



Currency Futures & Options



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The New York Board of Trade (NYBOT) currency products division – FINEX® – trades a variety of currency futures and options on futures.

Euro-based currency pairs
U.S. dollar-paired currency pairs
Other key cross-rate currency contracts
U.S. Dollar Index (USD^X)

FINEX—the Global Currency Market—provides interbank liquidity with exchange security.

NYBOT/FINEX Product History

November 1985: *USD^X futures*

September 1986: *Options on USD^X futures*

1987 and 1989: *U.S. Treasury futures*

1994: *A series of cross-rate contracts, including several Deutsche mark and U.S. dollar-paired futures*

April 1998: *ECU/U.S. dollar futures and options*

September 1998: *First exchange to trade euro futures and options (a “Large” euro/ U.S. dollar contract for 200,000 euro)*

November 1998: *Three euro-based futures (euro/Japanese yen; euro/Swedish krona; and euro/Swiss franc) and Swiss franc/Japanese yen futures*

December 1998: *Euro/British pound futures*

March 1999: *FINEX options on euro/yen, euro/Swedish krona, euro/Swiss franc, euro/British pound and Swiss franc/yen*

May 1999: *Futures contracts for euro/Norwegian krone, Australian dollar/New Zealand dollar, and the Australian dollar/Japanese yen*

May 1999: *“Regular” version of euro/U.S. dollar futures (100,000 euro)*

December 1999: *Euro/Canadian dollar futures and options*

The New York Board of Trade – responding to the challenge of change with the strength of tradition and the capacity for innovation.

Introduction

The rapid globalization of trade in the last decade of the twentieth century has fuelled growth in foreign exchange transactions and generated new strategies in the interbank market. Foreign exchange exposure for businesses, once limited to one or two currencies, has expanded to include a wide variety of countries in different regions. The historic introduction of a single European currency – the euro – may have reduced the variety of potential foreign exchange transactions, but it has also brought about new currency relationships that test financial institutions, currency traders and international businesses in different ways.

The New York Board of Trade's currency futures and options division – FINEX® – was established in 1985 in recognition of the growing importance of the financial derivatives sector. FINEX first traded futures contracts based on the U.S. Dollar Index (USDIX®) and later added options on USDX futures. Since its founding, NYBOT's currency products division has developed a series of innovative currency futures and options contracts and carefully tailored its trading practices to accommodate the financial sector's demand for flexible risk management and investment tools. In 1994, FINEX became the first exchange division to operate trading floors

on two continents by adding a complementary trading facility in Dublin, Ireland. In the same year, FINEX added several cross-rate and U.S. dollar-paired futures and options to their original USDX contracts. The NYBOT currency complex now features more than two dozen U.S.-dollar paired, euro-based and other key cross-rate futures in addition to the USDX contracts.

FINEX is the financial product division of the New York Board of Trade (NYBOT) – parent company of the Coffee, Sugar & Cocoa Exchange, Inc. (CSCE) and the New York Cotton Exchange (NYCE®). Through its two exchanges and their subsidiaries and divisions, which include Citrus Associates, FINEX® and the New York Futures Exchange (NYFE®), NYBOT offers a variety of agricultural, financial and index products. The Cantor Exchange (CX), a joint venture with eSpeed, Inc. (Cantor Fitzgerald), provides the first full-time, electronic market for U.S. Treasury futures.

This brochure serves only as a brief overview of the broad range of currency futures and options contracts offered by NYBOT's FINEX division. Trading on FINEX is governed by specific rules and regulations set forth by NYCE. These rules are subject to change. For more detailed information and specifications on the currency contracts or any of the agricultural, financial or index products traded on the exchange subsidiaries and divisions of the New York Board of Trade, contact NYBOT or your broker.

The Currency Cash Market

The political and economic structure of the world community of nations underwent a historic transformation in the 1990s. The decade witnessed the dissolution of the U.S.S.R, the sudden emergence of many new nation states and political regimes, the rapid globalization of trade, the tidal shift from managed to free market economies and the rise of regional economic alliances to replace old ideological blocs. Interdependent national economies and interconnected currencies increased the significance of foreign exchange rates as monitors for trade, income and capital flows. Currency relationships carried new levels of risk for financial and corporate managers and new realms of opportunity for international investors.

The process of the European Economic and Monetary Union (EMU) represented one of the decade's significant challenges to the world financial community. From the moment on January 1, 1999, when the national currency conversion rates of the eleven participating member countries – Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain – were irrevocably fixed to the euro, the international financial marketplace experienced changes that reached far beyond backroom conversion problems.

The entire transition period through July 1, 2002 has broad implications for the interbank currency market. Not only are the old national currencies scheduled to disappear completely, the relationships of European national currencies not included in the first phase of EMU (e.g., the British pound) or not eligible for EMU (the Swiss franc) are being transformed. Financial institutions and trading entities in other nations such as Australia or Canada that have significant trading relationships with member nations of EMU must now accommodate the euro in their economic planning and strategy. The interbank market responds to this uncertainty by continuing to define shifting currency relationships and discovering new opportunities.

Exchange-traded futures and options markets are particularly well suited to reduce some of the risk and support some of the opportunities that accompany such profound change. The NYBOT global currency exchange provides the marketplace for a wide-range of currency contracts.

NYBOT Currency Futures and Options Markets

Currency futures and options offer currency traders advantages not found in the cash market. The NYBOT FINEX division provides a global marketplace for euro-based, U.S. dollar-paired and other strategic cross-rate contracts as well as U.S. Dollar Index (USDIX) futures and options.

The exchange's open auction marketplace provides an efficient pricing mechanism, effective risk transfer and complete anonymity of trading. Futures market traders can exit the market by simply offsetting their position – whereas cash market trades often involve the simultaneous holding of offsetting positions with no chance of simple liquidation.

The futures market utilizes margin to cover a net market position, while the currency cash market calls for the commitment of a credit line to cover every position taken. Use of futures creates access to currency markets for accounts of all sizes without tying up vital credit lines.

The New York Clearing Corporation (NYCC) – the designated clearinghouse for all the NYBOT markets – backed by its clearing members, removes the counterparty risk associated with any cash market transaction and replaces it with a long history of total trade security and financial integrity. The clearinghouse stands as buyer to every seller and seller to every buyer. Futures exchanges are carefully regulated and operate by rules that provide

an open and equitable trading process. Trading is regulated in the U.S. and Dublin by the Commodities Futures Trading Commission (CFTC) and supervised on the Dublin floor by the Central Bank of Ireland.

FINEX futures allow access to foreign exchange markets for accounts of any size. Money managers, banks and corporations can carry out currency transactions without tying up credit lines. A money manager who needs to take a position in the euro vs. the U.S. dollar but lacks the necessary credit line can get a contract price in the FINEX market and establish the position in futures.

All FINEX currency futures trade on a quarterly basis, listing contracts for March, June, September and December. Currency futures positions need to be 'rolled' on a quarterly rather than a daily basis as spot contracts. When calculating profit/loss, there are no forward costs to be added. When futures trades are closed out, they are automatically netted and disappear from the balance sheet. The resulting profit or loss accrues to the bottom line immediately

Establishing a futures contract position requires an original margin deposit. In the event of a market moving against the original position, variation margin payments may be necessary on a daily basis to maintain the position. If the market move is favorable, the daily gain in the margin account is immediately available to the market participant.

(Margin rates are established by NYCE and are subject to change. Market users are advised to consult NYCE or a broker for current margin rates and more detailed information.)

The purchase of options, however, does not require the posting of margin. The option contract, with the payment of a market-determined premium, can provide risk insurance against potential losses from sharp currency rate moves that could endanger cash market arrangements. The option does not limit the benefits that might be realized from a favorable market move.

FINEX options on USDX and currency-paired futures are standardized and available for trading with a wide variety of expirations. While a futures position can lock in a rate and reduce loss for a hedger, an option can be used to limit loss without sacrificing the potential benefit from a favorable market move. For an investor, options can provide a simplified, cost-effective means to capture gains from expected market price moves without the commitment of margin capital necessary to maintain a futures position over an extended time frame. Since options provide considerable trading flexibility, they can be particularly useful when wide swings in currency exchange rates are anticipated.

Prices are traded in the smallest pricing increments utilized in the cash currency markets. For any option strike price, break-even points can be easily checked on calls, puts or combinations. Since all of the FINEX options feature “American style” exercise, option holders can exercise them on any day up to and including the expiration day of the option. Option buyers therefore have the flexibility to determine the appropriate time to exit their chosen strategy.

FINEX options expirations coincide with interbank market expiration: 3:00 p.m. GMT (10 a.m. Eastern Time). The expiration occurs when the futures market is still open so option writers (sellers or grantors) can know their position and adjust their offsetting hedge at that time. With the expiration, allocation is known instantly, with immediate notification of the Reference Price for Automatic Exercise on quote vendor pages. Therefore, there is no one to call and no hedge uncertainty.

The NYCC uses pro-rata allocation to assign exercise notices to its short clearing members. For each strike, the NYCC calculates the percentage of open interest assigned and puts it on a page for clients to see.

The NYBOT/FINEX currency markets combine the security and simplicity of the futures market with the strength and liquidity of the interbank cash market. Through its trading capabilities and

product flexibility, FINEX provides efficient, liquid currency futures and options markets. Its close relationship to the interbank market also allows the FINEX currency markets to respond quickly to evolving cash market signals and customer needs.

With trading floors in New York and Dublin and a New York night session, NYBOT's FINEX markets trade around the clock. A FINEX broker can provide competitive price quotes in all major centers, day or night.

Institutional investors find valuable Exchange efficiencies such as a block order procedure, which provides the interbank capability of filling large orders at a single and competitive price. An effective "exchange of futures for physicals" (EFP) facility brings another valuable dimension to currency trading. The EFP mechanism serves the needs of interbank market makers and traders and adds an important and increasingly utilized component to a variety of foreign exchange strategies. *(More detailed information on the EFP capability is available through a broker or NYBOT.)*

In addition, the New York Clearing Corporation (NYCC) pays interest on most FINEX market margin deposits – an important advantage in large currency transactions.

U.S. Dollar Index (USDIX)

From its inception in 1985, NYBOT's FINEX division has featured futures and options based on the U.S. Dollar Index (USDIX). The USDIX remains a useful and cost effective counterpart to the more specialized currency grid that has been developing since 1994.

The USDIX provides the most 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. Changes in the relative strength of the dollar also represent significant investment opportunities. Beginning in 1985, FINEX provided USDIX 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.

The base value of the USDIX is 100.00. The current level of the USDIX reflects the average value of the dollar relative to the 1973 base period. In recent years, the USDIX has traded between 80 and 100. Its historic high of 164.72 was established in

1985 and the all-time low of 78.19 was set in 1992. 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 interbank market's rapid shift to the euro has allowed FINEX to change the calculation method for its USDX contract.

FINEX now recognizes the euro directly in the calculation of the USDX, replacing five currencies included in the euro (German mark, French franc, Italian lira, Netherlands guilder, and Belgian franc). With the conversion rates for those currencies fixed and the weighting the same, the revision of the calculation formula has no effect on the resulting index value. In addition to the euro, the remaining currencies are the Japanese yen, British pound, Canadian dollar, Swedish krona and Swiss franc.

USDX futures pricing 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-date 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.")

The volatility premium and other unique pricing characteristics make the USDX unique among currency futures. The premium gives the futures some characteristics of an option in that volatility contributes to pricing. A detailed understanding of USDX futures pricing is necessary for arbitrageurs and other traders. (*For more information about USDX futures pricing, consult a broker.*)

USDX futures can help international financial managers reduce the risk from adverse movements in the dollar that can dramatically affect asset prices and net returns. International corporations can utilize USDX futures to limit their risk exposure to broad-based fluctuations in the dollar.

The USDX futures contract is valued at \$1,000 times the Index. For example, a contract settled with an index value of 98.80 would be worth \$98,800. The final settlement price of the expiring USDX futures contract is determined by using the USDX weighted formula and specific rates for the component currencies (euro, Japanese yen, British pound, Canadian dollar, Swedish krona and Swiss franc). The rates for the component currencies represent the final settlement prices for the expiring U.S. Dollar/Japanese yen, U.S. Dollar/Canadian Dollar and U.S. Dollar/Swiss Franc future and the reciprocal of the final settlement prices for Sterling/U.S. Dollar and Euro/U.S. Dollar. The calculation of the U.S. Dollar/Swedish Krona rate is determined by dividing the final settlement price of the expiring Euro/Swedish krona futures by the final settlement price of the Euro/U.S. Dollar futures contract.

The USDX price reflects the general movement in the value of the dollar without being limited by the specific pressures of a single-currency exchange rate that may move counter to the trend. A currency trader who wishes to take a general position on a stronger dollar can buy USDX contracts and profit from an overall trend while avoiding the expense and risks of constructing and trading a foreign exchange basket of the major currencies. This represents a cost-effective way to manage foreign exchange risk and realize potential gains from broad movements in the U.S. dollar.

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 USDX Futures

Scenario:

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.

Strategy:

To help protect the value of the portfolio, the manager buys **100 USDX Dec futures** at **97.68**.

Result:

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. On December 1, Dec futures are trading at **103.80**. The manager closes out the futures position for a **6.12 gain (103.80 - 97.68)**. The total gain would offset the bulk of the depreciation in value of the portfolio as a result of the strengthening of the U.S. dollar.

While hedging with futures allowed the manager to limit his dollar exposure, the same hedge with a call option would have permitted the manager to protect the value of the portfolio while allowing participation in gains from U.S. dollar depreciation. Each strategy offers advantages and the choice depends on the manager's specific goals and the interpretation of the market indicators.

The Currency Complex

The FINEX currency complex offers basically three sets of currency pairs futures and options: U.S-dollar paired (such as U.S dollar/Japanese yen; U.S. dollar/British pound or Australian dollar/U.S. dollar); euro-based (quoted in terms of the national currency per euro); and other key cross rates (such as the Swiss franc/Japanese yen, Australian dollar/NZ dollar or Australian dollar/Japanese yen). These contracts are physically delivered and prices are quoted interbank style. The large size of the contracts makes them more cost efficient for institutional investors.

Cross-rate futures can provide traders with an effective hedge to reduce a loss from an unfavorable foreign exchange rate move. Taking a futures position allows the trader to lock in a rate in the futures market which fixes the net cash market result.

For example, the Swiss franc/Japanese yen (200,000 Swiss francs) represents the cost of the Swiss franc in terms of the yen. The contract trading at 73.90 would mean that each Swiss franc was currently valued at 73.90 yen. The total contract would then be worth 14,780,000 yen (200,000 francs times 73.90 yen). A trader expecting a cash market rise in the value of the Swiss franc against the Japanese yen can buy a Swiss franc/Japanese yen contract and lock in a favorable exchange rate in the futures market, protecting the cash market

transaction. A contract priced at 74.35 yen would reflect a stronger Swiss franc against the yen. The total contract value would then be 14,870,000 yen – an increase of 90,000 yen (0.45 yen per Swiss franc).

Euro-based futures can fit investment strategies designed in response to the uncertainties surrounding a new regional currency.

For example, the euro declined by over 10% against the U.S. dollar in its first three months. The two euro/U.S. dollar contracts – regular (100,000 euro) and large (200,000 euro) – expand opportunities for individual investors, Commodities Trading Advisors (CTAs), hedge funds and other institutional investors who wish to take a position in the new currency against the U.S. dollar. These contracts are priced in dollars per euro. A CTA, in expectation of a weakening euro, might sell a regular euro futures contract at \$1.0850/euro and the close it out at \$1.0505 and profit from the decline in the newer currency: \$0.0345/euro or \$3450 per contract

U.S. dollar-paired futures represent a mechanism to reduce risk exposure in foreign exchange transactions that involve the U.S. dollar and several major currencies (i.e., Japanese yen, Australian dollar, Swiss franc, British pound).

For example, the British wholesaler who imports a particular U.S. consumer item in a market where the dollar's value versus the pound is rising needs to guard against an escalation of a projected purchase price in order to keep customer commitments. The British pound/U.S. dollar contract is for 125,000 pound sterling and is priced in dollars per pound, meaning that when the price of the contract (in dollars) goes down it means a stronger dollar. A contract that is sold at 1.6200 dollars/pound and then bought at 1.6050 dollars/pound reflects a declining pound and a stronger dollar.

The U.S. investor who holds a significant international portfolio investment in Japan does not want to see gains diminished by unfavorable currency rates. A strengthening dollar could diminish unhedged yen-based stock market gains. The investor could use the U.S. Dollar/Japanese yen futures contract (\$200,000 and priced in yen per dollar) to hedge the yen exposure. A rising contract price (in yen) reflects a strengthening dollar.

Foreign exchange rate volatility can create myriad problems for long-term international business or investment planning. U.S. dollar-paired futures allow hedgers to lock in a specific rate.

Trading Currency Futures

Scenario:

An investor believes that an upcoming decision by the World Trade Organization concerning trade policy for certain agricultural commodities will benefit the European Union. A favorable decision is expected to generate a brief upswing in the euro against the U.S. dollar. The value of the euro, while generally declining over the previous month, has edged up in the past three days.

Strategy:

Because the euro/U.S. dollar contracts are quoted in dollars per regular euro, the investor establishes a long euro futures position in early August by buying **3 September euro contracts** at a prevailing rate of **1.0667 dollars per euro**. Each contract represents 100,000 euro. The total contract value is \$320,010.00 (3 x 100,000 x 1.0667).

Result:

Three weeks later the World Trade Organization decision does favor the European Union and the euro appreciates against the dollar, reaching a rate of **1.0880 dollars per euro**. The investor closes out his euro position by **selling three euro contracts at 1.0880** (total contract value of **\$326,400.00**) and realizes a profit of **.0213 dollars/euro (total profit = \$6,390.00)**.

Trading Euro-Based Options

Scenario:

In March, a hedge fund has a cash market long position in euro/Japanese yen for an equivalent of **200 million euro**. The spot rate is **126.20 yen per euro**. A short-term monetary risk from a potential European Central Bank policy may be on the horizon and the hedge fund manager wants to cover part of the risk but would like to profit if the yen depreciates.

Strategy:

The hedge fund buys **2,000 FINEX June euro/yen put options** (one contract = 100,000 euro) at a **strike price of 126.00 yen per euro**. The fund pays a premium of 1.70 yen per euro, gaining the right to sell 2,000 June euro/yen futures at 126.00 yen.

Result (yen appreciates):

Because FINEX options have American-style exercise, the hedge fund may exercise its puts at any time up to expiration, thus assuming a short futures position at 126.00. The resulting futures profit will help offset the loss on its cash forward position (less the premium of 1.70 yen/euro). If the market goes to **121.00 yen**, the futures profit is **3.30 yen/ per euro** (126 yen per euro - 1.70 = 124.30 yen per euro (121.00 = 3.30 yen/euro) or **660 million yen**.

Result (yen depreciates):

If the market consistently moves ahead, the hedge fund will allow its puts to expire worthless, and still continue to benefit from the original cash market forward position decreased only by the cost of the option premium.

Either way the put option acts as an insurance policy without limiting potential gains from a favorable cash market move.

Conclusion

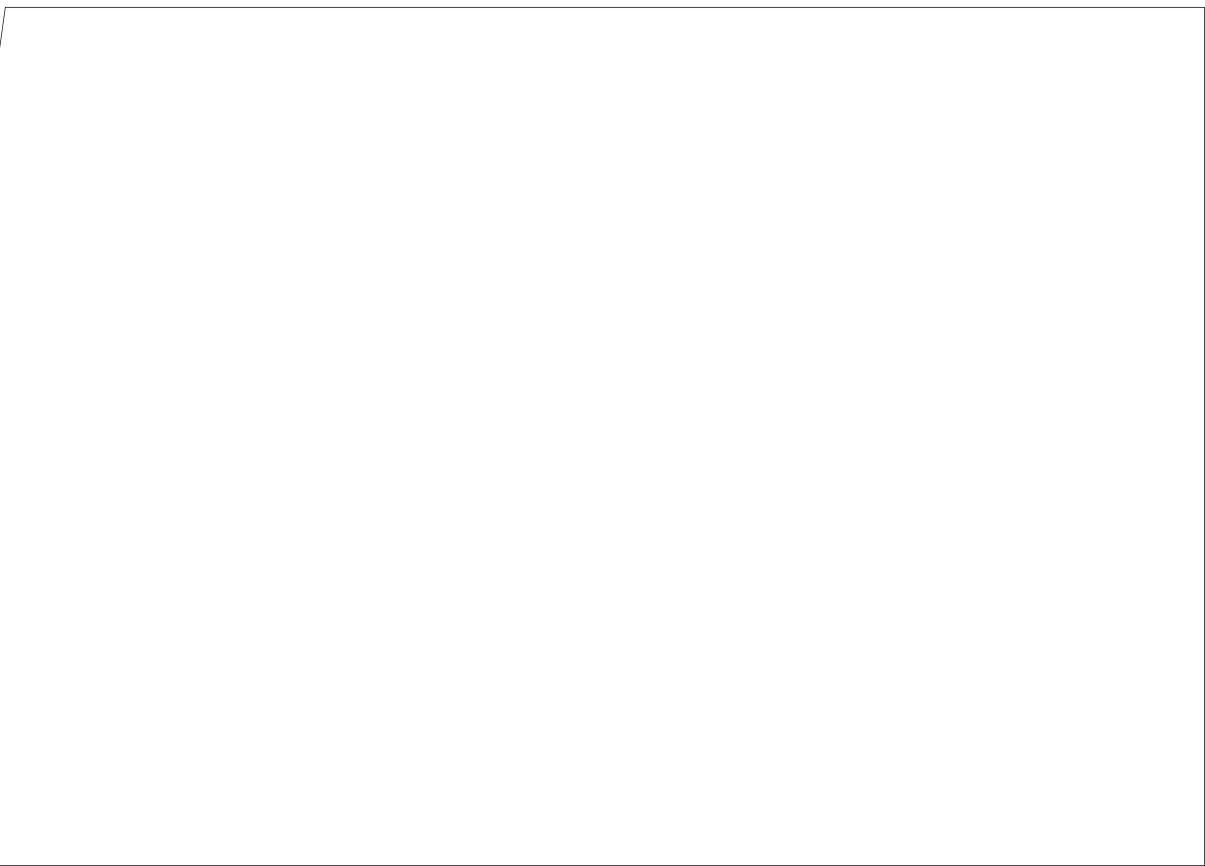
Futures and options markets provide an important risk management function to participants in a number of industries. They offer price protection to hedgers and trading opportunities for investors. Their uses are broad and diverse. The NYBOT currency complex at its FINEX division features a range of futures and options contracts specifically targeted to meet the specialized needs of various segments of the global currency market.

The New York Board of Trade offers a large selection of educational materials and services about futures and options trading for each of its markets. To receive more information on any of the subsidiaries of the NYBOT, contact the exchange or your broker.

The examples contained in this FINEX brochure are designed to foster a better understanding of currency futures and options transactions. Readers are advised, however, that fees and commissions are not included in the examples and that margin levels are set by the exchange and subject to change. Trading at any of the subsidiaries of the New York Board of Trade is governed by a specific set of rules and regulations as set forth in the exchange rules. Contact your broker for additional information.

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