Inflation expectations derived from the capital market as calculated by the Bank of Israel: Explanation

1. Inflation expectations derived from capital market data are calculated as the difference between the yield to maturity on non-indexed bonds, which represents the nominal yield, and the yield on CPI-indexed bonds, representing the real yield. Thus, for example, inflation expectations one year forward are based on the nominal side on the longest *makam* yield, while the real yield is obtained from a model of the real yield curve, which enables an estimate to be made of the yield to one year, even though tradable bond series with exactly that term may not exist. The observations in that model are weighted by their trade volume in order to reduce the bias caused by exceptional yields resulting from small isolated transactions.
2. Since CPI-indexed bonds do not provide total linkage to the CPI, the yield to maturity on these bonds must be adjusted such that it correctly expresses the appropriate real yield. That is achieved by dividing the term to maturity of each bond into three sub-periods: (i) the period in which there is a change in the CPI, but it has not yet been published at the time the inflation expectations are measured; (ii) the period in which the bond affords full compensation for the change in the CPI; and (iii) the period close to maturity, in which there is no compensation for the change in the CPI.
3. When the real yield is calculated for a particular date, e.g., 10 May, the repayment of principal and interest are costed on the basis of the known index, i.e., the last published index in this example it is the index published on 15 April, that reflects the average price level in the previous month, March. It is reasonable to assume, however, that the investors who determine the price of bonds on 10 May take into account inflation that has occurred until that date even though it has not yet been published. This would be the case especially if in the interim period a sharp change had taken place in one of the important factors that affect prices, such as the exchange rate. Redemption of the bond also takes place according to the known index, i.e., that which was published on the 15th of the month, indexed to the average price level of the previous month. Hence bonds do not provide full linkage to prices, and this must be taken into consideration when calculating the real yield.[1]
4. In line with the characteristics of indexation described above, certain assumptions must be made in calculating the real yield on indexed bonds: the estimated change in the CPI that has occurred but has not yet been published is based on the average forecasts of the banks and economic consultants who provide their forecasts on a regular basis. In the run-up to redemption, in which there is no indexation to the CPI, the bond can be defined as a nominal one, and its nominal value can be discounted in this short period.
5. The detailed equations used to perform the calculations appear in the paper by Zvi Wiener and Helena Pomposhko, "The Estimation of Nominal and Real Yield Curves from Government Bonds in Israel," *Monetary Studies* 2006.03, Bank of Israel, Monetary Department Discussion Paper Series, June 2006, available at http://www.boi.gov.il/deptdata/monetar/studies/mns0603e.htm

[1] The feature described above is known as the indexation lag, and affects even more strongly most indexed bonds traded abroad.