BANK OF ISRAEL
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Research Department Staff Forecast, June 2013

Abstract

This document presents the forecast of macroeconomic developments compiled by the Bank of Israel Research Department in June 2013. The forecast was presented to the Monetary Committee on June 23, 2013 during its meeting prior to the decision on the Bank of Israel interest rate for July 2013. According to the staff forecast, the rate of inflation over the next year (ending in the second quarter of 2014) will be 2.1 percent. The Bank of Israel interest rate, which was 1.25 percent when the forecast was compiled, is expected to remain at this level in the coming year. Gross domestic product (GDP) is projected to grow by 3.8 percent in 2013 and by 3.2 percent in 2014. In addition to the baseline forecast, we prepared two other scenarios. In the first one, we assumed that growth in government expenditure in 2013 beyond the expenditure rule would be slightly lower what was approved in the budget proposal. In this scenario, GDP is expected to grow slightly less in 2013 and by slightly more in 2014. In the second scenario, we assumed a more rapid retreat from the quantitative easing program in the US, which is expected to be reflected in higher interest rates worldwide and in Israel as well. The effect on activity in Israel depends on the sources for increased interest rates around the world.

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 Dynamic Stochastic General Equilibrium (DSGE) model developed in the Research Department—a structural model based on microeconomic foundations—plays a primary role in designing the macroeconomic forecast.[2] The model provides a framework for analyzing the factors which have an effect on the economy, and allows the integrating of information from various sources into a macroeconomic forecast for real and nominal variables, with an internally consistent "economic story". In addition

[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".

to formulating the base forecast, the DSGE model is also used to assess the effects on the economy of changes in the interest rate, to assess 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 international financial institutions (such as the IMF and OECD) and investment houses. Since the formulation of the previous forecast in March, the assessments of these institutions in terms of growth of world trade have been revised downward. According to the latest OECD Economic Outlook (May 2013), OECD member state imports are expected to increase by 1.5 percent in 2013 and by 4.5 percent in 2014 (in contrast to our previous forecast which was for 3.0 percent growth in 2013 and 5.0 percent in 2014).[3] At the same time, interest rates in advanced economies are projected to remain at their low levels in the coming year, and inflation in those countries is expected to be 1.6 percent in 2013 and 1.9 percent in 2014.[4]

Oil (Brent Crude) prices declined by about 10 percent since the previous forecast, and during the second quarter they stood at about $104 per barrel. Global commodity prices, excluding energy, declined by about 7 percent in the second quarter, compared with the first quarter.

b. Real activity in Israel

GDP growth is expected to be 3.8 percent in 2013. Excluding the contribution of the natural gas production from the "Tamar" site, GDP in 2013 is expected to grow by 2.8 percent.[5]

The GDP growth forecast for 2013 (3.8 percent) remained similar to that which was published in March, but the composition of uses changed, and the forecast of imports is lower. In the forecast published in March, we assumed that the government would meet the expenditure rule, while the proposed budget approved in first reading by the Knesset in June included a provision for exceeding the expenditure rule in 2013 by about NIS 6.5 billion.[6] Therefore, domestic public consumption is expected to grow at a higher rate in 2013 than we forecast in March.

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[3] The OECD forecast of OECD member state imports from November 2012 was for growth of 3.4 percent in 2013 and 5.6 percent in 2014. Our March forecast assumed lower growth rates in accordance with more updated assessments.

[4] The interest on government bonds worldwide increased recently in light of estimations that the Federal Reserve would reduce the quantitative easing program in the US earlier than what had been estimated thus far. A discussion of this can be found in the section on risks in the forecast.

[5] Our assessment is that the Central Bureau of Statistics decision regarding how to record natural gas production from the “Tamar” drilling site (and the replacement of fuel imports) in National Accounts data (in constant prices) is expected to be reflected in a contribution of one percentage point to growth in 2013 and 0.7 percentage points in 2014 in parallel with a marked slowdown in the growth of imports due to the decline in fuel imports.

[6] In this forecast, we assume that the government will take fiscal measures in accordance with the budget proposal for 2013–14 that was approved by the Knesset in its first reading in June. For more information on the proposed budget, see Recent Economic Developments number 135, Bank of Israel, June 2013.

In contrast, the growth forecast for the other uses—exports, investments, and private consumption—was lowered, together with the forecast for the growth rate of imports. The main factors in reducing the forecast for the uses other than public consumption are the downward revision of the global trade growth forecast and the restraining effects of the fiscal measures set forth in the proposed budget (particularly the tax increases that are expected at the beginning of 2014 and the cuts in transfer payments). The growth forecast for investments was lowered significantly, *inter alia* in light of the sharp decline in investments in the first quarter of the year according to National Accounts data published in June.

Excluding the contribution of natural gas production, the growth rate in 2013 is expected to slow compared with that of 2012, despite the marked expansion of public consumption, with a slowdown in the rate of export growth, investments in fixed assets, and private consumption. The slowdown in the rate of growth of fixed capital formation in 2013 reflects a slowdown in the rate of growth of both investment in the primary industries and residential construction.

Table 1: Economic Indicators
Research Department Staff Forecast for 2013 and 2014
(rates of change, percent, unless stated otherwise)

	Actual 2012	Bank of Israel forecast 2013	Bank of Israel forecast 2014
GDP	3.2	3.8	3.2
Civilian imports (excluding diamonds, ships, and aircraft)	6.7	-8.4	4.5
Private consumption	2.7	2.2	2.2
Fixed capital formation	4.0	-7.1	5.3
Public sector consumption (excluding defense imports)	3.3	8.1	1.1
Exports (excluding diamonds and start-ups)	3.6	-0.1	4.5
Unemployment rate[a]	6.8	6.8	7.2
Inflation rate[b]	1.6	1.9	1.9
Bank of Israel interest rate[c]	2.1	1.25	1.25

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) Average for the final quarter of the year.
Source: Data - based on Central Bureau of Statistics and Bank of Israel; forecast - Bank of Israel .

In 2014, growth is projected to be 3.2 percent, reflecting a marked slowdown in the growth rate of domestic public consumption and an acceleration of the growth rates of exports and fixed capital formation. The moderation of the GDP growth rate in 2014, compared with 2013, derives from two main factors: markedly slower growth in public consumption (with a return to expenditure levels in line with the expenditure rule, in accordance with the proposed budget), and the smaller effect of natural gas production.[7] In contrast, an acceleration is expected in the growth rates of exports and investment, with the expected global recovery. Private consumption is

[7] The GDP growth rate excluding the contribution of natural gas production is 2.8 percent in 2013 and 2.5 percent in 2014.

expected to grow moderately in 2014 as well, affected by this year’s tax increases. The increase in the growth rates of exports and investment is reflected in the acceleration of the growth of imports in 2014. Growth in investment and private consumption is supported by accommodative monetary policy. The relatively low level of interest rates, which supports economic activity, reflects, among other things, the positive effect of the fiscal consolidation decided upon in the recent proposed budget.

c. Inflation and interest rate estimates

In our assessment, the rate of inflation during the four quarters ending in the second quarter of 2014 will be 2.1 percent, close to the midpoint of the target range of 1–3 percent. Inflation as measured over the previous four quarters is expected to remain within the target range during the next year (Figure 1).

A main factor contributing to inflation expected during the next four quarters is the increase in the VAT in June alongside the increase in other indirect taxes.[8] In addition, the increase in the housing component of the CPI (rent prices) is expected to contribute to the inflation rate in the next four quarters. In contrast, we estimate that the significant appreciation of the shekel that took place in the past three quarters, as well as moderating demand, will continue to restrain inflation during the coming period. The higher inflation rate in the next four quarters compared to inflation in the four quarters ending in the second quarter of 2013 is also derived from one-time factors that moderated the inflation rate in the past year—particularly the lower costs of communication services due to the increased competition in the cellular market, and lower education costs due to the implementation of the recommendations of the Committee for Economic and Social Change (the Trajtenberg Committee).

The **Bank of Israel interest rate**, which was 1.25 percent at the time the forecast was formulated, is expected to remain at its current level in the coming year. The relatively low domestic interest rate is intended to support economic activity, against the background of the moderate global environment and the restraining effects of the fiscal consolidation, in a moderate inflation environment. This interest rate level reflects, among other things, the low level of interest rates worldwide, which is affecting the exchange rate of the shekel. Interest rates in the main developed economies are expected to remain at their low level in the coming quarters, in order to continue supporting the recovery of real activity and employment in these economies. At the same time, an increase in the interest rates on government bonds around the world, which expresses expectations that the Federal Reserve will reduce bond purchases in the US earlier than what had previously been estimated, is moderating the forces for the appreciation of the shekel.

Table 2 indicates that, with regard to the coming year, **the Research Department's forecast of the inflation rate is similar to that of private forecasters and the**

[8] Inflation in the third quarter of the year (the third quarter average compared to the second quarter average) is expected to be high due to the VAT increase in June.

interest rate forecast is similar to that of the forecasters and expectations derived from capital markets. Expectations of inflation derived from the market are lower than forecasters' projections and the Research Department's Staff Forecast. One possible explanation of this is that expectations derived from the market are for inflation during the next year, while the forecasters' projections are for the next 12 CPI readings. Thus, the June CPI, which is expected to be high due to the increase in VAT, affects the forecasters' projections and the Staff Forecast more than it does the expectations derived from the market during June.[9]

Table 2
Forecasts for inflation rate and interest rate for the coming year
(percent)

	Research Department	Capital markets[a]	Private forecasters[b]
Inflation rate[c] (range of forecasts)	2.1	1.6	2.0 (1.6-2.5)
Interest rate[d] (range of forecasts)	1.25	1.2	1.2 (0.75-1.50)

a) Average for the month of June (through June 20). Seasonally adjusted expectations of inflation.
b) Inflation and interest rate forecasts are after the publication of the CPI reading for May.
c) Inflation rate over the next 12 months (Research Department: in the next four quarters).
d) Capital markets forecast derived from Telbor rates. Forecasters and market: the interest rate one year from now. Research Department: Interest rate in the second quarter of 2014.
Source: Bank of Israel.

d. Balance of risks in the forecast

There are several factors which can lead to developments that are different than those in the baseline forecast.

In the domestic economy, it is possible that the fiscal policy adopted will be different than what we assumed in the baseline forecast, since the budget for 2013-14 has still not been given final approval by the Knesset, among other reasons. In the baseline forecast, we assumed that domestic public consumption would grow in accordance with the proposed budget approved by the government, at a rate of 8.1% in 2013 (see Table 1), and its growth rate, as derived from the expenditure rule, would moderate significantly to 1.1% in 2014. As we noted above, the decline in the growth rate of public consumption in 2014 is a main factor in the moderation of the GDP growth rate in that year. If the growth rate of public consumption in 2013 is lower than estimated,

[9] The Research Department Staff Forecast is for a cumulative increase in the CPI between the second quarter average in 2013 and the second quarter average in 2014. Thus, to a large extent, it also includes the effect of the June CPI, which is expected to increase the average CPI in the third quarter of 2013.

and remains in line with the expenditure rule in 2014 (as we assumed in the baseline forecast), then the GDP growth rate will be slightly lower in 2013 and slightly higher in 2014. Therefore, the decline in the growth rate in 2014 compared with 2013 will be more moderate. For instance, if the growth in government expenditure beyond the expenditure rule for 2013 is about half of what was approved in the proposed budget, then in our estimation, GDP will grow by 3.6 percent in 2013 and by 3.4 percent in 2014.[10]

In the global environment, a main risk that is a concern worldwide is the manner and timing of a retreat from the very accommodative monetary policy in the US, in particular the reduction in the volume of the Federal Reserve's bond purchases which are part of the quantitative easing program that it has been implementing.[11] There is concern that an earlier or more rapid reduction in the quantitative easing program than had previously been estimated will lead to a sharp increase in market interest rates in the US, followed by other countries, and could thereby have a restraining effect that will make the growth of real activity and employment more difficult. In particular, there is concern of a negative impact on the recovery of European countries, where the recovery is slower and more fragile than in the US. However, according to the Federal Reserve, a retreat from the purchase volumes is expected only once there are indications of a sustainable recovery in the US, which in itself is expected to have a positive effect on other economies. In addition, the European Central Bank is expected to continue taking expansionary measures to support the recovery there as much as required.

A reduction in the quantitative easing program in the US (earlier or more rapidly than the assumptions underlying the baseline forecast) will cause an increase in the average market interest rate. An increase in global interest rates will affect Israel by depreciating the shekel and increasing inflation and local interest rates. The effect of such a development on real economic activity in Israel depends on the factors behind the cessation of the quantitative easing program in the US. An increase in interest rates in and of itself has a restraining effect on demand. But if the increase in interest rates worldwide is a response to a significant improvement in the economic environment, then the improvement in activity in and of itself is expected to have a positive effect on the Israeli economy through an increase in demand for Israeli exports and an improvement in consumer and business confidence.[12] Therefore, the effect on activity in Israel is not clear, and depends on the sources for the increase of interest rates around the world.

[10] Alternatively, it is possible that the deviation from the expenditure rule in 2013 that was set in the proposed budget will reflect more moderate growth in public consumption alongside more significant growth in other expenditure items.

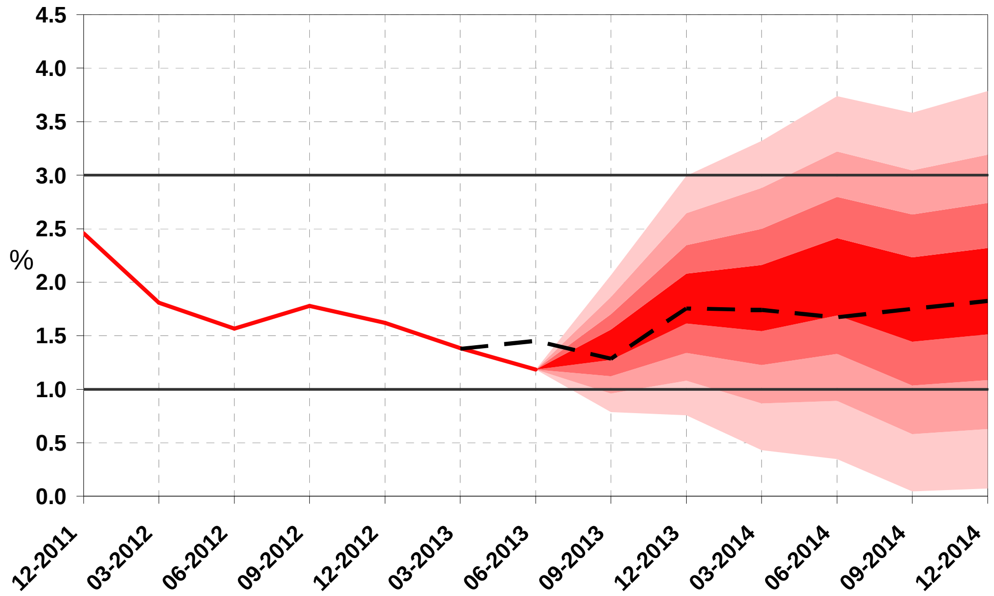
[11] It seems that a change in the expectations of market players in relation to the reduction of bond purchases by the Federal Reserve has led to an increase in bond yields in the US since May, followed by other countries, including Israel.

[12] If the source of the increase in interest rates is mainly improved demand in the US, the growth of the Current Account surplus due to increased global demand for Israeli exports is expected to moderate the forces for depreciation of the shekel that derive from an increase in global interest rates.

Further risks in the global environment derive from weakness in eurozone countries and the slowdown in growth in the US due to implementation of fiscal restraint measures.[13] In the baseline forecast we assumed a gradual recovery worldwide beginning from the second half of 2013, but to the extent that the pace of recovery is slower, or if there is even real deterioration in the global environment, activity and inflation are expected to be more moderate than we assessed in the baseline scenario.

Figures 1 and 2 present fan charts around the inflation rate and interest rate forecasts (the broken line represents the baseline forecast of March 2013). The width of the fan distribution is derived from the **estimated** distributions of the shocks in the Research Department's DSGE model.

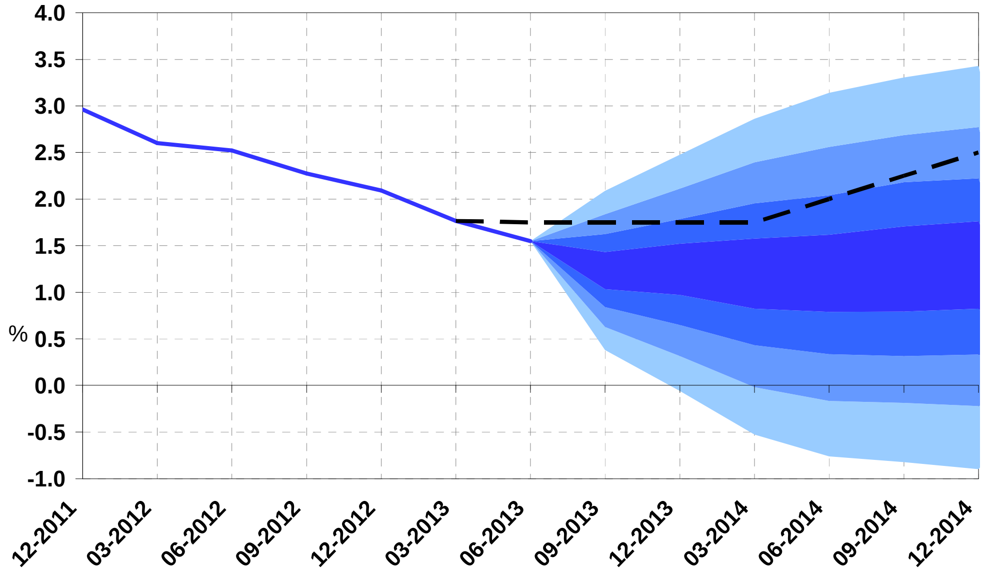
Figure 1
Actual Inflation and Fan Chart of Expected Inflation
(cumulative increase in prices in previous four quarters)



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.
The dotted line corresponds to the previous staff forecast (published in March 2013).
Source: Bank of Israel.

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

[13] For a review of the global risks, see the International Monetary Fund’s World Economic Outlook from April 2013, and the OECD’s Economic Outlook from May 2013.



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 interest rate.
The dotted line corresponds to the previous staff forecast (published in March 2013).
Source: Bank of Israel.