New York Board of Trade

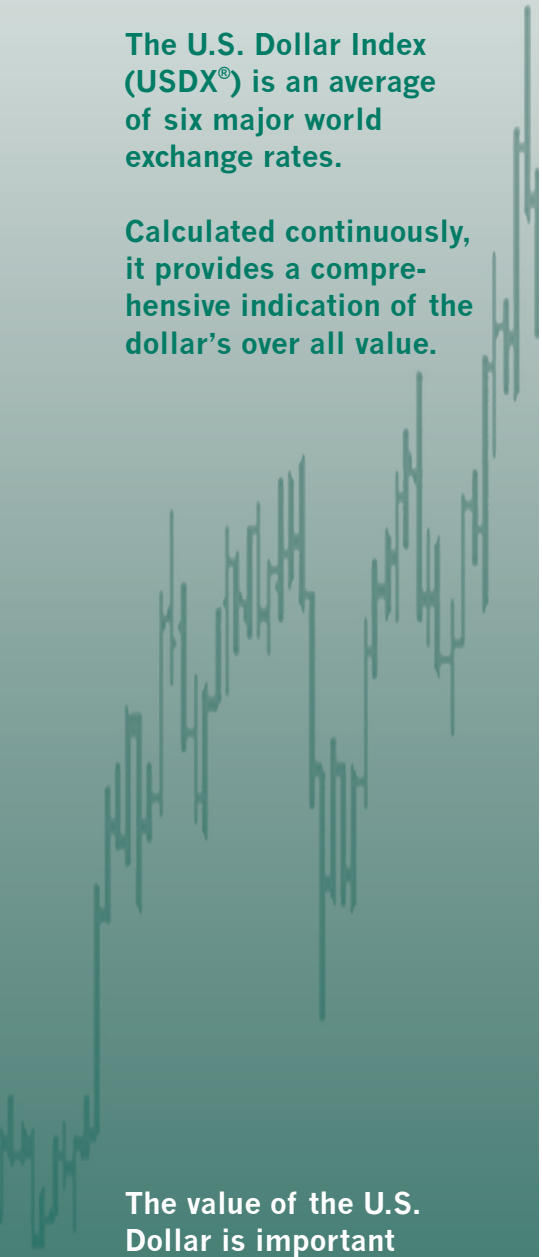
U.S. Dollar Index
USDX® Futures and Options

The Barometer of the U.S. Dollar

The U.S. Dollar Index®

The U.S. Dollar Index (USDX®) is an average of six major world exchange rates.

Calculated continuously, it provides a comprehensive indication of the dollar's over all value.



The value of the U.S. Dollar is important to exporters and importers, as well as international investors.

The U.S. Dollar Index® (USDX®) provides the world with a comprehensive barometer of the value of the U.S. Dollar, 24 hours a day. Similar in many respects to the Federal Reserve Board's original trade-weighted index, the USDX is calculated continuously by Reuters using foreign exchange quotes from hundreds of banks around the world, and disseminated by FINEX® to all leading market data services. The USDX tracks the value of the dollar against a basket of six major world currencies.

USDX futures and futures options offer the financial community the opportunity to trade the worldwide value of the dollar, without running the risk of exposure to any one specific currency.

USDX futures and futures options, available exclusively through the FINEX® currency markets of the New York Board of Trade® (NYBOT®) are valuable foreign exchange risk management tools for currency overlay managers, institutional investors and corporations. They are also valuable trading instruments for professional investors and position traders of the foreign exchange market.

Liquidity for the U.S. Dollar Index is derived from the underlying foreign exchange market and the component currencies. This daily average volume as calculated by the Bank for International Settlements (BIS) is approximately $1.2 Trillion (for the three-year period from 1999-2001). The component currencies of the USDX accont for 94.5% of that daily volume.

For risk management strategies involving diversified international businesses or investment portfolios, USDX futures and options can have important cost advantages over alternative foreign currency futures options.

International investment and pension fund managers whose performance is benchmarked against the Morgan Stanley Capital International's Europe, Australia and Far East Index (EAFE) or Salomon Brothers' Non-U.S. Dollar World Government Bond Index (WGBI) can find the USDX an effective tool for managing foreign currency exposure of these international indices.

What is the U.S. Dollar Index?

Just as the Dow Jones Industrial Average provides a general indication of the value of the U.S. stock market, the U.S. Dollar Index (USDX) provides a general indication of the international value of the U.S. Dollar. The USDX does this by averaging the exchange rates between the U.S. Dollar and six major world currencies.

These 17 countries (12 countries of the Euro zone plus the five other nations whose currencies are represented in the USDX) constitute the bulk of international trade with the United States and have well-developed foreign exchange markets with rates freely determined by market participants. In addition, many currencies not included in the USDX move in close correlation with those that are included. The USDX is computed 24 hours a day, seven days a week based on exchange rates supplied to Reuters by some 500 banks worldwide.

How is the U.S. Dollar Index Calculated?

The spot USDX is disseminated by NYBOT to all leading market data services and is available at all times. The USDX is also broadcast on the exchange's data network during its operating hours. For real time or delayed USDX data, go to NYBOTlive.com, the Exchange's innovative live data source.

Currencies and weights used in the calculation of the USDX (Chart 1) are based on those used in the original Federal Reserve Board's trade-weighted U.S. Dollar Index.

Since the USDX is based only on indications of foreign exchange rate values, it may occasionally differ from a value calculated using other data sources.

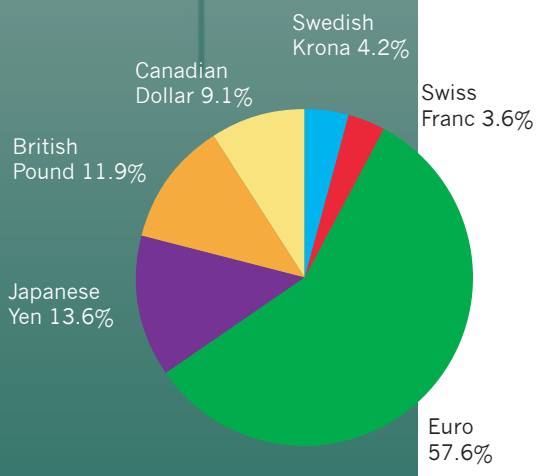
The USDX is calculated as a geometric weighted average of the change in six foreign currency exchange rates against the U.S. Dollar relative to March 1973.

The USDX measures the dollar's general value relative to a base of 100.00. A quote of '105.50' means the dollar's value has risen 5.50% since this base period.

March 1973 was chosen as a base period because it represents a significant milestone in foreign exchange history when the world's major trading nations allowed their currencies to float freely against each other. This agreement was reached at the Smithsonian Institution in Washington, D.C. and was a victory for free market theorists. The Smithsonian agreement replaced the unsuccessful fixed rate regime established approximately 25 years earlier at Bretton Woods, New Hampshire.

The current level of the USDX reflects the average value of the dollar relative to this 1973 base period. Since that time, the Dollar Index has ranged as high as the mid-160's and as low as the high-70's. Volatility of this instrument is comparable in range and variability to

Chart 1



USDX Components

The U.S. Dollar Index is computed using a trade weighted geometric average of the 6 currencies hown below:

Currency	Weight
Euro	0.576
Japanese Yen	0.136
British Pound	0.119
Canadian Dollar	0.091
Swedish Krona	0.042
Swiss France	0.036

a broad-based, multi-capitalization stock index future. The index is calculated on a 24-hour basis with futures trading available 12 hours a day. The NYBOT USDX contract is sized at $1000 times the index value. Thus if the index is trading at 100.00 even, the contract will be valued at $100,000; if it is at the 112.50 level, each contract will have a $112,500 value.

Calculating USDX Futures

The U.S. Dollar Index futures contracts are formulated with the following formula, currency and weights:

$$USDX = 50.14348112 * 6 = (\text{Spot Rate}_{it})^{\text{currency weight I}}_{i = 1}$$

Where spot rate = exchange rate of currency i at the time t with all exchange rates expressed in European terms, i.e., units of currency per U.S. Dollar and $w_{i =}$ weight for currency i

Originally, the USDX was calculated as a geometric weighted average of the change in ten foreign currency exchange rates against the U.S. Dollar relative to March 1973. The USDX remained unchanged until the interbank market's rapid shift to the euro in the year 2000 allowed FINEX to change the calculation method for its USDX contract to the current basket of six currencies.

The Euro

Shortly after the introduction of the Euro currency, FINEX began to recognize the Euro directly in the calculation of the USDX, replacing five currencies included in the euro (German mark, French franc, Italian lira, Dutch guilder, and Belgian franc) that had been included individually in the index. The changes made to the calculation formula to accomplish this were designed and implemented such that the revision had no effect on the resulting index value. That is to say, using the conversion rates for each of the affected currencies as set by the European Central Bank, calculation of the USDX using the old 10-currency formula results in the same value as calculation of the USDX using the new formula. This method had the benefit of maintaining the integrity of the index from the date of its creation through the present time. The Index historical data provides a consistent and continous record of the value of the U.S. Dollar from the point of inception. Therefore the USDX provides an important long-term perspective on the movement of the U.S. Dollar. Historical data from January 1999 to the present is available at www.nybot.com.

Trading USDX Futures & Options

From its inception in 1985, NYBOT's FINEX division has featured futures and options based on the U.S. Dollar Index (USDX). The USDX remains a useful and cost effective counterpart to the more specialized currency grid that has been developing since 1994. The USDX provides a comprehensive and continuous statistical indication of the international value of the U.S. Dollar. Since the U.S. dollar is the principal international medium of exchange (settling over one-half of total world trade), movements in the value of the dollar can dramatically affect international trade. For example, major global commodities such as cotton (also traded at NYBOT) are priced in U.S. Dollars. Changes in the relative strength of the dollar also represent significant investment opportunities.

FINEX provides USDX futures and options for the foreign exchange risk management needs of currency overlay managers, institutional investors and corporations, and as an investment vehicle for traders seeking to trade the direction of the dollar.

Avoids Single Currency Risk

Prior to the introduction of FINEX's USDX futures and options, there was no easy way for market participants to trade the general direction of the dollar. Rather, positions involving the dollar had to be taken against a particular currency, such as the Japanese yen. Since these bilateral exchange rates adjust to pressures affecting both the U.S. Dollar and the counter currency, some may move more adversely even when the general direction of the dollar is correctly anticipated. Because the USDX captures the general movement of the dollar, futures and option on the USDX avoid this single currency risk.

This is another way of saying that the USDX benefits from the risk-reduction of diversification.

NYBOT's FINEX divison developed futures and futures options on the USDX to enable the financial community to trade the worldwide value of the dollar amid the benefits of an open outcry and exchange regulated marketplace.

Futures and options on the USDX provide portfolio investors and multinational corporations with multiple currency exposure and cost-effective ways to manage foreign exchange rate risk, while offering position traders investment vehicles that can be used to take advantage of international movements in the value of the dollar.

USDX Futures

The USDX futures price like the USDX cash market forward price responds directly to short-term interest rate differentials. For example, if interest rates in the U.S. are broadly higher than international interest rates, then USDX futures will trade at a discount to the USDX spot index. If U.S. rates are lower, USDX futures will trade

at a premium to the spot index. This relationship also holds for long-dated futures versus nearby futures. Since interest rates move up and down, USDX futures may trade at a premium some of the time and at a discount at other times.

The USDX futures price, however, while very close to the USDX cash market forward price, generally trades at a premium to the forward price. (The USDX forward price consists of the USDX spot price plus the cost of carry reflecting interest rate differentials).

The pricing convention of the USDX contributes to the premium. Since the component currencies of the USDX are quoted in European terms (units of foreign currency per U.S. Dollar) the tick value of USDX futures should increase as the dollar weakens. Since the tick value is fixed at $10, the USDX will rise more than the decline in the Index basket of currencies during periods of dollar strength and fall by less than the basket value rise during periods of dollar weakness. This characteristic is a component of something called the "volatility premium" used in the pricing of USDX futures. (A mathematical explanation of volatility premium can be found in a 1988 Journal of Futures Markets article by Eytan, Harpaz and Krull entitled "The Pricing of the Dollar Index Futures.")

USDX Options

USDX options offer hedgers a means to help protect the value of certain assets against a rising or falling U.S. Dollar while still allowing participation in the gains from a favorable currency move. They also provide opportunities for investors who seek to profit from movement in the value of the U.S. Dollar without major margin commitments.

Trading Scenario

(*This is a hypothetical example only.)*

In September, a U.S. investment manager, seeking to benefit from higher interest rates overseas, has established a large portfolio of international short-term financial securities valued at $10 million. The manager is concerned, however, that the U.S. Dollar may appreciate and generate a loss on the foreign currency component of the investment. The investment manager has determined that the USDX correlates with the currency exposure of the investment portfolio. December USDX futures are trading at 97.68.

Trading Strategy

To help protect the value of the portfolio, the manager buys 102 USDX Dec futures at 97.68. (At an Index value of 97.68, each futures contract has a dollar value of $97,680; 102 contracts have an aggregate dollar value of $9,963,360.

Trading Result

By December, the trader's fears are realized as the dollar appreciates roughly 6% against a range of currencies, lowering the dollar value of the trader's international securities by approximately $600,000. December futures are trading at 103.80. The manager closes out the futures positions for a gain of $6,120 per contract, or a total of $624,240. This gain on the futures hedge offsets the bulk of the depreciation in the value of the portfolio that resulted from the strength of the dollar over the life of the hedge.

Advantages of USDX Futures & Options

Ease and Efficiency

Trading USDX futures and options can be easier and less expensive than constructing and trading a similar foreign exchange basket composed of the six component currencies. In fact, active markets in all six currencies may not exist all of the time. There may also be significant premium savings in buying an option on a USDX future instead of a basket of options on the six component currencies.

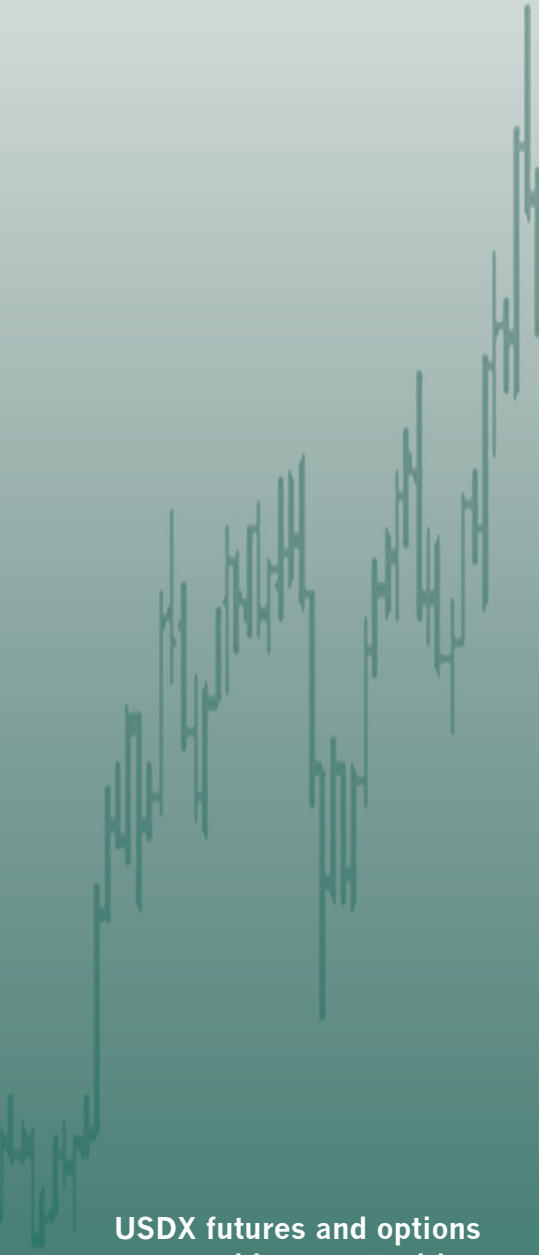
With trading at both the Dublin and New York trading floors, USDX positions can be adjusted almost any time throughout the day or night. This provides a convenient way to place orders during the European trading sessions, or just before the traditional morning opening of U.S. currency markets.

Superior Technical Applications

As an index, the USDX can reflect trends more efficiently than other foreign exchange rate products. Country specific developments that can have a dramatic impact on one currency have much less of an impact on the USDX. The averaging process used in the calculation of the USDX ensures that the only broad-based price changes are reflected in this index. This is particularly important to technical traders who need clear signals of when a trend is beginning or ending.

Because it is an index, the USDX may trend better than most individual currencies, which is an important benefit to technical traders.

Trading Advantages



USDX futures and options can provide opportunities for traders who have a view on the dollar, but do not want to run the risk of exposure in a particular foreign currency.

Physical Delivery

USDX futures call for physical delivery upon the expiration of the contract. As such, a long USDX position at expiration will receive U.S. dollars and pay the component currencies. Conversely, a short USDX position at expiration will receive the component currencies and pay U.S. dollars.

The primary purpose for physical delivery of USDX futures is to create a trading environment that is both efficient and transparent. This is accomplished by utilizing the settlement prices of the relevant component currency futures contract as the basis for the payments/receipts described above. Specific settlement procedures are described in a later section of this brochure.

Block Order Execution Rule

In 1993, FINEX introduced the Block Order Execution Rule, which allows the trading of an exact number of contracts (minimum of 50 lots) at a single price. Under the Block Order Execution Rule, a market is created for the specific large order, and market participants including arbitragers respond with the best bid and offer for the entire amount of the order. With the Block Order Execution Rule, the customer can see and deal at the best bid and offer for the complete size of the order at a single price. In this respect, Block Order Execution Rule provides an important element of liquidity in the futures trading pit. By enabling large orders to be executed at a single price, the Block Order Execution Rule prevents price slippage which can occur when large orders have to be divided into smaller sized orders for execution, typically with each piece being executed at less favorable prices.

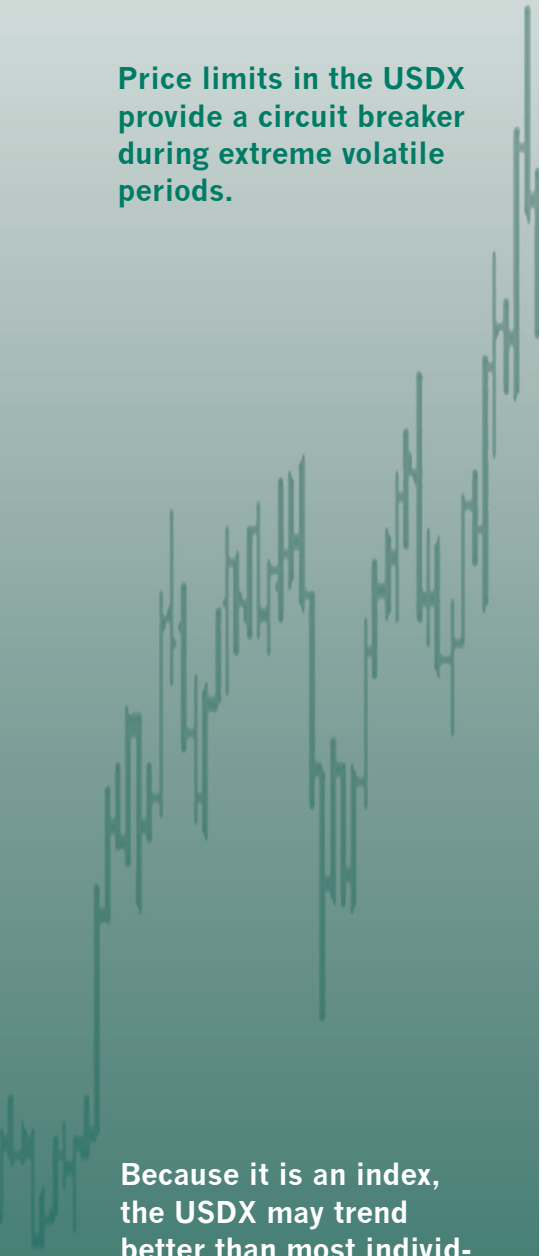
Spot Price Orders

FINEX permits orders on USDX futures to be contingent on the USDX spot price. This method may be preferred by cash market participants and traders with long-term technical systems who base trading decisions on the spot USDX and find it convenient to convert the prevailing USDX spot price to an equivalent futures price. For example, a trader may wish to place an order to buy at "50 ticks premium to spot" in which case the futures contract would be bid at a price equal to the current spot USDX plus 50 ticks. This innovative order-entry procedure is available for all types of orders triggered by price action, including stop orders.

Price Limits

USDX futures were the first to incorporate a unique system of price limits designed to reduce traders' exposure to extreme intraday volatility, while also allowing the futures price to adjust as quickly as possible to fundamental changes in the underlying currencies. The limit prevents the USDX from trading more than 200 ticks above or below the prior days settlement price. If prices do reach this limit, and do not retrace 100 points or more of the limit movement by the end of a 15-minute "cooling down" period, then new limits are set 200 ticks above and below the original price limits. The cooling down period protects the trader from extreme intraday volatility. In addition, there are no price limits in the final 30 minutes of trading. With this approach, USDX futures will never be "locked limit" for extended periods of time, yet traders are still protected against excessive short-term volatility.

Price limits in the USDX provide a circuit breaker during extreme volatile periods.



Because it is an index, the USDX may trend better than most individual currencies, which is an important benefit to technical traders.

Average Price Orders

The Average Price Order (APO) was used at the New York Cotton Exchange (NYCE®) for several decades as a basic tool for better order execution at the open and the close of the trading session. With this APO facility, customers can place orders to be filled at the average price of the opening or closing range at which time their order can be matched against another APO.

In working an APO on the open, a floor broker with market orders matches his orders with offsetting orders held by other traders during the 15-minute period before the open. Following the contracts opening call, an exchange official calculates and announces the average price, which is calculated as the average of all prices traded in that contract month during the opening. The transactions are then recorded at the average price of the opening range. On the close, a floor broker may execute futures and options by using an APO. During the last 30 minutes of trading, brokers who have market-on-close orders match those orders through open outcry. The prices recorded during the last 60 seconds of trading determine the average price on the close.

If a floor broker cannot match an APO, he will generally execute it as a conventional market order. Brokers usually attempt to execute all qualifying orders through the APO mechanism unless, of course, customers specify otherwise. However, many customers find the APO to be an excellent tool and use it to their advantage.

Pricing the USDX

USDX Forward Price

A theoretical USDX forward price is calculated in exactly the same manner as the spot USDX with the exception that forward currency rates are used in place of spot rates. To properly compare the USDX forward price with a particular USDX futures price, each of the six forward rates must have the same maturity as the USDX futures under consideration. For instance, if the USDX futures settles in 60 days, the 60 - day forward rates should be used in the forward index calculation.

The USDX forward price consists of the spot price plus the cost-of-carry. The latter reflects interest rates differential between the U.S. and the six countries whose currencies compose the USDX.

The Final Settlement Price

In trading the USDX, it is useful to understand that the value of the contract is determined differently on the last day of trading in an expiring USDX futures contract month.

On that day, the Final Settlement Price is calculated using the USDX formula and applying the final settlement prices of FINEX currency futures contracts of the underlying component currencies. Normally these currency futures contracts will expire simultaneously with the expiring USDX futures contract. The complete procedure for determining the final settlement price is outlined in detail within the contract rules. The NYBOT Rule Book is available online at www.nybot.com.

Pricing

USDX Futures Price

The USDX futures price is very similar to the USDX forward price with one important exception: the USDX futures price incorporates the volatility premium, which serves to increase the futures price above the forward price.

The USDX futures price captures a volatility premium which, along with the cost-of-carry, form the basis relative to the spot price. Among currency futures, the volatility premium is unique to the USDX and gives the futures some characteristics of an option.

The volatility premium arises primarily from the pricing convention of the futures contract. Because the component currencies of the USDX are quoted in European terms, the tick value of the USDX futures (.01 USDX points) should decrease as the dollar strengthens and increase as the dollar weakens. However, the contract's pricing convention fixes the tick value at a constant $10.00.

Consequently, during periods of dollar strength, the USDX will rise by more than the decline in the corresponding basket of foreign currencies. During periods of dollar weakness, the USDX will fall by less than the rise in the basket of foreign currencies. This can be beneficial to hedgers with long positions (long the USDX and long foreign currencies), so the volatility premium adequately compensates USDX sellers and brings the future price to a fair value.

The volatility premium is a function of the volatility of the USDX. During volatile periods, this premium will increase in value, thereby increasing the price of the USDX futures above the spot index.

Implications For Arbitragers

The existence of the Volatility Premium makes arbitraging USDX futures more complicated than traditional currency futures.

Arbitragers must take into account changes in the volatility premium when trading USDX futures against a basket of foreign currencies. This becomes especially important during periods of rapidly changing currency volatilities.

In essence, an arbitrager sells USDX futures if they believe the futures to be over-valued relative to an underlying basket of foreign currencies, and buys USDX futures if under valued relative to the underlying basket of foreign currencies. Such a strategy requires an evaluation of both the cost-of-carry and the volatility premium implied by the current USDX futures price. Evaluating the volatility premium is difficult as it reflects an expectation of futures volatility and, in this regard, is similar to the investment analysis undertaken by the options traders.

Trading Examples

The US Dollar Index

- ✓ **Track it**
- ✓ **Trade it**

USDX Futures & Options exclusively at the New York Board of Trade

Example 1

Situation

A trader wishes to be long yen and short European currencies, but wants to avoid the cost and complexities of managing a multi-currency portfolio.

Strategy

The trader can easily establish a position that is long yen and short a basket of European currencies by buying USDX futures supplemented with an appropriate sale of U.S. Dollar/Yen futures.

Cross-rate trading the USDX with another currency creates a new index based in that currency, rather than based in U.S. dollars.

For example, with USDX futures at 110.00, the purchase of 20 contracts having a total dollar value of $2,220,000 will result in the following short foreign currency position in the U.S. dollar (calculated by multiplying the total value of $2,220,000 by each currency's weight in the Index):

Euro	**1,278,720**
Yen	**301,920**
Sterling	**264,180**
Canadian	**202,020**
Krona	**93,240**
Swiss	**79,920**

The trader can then create a synthetic position that is long yen and short a basket of other currencies by going long yen against the short currency basket embedded in the USDX position. In this example, the trader would need to sell 11 FINEX US Dollar/Yen contracts (calculated by dividing the dollar value of the USDX future position by the dollar value of a Dollar/Yen contract, or $2,220,000/$200,000.)

Results

This transaction would have two effects:

1. The dollar exposure would be roughly eliminated. The $2,220,000 long dollar position from the USDX futures is roughly offset by the $2,200,000 short dollar position from the short Dollar/Yen futures.

2. The exposure of the yen has been established at $1,898,080 (calculated by subtracting the $301,920 short position from the USDX futures from the $2,200,000 long position from the Dollar/Yen futures.)

By spreading USDX and U.S. Dollar/Yen contracts, the trader has created a yen index - long yen and short a basket of non-US $ currencies - which will increase in value if the yen appreciated against the opposing currencies. Movement in the U.S. Dollar should not have any significant impact on the value of the cross-rate trade.

Constructing a long yen and short other-USDX-currency positions requires spreading contract positions in the ratio of 20:11- 20 long USDX contracts to 11 short U.S. Dollar/Yen contracts. The spread ratio depends upon market exchange rates and the sizes of futures contracts, so it will change over time and current data should always be considered before a strategy is undertaken.

Variation on Example 1

Strategy

For example, with USDX futures at 105.50, the purchase of 15 contracts having a value of $1,582,500 will result in the following short foreign currency position in the U.S. dollar (calculated by multiplying the total value of $1582,500 by each currency's weight in the Index):

Euro	*911,520.00*
Yen	*215,220.00*
Sterling	*188,317.50*
Canadian	*144,007.50*
Krona	*66,465.00*
Swiss	*56,970.00*

The trader can then create a synthetic position that is long yen and short European currencies but going long yen against this short currency basket. The size of the U.S. Dollar/Yen futures contract is 200,000 U.S. dollars. The trader could sell $1,582,500 = 7.9125, roughly 8 contracts.

Result

This transaction would have two effects:

1. The dollar exposure would be roughly eliminated. The $1,582,500 long dollar position of the USDX transaction is roughly offset by the $1,600,000 short dollar position of the yen transaction.

2. The exposure of the yen has risen to $1,600,000- 215,220= 1,384,780. By spreading USDX and U.S. Dollar/Yen, the trader has created a yen index - long Yen and short a basket of non-US $ currencies - which will increase in value if the yen appreciated against the European currencies. Movement in the U.S. Dollar should not have any significant impact on the value of the cross-rate trade.

Constructing a long yen and a short European currency exposure requires spreading contract positions in the ratio of 15:8 – 15 long USDX contracts to 8 short U.S. Dollar/Yen contracts. The spread ratio depends upon market exchange rates and the sizes of futures contracts, so it may change over time.

Using the same type of analysis, traders can create indices based on a variety of currencies other than the U.S. Dollar to capitalize on expected foreign exchange rate movements.

To help traders using futures in cross-rate trading, FINEX offers reduced minimum margins for hedge (spread) transactions between USDX futures and many currency futures. Please consult the Exchange for further details.

Example 2

USDX futures (calendar) spreads may enable traders to benefit from movements in international interest rates, regardless of movements in the dollar.

Situation

A trader expects short-term interest rates in the U.S. to diverge from those abroad and wants to establish an appropriate trading position. However, he wants to avoid the foreign currency risk of trading international interest rates futures.

Opportunity

Spreading may enable traders to take a position on interest rate movements while eliminating the effect of exchange rate movements. Straddle or intra-market spreading consists of buying USDX futures of one expiration month, and simultaneously selling the same number of USDX futures and a different expiration month. The difference between USDX futures prices of different expiration months is mostly determined by the short-term interest rate differentials in a manner consistent with theory of interest rate parity. If interest rates in the U.S. are broadly higher (lower) than interna-

tional interest rates, then the USDX future will trade at a discount (premium) to nearby futures. Since some interest rates move up and down, USDX futures may trade at a premium to spot some of the time, and at a discount to spot at other times. (Spreads also reflect the difference in volatility premiums of the two futures contracts, but this is only a small part of the spread).

A spread with USDX futures captures movements in short-term interest rate differentials between the U.S. and the countries of the six currencies composing the index. There is virtually no foreign exchange rate risk since the investor is both long and short USDX futures. Gains of one contract resulting from a foreign exchange rate movement are generally offset by losses on the other.

Spread Strategy

Assume that the trader observed the following rates in July 2002.

Spot USDX	**105.52**
Sep 2002 USDX futures	**105.87**
Dec 2002 USDX futures	**106.43**
Mar 2002 USDX futures	**106.98**

Long-dated futures trade at a forward premium to nearby contracts. The trader can establish a short Sep-Dec spread by selling the December USDX futures and simultaneously buying the September USDX futures. This straddle is valued at 10643 - 10587 = 0.56 USDX points, or 0.56 x $1000 multiplier = $560.

Result

Assume that one month later, the trader observes the following rates:

Spot USDX	**107.32**
Sep 2002 USDX futures	**107.40**
Dec 2002 USDX futures	**107.65**
Mar 2002 USDX futures	**107.91**

The Sep-Dec straddle has narrowed to 107.65 - 107.40 = 0.25 USDX points, or 0.25 x $1000 multiplier = $250. This represents a gain of $310 over the month and occurred as a result of narrowing interest rate differentials between the U.S. and oversees countries. Even though the dollar strengthened over the period, this had no effect on the straddle spread. Had interest rate differentials widened instead, the straddle would have increased in value.

Because USDX straddles are less risky than outright futures positions, exchange minimum margin requirements on straddles are correspondingly less. Please consult the exchange for further details.

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