominant in financing health expenditures for children (aged 0–14), financing 85 percent of all expenditures in this age group. The rate of public financing declined for older ages, and about half of health expenditures for those aged 19–49 was financed privately. With aging and the increase in total health expenditures, the public sector again took on an expanded role, and public financing for those aged 75 and above covered about 70 percent of expenditures.

In order to conduct an international comparison of the national health expenditure, we recalculated the profile of total expenditures by age for each country, in accordance with the relative weight of private and public expenditure. For the purpose of this work, and in the absence of appropriate data, we used the profile of private health expenditure in Israel for the other countries as well.[10] As a result, the profiles obtained still place Israel in the group of countries where expenditures at older ages are growing at a relatively moderate pace.

The general profiles and data on total health expenditure as a share of GDP enable a calculation of the cost of the national health expenditure per standardized individual (an individual of intermediate age) for each country, and the result is presented in Figure 2.7. When taking private expenditure into account as well, Israel places higher in the international comparison of per capita health expenditure, and the relative restraint on expenditure in Israel is reduced.

To sum up this section, let us look at a series of figures. Figure 2.8 shows an international comparison that breaks down the contributions of the three components into the differences that exist between Israel and the subject countries from the standpoint of the national health expenditure. We still find that the young age of the population in Israel and the relatively low expenditures on the young and elderly contribute to lowering the total healthcare costs in Israel. In contrast, healthcare costs per standardized individual (as defined in this work) in Israel are not particularly low, and they erode the relative savings that result from the other two factors.

The expected aging of the population in Israel by 2039 may generate growth of 0.9 percentage points in the national health expenditure as a share of GDP. However,

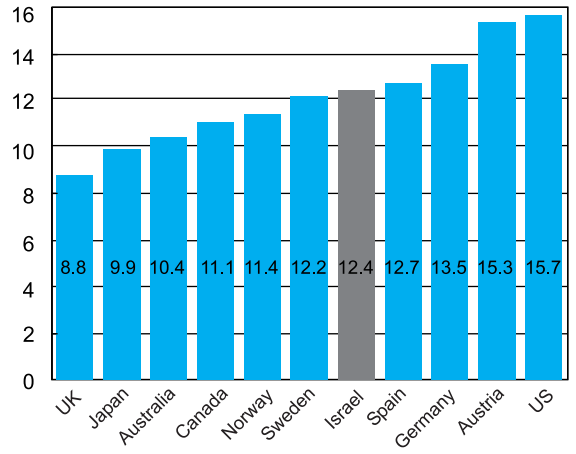
[8] Use of the Expenditure Survey enables us to properly assess the direct (out-of-pocket) healthcare expenditures of households, which constitute about 70 percent of private healthcare expenditure. The use of health insurance payment data assesses the financing side of insurance (premium payments) and not the performance side (insurers' medical expenditures). Thus, we can also take into account the share of premiums remaining in the hands of the insurance companies (for the purpose of financing the operations and marketing mechanisms and profit accumulation), and which does not serve for actual medical expenses. According to Ministry of Finance data, this share reaches 62% of medical expense insurance at insurance companies for individual policies and 17 percent for group policies.

[9] The profile of private expenditure by age was obtained through a regression whose dependent variable was household healthcare expenditure and the explanatory variables were the number of individuals in each age group within the household. It is clear that other factors (for instance, income) also affected household healthcare expenditures, but we deleted them in order to find only the expenditure profile by age. In each of the years between 2007 and 2011, the profile we obtained was slightly different, with no clear trend. We therefore used a kind of average of these years (by pooling all of the households surveyed and using expenditures at fixed prices).

[10] We assumed this due to the absence of appropriate data on the private expenditure profile in the examined countries. This assumption may be significant, mainly in countries where there is a high rate of private expenditure in relation to total national expenditure. It should be noted that partial data on private expenditure in the US (Source: CMS) indicate trends that are similar to those shown by Israeli data—compared to the public expenditure profile, private expenditure for children is low, and for the elderly, it increases at a very moderate rate.

Figure 2.7

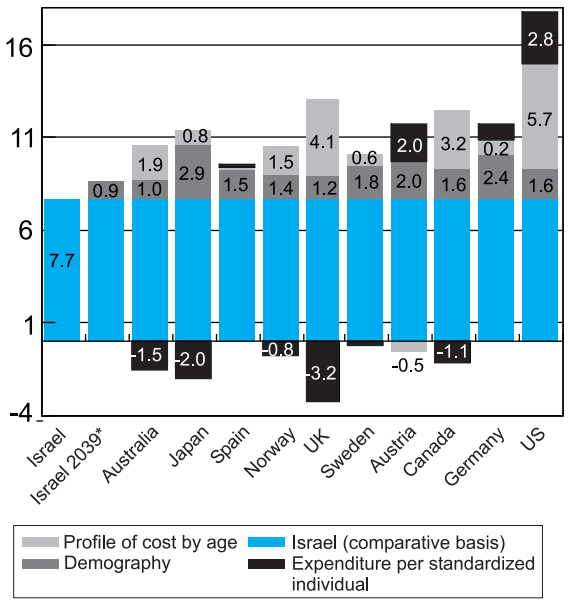
National expenditure on health per standardized individual (average individual aged 50-64), 2009 (percent of per capita GDP)



SOURCE: Bank of Israel.

Figure 2.8

Dissembling the difference in national expenditure on health between Israel and other countries by components: demographic composition, profile of cost by age and expenditure per standardized individual, 2009 (percent of GDP)



* Demographic structure in 2039 based on Central Bureau of Statistics Population Forecast (intermediate scenario)
SOURCE: Bank of Israel.

the international comparison in the Figure hints that the growth in the costs of the healthcare system and the manner in which resources are distributed between the elderly and the young, may have an even larger effect on expenditures. If the prices of healthcare services increase in parallel with the aging of the population, or if the expenditure profile in Israel changes such that expenditures on the elderly grow even more, then the effect of aging on health expenditure will also strengthen.

Figure 2.9 shows international comparisons of national health expenditures. On the right side, the Figure shows the actual situation, and on the left side, it shows a comparison neutralizing the differences in the age composition of the population. The Figure shows that even discounting the demographic factor, health expenditures in Israel are low compared to all of the countries examined, other than Japan.

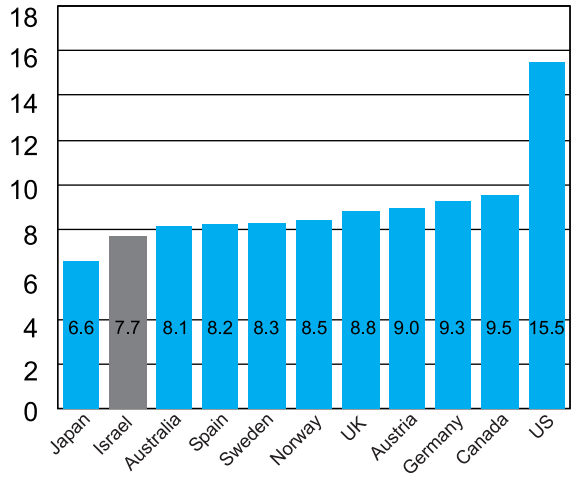
This result which, as stated, was obtained for 2009, is different than the picture presented by similar comparisons for the mid-1990s and the beginning of the last decade. During these periods, discounting the demographic effect placed Israel at the top of the health expenditure table, with a high expenditure as a share of GDP. The difference is the result, first of all, of an update in expenditure and GDP data, and secondly, during the previous decade, health expenditures in most of the OECD countries increased greatly (beyond the growth derived only from the aging of the population), while in Israel, the national health expenditure remained almost unchanged as a share of GDP (Figure 2.10).

In conclusion, it should be noted that the international comparison of health expenditures alone paints only a partial picture of the quality of the healthcare system in each country. This is because expenditures reflect the cost of the healthcare services consumed and not the healthcare results, the improvement of which is the main goal of any healthcare system. If two different mixes of healthcare service consumption improve the health of the population to the same extent, then it is clear that it is preferable to choose the less expensive of the two, since it will enable attaining more healthcare within the budget limitations. Therefore, there is reason to assess the results obtained from the services consumed in addition to the healthcare expenses.

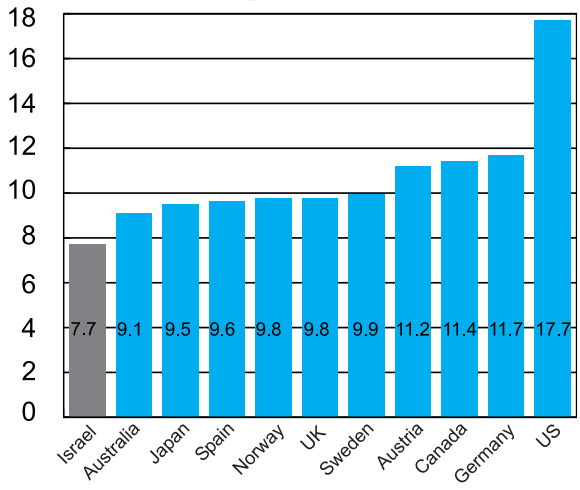
Due to space limitations, we will not present an in-depth assessment of healthcare results in Israel, but it is worth mentioning that, in parallel with the fact that health expenditures in Israel are low (even discounting the demographic factor), the indices obtained for the state of national health (such as life expectancy, infant mortality rates, potential years of life lost, self-evaluation of health, and so

Figure 2.9

National expenditure on health had the composition of age in the population been identical in all countries to that of Israel, 2009 (percent of GDP)



Actual national expenditure on health (percent of GDP)



SOURCE: Bank of Israel.

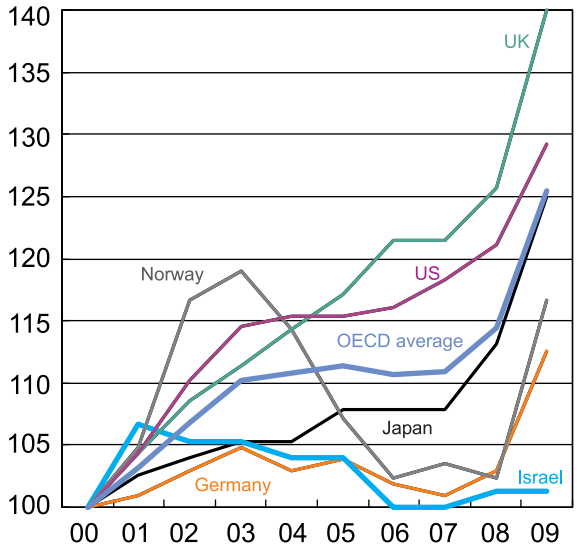
forth) indicate good results when compared internationally.[11] In addition, the Israeli healthcare system wins praise in international surveys.[12] This combination should show that, compared to other countries, the healthcare system in Israel is characterized by a relatively high level of efficiency in an aggregate cost-benefit analysis.

Revisions to Quarterly National Accounts Data

- When the Central Bureau of Statistics publishes estimates of quarterly National Accounts data, it also revises the estimates for the previous quarters. This box examines the characteristics of the revisions in quarterly growth data for the period 2005–2011.
- During the period reviewed, the Central Bureau of Statistics made major revisions in GDP growth data. The absolute value of the revisions made between the first and final publication averaged 0.7 percentage points on an annualized basis. However, it is not possible to forecast the revisions on the basis of initial GDP growth data, and

Figure 2.10

National expenditure on health relative to GDP, selected OECD countries, 2000-09, index (2000 = 100)



SOURCE: OECD.

[11] It should be noted that the aggregate indices mentioned do not relate to the inequality between population groups from the standpoint of healthcare results, and that they ignore the level of "customer service" in the healthcare system from the standpoint of aspects with a small effect on healthcare results.

[12] For instance: OECD (2012), OECD Reviews of Health Care Quality: Israel 2012: Raising Standards, OECD Publishing.

the revisions do not tend to change the position of the growth estimate relative to the trend.
- The second revision in the data (that is, the third publication) tends to be smaller than the initial revision as well as those succeeding it. In other words, growth data do not necessarily stabilize with the third publication. This pattern is characteristic of GDP as a whole and all of its main components.
- By international standards, the amount of revisions in Israel is unexceptional, except for those in data on exports and gross capital formation. However, these data are only subject to a major revision until the third estimate is published and from that estimate onwards, their revisions are also unexceptional. This is suggestive of the quality of the initial estimates by worldwide standards and accordingly, of the weighting that should be attributed to each component when policy decisions are made.
- Most of the revisions in final uses are accompanied by parallel revisions in investment in inventory and in imports and to a smaller extent, by revisions in GDP data.

National Accounts data provide in-depth and very comprehensive information which can be used to assess the situation of economic activity at a given time, forecast future activity and make policy decisions. The problem is, that these data undergo numerous and significant revisions due to the receipt of new information.[13] Every quarter, the Central Bureau of Statistics (CBS) publishes estimates of GDP growth data and of the other National Accounts components. The figure published is known as "a first release" and is published some six weeks after the end of the quarter. Every month, the CBS publishes a revision for each estimate that has been issued until then. This revision results from the accrual of new information that makes it possible to calculate the estimate more accurately.

As a result of these revisions, the data are likely to change considerably. In order to see this, we will examine the following two figures. Figure 2.11 refers to the period from the second quarter of 2005 to the fourth quarter of 2010 and illustrates the differences between the first release GDP growth series and the 12th revision in that figure. Most of the differences between the data are in the region of zero, meaning that the first release data were quite accurate although large differences were observed in several quarters. Figure 2.12 illustrates one of the significant revisions that were made during the period in question—the 12 amendments that were made in 2010 first quarter data. It can be seen that the initial figure published (3.4 percent) was 1.5 percentage points less than the last figure (5.0 percent).[14] The preliminary observation of the data shows that it is not possible to relate to the initial estimates as final data, and the changes made in them over time need to be monitored.

The data are therefore likely to change considerably as a result of the revisions, sometimes to the extent where a different policy decision might have been made on the basis of these revisions (had they been known in advance). Among consumers of the data, this situation creates a conflict between two objectives. While the consumer aspires to obtain a figure as rapidly as possible in order to make effective policy decisions, he also wishes to base such decisions on a figure that is as accurate as possible. This review attempts to resolve the conflict by examining the revisions and by assessing the quality of the estimates.

The first part of the review focuses on GDP data and examines the revisions from two aspects. The second part compares the findings obtained in the first part with the findings obtained from an examination of the other National Accounts component series: private consumption, public consumption, gross domestic investment, gross capital formation, imports and exports.[15] Also examined in the second part is the correlation between the revisions in the growth of the uses, imports and GDP. The third and final part compares the revisions in Israel with those in a peer group of countries. The data base for the review is described in Appendix 1.

1. The revisions in GDP growth

As stated, this section examines the revisions from two aspects, focusing initially on the differences between each estimate and the final estimate. This is because an examination of them will help to show from which estimate the final figure can be derived.[16] Attention is then centered on the differences between a number of subsequent

[13] The revisions in National Accounts data are one of two components that are indicative of the quality of the quarterly estimates. The other component is the quality of the measurement. In the following tests, we will refer to the revisions aspect only.

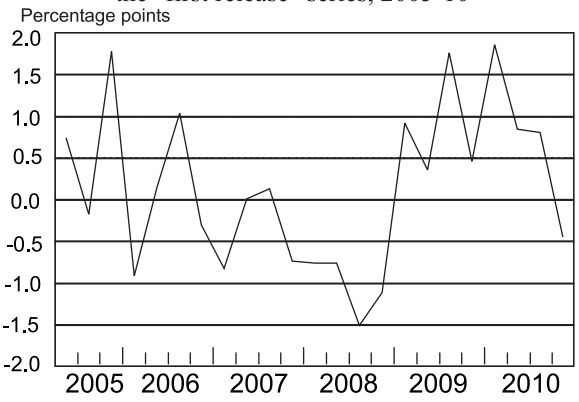
[14] Unless otherwise stated, the data are annualized quarterly growth data at fixed prices, and are seasonally adjusted.

[15] Public consumption—excluding defense imports; gross capital formation—excluding ships and planes; imports—excluding defense imports, ships, planes and diamonds; exports—excluding startups and diamonds.

[16] The final estimate of each quarter will be defined here as the estimate published in July of the following year. The final estimate is defined in this manner because definitions change periodically. The estimate after the change is published together with the annual Statistical Abstract in August. Due to these changes in definitions, different estimates for economic activity are obtained. However, these must not be related to as revisions and they should not be compared with data that are calculated in accordance with the previous definitions.

Figure 2.11

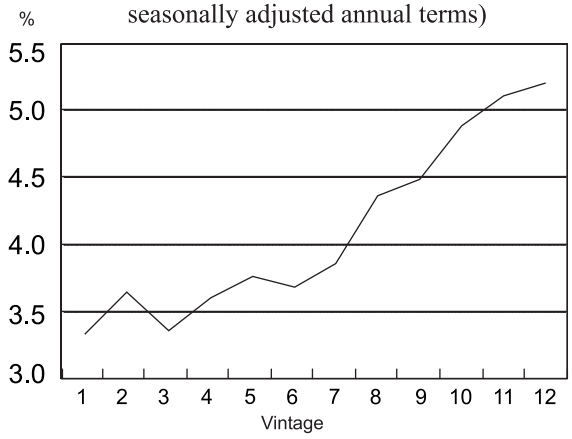
GDP quarterly growth (annualized): Difference between the 12th revision series and the "first release" series, 2005-10



SOURCE: Bank of Israel.

Figure 2.12

Development of the GDP growth estimate in the first quarter of 2010 (quarterly growth in seasonally adjusted annual terms)



SOURCE: Bank of Israel.

publications, because an examination of these differences will help to clarify the added value obtained from each estimate. The findings of the tests conducted on the revisions of GDP growth data are presented in Table 2.2. The upper part of the table presents the findings of the examination from the first aspect, and the lower part presents the findings of the examination from the second aspect.

The first column presents the frequency of the revision.[17] The frequency of the revision serves a rough estimate of the probability of a revision in a particular figure. As an example, the probability of a revision being made to a first release figure (I) is 67 percent. The lower part of the table shows that the incidence of recalculation in the first and third revision observed was high, while the incidence of a recalculation in the second revision was zero.[18] A similar pattern was observed with the other National Accounts components. Such a finding could be taken as indicating that it is not possible to assume that the figure will stabilize after publication of the third estimate even if the revision in it was small. This is because an additional significant revision can be expected together with the publication of the next quarterly figure—possibly due to the receipt of new information before calculation of the fourth estimate.

The second column presents the average revision.[19] The amendments made in each estimate (relative to the final estimate) are positive on average and are not statistically significant.

The third and fourth columns present the standard deviation and the average of the absolute values in each revision. These two indicators reveal the distribution characteristics of the revision series. The simple average (presented in the second column) could be misleading, because the negative revision values offset the positive values, with the result that the size of the revision appears smaller than its actual size. The average of the absolute values is intended to compensate for this, since the use of absolute values indicates the extent of the actual revision. The use of absolute values (alongside the standard deviation) has another advantage. As Figure 2.13 indicates, the standard deviation and the absolute values decline over time and approach the region of zero, thereby indicating that the estimates are becoming increasingly accurate as time passes. This is in contrast to the simple average, which does not converge and therefore cannot be taken as indicating a bias to a particular direction.

It should be noted that the first revision series is characterized by a high standard deviation. This partly derives from a number of quarterly data in which an especially large revision was made. Exclusive of the four quarters in

[17] A value is regarded as a revision in the event that it is greater (in absolute value) than a tenth of the standard deviation of the GDP growth series. The standard deviation of the series in question is 2.8 percent, for example. Each value greater than 0.28 and smaller than (-0.28) will therefore be regarded as a revision. The revision threshold is determined in this manner in order for the orders of size of the revision threshold to be proportional to those of the revision threshold of the other National Accounts components, and thereby permit the comparison that was made in the second part.

[18] The standard deviation and the average absolute values support this finding.

[19] The P-value of the average as obtained from regression results appears in parenthesis.

Table 2.2

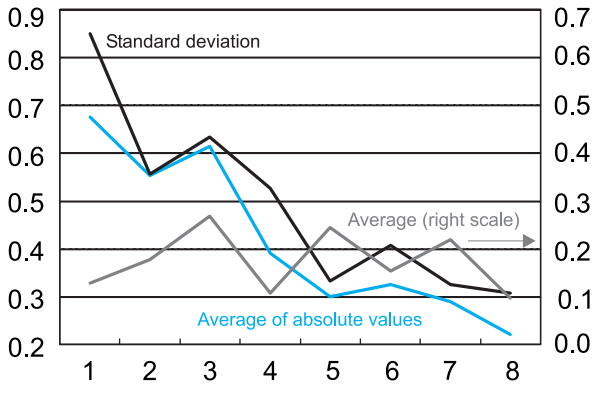
GDP growth data: The differences between the final estimate and each estimate, and the differences between subsequent publications

Estimate	Frequency of revision	Average (P-value of α)	Standard deviation	Average absolute values	Range	Mincer-Zarnowitz (1969) β (P-value of β)	Mincer-Zarnowitz (1969) F test (P-value of the F-test)	No. of times when revisions changed the estimate's position relative to the growth trend (overall No. of obs.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Difference between final estimate and initial estimate								
I	0.67	0.13	0.85	0.67	-1.5%-1.7%	-0.07	1.08	11.5%
		(0.43)				(0.30)	(0.30)	(26)
II	0.46	0.18	0.56	0.55	-1.1%-1.3%	-0.01	0.01	11.1%
		(0.29)				(0.90)	(0.90)	(18)
III	0.56	0.27	0.63	0.61	-1.1%-1.6%	-0.03	0.22	10.5%
		(0.12)				(0.64)	(0.64)	(19)
Difference between subsequent publications								
I-II	0.50	0.12	0.50	0.61	-0.6%-1.4%	-0.01	0.04	
		(0.33)				(0.84)	(0.84)	
II-III	0.00	-0.02	0.17	0.15	-0.2%-0.2%	-0.02	0.64	
		(0.75)				(0.44)	(0.44)	
III-IV	0.18	0.06	0.43	0.27	-0.9%-1.2%	-0.02	0.12	
		(0.60)				(0.73)	(0.73)	

SOURCE: Based on Central Bureau of Statistics.

Figure 2.13

GDP growth data: Standard deviation, average of absolute values and average differential between final estimate and every other estimate



SOURCE: Bank of Israel.

question, the standard deviation decreased to 0.6 percentage points. The range, which is presented in the fifth column, also illustrates the extremism of the first revisions series, since the amendment range in these revisions is the widest (3.3 percentage points).

The sixth and seventh columns present the results of a Mincer-Zarnowitz Test (1969) of forecasting efficiency (see Appendix 2 for details). This test examines whether it is possible to forecast the revisions on the basis of the initial estimates. If it is possible, this means that it would have been possible to publish more accurate estimates from the outset—estimates containing the revision, that is—and the forecast is therefore not efficient. It was found that it is not possible to reject the hypothesis that the forecast is efficient with respect to any revision. This finding is indicative of the efficiency of the estimates and of the fact that the revisions derive largely from new information that was added over the months.

The last column compares the revision data to the growth trend.[20] So far, we have seen that revisions in GDP growth data tend to be large and cannot be forecasted. But when an examination is made as to whether the revisions led to a change in the location of the figure relative to the growth trend in the same quarter[21], it is found that with respect to the majority of revisions, large as they may be, the answer is negative. That is, if the GDP growth estimate in the first release is higher than the growth trend, such a ratio is found in the last publication as well. Accordingly, in the 26 quarters that were examined, only 11.5 percent of the estimates changed their location relative to the growth trend as a result of the revision. This is an important finding, because decision-making resulting from growth data is based largely on the question of whether growth is high or low relative to the growth trend. It transpires therefore that the quality of the data is quite high, since they permit a rough assessment of the state of the economy as early as the time of the first release.

To conclude, the results of an examination of the revisions of GDP growth data indicated that the estimation is efficient even though large revisions in it may occur. This is both because it is not possible to forecast the revisions on the basis of initial estimates, and due to the fact that they do not tend to change the location of the estimate relative to the trend.

2. Analysis of uses and imports

Table 2.3 refers to seven main National Accounts components—GDP, private consumption, public consumption, gross domestic investment, gross capital formation, exports and imports—and presents a comparison between their first and their final estimate.

The first column presents the frequency of the revisions, from which it can be seen that the frequency is similar in all the National Accounts components. **The second column** presents the average revision. While positive averages were obtained in the export component and the gross capital formation component, a negative average was obtained in the gross domestic investment component. This finding is indicative of negative inventory adjustments. **The third column** presents the standard deviation. Due note should be made of the estimate of gross domestic investment, because it is considerably higher than that of the other components. This is due to the fact that four publications led to a high variability in the data series in question, which in turn led to exceptional results in the average, the average absolute values and the range. In addition, large deviations in the export and gross capital formation components are notable in the first publication, but tend to decline as early as the second publication of the estimate and particularly in the publication of the third estimate. Table 2.3 indicates that the characteristics of the GDP growth estimate are far smaller than those of the other components.

The sixth and seventh columns present the results of a Mincer-Zarnowitz Test (1969) of forecasting efficiency. The results reject the hypothesis that the estimation is efficient for all the National Accounts components except for GDP. It was also found that β coefficients, the coefficients of the differences between the first estimates and the average estimate, and the α coefficient, which represents the average revision, are significant for gross domestic investment, gross capital formation and exports. It is therefore apparent that when a particularly high (low) estimate is published, a downward (upward) revision can be predicted.

Does a relationship exist between the revisions in the National Accounts components? Table 2.4 is comprised of the correlations between the differences series between the first and the final estimate for each of the components. When we examine the first column—which presents the correlations for all GDP components—and the last row, which presents the correlation between import and the other components, it is found that the revisions in uses (except for public consumption) are correlated positively with imports and negatively with GDP. It is therefore possible to conclude that the revisions in uses are actually reflected in imports and inventory and less in GDP. Gross investment can be broken down into two components: gross capital formation and investment in inventory. It is possible to conclude from an examination of the correlations with respect to gross investment and gross capital formation that a high correlation exists between revisions in exports and inventory.

3. The revisions in Israel from an international perspective

Revisions in National Accounts data are common worldwide. This section compares the size of the revisions in Israel to their size in 27 other OECD countries.[22] The method of deducting seasonality tends to change from country to country. In order to bridge these gaps, the growth data in

[20] The growth trend was calculated with the help of a Hodrick-Prescott Filter (1969).

[21] A change is regarded as a change in location if the first publication is located a standard deviation above the growth trend (below a minus growth trend standard deviation), while the final estimate is located below the growth trend (above the growth trend)

[22] Austria, Australia, Italy, Indonesia, the US, Belgium, Brazil, the UK, Germany, Denmark, South Africa, Netherlands, Hungary, Japan, Luxembourg, Mexico, Norway, Slovenia, Spain, Poland, Portugal, Finland, the Czech Republic, France, South Korea, Canada and Turkey.

Table 2.3
National Accounts components: Differences between final and first release

Estimate	Frequency of revision	Average (P-value of α)	Standard deviation	Average absolute values	Range	Mincer-Zarnowitz (1969) β (P-value of β)	Mincer-Zarnowitz (1969) F test (P-value of the F-test)	No. of times when revisions changed the estimate's position relative to the growth trend
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP		0.13	0.85	0.67	-1.5%-1.7%	-0.07	1.08	11.5%
		(0.43)				(0.30)	(0.30)	
Private consumption	0.74	-0.21	2.29	1.84	-4.1%-5.7%	-0.28	11.27	0.0%
		(0.59)				(0.00)	(0.003)	
Public consumption	0.85	1.35	6.41	4.97	-12%-13%	-0.74	62.52	30.8%
		(0.06)				(0.00)	(0.00)	
Gross investment	0.78	-7.04	26.98	18.04	-94%-22%	-0.35	44.13	15.4%
		(0.04)				(0.00)	(0.00)	
Gross capital formation	0.78	3.49	8.87	7.17	-19%-22%	-0.41	17.75	3.8%
		(0.01)				(0.00)	(0.00)	
Exports	0.81	3.72	9.12	7.77	-17%-21%	-0.22	5.05	23.1%
		(0.03)				(0.03)	(0.03)	
Imports	0.67	0.18	12.08	7.13	-48%-21%	-0.47	49.16	11.5%
		(0.90)				(0.00)	(0.00)	

SOURCE: Based on Central Bureau of Statistics.

this part were calculated as the year-on-year quarterly rate of change.[23] Based on the examinations which we conducted, the CBS seasonal adjustment does not constitute a source for major revisions in National Accounts data in Israel.

The international comparison presented below focuses on the average of the absolute averages of the revisions. Figure 2.14 presents the findings for GDP growth data. The graph shows that the average of the absolute values of the revisions in Israel is 0.28 percent. This is a relatively low average, and positions Israel in the bottom half, around the UK and the Netherlands.

The other National Accounts components show a different picture. Figure 2.15 refers to the first, second and third publications, and illustrates the OECD distribution of the average absolute revisions in sources and uses data. Apart from the revisions in GDP growth data, Israel's revisions tend to be large for the first estimate and in the top part of the distribution. But as early as the second publication, the estimate is adjusted for private consumption, public consumption and imports. This adjustment positions Israel in the center and even the bottom part of the distribution. While export and gross capital formation data stabilize only with the third publication, these data also appear in the center of the distribution. It should be noted that Israel's revisions in export data are considerably larger than those of the other countries. According to the findings presented in the previous part however, there is no particular inaccuracy in the export data relative to the other National Accounts components. This may be due to the receipt of new foreign trade data.

[23] Shershta and Marini (2013) adopted this approach in a study on the same data base.

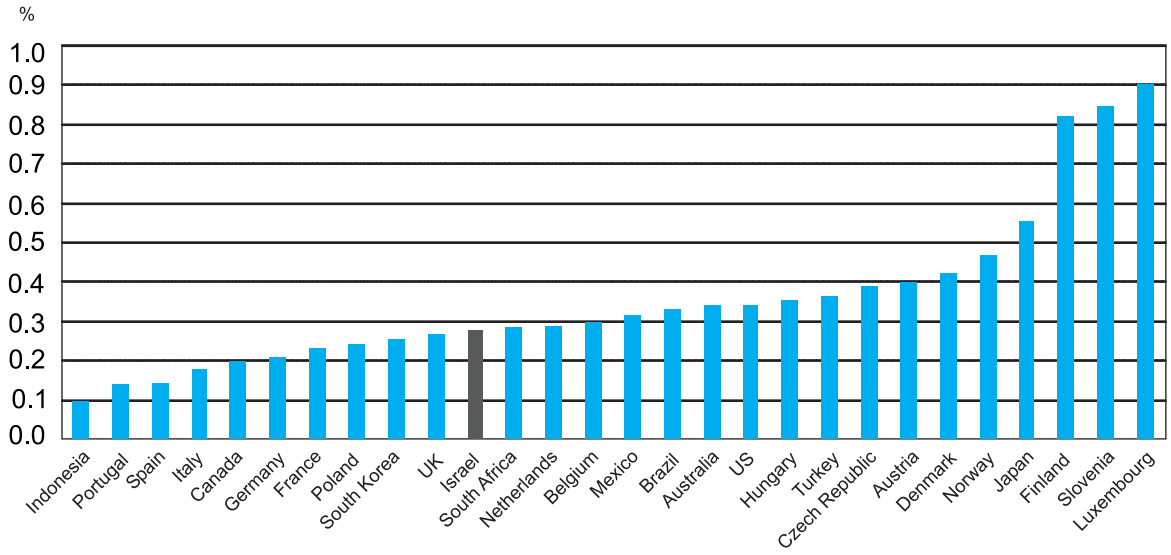
Table 2.4
Correlation between revisions in uses, imports, and GDP

	GDP	Private consumption	Public consumption	Gross domestic investment	Gross capital formation	Exports	Imports
GDP	1.00						
Private consumption	-0.42	1.00					
Public consumption	0.54	-0.29	1.00				
Gross domestic investment	0.03	-0.18	-0.24	1.00			
Gross capital formation	-0.11	0.30	-0.36	0.27	1.00		
Exports	-0.27	0.62	-0.29	-0.15	0.61	1.00	
Imports	-0.31	0.48	-0.52	0.51	0.79	0.61	1.00

SOURCE: Based on Central Bureau of Statistics.

Figure 2.14

Mean absolute revision in GDP growth data (rate of change of quarter vs. the same quarter in the previous year, percent), first release compared to estimate published a year thereafter



SOURCE: For Israel: Central Bureau of Statistics; for other countries: OECD Real time data base.

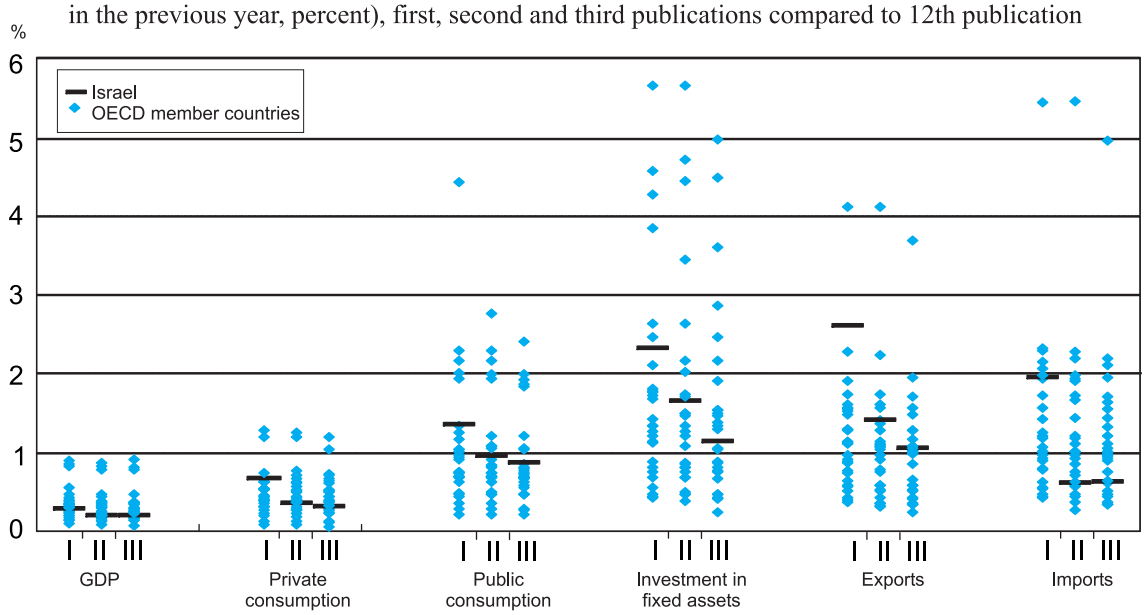
To conclude, the examination of the data on revisions in the National Accounts components data series indicates that the importance and the extent of the revisions cannot be ignored. It should therefore be remembered that the data are subject to numerous changes, although not to any exceptional extent relative to other countries worldwide, and decision-making processes must be adapted to this finding.

Appendix 1

The database for examining the quality of the estimates and the extent of the revisions includes series of quarterly data that underwent a fixed number of revisions. The first series is a collection of all the initial estimates of the annualized quarterly GDP growth data, from the second quarter of 2005 to the fourth quarter of 2011. The second series is a collection of all the secondary estimates and henceforth.

Figure 2.15

Mean absolute revision in sources and uses data (rate of change of quarter vs. the same quarter in the previous year, percent), first, second and third publications compared to 12th publication



SOURCE: For Israel: Central Bureau of Statistics; for other countries: OECD Real time data base.

It should be noted that until May 2009, National Accounts were not published on a permanent monthly basis; a month without any publication was recorded as a missing figure. For example, if an estimate was published for the second time only two months after a first release figure, this figure was recorded as a third estimate. This is on the assumption that the information accrued up to its publication matches the amount of information existing at the second revision stage (after two months) and not the first state (after a month).

Growth data are calculated as annualized quarter-on-quarter rates of change. In addition, for the purpose of international comparison only, growth data were calculated as the year-on-year quarterly rate of change.

Appendix 2

A Mincer-Zarnowitz (1969) forecasting efficiency test is based a regression of the form: $R_t^i = \alpha + \beta(X_t^i - \overline{X}^i) + u_t$, where X_t^i is the growth estimate in quarter t, $\overline{X}^i$ is the average of the estimates and R_t^i represents the revision for quarter t. The index i represents the number of the publication. Tables 2.2 and 2.3 (in the first and second part, respectively) present the β values, the F statistic and their significance level. The α values appear in the second columns together with their significance level.

The test examines whether it is possible to forecast the revisions by means of the initial publication. Adjusted estimates are published for two main reasons. One reason is noise and the other reason is news. When an adjustment is made as the result of noise, this means that measuring mistakes were made in the initial publications. These estimates are therefore not optimal and can be used to forecast the revision. When an adjustment is made because of news, this means that when the initial estimates were calculated, optimal use was made of all the information available. The revisions subsequently obtained result solely from new information. In this case, the estimate is optimal and it is not possible to forecast the revision.

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Residential Land Prices 1998–2012

- Between 2006 and 2011, the price of land sold by the Israel Land Administration (per residential unit in high density construction) increased by about 30 percent, with a marked difference between the center of the country and the periphery (close to 60 percent and about 15 percent, respectively), taking into account characteristics of the land such as location and area. The price of land declined in the past year.
- The spike in land prices in the center of the country is in line with the sharp increase in home prices there.
- There is a positive correlation between the price of land and the rate of land sold as a share of land marketed (in terms of residential units). In recent years, the rate greatly increased, and has come close to full utilization—even though the Israel Land Authority has markedly increased the volume of land being marketed. This development may hint to surplus demand for land in the center of the country.

The price of land is a significant component in the consumer price of a home, particularly in areas of high demand. In Israel, the price of land constituted about one-third of the consumer price of a home on a national average for 2009–10. In the center of the country, the price of land is a much more significant component than in the periphery. Construction costs also constituted about one-third of the price, with the remainder accounting for developers' profits and taxes.[24]

The box provides a brief outline of the yearly hedonic price indices of land per residential unit, i.e., after accounting for the characteristics of the land.[25] This is land sold by the Israel Land Administration (hereinafter: ILA) between 1998 and 2012, since there is no data available prior to the second quarter of 1998. The Land marketed by the ILA is used for the construction of most housing units, while its share in the center of the country is lower.

The database for calculating prices is the results of the tenders published by the ILA concerning land zoned for high density or for low density/ground level residential construction. In total, during the reviewed period, close to 11,000 plots of land were sold, which were zoned for the construction of about 117,000 residential units (about 89 percent in high density construction). The results of the tenders include the plot's location, zoning[26], area, the number of residential units that can be built[27], the price, development costs and concession date.

The explained variable in the hedonic estimations[28] is the log of the land price per residential unit (including development costs and excluding VAT), and the explanatory variables are: a dummy variable (indicator) for high density construction; the land area in sq. m.; the straight-line distance from Tel Aviv; population density per sq. km. of built up area in the

[24] Taken from a presentation by the Ministry of Construction and Housing and Rotem Strategy (2013).

[25] We cannot conduct an analysis at a higher frequency than yearly, or separately for each district, due to the low number of land transactions carried out by the ILA. This box does not deal with the economic or other factors that affect land prices, including the supply of land, demographic developments, interest rates and credit policy, construction costs, planning and construction laws, household income and wealth, and so forth.

[26] For the purpose of the hedonic estimations, corrections were made in the classification prepared by the ILA concerning land zoning: for high density or for low density/ground level/build your own home. The corrections were made in accordance with the number of zoned residential units, the area per residential unit and the location of the plot, with the help of aerial photographs.

[27] The number of residential units actually built may be different, for instance due to updates in the Urban Building Plan.

[28] The estimates were made using the OLS method, with weighting according to the number of residential units zoned and accounting for heteroskedasticity in the level of the community (robust standard errors). Similar estimations can be found in the following studies: Goffette-Nagot, 2008; Haughwout et al, 2008; Moller, 2009; Wu et al, 2010; Combes et al, 2011; Nichols et al, 2011. Transactions were excluded from the estimations if the land price per residential unit (including development costs) each year was more than twice as high, or less than half the median price in the sub-district. The exclusion was done separately for high density construction and for non-high density construction, and for Jewish and Arab communities, and about 8 percent of transactions were excluded. The explanatory power reached 0.8–0.9 in estimates that include a locality dummy variable, and 0.5–0.6 in the others (where full explanatory power equals 1.0).

locality[29]; the locality's population[30]; a dummy variable for an Arab locality; the socio-economic rating of the statistical area in which the plot is located (this rating varies between 1 and 20, with 20 being the best-off area, and is prepared according to the population and housing census of 2008); and a dummy variable for each of the years, reflecting the annual change in prices (compared to the base year of 1998), all other variables constant.[31] Some of the estimations were limited to high density construction, since such purchases have different characteristics than purchases of land for ground-level construction. We emphasize that since the ILA carries out a relatively low number of land sale transactions each year, and due to the limited information on the characteristics of the land and the homes built on it, the estimates of change of land prices over time are rough estimates only.

Before presenting the land price indices, let us briefly examine the contribution of the explanatory variables to land prices. Most of the estimates point in the expected directions, and in general, they are very significant. The price of land per residential unit in high-density construction is two-thirds to three-quarters lower than the price for ground level construction. Price elasticity in relation to the distance from Tel Aviv[32] stands at -0.2 to -0.4 (meaning an addition of one percent to the distance to Tel Aviv, at the average point of all explanatory variables, involves a decline of 0.2 to 0.4 percent in the price of land per residential unit). Price elasticity in relation to the locality's population stands at 0.1 to 0.2, since large urban centers have drawing power thanks to the variety of various amenities, the broad supply of work places, and so forth. In Arab localities, the price of land per residential unit is markedly lower than the price in Jewish localities. Every increase of one unit in the socio-economic rating of the statistical area in which the plot is located raises the price of land by 6 percent.[33]

Yearly indices of land prices per residential unit are presented in Figure 2.16. In general, in 1999 – 2000 prices increased (only in the periphery, as will be detailed below), in 2000 – 2006 they were volatile and increased, from 2008 to 2011 they skyrocketed by about one-third, and in 2012, they declined.[34] During the period from 1998 to 2012, the price of land per residential unit doubled. We note that compared to the hedonic estimates, the gross prices of land (Figure 2.17) developed in the same direction in most years, but the annual rates of change were generally quite varied.

Figure 2.16 also shows the results of the calculation of the hedonic land price index for land zoned for high density construction (10 housing units or more) in neighborhoods and small localities where land was sold in at least two different years. This is basically how we track developments in the prices of land that is of close to equal quality in terms of its location. In other words, this is a kind of "repeated transactions" approach. In addition, the estimates took into account the number of intended residential units and the area of the land, and dummy variables (indicators) for neighborhoods or small localities were added to the explanatory variables. The Figure shows that the development of the land price index estimated through this method is similar to that presented here.

When assessing the change in the owner occupied home price index (this index is not part of the Consumer Price Index) and comparing it to the change in the prices of land for high density construction and to the Index of Input in Residential Building, the following picture emerges (Figure 2.18): Between 2006 and 2011, home prices increased by more than half, land prices increased by one-third[35], and building input prices increased moderately. Looking long-term at the period from 1998 to 2012, the rate of land price

[29] Based on Central Bureau of Statistics (CBS) data on land use, as of 2002, the final year in which such data were published. See: http://gis.cbs.gov.il/website/landuse_2002/mavo/main.html (in Hebrew only).

[30] The four most recent explanatory variables were estimated in log.

[31] There was room to incorporate additional explanatory variables such as zoned construction area, but they are not available.

[32] Alternatively, the peripherality index calculated by the Central Bureau of Statistics for 2004 (Tsibel, 2009) could have been used. The index takes into account the travel distance between each locality and all the other localities in Israel, and the size of the population in the localities. The correlation between the Central Bureau of Statistics peripherality index and the distance to Tel Aviv stands at 0.9 in absolute terms, and when using it instead of the distance to Tel Aviv, similar estimates are obtained.

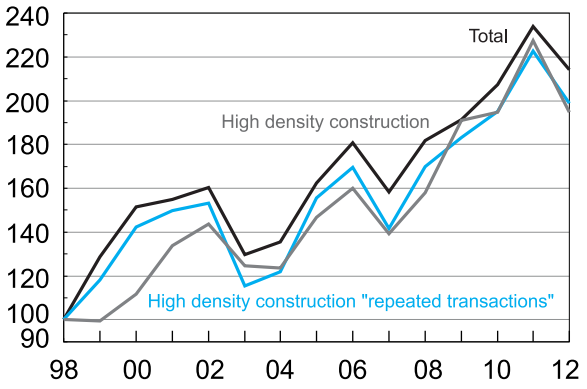
[33] In other versions of the study, the price of land per residential unit in high density construction was estimated while adding the explanatory variable of the number of zoned residential units. Each additional residential unit reduces the price, on average and significantly, by about 0.1 percent. In other estimates, the price of land (not per residential unit) was estimated with the number of residential units added to the explanatory variables. (Land price elasticity in relation to the number of residential units stands at 0.8 – 0.9.) Compared to the original estimates, the estimates of the other explanatory variables, including the dummy variables for years, remain almost unchanged.

[34] The number of land transactions in 2007 was very low, particularly in high density construction, and we must therefore relate to the price estimates for that year with greater caution.

[35] We note that the increase in land prices began even before 2006, and there is a time lag between the purchase of the land and the sale of the homes.

Figure 2.16

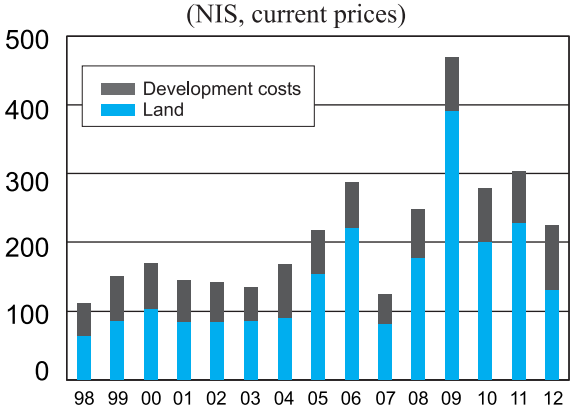
Yearly hedonic price indices of land per residential unit, 1998-2012 (1998 = 100)



SOURCE: Bank of Israel.

Figure 2.17

Average annual gross price of land and development costs per housing unit in high density construction, 1998-2012 (NIS, current prices)



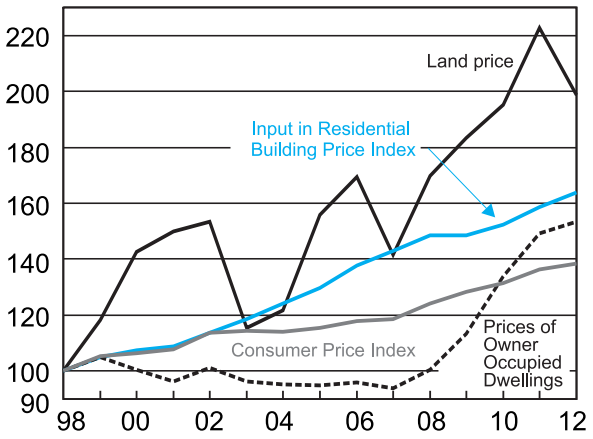
SOURCE: Based on Israel Land Administration.

increases was much more rapid than the rate of home price increases, and the prices of building inputs rose rapidly.

The development of home prices and of prices for land for high density construction, divided into the center of the country and the periphery (the northern, Haifa and southern districts), is show in Figures 2.19a, 2.19b, and 2.19c. While prices go hand in hand in the center of the country, that is not the case in the periphery. Between 2006 and 2011, the prices of land for high density construction (per residential unit) in the center increased by close to 60 percent, as did home prices. In contrast, the increase of land prices in the periphery was more measured—about 15 percent—while home prices increased by about 50 percent.[36] If we look at these things in absolute terms, the price of land per residential unit in the center of the country (excluding VAT) increased by more than NIS 150,000 during the same period, and home prices jumped by more than NIS 500,000, while in the periphery, land prices increased slightly and home prices increased by about NIS 250,000.[37] Similar differentials in the increase of land prices between the center and periphery during the reviewed period can also be found in the "repeated transactions" method. In 2011, land prices (excluding VAT) reached their peak: In the center, prices reached the order of NIS 450,000 per residential unit for high density construction, and in the periphery they came close to NIS

Figure 2.18

Yearly index of housing prices for owner occupied dwellings, land prices[a], and residential construction input index, 1998-2102 (1998 = 100)



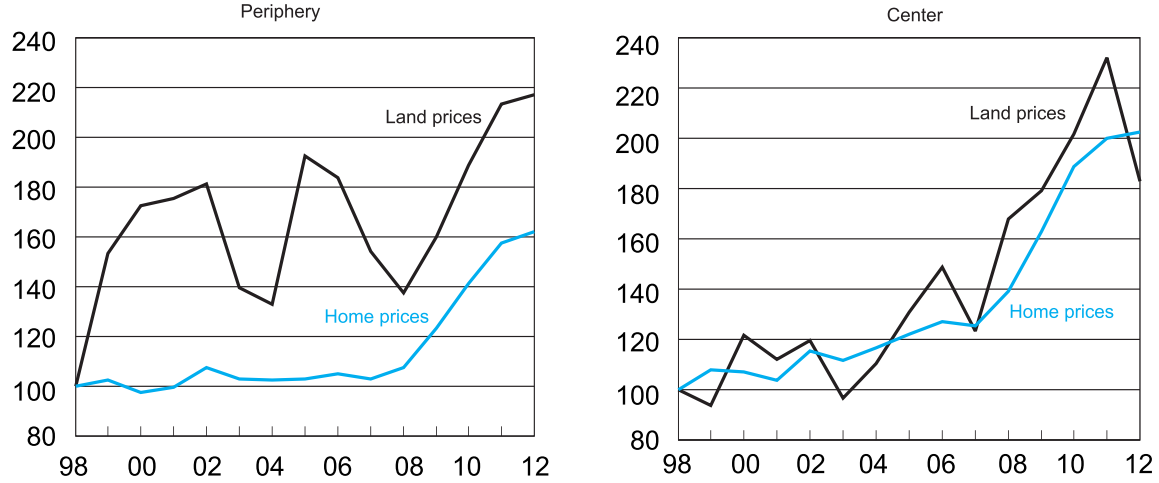
[a] Price of land per high density residential unit.
SOURCE: Based on Central Bureau of Statistics.

[36] The rapid rate of increase in land prices in the periphery that took place at the end of the 1990s and beginning of the last decade is in line with the rapid growth of the amount of land sold as a share of land marketed (Figure 2.20), and with the rise in the gross price of land (and particularly development costs). In absolute terms, the price of land in the periphery increased from about NIS 44,000 per housing unit in high density construction in 1998 to about NIS 62,000 in 2003; this increase constitutes less than 4 percent of the average price of a 3.5–4 room apartment in the periphery in 1998.

[37] Since the beginning of the last decade, there have been changes in construction standards, planning and building laws, and so forth, and according to the Israel Builders Association, these changes have raised the cost of an average apartment by an order of magnitude of NIS 170,000 (Ministry of Construction and Housing and Rotem Strategy, 2013). Apparently, only some of these changes were reflected in the Index of Input in Residential Building. Since the cost of construction is a major part of the consumer price of a dwelling in the periphery, this had a larger effect on the rate of change in home prices in the periphery.

Figure 2.19a

Yearly index of home[a] and land prices[b] in the center and the periphery[c], 1998-2012
(1998 = 100)



[a] Average gross price of a 3.5 to 4 room apartment. The distribution of the number of transactions in each district in the center / periphery each year is stable at the level that it was in 1998.
[b] Price of land per residential unit in high density construction.
[c] Periphery: the northern, southern and Haifa districts.
SOURCE: Based on Central Bureau of Statistics.

100,000[38]—about one-third and about one-tenth of the price of a typical 3.5–4 room apartment, respectively.[39]

There is a positive correlation between residential land prices and the rate of land that the ILA sold as a share of what it marketed (Figure 2.20). In the center of the country, the correlation is higher (about 0.6) than in the periphery (about 0.3). The rate of sales of land in the center averaged about 82 percent between 1998 and 2012, compared with 58 percent in the periphery. In 2010 and 2011, sales in the center reached about 94 percent, hand in hand with the sharp increase in the price of land there, while the rate of sales and the increase in land prices were lower in the periphery—even though the ILA markedly increased the volume of land marketed throughout the country during those years. These developments apparently show that there was a shortage of land in areas of high demand in the center of the country in those years, and we can assume that in the short term, this will make it hard to lower the prices of dwellings there as long as demand for them remains high.

We conclude that in the center of the country, the increase in land prices is in conjunction with increases in home prices[40]—a direct result of lively demand for housing and limited supply of land for construction, whose price is a significant part of the price of the dwelling. In contrast, in the periphery, the ILA owns a relatively large portion of the unbuilt land, and has a greater ability to market it within a short period of time than it does in the center of the country also due to fewer planning limitations. Therefore, it is easier to moderate the increases in home prices in the periphery through expanded marketing of land.

We emphasize that this box does not assess the causal connection between land prices and home prices. Such an assessment requires an empirical analysis that takes into account how various factors affect home prices, some of which factors have a direct impact on land prices. (See also footnote number 25.)

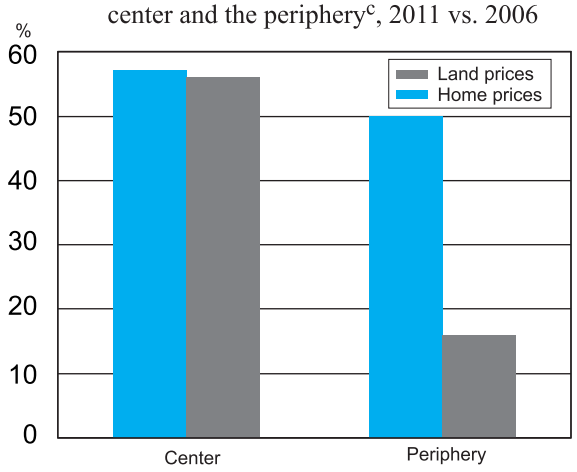
[38] We note that discounts in the price of land and in development costs were awarded in the periphery at different times.

[39] According to the mix of land transactions for high density construction and for 3.5 – 4 room apartments that were conducted in each district in the center and the periphery in 1998, and according to the increase in the index of land prices and the gross prices of these dwellings in each district up to 2011.

[40] A similar phenomenon was observed in other countries as well. (A discussion of the American case appears in Davis and Palumbo, 2008).

Figure 2.19b

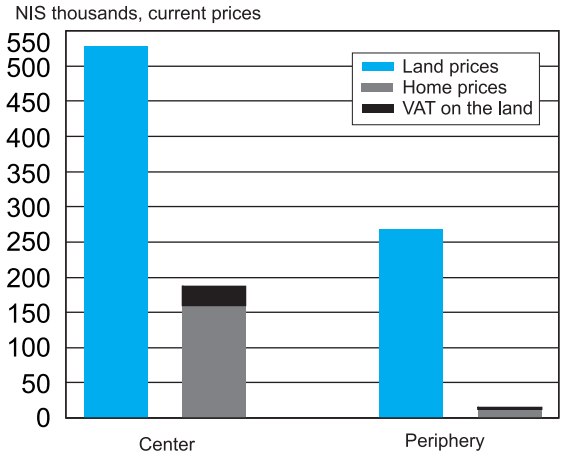
Change in home[a] and land prices[b] in the center and the periphery[c], 2011 vs. 2006



[a] Average gross price of a 3.5 to 4 room apartment.
The distribution of the number of transactions in each district in the center / periphery each year is stable at the level that it was in 1998.
[b] Price of land per residential unit in high density construction.
[c] Periphery: the northern, southern and Haifa districts.
SOURCE: Based on Central Bureau of Statistics.

Figure 2.19c

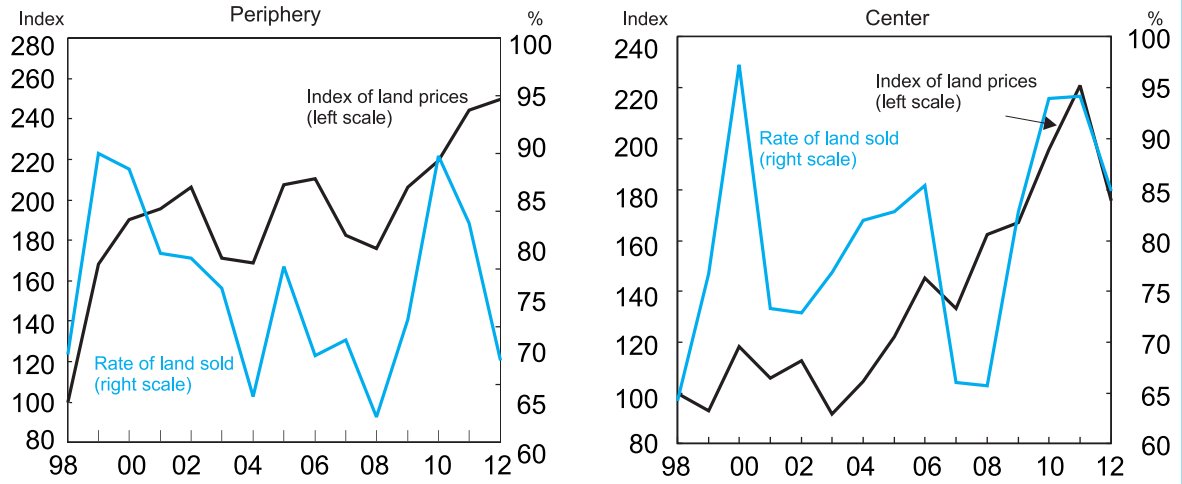
Absolute change in home[a] and land prices[b] in the center and the periphery[c], 2011 vs. 2006



[a] Average gross price of a 3.5 to 4 room apartment.
The distribution of the number of transactions in each district in the center / periphery each year is close to what it was in 1998.
[b] Price of land per residential unit in high density construction.
[c] Periphery: the northern, southern and Haifa districts.
SOURCE: Based on Central Bureau of Statistics.

Figure 2.20

Yearly index of land prices[a] and land sold as a share of land marketed[b] in the center and the periphery[c], 1998-2012



[a] Price of land per residential unit.
[b] Number of residential units zoned for construction and sold as a share of those marketed by the Israel Land Administration.
[c] Periphery: the northern, southern and Haifa districts.
SOURCE: Based on Israel Land Administration.

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Statistical Tables

Table 1.1 National Accounts, 2012-2013
(percentage change in annual terms, at constant prices, seasonally adjusted)

		Change from previous quarter					Year-on-year change[b]	
		2012				2013	2012	2013
	2012[a,b]	I	II	III	IV	I	IV	I
GDP	3.2	2.9	2.6	2.8	2.6	2.8	3.3	2.0
Business-sector product	3.3	3.2	2.9	2.9	3.4	2.0	3.6	1.9
Private consumption expenditure	2.7	5.6	2.5	1.4	2.0	5.6	3.4	3.8
Gross domestic investment	11.6	80.8	-42.0	5.6	-8.4	-8.1	-6.2	-22.5
Fixed investment	4.0	3.5	-2.5	-4.4	-11.0	-14.7	-2.8	-8.0
Goods and services exports excl. diamonds	4.3	7.7	29.6	-10.9	-9.0	12.1	3.3	5.2
Goods exports[c]	-2.4	-5.6	19.9	-13.7	-11.5	19.9	-3.4	2.1
Services exports[c]	6.3	21.2	24.7	-18.8	2.3	12.9	6.0	5.3
Goods and services imports excl. diamonds[d]	6.7	45.5	-7.1	-14.5	-14.8	-2.6	-1.4	-9.9
Goods imports[e]	2.4	32.8	-5.8	-15.3	-19.9	1.8	-5.6	-10.6
Services imports[e]	6.9	70.5	-31.1	1.1	-14.8	42.6	-1.2	-6.2
Public sector consumption	3.4	3.4	-1.3	1.0	5.2	-7.3	4.4	-0.9
Public consumption excluding defense imports	3.3	2.4	1.3	2.2	4.1	-4.8	4.0	0.3
Domestic use of resources	4.3	17.5	-8.0	1.0	0.2	1.2	1.6	-2.7

[a] Compared with previous year.

[b] Unadjusted data.

[c] New calculation - excluding subsidies.

[d] Excluding defense imports, ships and aircraft.

[e] New calculation - excluding taxes.

SOURCE: Based on Central Bureau of Statistics data.

Table 1.2 Indicators of Business Activity, 2012-2013
(percentage change, in annual terms, seasonally adjusted)

	Change from previous month						October-March		
	2012			2013			Change from previous period	Year-on-year change[a]	Last month for which data available*
	Oct	Nov	Dec	Jan	Feb	Mar			
Composite state-of-the-economy index	0.1	0.1	0.0	0.2	0.2	0.1	0.5	1.2	March
Large-scale retail trade	-0.2	0.5	1.9	0.3	-1.1	-1.4	-1.2	3.5	March
Industrial production (excl. diamonds)	-2.4	2.2	-6.6	3.1	3.7	-1.3	-0.8	2.8	March
Index of trade revenue	1.1	-0.8	-0.3	1.1	2.9	-3.2	0.3	1.1	March
Index of trade and services revenue	2.6	-0.6	0.2	0.2	3.1	-3.7	0.5	2.5	March
Index of services exports	-3.3	2.7	6.2	-6.7	5.2	-1.6	-4.6	3.2	March
Tourist arrivals	-1.1	-6.3	-2.3	2.3	4.7	-3.7	-4.2	-1.1	March
Residential construction									
Starts	37.8	-18.3	5.1	-1.2	9.0	-8.1	10.6	1.3	March
Completions	-0.8	-0.5	3.1	-0.9	-6.8	3.0	-1.7	8.4	March
ILA land permits (units)[a,b]	944	666	1,312						January
Climate indices based on Business Tendency Survey[c]									
Assessment of present activity: total business sector	0.11	0.08	0.11	0.20	0.27	0.22			March
Assessment of present activity: manufacturing industry	0.10	0.08	0.10	0.12	0.17	0.15			March
Assessment of present activity: services industry	0.08	0.03	0.08	0.23	0.34	0.28			March
Assessment of future activity: total business sector[d]	0.07	0.08	0.09	0.07	0.12	0.16			March
Business Climate Index (total business sector)	0.10	0.09	0.08	0.09	0.20	0.23			March

* For monthly indicators, when the last month for which data is available is March, the previous comparison period is April–September; when the last month with data available is February, the comparison period is April–August; when the last month with data available is January, the comparison period is April–July. When the last month with data available is December, the comparison period is April–June. For indicators produced quarterly, the comparison is to the last complete quarter in the previous period reviewed.

[a] Unadjusted data.

[b] Land transactions authorized by the Israel Lands Administration in the relevant period.

[c] Figures are in terms of monthly growth of business product and refer to the month in which the survey was conducted.

[d] Expectations are attributed to the middle of the three month period following the survey.

SOURCE: Based on Central Bureau of Statistics and Ministry of Construction and Housing data.

Table 1.3 Indicators of Labor Market Developments, 2012-2013
(percentage change, seasonally adjusted)

	I/2013	Percent change from previous quarter					October-March: Change from previous period	October-March: Year-on-year change[a]	Last month for which data available*
		2012				2013			
	(thousand)	I	II	III	IV	I			
Civilian labor force	3,653.6	0.6	1.7	1.2	-0.1	0.4	0.4	3.1	March
Israeli employees	3,415.1	0.5	1.6	1.4	-0.1	0.7	0.7	3.3	March
of which : in public services		0.6	3.5	2.2	-2.1				December
in business sector		1.6	-1.0	1.2	1.3				December
Foreign workers and Palestinians (unadjusted)		0.4	1.3	3.1	-0.8				December
Average hours worked weekly per Israeli employee	35.4	1.2	0.8	-2.5	-0.6	-0.3	-0.3	-4.2	March
Weekly labor input in business sector (incl. foreign workers and Palestinians)		1.2	0.7	-0.5	0.2				December
of which: Israelis		1.0	0.6	-0.8	0.3				December
Weekly labor input in public services (Israelis)		12.5	4.5	-1.3	-1.5				December
Unemployed	238.5	0.8	3.1	-1.2	0.5	-4.0	-4.0	0.0	March
Job seekers	188.9	0.1	1.9	1.6	1.1	-0.9	1.2	4.2	January
Claims for unemployment benefits	79.9	0.5	1.0	5.5	1.2	1.5	4.6	8.4	March
Balance of Employment[b]		0.3	1.0	0.5	0.6	1.1			March
Job vacancies[a]	57.8	-0.2	-2.0	-1.5	-2.0	-2.3	-3.9	-7.5	March
	(NIS)								
Real wage per employee post[c]		-1.0	1.2	0.1	0.8	-0.8	0.4	1.3	March
In public services		-1.2	0.6	-0.5	0.7	0.4	0.5	0.6	March
In business sector		-1.7	1.9	0.0	1.0	-0.4	0.6	1.7	March
Nominal wage per employee post[c]	8,863.9	-0.5	1.9	0.3	1.1	-0.6	0.9	2.8	March
In public services	8,532.8	-0.7	1.3	-0.3	1.0	0.6	0.9	2.1	March
In business sector	9,092.8	-1.0	2.3	0.2	1.7	-0.5	1.4	3.2	March
Unit labor cost		-1.1	0.1	-0.7	-0.1				December
		Percent, seasonally adjusted							
Participation rate		62.8	63.6	64.1	63.8	63.7			March
Employment rate		58.5	59.2	59.8	59.4	59.5			March
Unemployment rate		6.9	7.0	6.8	6.8	6.5			March
Depth of unemployment[d]		24.5	26.0	23.8	26.7	26.6			March

* For monthly indicators, when the last month for which data is available is March, the previous comparison period is April–September; when the last month with data available is February, the comparison period is April–August; when the last month with data available is January, the comparison period is April–July. When the last month with data available is December, the comparison period is April–June. For indicators produced quarterly, the comparison is to the last complete quarter in the previous period reviewed.

[a] Unadjusted data.

[b] Posts filled minus terminations of employment, as a percentage of the total number of employees in businesses in the Employers Survey Sample. The calculation is made by the Bank of Israel.

[c] Including foreign workers and Palestinians. Seasonally adjusted data.

[d] Percent of unemployed seeking work for more than six months (unadjusted).

SOURCE: Central Bureau of Statistics Labor Force Survey, except for data on Israelis, non-Israelis, and labor input in the business sector, and total Israelis employed, which are the Central Bureau of Statistics (CBS) National Accounts estimates; job seekers, which are derived from the Israeli Employment Service; claims for unemployment benefits, which are derived from the National Insurance Institute; job vacancies, which are derived from the CBS Survey of Job Vacancies, and the Balance of Employment, which is derived from the Ministry of Industry, Trade and Labor's Employers Survey.

Table 1.4 Government Budget Performance, 2012-2013

		Change from previous quarter					October-March		
		2012				2013			
	2012[a]	I	II	III	IV	I	Change from previous period	Year-on-year change	Last month for which data available*
Domestic deficit, as percent of GDP	-3.1	0.5	-3.2	-2.8	-6.9	-0.9			March
Total deficit excluding credit, as percent of GDP	-4.2	-0.7	-4.1	-3.8	-8.0	-2.0			March
Deviation from domestic budget path, excl. credit extended:[b]					(NIS billion)				
Revenue	-6.9	-3.1	-3.9	-5.2	-6.9	-4.6			March
Expenditure	1.1	-2.0	-1.3	1.1	1.1	-0.1			March
Deficit	-8.0	-1.2	-2.6	-6.3	-8.0	-4.6			March
Total deficit excluding credit	-39.0	-1.6	-9.5	-9.1	-18.8	-4.7	-4.9	-3.4	March

	Real change year-on-year (percent)								
	2012			2013					
	Oct	Nov	Dec	Jan	Feb	Mar			
Government domestic revenues excluding credit	-2.0	-3.7	1.7	-9.0	-0.2	13.6		0.0	March
Government tax revenue	3.6	-0.9	1.0	-6.0	-0.4	5.8		0.2	March
of which : income tax, net	-2.3	11.0	12.7	-14.5	-8.3	-0.5		-1.7	March
VAT, gross	21.0	-3.5	9.3	-0.7	6.8	5.0		5.4	March
Government expenditure excluding credit	-6.0	8.7	-0.6	8.9	6.7	3.9		2.8	March
National Insurance allowances	6.4	5.8	8.0	4.5	5.5	3.0		5.5	March
of which : Unemployment benefit	15.8	15.9	13.5	12.2	13.6	6.5		12.8	March
Income support[c]	2.8	-0.4	18.8	0.6	3.9	-1.1		4.1	March
Payments to the National Insurance Institute by the public	-1.7	2.8	-1.1	2.1	4.7	3.9		1.7	March

* For monthly indicators, when the last month for which data is available is March, the previous comparison period is April–September; when the last month with data available is February, the comparison period is April–August; when the last month with data available is January, the comparison period is April–July. When the last month with data available is December, the comparison period is April–June. For indicators produced quarterly, the comparison is to the last complete quarter in the previous period reviewed.

[a] Compared with previous year.

[b] The path is determined in accordance with the deficit ceiling. The figures compared with the previous period and with the corresponding period are differences.

[c] Not including income support in old-age and survivors' pensions.

SOURCE: Based on Ministry of Finance and National Insurance Institute data.

Table 1.5 Foreign Trade, Balance of Payments, and the Reserves, 2012-2013
(Seasonally adjusted)

		Change from previous quarter					October-March		
		2012				2013	Change from previous period	Year-on-year change[b]	Last month for which data available*
	2012[a,b]	I	II	III	IV	I			
	(rate of change, percent)[c]								
Trade in goods[d]									
Goods imports	-1.4	2.1	-1.2	-2.1	-3.4	0.4	-4.2	-6.8	March
of which : Consumer goods	-5.6	-0.4	-0.3	-2.0	-1.3	5.6	0.5	-2.1	March
Capital goods	-5.7	0.8	-6.3	-10.6	-4.0	-8.8	-13.4	-19.8	March
Intermediates	2.0	3.6	0.4	1.1	-4.0	1.4	-2.8	-3.3	March
Goods exports	-3.2	-3.6	-2.6	5.6	-3.6	8.8	3.3	1.4	March
of which : Manufacturing	-3.3	-3.8	-2.4	5.2	-3.9	9.4	3.2	1.2	March
of which : High-tech	-2.5	-8.9	1.4	8.6	-5.1	12.5	5.0	4.4	March
Balance of payments				$ million					
Goods and services exports	90,477	22,346	23,299	22,527	22,305				December
Goods and services imports	91,984	24,412	23,277	22,314	21,982				December
Balance of trade in goods and services account	-1,507	-2,065	22	213	324				December
Balance of trade in current account	-927	-1,077	-146	224	71				December
Surplus/deficit in financial account (excl. foreign exchange reserves)[b]	-7,879	-773	-1,256	-1,717	-4,133				December
of which : Nonresidents' direct investments[b]	10,414	1,693	3,315	3,441	1,966				December
Nonresidents' portfolio investment[b]	-3,558	-807	-2,423	326	-653				December
Residents' direct and portfolio investment abroad[b]	8,327	1,511	1,926	2,540	2,351				December
Bank of Israel foreign currency reserves, end-period[b]	75,906	77,041	75,148	76,199	75,906	77,002	1.1	-0.1	March
Net external debt (percent of GDP)[b,e]	-27.0	-25.0	-26.4	-27.1	-26.9				December

* For monthly indicators, when the last month for which data is available is March, the previous comparison period is April–September; when the last month with data available is February, the comparison period is April–August; when the last month with data available is January, the comparison period is April–July. When the last month with data available is December, the comparison period is April–June. For indicators produced quarterly, the comparison is to the last complete quarter in the previous period reviewed.

[a] Compared with previous year.

[b] Unadjusted data.

[c] The change relates to the dollar values of imports and exports.

[d] Not including ships, aircraft, diamonds, and fuel.

[e] GDP is calculated at the end-of-period NIS/$ exchange rate.

SOURCE: Based on Central Bureau of Statistics data.

Table 1.6 Selected Price Indices, the Effective Exchange Rate, Nondirected Bank Credit, Interest Rates, Yields, and the Share Price Index, 2012-2013

(rates of change, percent)

	Change from previous month						October-March		
	2012			2013			Change from previous period	Year-on-year change	Last month for which data available*
	Oct	Nov	Dec	Jan	Feb	Mar			
CPI	-0.2	-0.5	0.2	-0.2	0.0	0.2	-0.4	1.3	March
Consumer price index, seasonally adjusted	-0.1	-0.1	0.2	0.1	0.1	0.2	0.4	1.3	March
Price index of owner-occupied homes[a]	1.1	1.3	1.7	1.4	0.5		6.0	10.5	February
General share-price index[b]	2.9	1.2	-3.6	0.9	3.8	1.5	6.8	8.7	March
Real effective exchange rate[c]	-1.6	0.8	-2.2	-0.5	-0.9	-1.3	-1.2	0.7	March
Nominal effective exchange rate	-2.1	0.5	-2.1	-0.7	-1.4	-1.6	-2.1	0.0	March
Nondirected bank credit	0.6	0.3	-0.1	0.1	0.2	0.1	1.7	3.4	March
Effective interest rate in daily deposit auction[b]	2.3	2.0	2.0	1.8	1.8	1.8	1.9	2.8	March
Yield to maturity on 5-year notes[b]	0.4	0.4	0.4	0.4	0.4	0.3	0.4		March
Risk premium[b,d]	-3.1	4.0	-11.2	-11.6	-1.7	-1.3	-35.5	-53.0	March
	Change during previous 12 months[e]								
CPI	1.8	1.4	1.6	1.5	1.5	1.3	0.1	1.5	March

* For monthly indicators, when the last month for which data is available is March, the previous comparison period is April–September; when the last month with data available is February, the comparison period is April–August; when the last month with data available is January, the comparison period is April–July. When the last month with data available is December, the comparison period is April–June. For indicators produced quarterly, the comparison is to the last complete quarter in the previous period reviewed.

[a] Not part of the CPI.

[b] Daily average over the month.

[c] The real effective exchange rate is the weighted geometric mean of the exchange rate of the shekel against 28 currencies, representing 38 of Israel's main trading partners (weighted by the extent of Israel's trade with those countries), adjusted for the difference between the rate of inflation in Israel and the rates of inflation in those countries.

[d] As measured by 5-year credit-default-swaps (CDS). Calculated as the difference in basis points.

[e] Year-on-year period change.

SOURCE: Based on Central Bureau of Statistics data.

Table 1.7 Indicators of Economic Development in Advanced and Developing Economies[a]
(annual change, percent)[b]

			2011	2012	2013 Projection	2014 Projection
World GDP			4.0	3.2	3.3	4.0
	Advanced economies		1.6	1.2	1.2	2.2
	Emerging and developing economies		6.4	5.1	5.3	5.7
World trade			6.0	2.5	3.6	5.3
	Advanced economies	Imports	4.7	1.0	2.2	4.1
		Exports	5.6	1.9	2.8	4.6
	Emerging and developing economies	Imports	8.6	4.9	6.2	7.3
		Exports	6.4	3.7	4.8	6.5
Commodity prices ($)	Oil[c]		31.6	1.0	-2.3	-4.9
	Nonfuel		17.8	-9.8	-0.9	-4.3
Inflation (CPI)	Advanced economies		2.7	2.0	1.7	2.0
Short-term interest rate (%)[d]	Dollar deposits		0.5	0.7	0.5	0.6
	Euro deposits		1.4	0.6	0.2	0.4
Unemployment rate	Advanced economies		7.9	8.0	8.2	8.1

[a] According to the World Economic Outlook, Israel is classified as an advanced economy. The advanced economies include the industrialized countries and some emerging markets.

[b] Except for unemployment and interest rates (percent).

[c] The average price of a barrel of U.K. Brent, Dubai and West Texas Intermediate crude oil in 2011 was $104.01, excluding freight costs. Estimated price for 2012 is $114.71 and for 2013, $110.00.

[d] Six-month Libor rate for US dollar deposits, and three-month Libor rate on euro deposits.

SOURCE: World Economic Outlook (IMF), April 2013.