



Chicago Mercantile Exchange

CME\$INDEX™ **Futures and Options on Futures**

Overview

CME\$INDEX™, a geometric index of seven foreign currencies developed by Chicago Mercantile Exchange Inc. (CME) and weighted to reflect the relative competitiveness of U.S. goods in foreign markets, provides investors with a new instrument for currency market participation and risk management. Including CME\$INDEX within an international portfolio composed of any combination of currencies, stocks and bonds can reduce portfolio volatility, making the product an extremely powerful tool for risk exposure protection. In addition to providing an enhanced hedging vehicle for dollar exposure, the index offers a means of direct investment in the dollar against a basket of seven major currencies. CME\$INDEX provides both hedgers and speculators with an effective risk management tool.

CME\$INDEX is traded virtually around the clock, and futures and options on futures are available both on CME's Chicago-based trading floors and on its GLOBEX® electronic trading platform. The contract is physically deliverable upon expiration, in order to ensure a transparent trading environment in which the final settlement prices of the underlying currencies are used as a basis for payment. The index offers traders the ability to participate in opportunities created by international interest rate fluctuations and other country-specific developments, both day and night.

The countries and regions included in CME\$INDEX are those with currencies that are traded in deep and relatively liquid financial markets and for which both short- and long-term interest rates are readily available. The exchange rate of each currency within the index has been assigned with a specific weight in order to reflect the relative competitiveness of U.S. goods in foreign markets. The varying emphasis placed on specific currencies in the index is based on a set of competitive weights published by the Board of Governors of the U.S. Federal Reserve System. As these weights are updated annually, investors finally have access to a truly dynamic exchange-traded dollar index product.

Major Currencies

In October 1998, the Fed announced¹ the development of a set of new indexes focusing on distinct currency groups. The primary group, termed the broad index, represents currencies of important U.S. trading partners and includes twenty-six currencies. From this group, the Fed chose seven currencies including the euro-zone Euro, Australian dollar, Canadian dollar, Japanese yen, Swedish krona, Swiss franc and the British pound, in order to create a basket to replace its old G-10 index.² This index is now called the Major Currency Index. Similar to the old G-10 index, the new Major Currency Index not only measures the competitiveness of U.S. goods relative to goods of major industrial countries, it also serves as a gauge of financial pressures on the U.S. dollar.

Competitive Weights

Unlike the old G-10 index, the weighting scheme of the Major Currency Index is updated annually and focuses more directly on the competitiveness of U.S. goods both in the U.S. and in foreign markets. The new scheme includes three sub-measures of competitiveness reflecting competition within the U.S. between U.S. and foreign goods, competition within a foreign country between U.S. goods and the goods of that country and, most importantly, competition within other world markets between U.S. goods and the goods of a foreign country. These three sub-measures are aggregated in the Major Currency Index to produce a weight for each currency.

In order to create a more relevant tool, CME\$INDEX was designed using weights that capture the effect of global competition. The index is based upon the Federal Reserve Bank weights established in the 1998 Major Currency Index, in order to ensure index applicability to the current market environment. Major Currency Index weights are updated annually, as are CME\$INDEX weights, which helps to create a dynamic product that can attract a wide range of trading interests.

CME\$INDEX Currency Weights

Region/Currency	Weight (%)
European Union/Euro	42.2782
Japan/Yen	29.9536
United Kingdom/Pound	8.4604
Switzerland/Franc	8.2871
Australia/Dollar	4.6461
Canada/Dollar	4.2086
Sweden/Krona	2.1660

¹ See "New Summary Measures of the Foreign Exchange Value of the Dollar", Federal Reserve Bulletin, October 1998, Board of Governors of the Federal Reserve, Washington, D.C. for a detailed description of the construction of these indexes.

² See "Index of the Weighted-Average Exchange Value of the U.S. Dollar: Revision", Federal Reserve Bulletin, Board of Governors of the Federal Reserve System, Washington, D.C., Number 8, Volume 64, August 1978.

While the currencies and regions that are included in the CME\$INDEX are the same as those in the Fed's Major Currency Index, CME uses *competitive weights* that specifically reflect competition within other world markets between U.S. goods and the goods of a foreign country rather than the composite weights of the three sub-measures established by the Fed.

In conversations with market participants, CME learned that many market participants were uncomfortable with the distribution of the composite weights produced by the Major Currency Index, as the weights are not indicative of the global turnover of individual currencies. As a result, CME developed a weighting system that focuses more on global competitiveness instead of on bilateral trade data. As illustrated in the following table, the CME\$INDEX uses a competitive weight for Canada of 4.2086 percent versus the Major Currency Index aggregate weight for Canada of 31.03 percent. The CME\$INDEX weight reflects the relative competitiveness of U.S. goods against Canadian goods in other world markets, whereas the Fed's weighting reflects the high level of trade between the U.S. and Canada.

Country/Currency Weights

	CME\$INDEX	Major Currency Index	G-10 index
European Union/euro	42.2782	31.91	57.60
Japan/yen	29.9536	22.07	13.60
United Kingdom/pound	8.4604	8.06	11.90
Switzerland/franc	8.2871	3.14	3.60
Australia/dollar	4.6461	2.28	N.A.
Canada/dollar	4.2086	31.03	9.10
Sweden/krona	2.1660	1.51	4.20

To reiterate, although the Fed computes competitive weights, it does not maintain an index based on these weights. The Major Currency Index is calculated using an aggregate of the three sub-measures. The table above lists the weights for CME\$INDEX as of January 2003, as well as the Major Currency Index and the old G-10 Index for purposes of comparison.

Index Formula

The sum of the currency weights in the index will always total 100 percent and the CME\$INDEX contract will be computed using the following equation:

$$CME\$INDEX_t = B_t * \prod_{i=1}^7 (1/S_{i,t})^{w_{i,t}}$$

$\prod_{k=1}^n (x_k)$ is the product of x_k as k ranges from 1 to n , $S_{i,t}$ is the exchange rate of currency i at time t , expressed in dollars per unit of foreign currency, $w_{i,t}$ is the weight of currency i at time t , and B_t is a multiplier that will be calculated every time the currency weights, $w_{i,t}$ change to ensure index continuity. The index value will be rounded to two decimal places (0.01).

The multiplier B_t ³ will be determined as follows:

$$CME\$INDEX_{Jan\ 1,1999} = 100 = B_{1998} * \prod_{i=1}^7 (1/S_{i,Jan\ 1,1999})^{w_{i,1999}}$$

The base date, or the date on which the index value equates to 100, is January 1, 1999. The value of B_t on this date will be determined by the above equality and solving⁴ this equation gives us a value of 21.8194624563 for B_{1998} (rounded). As explained below, the value of B_t changes only when the weights change.

Currency weights are often revised by the Fed during the beginning of each calendar year, and can also be revised at any time throughout the year. CME will adopt the new weights at the start of trading for the first trade date in March⁵ of every year in order to provide a transparent adjustment process. The value of the new multiplier B_t will be calculated using closing spot exchange rates from the last trading day of the previous month, i.e., February. If the currency weights are revised during the calendar year, CME will adopt the new weights on the first trading day of the second calendar month after the revision.⁶

³ Please refer to the CME\$INDEX futures contract rules for detailed descriptions of the methodology adopted to calculate the value of the multiplier.

⁴ Please note that all exchange rates used were daily closing prices from Bloomberg (field name: Px_Last).

⁵ The choice of day and time is a bit arbitrary. A better option would be to start the new month with a new multiplier. In that case, this calculation would be performed after the close for trading on the last trading day in February.

⁶ For example, if the Fed revises the previously announced weights for the year 2003 on May 15, 2003, the new weights will go into effect on July 1, 2003. CME will revise the value of the 2003 multiplier, using closing spot exchange rates from June 30, 2003.

Settlement Procedure

The CME\$INDEX futures contract will be physically delivered upon expiration. In order to ensure an efficient pricing procedure and a transparent trading environment, the settlement price of the index futures contract at termination will be computed using the settlement values of the seven underlying currency futures in the manner demonstrated below.

Future Settlement Value Calculation

	Weights %	Future rate	(Settlement value) ^{-weight}
European Union/euro	42.2782	1.0748	0.97
Japan/yen	29.9536	0.00834	4.1946
United Kingdom/pound	8.4604	1.6445	0.9588
Switzerland/franc	8.2871	0.7318	1.0262
Australia/dollar	4.6461	0.5874	1.0250
Canada/dollar	4.2086	0.6566	1.0179
Sweden/krona	2.1660	0.1161	1.0477
			4.3760
CME\$INDEX = Product x Multiplier			
= 4.3760 x 24.0565816671			
=105.27			

The U.S. dollar value of the CME\$INDEX futures contract = CME\$INDEX futures Final Settlement price x \$1000. If the index is 105.27 at termination, then the seller delivers and the buyer receives \$105,270 (= \$1,000 x 105.27). As demonstrated in the example below, the buyer pays proportionate amounts of seven currencies whose dollar values sum to \$105,270.

Settlement Amounts - Example

Currency	Weight %	U.S. Dollar Value (currency weight x total U.S. dollar value)	FX Rate (expressed as U.S. dollars per unit of foreign currency)	Foreign currency amounts (delivered by buyer)
European Union/euro	42.2782	\$44,506.26	1.074800	EUR 41,408.88
Japan/yen	29.9536	\$31,532.15	0.008340	JPY 3,780,834
United Kingdom/pound	8.4604	\$8,906.26	1.644500	GBP 5,415.79
Switzerland/franc	8.2871	\$8,723.83	0.731800	CHF 11,921.06
Australia/dollar	4.6461	\$4,890.95	0.587400	AUD 8,326.44
Canada/dollar	4.2086	\$4,430.39	0.656600 ⁷	CAD 6,747.48
Sweden/dollar	2.1660	\$2,280.15	0.116100	SEK 19,639.52
Total	100.0000	\$105,270.00	-	-

Additional Information

For additional information please visit www.cme.com/fx or contact Rick Sears at (312) 634-8367 or Sayee Srinivasan at (312) 454-5205.

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⁷ As Canadian dollar futures terminate trading on a Tuesday, the Canadian dollar nearest-to-expiration futures price is used for calculating the final settlement price for CME\$INDEX futures on its last trading day (Monday).