REPUBLIC OF TURKEY
PRIME MINISTRY
UNDERSECRETARIAT OF TREASURY

CONSUMER PRICE INDEX (CPI) INDEXED

GOVERNMENT BONDS

INVESTORS' GUIDE

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I. GENERAL ISSUES

In line with its objectives of diversifying the instruments issued, broadening the investor base and lengthening the borrowing maturities; the Undersecretariat of Treasury has started to issue Inflation (Consumer Price Index-CPI) Indexed Government Bonds. The first CPI Indexed Government Bond was auctioned on February 19, 2007.

By guaranteeing a real return, CPI Indexed Government Bonds serve as an alternative asset class to the investors. These securities are preferred by investors because they provide a reduced exposure to changes in inflation due to their stable real returns. By eliminating the risk of inflation uncertainty over the total return, CPI Indexed Government Bonds allow investors to lengthen their investment horizon. Consequently, in most issuing countries, such securities are generally sold with maturities longer than 40 years.

The principal payment of the securities is not eroded by inflation. The interest revenue is also protected in the same way. The real return of the bond is fixed, no matter what the inflation rate is over the life of the bond.

II. TERMS OF THE BONDS

1. Maturity

The bonds have a maturity of five years or more with semi annual coupon payments.

2. Issuance Technique

CPI Indexed Government Bonds is issued through multiple price auctions. Bidders submit their price bids for the securities with TL 100 par value for which the real coupon has been fixed by the Treasury.

The Treasury auctions are open to all local and international investors, institutional or individual, with a minimum bid requirement of TL 1000. The monthly auction calendar is announced on the last business day of the preceding month on

Treasury web site www.hazine.gov.tr, together with a press release. Similarly, the details of auctions are also announced on the last business day of the previous week.

3. Real Coupon Rate

The real 6 month coupon rate is announced prior to auction and this rate is fixed over the life of the bond.

4. Index to Be Used and Indexation Method

CPI, as announced by the Turkish Statistical Institute (TurkStat) is used for all payments of the bond. The detailed information on CPI can be found on the web page of Turkstat (www.tuik.gov.tr).

i) Principal Payment

The inflation valuation of the principal is paid to investors at maturity. So the bond with TL 100 par value will not be affected by the inflation difference over the maturity in real terms.

The principal per TL 100 to be paid at maturity is calculated according to the formula provided below:

$$Principal\ Payment = \frac{Reference\ Index_{Maturity}}{Reference\ Index_{Issue\ Date}} \times 100$$

(Reference Index calculations are explained in section 5.)

ii) Coupon Payments

Semiannual coupon payments is also protected against inflation. Accordingly, the coupon payments for TL 100 par value is calculated according to the formula below:

$$Coupon\ Payment = \left(\frac{Reference\ Index_{Coupon\ Date}}{Reference\ Index_{Issue\ Date}} \times 100 \right) \times Real\ Coupon\ Rate$$

iii) Guaranteed Return

It is guaranteed that the principal payment would not be less than the par value. In other words, in cases where the reference index at maturity would be below the reference index at issuance, the TL 100 par value is paid. Therefore, should deflation occur over the lifetime of the bond, the principal to be paid would be equal to the par value.

There is also a guarantee for the coupon payments in case of the reference index at coupon payment date to be below the reference index at issuance. In such cases, coupon payments would be calculated over the TL 100 par value and the 6 month real coupon rate determined by the Treasury.

5. The Computation of Daily Reference Indices

The Consumer Price Index announced by the Turkish Statistical Institute (TurkStat) is used for all the principal and coupon payments and the secondary market pricing of the bonds.

Reference index for g^{th} day of ath month is calculated as follows.

$$Daily\ Reference\ Index = CPI_{a-3} + \frac{g-1}{AG} \times (CPI_{a-2} - CPI_{a-3})$$

CPI_{a-2} : CPI of $(a-2)$ month g : number of past days in (a) month

CPI_{a-3} : CPI of $(a-3)$ month AG : number of total days in (a) month

As shown in the above formula, the reference index for the first day of any calendar month is the CPI for the calendar month falling three months earlier. The reference index for the other days of the month is calculated by interpolation using CPI_{a-2} and CPI_{a-3}. The method used in the calculation of the reference index has also been used in other countries which issued Inflation Indexed Bonds and it generates the efficiency in the secondary markets by allowing forward value transactions and the calculation of the settlement price.

The daily reference indices is calculated based on the above formula and the indices is rounded to six digits. The calculated indices is announced on the Treasury web page www.hazine.gov.tr.

In case of a change in the base year of the index, the index before the change will be used. However, the index will be revalued according to the inflation realization based on the new index.

III.SECONDARY MARKET PRICING

The pricing of the inflation indexed bonds, which includes "clean price", "accrued interest" and "settlement price" calculations are given below.

Clean Price

Clean price formula for these bonds, which excludes the inflation valuation is given below:

$$F_t = \sum_{j=1}^{n} \frac{r \times 100}{(1+i)^j} + \frac{100}{(1+i)^n}$$

Where F_t is the clean price, n = remaining number of coupons, r = real coupon rate and i = real return demanded by the investor

As can be seen from the formula, the only difference from the fixed coupon bond pricing is that; instead of nominal coupon and discount rate; the real coupon rate and real return demanded by the investors are used respectively.

Accrued Interest

The accrued interest (BF_t), excluding the inflation valuation, for the CPI indexed bond will be calculated just like other coupon paying securities, as follows:

$$BF_t = r \times 100 \times \frac{Number\ of\ days\ accrued\ in\ the\ coupon\ period}{Total\ number\ of\ days\ in\ the\ coupon\ period}$$

Settlement Price

Settlement price covering the accrued interest and inflation valuation is calculated by using the formula as shown below.

$$Settlement\ Price = (F_t + BF_t) \times \frac{Reference\ Index_{Settlement\ Date}}{Reference\ Index_{Issue\ Date}}$$

The price quotations for inflation indexed bonds is given over the Clean Price formula as announced by the Istanbul Stock Exchange. However, the price quotations for stripped principal and coupons of inflation indexed bonds is given over the Dirty Price.