



BANK OF ISRAEL

Office of the Spokesperson and Economic Information

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Press Release

Research Department Staff Forecast, December 2015

Abstract

This document presents the forecast of macroeconomic developments compiled by the Bank of Israel Research Department in December 2015. The forecast was presented to the Monetary Committee on December 27, 2015, during its meeting prior to the decision on the Bank of Israel interest rate for January 2016. According to the staff forecast, gross domestic product (GDP) is projected to increase by 2.8 percent in 2016, and by 3.1 percent in 2017. The rate of inflation over the next year (ending in the fourth quarter of 2016) is expected to be 0.6 percent. The Bank of Israel interest rate is expected to remain at its current level of 0.1 percent through the third quarter of 2016, and to increase gradually from the fourth quarter of 2016.

Forecast

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.¹ The Bank's medium scale DSGE (Dynamic Stochastic General Equilibrium) model developed in the Research Department—a structural model based on microeconomic foundations—plays a primary role in formulating the macroeconomic forecast.² The model provides a framework for analyzing the forces which have an effect on the economy, and allows the integration of information from various sources into a macroeconomic forecast for real and nominal variables, with an internally consistent "economic story".

a. The global environment

The current assessments of expected developments in the global environment in the next two years are based mainly on projections by international institutions (the International Monetary Fund and the OECD) and of foreign investment houses. In its forecast published in November, the OECD lowered its global growth forecast and its forecast for growth in global trade and for imports by OECD member countries. This forecast does not project an improvement in the rate of growth of imports by OECD

¹ An explanation of the staff macroeconomic 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.

² A Discussion Paper on the model is available on the Bank of Israel website, under the title: "MOISE: A DSGE Model for the Israeli Economy," Discussion Paper No. 2012.06.

countries in 2016, with expectations for growth of about 4 percent in 2016, similar to its growth rate for 2015. In September, our assessment was that the growth rate would improve to 4.5 percent in 2016 (from 3.5 percent in 2015).

Since the last quarterly staff forecast, in September, oil prices have declined markedly. The price of Brent Sea crude oil was \$100 a barrel in September 2014. In September 2015, it was \$50, and the decline in prices resumed in November, with prices falling below \$40 a barrel in December. This is against the background of the OPEC decision not to reduce oil production among its member countries. The prices of other commodities, as well as food prices, also continued to decline in the fourth quarter. The decline in the prices of commodities, particularly energy, is expected to continue supporting moderate global inflation.

In December, the Federal Reserve raised the interest rate in the US by 0.25 percentage points to a range of between 0.25 percent and 0.5 percent, following seven years in which it remained at near zero (between 0 percent and 0.25 percent). The members of the Federal Open Market Committee expect that the interest rate in the US will rise gradually, reaching 1.4 percent at the end of 2016, and 2.4 percent at the end of 2017. The pace of increase in the interest rate as derived from futures contracts traded on the capital market is more moderate. In contrast, the European Central Bank lowered the interest rate on bank deposits to -0.3 percent, and announced a continuation of its bond purchasing program until at least March 2017. The reduction of the extent of monetary accommodation in the US and its expansion in Europe are expected to continue in 2016.

b. Real activity in Israel

GDP growth is expected to be 2.4 percent in 2015. The first estimate of National Accounts data for the third quarter of 2015 showed that GDP grew by 2.5 percent in the third quarter in seasonally adjusted annual terms. Thus, according to this estimate, there is no noticeable “compensation” in the third quarter for near-zero growth in the second quarter. As a result, and in view of various indicators of economic activity in the fourth quarter, the growth estimate for 2015 was revised slightly downward from the September forecast (by 0.2 percentage points).

GDP in 2016 is expected to grow by 2.8 percent, 0.5 percentage points lower than the September forecast. The factors contributing to the downward revision of the growth forecast include the lower growth forecasts for global trade and imports by OECD countries, and the downward revision of assessments regarding the level of activity in the second half of 2015.

Growth in 2016 is expected to be higher than in 2015, led by improved exports. Exports (excluding diamonds and startups) declined by about 2 percent in 2015, compared with an increase in global trade indices this year.³ Our assessment is that the relative weakness of exports in 2015 was partly the result of temporary factors,

³ According to the most recent OECD forecast, which was published in November, imports to OECD countries increased in 2015 by about 4 percent, and global trade increased by 2 percent.

and that exports will recover in 2016, and will increase at a rate similar to the expected growth rate of imports to OECD countries.

Investment in 2016 is expected to increase rapidly, mainly due to investment in a large company (which will mostly be imputed to the import of machines and equipment). The same is true of the increase in investment in 2017.⁴ Our expectation is that the growth rate of private consumption will moderate in 2016, after increasing rapidly in 2015, particularly consumption excluding durable goods.

In 2017, the growth rate of global trade is expected to increase, which will support improvements in Israeli exports. A relatively high rate of growth is expected in Israeli exports in 2017 due to the exports of a large company. GDP is expected to grow by 3.1 percent in 2017.

Table 1: Economic Indicators
Research Department Staff Forecast for 2015 to 2017

(rates of change, percent, unless stated otherwise)

| | Bank of Israel estimate 2015 | Bank of Israel forecast 2016 | Bank of Israel forecast 2017 |
|--|---------------------------------------|---------------------------------------|---------------------------------------|
| GDP | 2.4 | 2.8 | 3.1 |
| Civilian imports (excluding diamonds, ships, and aircraft) | 1.8 | 6.8 | 7.0 |
| Private consumption | 4.6 | 3.5 | 3.1 |
| Fixed capital formation | -1.8 | 5.1 | 5.1 |
| Public sector consumption (excluding defense imports) | 2.2 | 2.9 | 1.4 |
| Exports (excluding diamonds and start-ups) | -2.0 | 4.0 | 6.3 |
| Unemployment rate ^a | 5.3 | 5.3 | 5.3 |
| Inflation rate ^b | -0.8 | 0.6 | 1.6 |
| Bank of Israel interest rate ^c | 0.10 | 0.25 | 1.00 |

a) Annual average.

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

c) End of the year.

Source: Bank of Israel.

c. Inflation and interest rate estimates

In our assessment, inflation during the four quarters ending in the fourth quarter of 2016 is expected to be 0.6 percent. Inflation in the first quarter of the year is expected to be low due to global price declines (particularly energy prices) and

⁴ At this stage, investments of a macroeconomic scale connected with the expansion of development of the Tamar natural gas reservoir or the start of development of the Leviathan reservoir have not been included in the forecast. Such investments will for the most part be imputed to the import of machines and equipment.

due to one-off price declines⁵, but the moderating effects on inflation are expected to dissipate over the course of the year. The low inflation rate in 2015 was to a great extent the result of the sharp decline in energy prices, one-off factors such as the reduction in VAT in October, the lowering of electricity prices, and the cancellation of the television levy, and the appreciation of the shekel. Our assessment is that the moderating effect of declining energy prices will dissipate during the year. Accordingly, our forecast is that inflation rates will rise gradually during the second half of 2016, supported by a strong labor market and improved activity, with annual inflation totaling 0.6 percent. The increase in the minimum wage and public sector wage agreements are also expected to support increased wages and prices.

According to the Research Department's assessment, the Bank of Israel interest rate is expected to be 0.1 percent during the first three quarters of 2016, and to begin increasing in the fourth quarter of 2016. The interest rate is expected to remain at its current level in the coming months in order to support the return of inflation to within the target range and to support growth in activity. The interest rate is expected to begin rising in the fourth quarter of the year, to 0.25 percent at the end of 2016, against the background of a gradual increase in inflation and in inflation expectations, as well as stronger real activity. The interest rate is expected to continue rising gradually in 2017, to 1.0 percent in the fourth quarter of 2017. It is worth emphasizing that this forecast is conditioned *inter alia* on the expected monetary policy in the US and in other economies. Assessments from the capital market (as derived from interest rate futures contracts) are that the Federal Funds Rate is expected to rise to about 0.9 percent by the end of 2016, and to about 1.4 percent by the end of 2017. The assessment of the members of the Federal Open Market Committee of the US Federal Reserve is that the interest rate will rise more rapidly (1.4 percent at the end of 2016 and 2.4 percent at the end of 2017). In contrast, market assessments are that the European Central Bank interest rate is expected to remain near zero in the next two years, and the ECB will continue with its bond purchasing program.

Regarding the forecast in September, our assessment is that the interest rate will begin increasing later (in the fourth quarter of 2016 instead of in the second quarter), in view of the more moderate inflation environment and more moderate activity, reaching 0.25 percent in the fourth quarter of 2016 (compared to 0.50 percent in September forecast).

Table 2 shows that the Research Department's forecast of inflation in the next year is slightly higher than the projections of professional forecasters (and is within the range of their projections) and significantly higher than inflation expectations derived from the capital market. The Research Department's interest rate forecast is similar to the projections of forecasters and to expectations derived from the Telbor market.

⁵ Including the declines of public transport and water prices announced by the Ministry of Finance on December 27, and the declines in prices of compulsory vehicle insurance.

Table 2**Forecasts for inflation rate and interest rate for the coming year**

(percent)

| | Bank of Israel Research Department | Capital markets ^a | Private forecasters ^b |
|-----------------------------|--|---------------------------------|----------------------------------|
| Inflation rate ^c | 0.6 | 0.2 | 0.5 |
| (range of forecasts) | | | (-0.2–1.2) |
| Interest rate ^d | 0.25 | 0.2 | 0.25 |
| (range of forecasts) | | | (0.1–0.75) |

a) Average for the month of December (through December 22). Seasonally adjusted inflation expectations.

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

c) Inflation rate over the next 12 months (Research Department: in the next four quarters).

d) Research Department: the interest rate in the fourth quarter of 2016. Forecasters and capital markets: the interest rate one year from now. Capital markets forecast derived from Telbor rates.

Source: Bank of Israel.

d. Balance of risks in the forecast

This forecast is based on assumptions related to the global environment and to domestic background conditions. Developments different than those assumptions may lead to developments in the domestic economy that are different than those in the baseline forecast (Table 1).

A prominent source of risk to the forecast is the global economy. Risks to the pace of global growth and to global trade are derived from both the developing economies and the advanced economies. As stated, the price of oil declined markedly in recent weeks, further to the sharp price declines since September 2014. In the forecast presented above we assess that commodities and energy prices will stabilize at their current levels, and that their moderating effect on inflation will therefore dissipate over the course of the coming year. However, it is possible that prices will continue to decline, and it is also possible that there could be some correction to the decline in prices. This will also depend on demand for oil, which in turn is dependent in particular on the growth of developing economies. The developments in the global environment will also have an impact on the monetary policy of other central banks around the world, particularly on the pace of interest rate increases expected in the US, and on the depth of monetary accommodation in the eurozone. These developments will have an impact on real activity and inflation in Israel, and accordingly also on the interest rate path in Israel.

Other sources of uncertainty in the forecast include factors that may have an impact on the exchange rate, geopolitical or security developments, and developments in the housing market.

Figures 1 to 3 present fan charts around the inflation rate, interest rate and GDP growth forecasts. (The broken line represents the baseline forecast from September 2015.) The width of the fan is derived from the estimated distributions of the shocks in the Research Department's DSGE model.

Figure 1
Actual Inflation and Fan Chart of Expected Inflation
(cumulative increase in prices in previous four quarters)

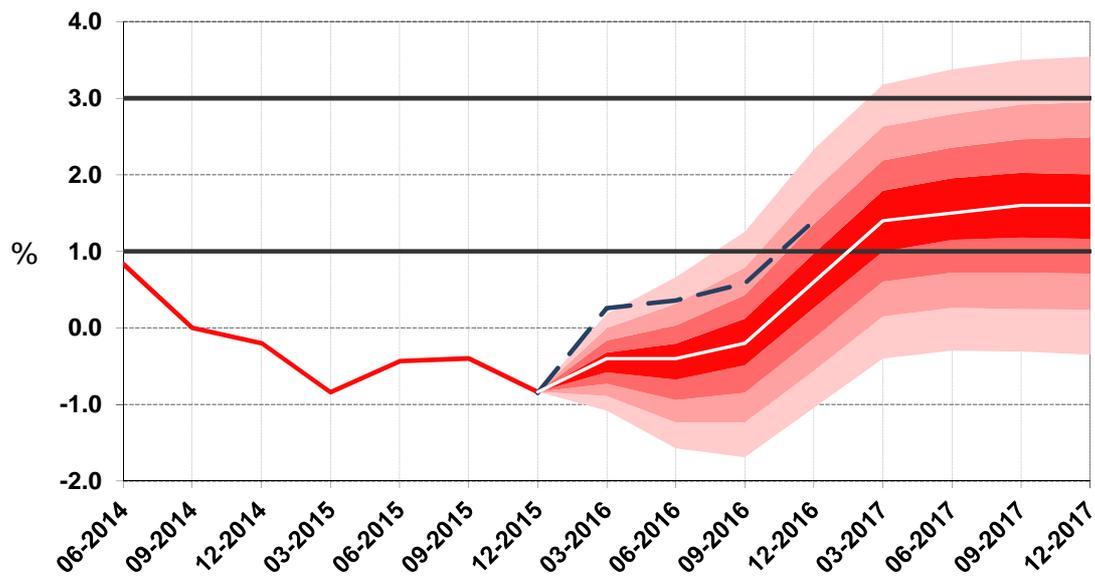
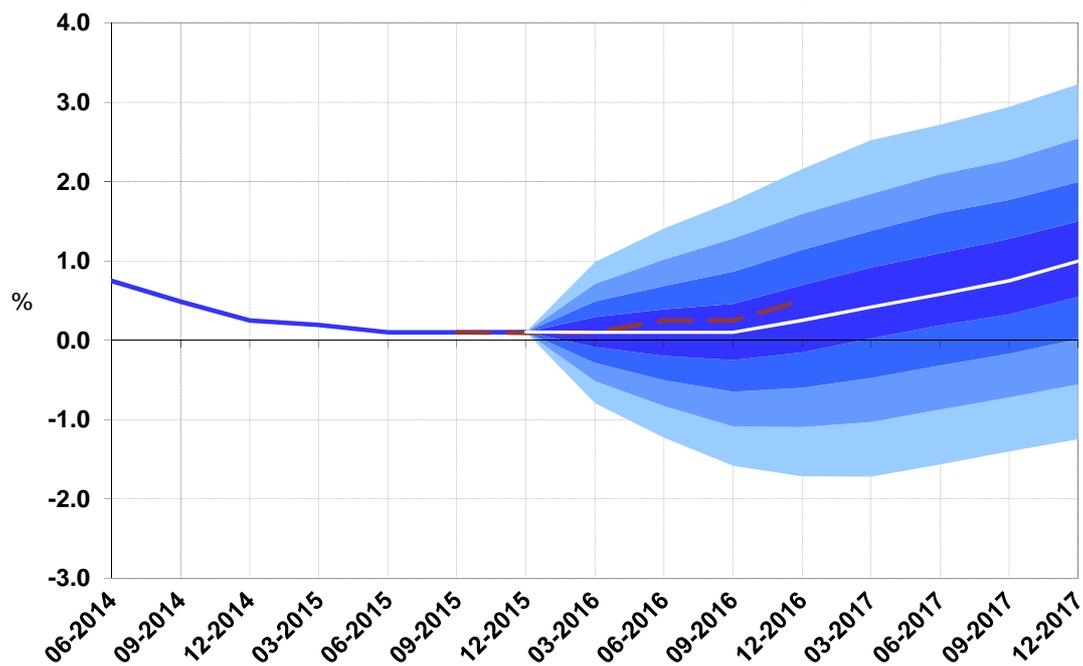
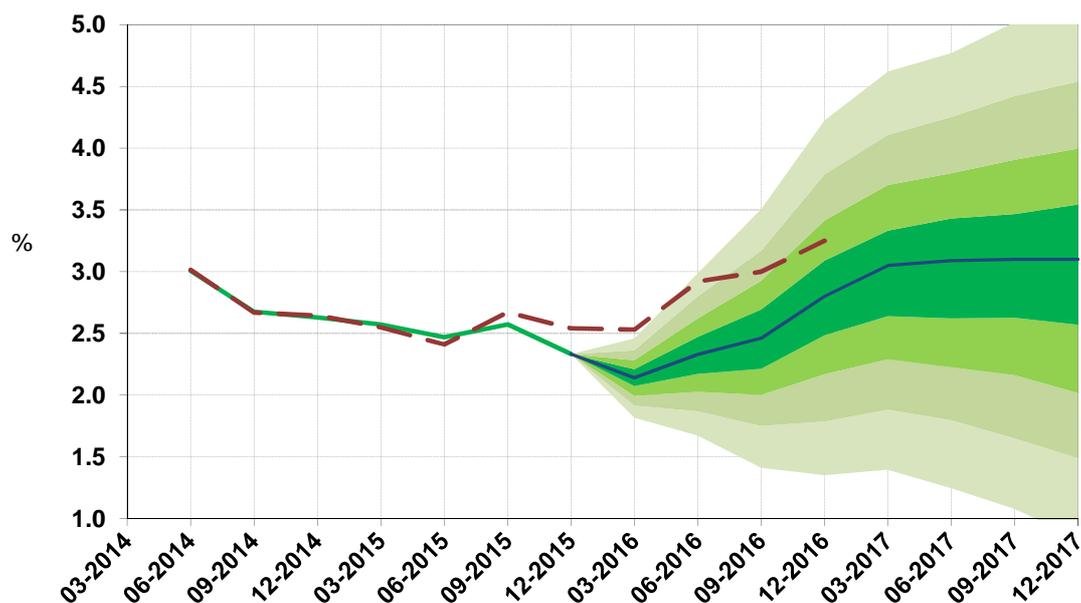


Figure 2
Actual Bank of Israel Interest Rate and Fan Chart of Expected Interest Rate



The center of the fan charts (the white line) is based on the Bank of Israel Research Department assessment. The width of the fan is based on the Department's medium-scale DSGE (dynamic stochastic general equilibrium) model. The full fan covers 66 percent of the expected distribution. The dotted line corresponds to the previous staff forecast (published in September 2015).
 Source: Bank of Israel.

Figure 3
Actual GDP Growth Rate in the Past Four Quarters and Fan Chart of Expected Growth Rate



The growth rate is calculated as total GDP over the past four quarters relative to GDP in the preceding four quarters. The center of the fan chart (the blue line) is based on the Bank of Israel Research Department assessment. The width of the fan is based on the Department's medium-scale DSGE (dynamic stochastic general equilibrium) model. The full fan covers 66 percent of the expected distribution. The dotted line corresponds to the previous staff forecast (published in September 2015).
 SOURCE: Bank of Israel.