WING I: Monetary Policy
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REVISION OF THE TRADE-WEIGHTED EXCHANGE RATE INDEX (TWI)

The TWI is a nominal effective krone exchange rate calculated on the basis of NOK exchange rates against the currencies of Norway's main trading partners (geometric average using the OECD's current trade weights). A rising index value denotes a depreciating krone exchange rate.

With effect from 1 February 2000, Norges Bank will change the construction of the trade-weighted exchange rate index and expand the number of currencies in the index from 18 to 25. The background for the revision is explained in a box in Inflation Report 1999/4. The historical values of the index have been recalculated.

Until today the trade-weighted index was constructed on the basis of changes in exchange rates in relation to exchange rates prevailing on 18 October 1990 (base rates). The exchange rates for individual currencies were weighted according to current annual trade weights. With the new method of calculation, annual indices are calculated and then chained together. During the year the index will be calculated in relation to the exchange rates on the first business day in February (base rates). In February the following year, the base rates will be moved one year ahead and the index will be chained. Further exchange rate movements will be calculated on the basis of the new base rates. The new index will be set at 1990 = 100. The weights will, as before, be regularly updated, but the index formula means that the weights will lag by one year.

The calculations are based on Laspeyres' index formula. The formula can be written as:

$$(1) \quad V_t \equiv \prod_{i=1}^{N} \left(\frac{v_t^i}{v_0^i} \right)^{\alpha_0^i} \quad , \ t = 0,...,T$$

v_0^i is the base level of exchange rate i

v_t^i is exchange rate i at time t

α_0^i is exchange rate i's weight in the base period

When a chain index is calculated over this period, the period is split up into shorter intervals, typically of one year.

The formula for the whole period is the product of the indices for each interval.

$$(2) \quad V_t \equiv \prod_{i=1}^{N} \left(\frac{v_1^i}{v_0^i} \right)^{\alpha_0^i} \prod_{i=1}^{N} \left(\frac{v_2^i}{v_1^i} \right)^{\alpha_1^i} .....\prod_{i=1}^{N} \left(\frac{v_T^i}{v_{T-1}^i} \right)^{\alpha_{T-1}^i}$$