

## RESEARCH DEPARTMENT 2012 STAFF FORECAST<sup>1</sup>

### Abstract

This document presents the forecast of macroeconomic developments compiled by the Bank of Israel Research Department in December 2011 and published in a press release on December 26, 2011. According to the staff forecast, the inflation rate over the full year of 2012 will be 2.1 percent, near the midpoint of the inflation target range of 1–3 percent per year. The Bank of Israel interest rate in the final quarter of 2012 is expected to be 2.25 percent. The economy (GDP) is expected to grow by 2.8 percent in 2012.

### FORECAST<sup>2</sup>

The Bank of Israel Research Department compiles a staff forecast of macroeconomic developments on a quarterly basis. The staff forecast is based on several models, various data sources, and assessments based on economists' judgment. The Bank's Dynamic Stochastic General Equilibrium (DSGE) model developed in the Research Department—a structural model based on microeconomic foundations—plays a primary role in developing the macroeconomic forecast.<sup>3</sup> The model provides a framework for analyzing the factors which have an effect on the economy, and allows for combining data from various sources to reach an integrative macroeconomic forecast for real and nominal variables, with internal consistency and an "economic story". In addition to formulating, analyzing, and presenting the base forecast, the DSGE model is also used to examine alternative scenarios and to evaluate the risks to the baseline forecast.

#### a. The global environment

The assumptions about the global economy are primarily based on forecasts by investment houses and international entities (such as the IMF and OECD). Assessments of expected global growth were lowered in comparison with those on the date of the compilation of the previous macroeconomic forecast (in September 2011), following the worsening of the debt crisis in Europe and concern about its impact. Specifically, investment house forecasts of expected growth in Europe were reduced significantly.<sup>4</sup> At the same time, investment houses lowered their assessments of the expected path of the ECB's interest rate, so that they now expect that the interest rate will continue to decline in the coming year.<sup>5</sup> Interest rates in other developed markets, especially the US, are forecast to remain at their low level in the coming year.

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<sup>1</sup> The forecast presented here is based on data which were available up through the interest rate decision for January 2012 (reached on December 26, 2011). The forecast was originally published in a press release on December 26, 2011. This document provides a more expanded analysis.

<sup>2</sup> An explanation of the staff forecast, and an overview of the models on which it is based, can be found in Inflation Report 31 for the second quarter of 2010, section 3-C.

<sup>3</sup> A Discussion Paper on the model is due to be published in the near future.

<sup>4</sup> Forecasts for growth in the eurozone in the coming quarters were lowered from moderate increases according to assessments published in September, to contraction of up to 1.9 percent in annual terms (in the first quarter of 2012) according to assessments published in December.

<sup>5</sup> Forecasts reported by investment houses in September were formulated before the ECB reduced the interest rate from 1.5 percent to 1 percent over the course of the fourth quarter, and they forecast, on

World trade forecasts had already declined in September compared with forecasts in June, and declined further between September and December.<sup>6</sup> We assumed that imports in OECD countries will grow by 2.5 percent in 2012, compared with an assumption of 3.5 percent in the forecast compiled in September.

Our assumptions for inflation in world prices are similar to those in September. An OECD forecast published in November sees inflation in OECD countries at 1.9 percent in 2012.

## b. Real activity in Israel

**Table 1: Economic Indicators**  
**Research Department Staff Forecast for 2011 and 2012**  
 (rates of change, percent, unless stated otherwise)

	Actual 2010	Bank of Israel forecast 2011*	Bank of Israel forecast 2012*
GDP	4.8	4.8	2.8
Imports (civilian, excluding diamonds, ships, and aircraft)	9.5	8.8	1.4
Private consumption	5.3	4.7	1.4
Fixed capital formation	13.6	17.4	4.2
Public sector consumption (excluding defense imports)	2.2	2.5	1.8
Exports (excluding diamonds and start-ups)	10.6	2.1	1.2
Unemployment rate	6.6	5.7	6.3
Inflation rate <sup>a</sup>	2.4	2.5	2.1
Bank of Israel interest rate <sup>b</sup>	2.00	3.00	2.25

a) Average CPI reading in the final quarter of the year compared with the final quarter average in the previous year.

b) Average for the final quarter of the year

\* Bank of Israel forecast as of December 26, 2011.

Source: Based on Central Bureau of Statistics.

**GDP growth is forecast to be 2.8 percent in 2012.** The forecast for 2012 was revised downward from the September forecast of 3.2 percent, primarily due to the effect of the deterioration in global conditions, which is expected to impact on all components of demand. The slowdown of the rate of growth of demand compared with its growth in 2011 is also expected to be reflected in the marked slowdown in the rate of growth of **imports**, which are expected to increase by only 1.4 percent in 2012. The relatively low rate of growth of imports, compared to the rate of growth of GDP, is due to several factors. First, we expect a marked moderation in growth of import-intensive demand components (see below for investment in industries excluding housing services and purchases of durable goods). Second, depreciation of the shekel in effective-exchange-rate terms in the second half of 2011 (and gradual transmission to prices) works to make imported goods more expensive in comparison with domestic items. Third, the growth path of imports in 2011, particularly the high rate

average, that the interest rate would remain stable (at a level of around 1.4 percent) in the coming year. In contrast, in December, they forecast further decline in the interest rate, reaching 0.7 percent in the third quarter of 2012. Note that in contrast, forecasts derived from the capital market in September and December of 2011 for the interest rate at the end of 2012 remained steady—1.1 percent in September and 1.0 percent in December.

<sup>6</sup> The IMF forecast for world trade growth in 2012 which was published in the World Economic Outlook from September was 5.8 percent, compared with 6.7 percent in June. The OECD forecast for world trade growth which was published in November was 4.8 percent, and the forecast for import growth in OECD countries was 3.5 percent.

of growth in the first quarter of the year, has a moderating effect on the annual rate of growth in 2012.

**The moderation of the economy's pace of growth in 2012 reflects a moderation of the growth rates of all components of demand. Exports** (excluding diamonds and start-ups) are expected to increase only 1.2 percent in 2012, due to the direct effects of recession in Europe and moderate growth of world trade on demand for exports.<sup>7</sup> **Private consumption** is expected to increase at a moderate rate of 1.4 percent in 2012, due to the deterioration in occupational security and a negative wealth effect inherent in a decline of financial asset prices against the background of the situation in the world. The moderate growth rate of private consumption in 2012 is due primarily to a decline in purchases of durable goods, after a marked increase in purchases of those items in previous quarters. Growth in **fixed capital formation** is expected to moderate in 2012 compared with 2011, led by a moderation in the pace of increase in investment in industries, against the background of expected moderation in activity and an increase in financial and business risks. In addition, the effect of the beginning of production at Intel's new lines is expected to be reflected in a decline in investments in the first half of 2012, alongside an increase in exports in that half.

The slowdown in the economy's pace of growth is expected to be reflected in an increase in the **unemployment rate**, from 5.6 percent in the third quarter of 2011, to 6.4 percent in the fourth quarter of 2012, alongside a modest increase in the rate of participation in the labor force, from 57.4 percent in the third quarter of 2011 to 57.6 percent at the end of 2012.<sup>8</sup>

### c. Inflation and interest rate estimates

**The staff forecast of the Bank of Israel Research Department is that the rate of inflation in 2012 will be 2.1 percent, near the midpoint of the target range of 1–3 percent.** During the course of 2012, inflation over the previous four quarters is expected to be within the target range, and at some points even below its midpoint, at around 1.7 percent. Figure 1 shows that the forecast for inflation in 2012 is slightly lower than our forecast last quarter of 2.3 percent. The forecast for the path of inflation over the previous four quarters during 2012 is lower than our assessment in September primarily due to a downward revision in inflation for the fourth quarter of 2011.<sup>9</sup>

**The forecast for the inflation rate to be at the midpoint of the target range reflects the combination of a number of economic forces—inflationary forces as well as forces acting to restrain inflation.** Inflationary forces include **the prices of commodities world wide.** Although prices of oil and other commodities moderated in

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<sup>7</sup> Exports in 2012 are expected to grow at a moderate pace (1.2 percent) compared with our assessment of OECD import growth during the year (2.5 percent) due to differences in the paths of these variables in 2011.

<sup>8</sup> Unemployment figures in this forecast are based on the quarterly Labour Force Survey of the Central Bureau of Statistics. The last quarterly figure which was published is an unemployment rate of 5.6 percent in the third quarter of 2011 (published on November 30, 2011).

<sup>9</sup> This update primarily reflects the fact that the change in the CPI for September was lower than forecast at the time of the previous staff forecast (in September).

the second half of 2011, they remain at high levels, which in our assessment puts upward pressure on prices. In the forecast we assess that oil prices will not moderate significantly in 2012, despite the expected slowdown in activity, due to supply factors (the impact of tension in Middle East).

Another inflationary force is **the depreciation of the shekel, in terms of the nominal effective exchange rate**, that occurred in the second half of 2011 (a cumulative 5 percent), which is expected to impact import prices in 2012, through the gradual transmission from changes in the exchange rate to prices. Forces having an effect on the exchange rate in the coming year include the interest rate gaps between domestic interest rates and global interest rates (primarily in the US and Europe). Although they remain positive—and thus support shekel appreciation—the gaps have narrowed with the interest rate reductions in Israel in the fourth quarter of 2011, and are expected to narrow further in the coming year, in line with the forecast of further reduction in the domestic interest rate, while interest rates world wide are already very low. In addition, current account deficits and the possibility of an increase in the economy's risk premium against the background of geopolitical forces are expected to act toward shekel depreciation. In light of the various factors, we expect a moderate depreciation of the shekel in 2012 in effective exchange rate terms.

With regard to the **housing component of the CPI (which represents rents)**, we expect its growth rate in 2012 to moderate compared with 2011, but it is still forecast to increase by about 4 percent, which is above the midpoint of the inflation target range.

**Forces expected to constrain inflation include the real wage, and the expected slowdown in the pace of growth of demand.** The rate of inflation (seasonally adjusted) moderated in the second half of 2011 compared with the first half, along with moderation in the rate of growth of the economy. We estimate that the expected moderation in growth of demand in 2012 will continue to press in this direction. Since the crisis at the end of 2008, real wages have increased at a moderate pace compared with the growth rate of labor productivity, so that in our assessment, at this time there are no significant inflationary pressures from domestic production costs. Against the background of the expected slowdown in the rate of growth of demand, we estimate that such pressures are not expected in the coming year as well.

The **Bank of Israel interest rate** is expected to decline in 2012, and stand at 2.25 percent at the end of 2012, compared with 2.75 percent in December 2011. Figure 2 shows that the interest rate forecast is lower than the rate forecast in the previous quarter, which was for an interest rate of 3 percent at the end of 2012. This is in light of deterioration in global conditions, particularly the negative impact on global demand for Israeli exports, the effect of the global slowdown on domestic demand (for private consumption and investments), and the downward revision of expected interest rate paths world wide. With that, in light of a high level of economic activity at the starting point of the forecast (specifically, the relatively low level of unemployment), the fact that monetary policy is already expansionary at the starting point, and the inflationary forces listed above, we estimate that a moderate reduction in the interest rate is consistent with an inflation rate that is expected to be around the midpoint of the target range.

Table 2 shows that **the Research Department's assessments of the inflation rate, interest rate, and growth are similar to those of private forecasters and to expectations derived from the capital markets.** The forecasts, on average, see an inflation rate near the midpoint of the target range, alongside a decline in the interest rate by 0.5 percentage points in the coming year. Inflation forecasts are similar to those in September, while the forecast interest rate in the coming year is lower than estimates in September, which were around 3 percent. The inflation assessment in the Central Bureau of Statistics Survey of Business Trends for the coming year is a bit lower than the assessment in the September survey, which was for 2.85 percent, but it is nonetheless the highest forecast inflation rate, at 2.7 percent, among the various forecasts.

**Table 2**  
**Forecasts for inflation rate, interest rate, and GDP growth, 2012**

	Bank of Israel Research Department	Capital markets <sup>a</sup>	Private forecasters <sup>b</sup>	Survey of business trends <sup>c</sup>
Inflation rate <sup>d</sup> (range of forecasts)	2.1	2.0	2.2 (1.7–2.5)	2.7
Interest rate <sup>e</sup> (range of forecasts)	2.3	2.4	2.3 (1.5–3.25)	
GDP growth <sup>f</sup> (range of forecasts)	2.8		2.9 (2.4–3.5)	

a) Average for the month of December.

b) Inflation and interest rate forecasts are after the publication of the CPI reading for November. Growth forecasts are from November and December.

c) Central Bureau of Statistics Survey of Business Trends, November 2011.

d) Inflation rate over the coming 12 months.

e) Interest rate at the end of 2012. Capital markets forecast derived from Telbor rates.

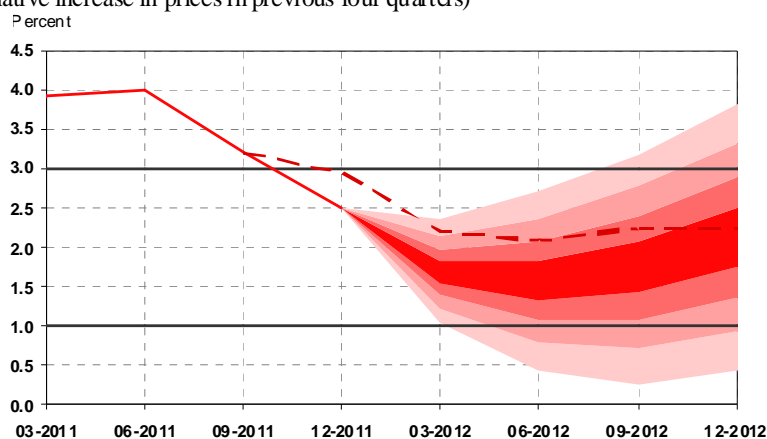
f) Full year GDP in 2012 compared with GDP in 2011.

Source: Bank of Israel.

**Balance of risks in the forecast:** At the time that the forecast was compiled, the uncertainty regarding developments in Europe, and as a result around the world as well, was especially great. The assessment on which the forecast is based is that Europe will enter a recession in 2012, although the debt crises will not develop into a major financial crisis or a sharp global recession. In particular, the recovery in the US is expected to continue. More severe repercussions from the debt crises are a prime risk factor to the real forecast. In light of the geopolitical tension in our region, and in particular the issue of sanctions on Iran, an increase in the price of oil, and a depreciation of the shekel following an increase in the economy's risk premium, pose upward risk factors to the inflation forecast.

Figures 1 and 2 present fan charts around the inflation rate and interest rate forecasts. The width of the fan distribution is derived from the estimated standard deviations of the shocks in the Research Department's DSGE model.

**Figure 1**  
**Actual Inflation and Fan Chart<sup>a</sup> of Expected Inflation,<sup>b</sup> 2011-2012**  
 (cumulative increase in prices in previous four quarters)

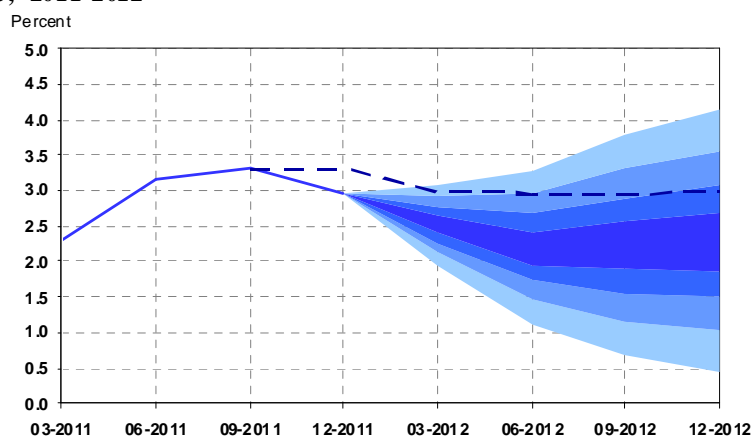


<sup>a</sup> The center of the fan charts is based on the Bank of Israel Research department assessment. The width of the chart is based on the department's medium-scale DSGE (dynamic stochastic general equilibrium) model. The full fan covers 66 percent of the distribution of expected inflation.

<sup>b</sup> The dotted line corresponds to the previous staff forecast (published in September).

Source: Bank of Israel.

**Figure 2**  
**Actual Bank of Israel Interest Rate and Fan Chart<sup>a</sup> of Expected Interest Rate,<sup>b</sup> 2011-2012**



<sup>a</sup> The center of the fan charts is based on the Bank of Israel Research department assessment. The width of the chart is based on the department's medium-scale DSGE (dynamic stochastic general equilibrium) model. The full fan covers 66 percent of the distribution of expected inflation.

<sup>b</sup> The dotted line corresponds to the previous staff forecast (published in September).

Source: Bank of Israel.