



## **Divisia Monetary Aggregates for Israel:**

### **Background Note and Metadata**

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**November 2011**

### **1. Background**

This background note provides an explanation of the choices made in calculating Divisia monetary aggregates for Israel, namely which assets are included and excluded, and some information about the benchmark and own rates.

The total gross financial asset portfolio of Israel's non-bank, non-government public (henceforth, public) amounted to 2.5 trillion New Israeli Shekels (NIS) at the end of June 2011, approximately three times nominal GDP. The composition of the portfolio is approximately one-third unindexed (i.e., nominal) NIS assets, another third is NIS assets indexed to the CPI and the remaining third consists of foreign currency denominated assets and equities held domestically or abroad. The large proportion of CPI-indexed and foreign currency denominated assets is a "legacy" of Israel's triple-digit inflation during the first half of the 1980s. While the inflation rate was brought down to low double-digit levels from 1985 to 1991 and to low single-digit levels by 1997, the share of non-indexed assets remains stubbornly low.

An a priori decision was taken to calculate Divisia monetary aggregates based on the unindexed NIS assets only (excluding all indexed assets and equities) for two principal reasons. First, sharp changes in the exchange rate and even the CPI generate volatility in the holding period yields on these assets, far in excess of the volatility on holding period yields on the unindexed NIS assets. For the former, it stretches the imagination to assume that the holding period yields proxy the relevant ex ante yields; that is precisely the reason for indexing in the first place. Furthermore, specifying the benchmark rate is a tremendous, if not insurmountable, empirical challenge. Second, the function of the indexed assets and of equities is almost exclusively "portfolio" related, not transactions related. Although Barnett and some of his colleagues have done groundbreaking work toward sorting out risk premia

and other portfolio effects from yield differentials, the amount of work involved in applying such methods in Israel and the high degree of measurement error almost surely involved in any such attempt suggest that such an effort would not be worthwhile.

Accordingly, only the unindexed NIS sector was considered for the Divisia monetary aggregate calculation. This sector consists of narrow money and time deposits at commercial banks, which were included in the calculation, as well as two types of tradable bonds, *makam* bills and Shachar bonds. The former are short-term Treasury-type bills which are a legal obligation of the government, but are effectively a monetary instrument as the Bank of Israel determines amounts issued and the bills do not finance the fiscal deficit. Shachar bonds are coupon bonds issued by the Treasury for budget finance. Two versions of Divisia indexes are calculated for Israel. One version includes *makam*, and the other does not. Both include narrow money and all unindexed bank deposits. The Shachar bonds are not included in either version for both substantive and logistical reasons: These bonds were introduced gradually over a long period starting in the 1990s, with steadily increasing maturities, so the process represents financial innovation of a nature not intended to be included in the Divisia aggregates; inclusion of Shachar bonds thus requires preliminary analysis and research that is beyond the scope of the present project.

The table in the next section provides detailed information on each of the monetary components—both quantities and own rates. For the benchmark rate, it was decided to use the average rate on short-term unindexed NIS credit extended by the banks. This is a continuously available data series and exceeds all of the own rates at all times. The conceptual basis for using this variable as the benchmark rate is that it proxies the highest rate that banks could offer on unindexed NIS liabilities and still earn some profit.

Excel files in this section of the website provide monthly data on the Divisia monetary aggregates and Divisia user cost indices in one file, and data on the underlying components (quantities, benchmark rate and rate differentials) in another file. It is intended to update the files with new monthly data once per quarter, when final quantities data become available, approximately 5 weeks after the end of a calendar quarter.

For more general background on aggregation-theoretic monetary aggregates and user cost indices, including formulas for calculating the indices, and information about data for other countries, consult the website of the Center for Financial Stability, [www.centerforfinancialstability.org](http://www.centerforfinancialstability.org), in the folder on Advances in Monetary and Financial Measurement.

## 2. Metadata

<u>File</u>	<u>Sheet</u>	<u>Variable</u>	<u>Description</u>	<u>Units</u>	<u>Start date</u>	
<u>Components</u>	Monetary Assets <sup>1</sup>	M1	Public's current account, unindexed (DD) plus currency and coin held by the public (CU).	NIS million	January 1989	
		SRO	Self-renewing overnight deposit (SRO), NIS, Un-indexed.	NIS million	January 1989	
		STD	Short-term deposit (STD), Unindexed.	NIS million	January 1989	
		MAKAM	Bills issued by the Bank of Israel ( <i>makam</i> ), divided by maturity periods.	NIS million	January 1992	
	Real User Cost <sup>1</sup>	R_HIGH	Short-term rate on bank credit to the public.	Percent	January 1989	
		Pi_SRO	SRO real user costs <sup>2</sup>	Percent	January 1989	
		Pi_STD	STD real user costs <sup>2</sup>	Percent	January 1989	
		Pi_MAKAM	<i>Makam</i> real user costs <sup>2</sup> , divided by maturity periods.	Percent	January 1992	
	<u>Monetary Aggregates</u>	<u>Divisia Indexes</u>	DMA without MAKAM	Divisia Monetary Aggregates (DMA) without <i>makam</i> .	Index	January 1989
			DMA with MAKAM	Divisia Monetary Aggregates (DMA) with <i>makam</i> .	Index	January 1992
			DUC without MAKAM	Divisia User Cost (DUC) without <i>makam</i> .	Index	January 1989
			DUC with MAKAM	Divisia User Cost (DUC) with <i>makam</i> .	Index	January 1992

<sup>1</sup> Monthly average of daily data.

<sup>2</sup> Real user costs,  $\pi_{it}$ , calculated as  $\pi_{it} = \frac{R_t - r_{it}}{1 + R_t}$  where  $R_t$  is the short-term rate on bank credit to the public (R\_HIGH) and  $r_{it}$  is the nominal yields for each monetary assets.