

**ROYALFOREX**

# **FOREX**

**STUDY BOOK FOR SUCCESSFUL FOREIGN EXCHANGE  
DEALING**

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# 1. Common knowledge about the trading on Forex

## 1.1. Foreign exchange as a part of the world financial market

**Forex – What is it?** The international currency market Forex is a special kind of the world financial market. Trader's purpose on the Forex to get profit as the result of foreign currencies purchase and sale. The exchange rates of all currencies being in the market turnover are permanently changing under the action of the demand and supply alteration. The latter is a strong subject to the influence of any important for the human society event in the sphere of economy, politics and nature. Consequently current prices of foreign currencies evaluated for instance in the US dollars fluctuate towards its higher and lower meanings. Using these fluctuations in accordance with a known principle "buy cheaper – sell higher" traders obtain gains. Forex is different in compare to all other sectors of the world financial system thanks to his heightened sensibility to a large and continuously changing number of factors, accessibility to all individual and corporative traders, exclusively high trade turnover which creates an ensured liquidity of traded currencies and the round - the clock business hours which enable traders to deal after normal hours or during national holidays in their country finding markets abroad open.

Just as on any other market the trading on Forex, along with an exclusively high potential profitability, is essentially risk - bearing one. It is possible to gain a success on it only after a certain training including a familiarization with the structure and kinds of Forex, the principles of currencies price formation, the factors affecting prices alterations and trading risks levels, sources of the information necessary to account all those factors, techniques of the analysis and prediction of the market movements as well as with the trading tools and rules. An important role in the process of the preparation for the trading on Forex belongs to the demo-trading (that is to trade using a demo-account with some virtual money), which allows to testify all the theoretical knowledge and to obtain a required minimum of the trade experience not being subjected to a material damage.

**Short data about the origin and development of the currency exchange market.** Currency trading has a long history and can be traced back to the ancient Middle East and Middle Ages when foreign exchange started to take shape after the international merchant bankers devised bills of exchange, which were transferable third-party payments that allowed flexibility and growth in foreign exchange dealings.

The modern foreign exchange market characterized by periods of high volatility (that is a frequency and an amplitude of a price alteration) and relative stability formed itself in the twentieth century. By the mid-1930s the British capital London became to be the leading center for foreign exchange and the British pound served as the currency to trade and to keep as a reserve currency. Because in the old times foreign exchange was traded on the telex machines, or cable, the pound has generally the nickname "cable". After the World War II, where the British economy was destroyed and the United States was the only country unscarred by war, U.S. dollar, in accordance with the Breton Woods Accord between the USA, Great Britain and France (1944) became the reserve currency for all the capitalist countries and all currencies were pegged to the American dollar (through the constitution of currencies ranges maintained by central banks of relevant countries by means of the interventions or currency purchases). In turn, the U.S. dollar was pegged to gold at \$35 per ounce. Thus, the U.S. dollar became the world's reserve currency. In accordance with the same agreement was organized the International Monetary Fund (IMF) rendering now a significant financial support to the developing and former socialist countries effecting economical transformation. To execute these goals the IMF uses such instruments as *Reserve trenches*, which allows a member to draw on its own reserve asset quota at the time of payment, *Credit trenches drawings* and *stand-by arrangements*. The letters are the standard form of IMF loans unlike of those as the *compensatory financing facility* extends

financial help to countries with temporary problems generated by reductions in export revenues, the *buffer stock financing facility* which is geared toward assisting the stocking up on primary commodities in order to ensure price stability in a specific commodity and the *extended facility* designed to assist members with financial problems in amounts or for periods exceeding the scope of the other facilities.

At the end of the 70-s the free-floating of currencies was officially mandated that became the most important landmark in the history of financial markets in the XX century lead to the formation of Forex in the contemporary understanding. That is the currency may be traded by anybody and its value is a function of the current supply and demand forces in the market, and there are no specific intervention points that have to be observed. Foreign exchange has experienced spectacular growth in volume ever since currencies were allowed to float freely against each other. While the daily turnover in 1977 was U.S. \$5 billion, it increased to U.S. \$600 billion in 1987, reached the U.S. \$1 trillion mark in September 1992, and stabilized at around \$1.5 trillion by the year 2000. Main factors influences on this spectacular growth in volume are mentioned below. A significant role belonged to the increased volatility of currencies rates, growing mutual influence of different economies on bank-rates established by central banks, which affect essentially currencies exchange rates, more intense competition on goods markets and, at the same time, amalgamation of the corporations of different countries, technological revolution in the sphere of the currencies trading. The latter exposed in the development of automated dealing systems and the transition to the currency trading by means of the Internet. In addition to the dealing systems, matching systems simultaneously connect all traders around the world, electronically duplicating the brokers' market. Advances in technology, computer software, and telecommunications and increased experience have increased the level of traders' sophistication, their ability to both generate profits and properly handle the exchange risks. Therefore, trading sophistication led toward volume increase.

**Regional reserve countries.** Along with the global reserve currency – U.S. dollar, there are also other regional and international reserve countries.

In 1978, the nine members of the European Community ratified a plan for the creation of the European Monetary System managed by the European Fund of the Monetary Cooperation. By 1999 these countries, which constituted so-called Euro zone, have implemented the transition to the common European currency - the euro (see Figure 1.1).

The euro bills are issued in denominations of 5, 10, 20, 50, 100, 200, and 500 euros. Coins are issued in denominations of 1 and 2 euros, and 50, 20, 10, 5, 2, and 1 cent.





**Figure 1.1.** The Euro notes.

The euro is a regional reserve currency for the euro zone countries and the Japanese yen – for the countries of South – East Asia. The portfolio of reserve currencies may change depending on specific international conditions, to include the Swiss franc.

***The role of U.S. Federal Reserve System and Central banks of other G-7 countries on Forex.*** All central banks, and the U.S. Federal Reserve System (FRS) as well, affect the foreign exchange markets changing discount rates and performing the monetary operations (as interventions and currency purchases).

For the foreign exchange operations most significant are *repurchase agreements* to sell the same security back at the same price at a predetermined date in the future (usually within 15 days), and at a specific rate of interest. This arrangement amounts to a temporary injection of reserves into the banking system. The impact on the foreign exchange market is that the national currency *should* weaken. The repurchase agreements may be either customer repos or system repos.

*Matched sale-purchase agreements* are just the opposite of repurchase agreements. When executing a matched sale-purchase agreement, a bank or the FRS sells a security for immediate delivery to a dealer or a foreign central bank, with the agreement to buy back the same security at the same price at a predetermined time in the future (generally within 7 days). This arrangement amounts to a temporary drain of reserves. The impact on the foreign exchange market is that the national currency *should* strengthen.

Monetary operations include payments among central banks or to international agencies. In addition, the FRS has entered a series of currency swap arrangements with other central banks since 1962. For instance, to help the allied war effort against Iraq's invasion of Kuwait in 1990-1991, payments were executed by the Bundesbank and Bank of Japan to the Federal Reserve. Also, payments to the World Bank or the United Nations are executed through central banks.

Intervention in the United States foreign exchange markets by the U.S. Treasury and the FRS is geared toward restoring orderly conditions in the market or influencing the exchange rates. It is not geared toward affecting the reserves.

There are two types of foreign exchange interventions: naked intervention and sterilized intervention.

**Naked intervention**, or **unsterilized intervention**, refers to the sole foreign exchange activity. All that takes place is the intervention itself, in which the Federal Reserve either buys or sells U.S. dollars against a foreign currency. In addition to the impact on the foreign exchange market, there is also a monetary effect on the money supply. If the money supply is impacted, then consequent adjustments must be made in interest rates, in prices, and at all levels of the economy. Therefore, a naked foreign exchange intervention has a long-term effect.

**Sterilized intervention** neutralizes its impact on the money supply. As there are rather few central banks that want the impact of their intervention in the foreign exchange markets to affect all corners of their economy, sterilized interventions have been the tool of choice. This holds true for the FRS as well. The sterilized intervention involves an additional step to the original currency transaction. This step consists of a sale of government securities that offsets the reserve addition that occurs due to the intervention. It may be easier to visualize it if you think that the central bank will finance the sale of a currency through the sale of a number of government securities. Because a sterilized intervention only generates an impact on the supply and demand of a certain currency, its impact will tend to have a short-to medium-term effect.

## 1.2. Risks by the foreign exchange on Forex

As it was mentioned above the trading on the Forex is essentially risk-bearing. By the evaluation of the grade of a possible risk accounted should be the following kinds of it: exchange rate risk, interest rate risk, and credit risk, country risk.

**Exchange rate risk.** Exchange rate risk is the effect of the continuous shift in the worldwide market supply and demand balance on an outstanding foreign exchange position. For the period it is outstanding, the position will be subject to all the price changes.

The most popular measures to cut losses short and ride profitable positions that losses should be kept within manageable limits are the *position limit* and the *loss limit*. By the position limitation a maximum amount of a certain currency a trader is allowed to carry at any single time during the regular trading hours is to be established. The *loss limit* is a measure designed to avoid unsustainable losses made by traders by means of *stop-loss* levels setting.

**Interest rate risk.** Interest rate risk refers to the profit and loss generated by fluctuations in the forward spreads, along with forward amount mismatches and maturity gaps among transactions in the foreign exchange book. This risk is pertinent to currency swaps, forward outright, futures, and options (See below). To minimize interest rate risk, one sets limits on the total size of mismatches. A common approach is to separate the mismatches, based on their maturity dates, into up to six months and past six months. All the transactions are entered in computerized systems in order to calculate the positions for all the dates of the delivery, gains and losses. Continuous analysis of the interest rate environment is necessary to forecast any changes that may impact on the outstanding gaps.

**Credit risk.** Credit risk refers to the possibility that an outstanding currency position may not be repaid as agreed, due to a voluntary or involuntary action by a counter party. In these cases, trading occurs on regulated exchanges, such as the clearinghouse of Chicago. The following forms of credit risk are known:



1. **Replacement risk** occurs when counterparties of the failed bank find their books are subjected to the danger not to get refunds from the bank, where appropriate accounts became unbalanced.

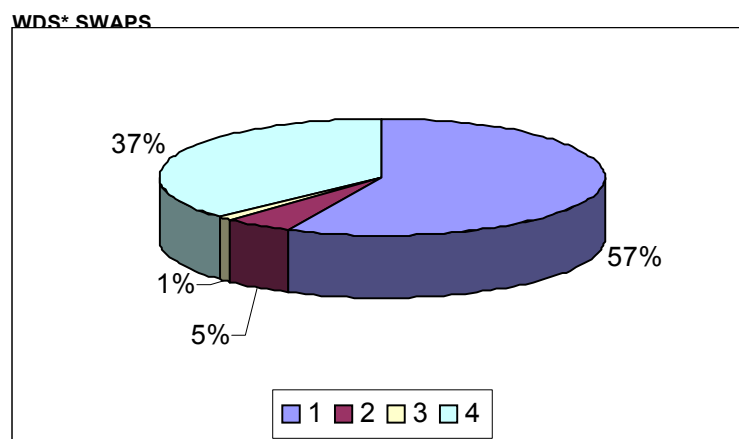
2. **Settlement risk** occurs because of the time zones on different continents. Consequently, currencies may be traded at the different price at different times during the trading day. Australian and New Zealand dollars are credited first, then Japanese yen, followed by the European currencies and ending with the U.S. dollar. Therefore, payment may be made to a party that will declare insolvency (or be declared insolvent) immediately after, but prior to executing its own payments.

Therefore in assessing the credit risk, end users must consider not only the market value of their currency portfolios, but also the potential exposure of these portfolios. The potential exposure may be determined through probability analysis over the time to maturity of the outstanding position. The computerized systems currently available are very useful in implementing credit risk policies. Credit lines are easily monitored. In addition, the matching systems introduced in foreign exchange since April 1993 are used by traders for credit policy implementation as well. Traders input the total line of credit for a specific counterparty. During the trading session, the line of credit is automatically adjusted. If the line is fully used, the system will prevent the trader from further dealing with that counterparty. After maturity, the credit line reverts to its original level.

**Dictatorship risk.** Dictatorship (sovereign) risk refers to the government's interference in the Forex activity. Although theoretically present in all foreign exchange instruments, currency futures are, for all practical purposes, excepted from country risk, because the major currency futures markets are located in the USA. Hence, traders have to realize that kind of the risk and be in state to account possible administrative restrictions.

### 1.3. Kinds of the Forex

**Spot Market.** Currency spot trading is the most popular foreign currency instrument around the world, making up 37 percent of the total activity (See Figure 3.1). The features of the fast-paced spot market are high volatility and quick profits (as well losses).



**Figure 1.2.** Market share of US spot trading (in %% of the volume): 1 – forwards and swaps; 2 – options; 3 - futures; 4 – spots.

A spot deal consists of a bilateral contract whereby a party delivers a specified amount of a given currency against receipt of a specified amount of another currency from a counterparty, based on an agreed

exchange rate, within two business days of the deal date. The exception is the Canadian dollar, in which the spot delivery is executed next business day. The two-day spot delivery for currencies was developed long before technological breakthroughs in information processing. This time period was necessary to check out all transactions' details among counterparties. Although technologically feasible, the contemporary markets did not find it necessary to reduce the time to make payments. Human errors still occur and they need to be fixed before delivery.

By the entering into a contract on the spot market a bank serving a trader tells the latter the *quota* – an evaluation of the currency traded against the U.S. dollar or an other currency. A quota consists from two figures (for example, USD/JPY = 133.27/133.32 or, which is the same, USD/JPY = 133.27/32). The first from these figures (the left part) is called the *bid* – price (that is a price at which the trader sells), the second (the right part) is called the *ask* - price (the price at which the trader buys the currency). The difference between *asks* and *bid* is called the *spread*. The spread, as any currency price alteration, is being measured in *points* (*pips*).

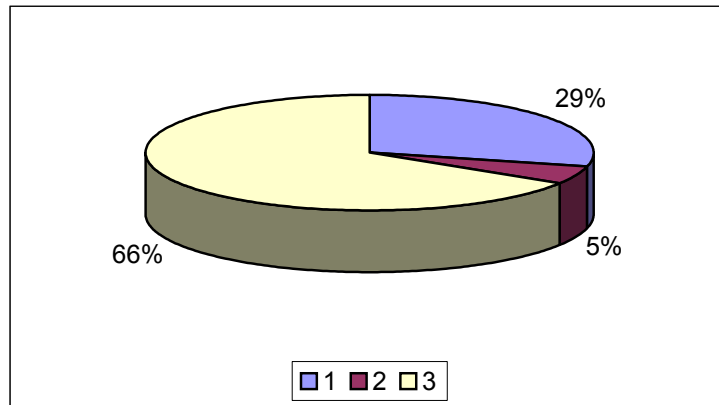
In terms of volume, currencies around the world are traded mostly against the U.S. dollar, because the U.S. dollar is the currency of reference. The other major currencies are the euro, followed by the Japanese yen, the British pound, and the Swiss franc. Other currencies with significant spot market shares are the Canadian dollar and the Australian dollar. In addition, a significant share of trading takes place in the currencies crosses, a non-dollar instrument whereby foreign currencies are quoted against other foreign currencies, such as euro against Japanese yen.

The spot market is characterized by high *liquidity* and high *volatility*. Volatility is the degree to which the price of currency tends to fluctuate within a certain period of time. For instance, in an active global trading day (24 hours), the euro/dollar exchange rate may change its value 18,000 times "flying" 100-200 pips in a matter of seconds if the market gets wind of a significant event. On the other hand, the exchange rate may remain quite static for extended periods of time, even in excess of an hour, when one market is almost finished trading and waiting for the next market to take over. For example, there is a technical trading gap between around 4:30 PM and 6 PM EDT. In the New York market, the majority of transactions occur between 8 AM and 12 PM, when the New York and European markets overlap. The activity drops sharply in the afternoon, over 50 percent in fact, when New York loses the international trading support. (See Figure 1.3) Overnight trading is limited, as very few banks have overnight desks. Most of the banks send their overnight orders to branches or other banks that operate in the active time zones.

The reasons of the spot-market popularity, in addition to the fast liquidity-taking place thanks to the volatility, belongs also the short time of a contract execution. Therefore the credit risk is on that market restricted. The profit and loss can be either *realized* or *unrealized*. The realized P&L is a certain amount of money netted when a position is closed. The unrealized P&L consists of an uncertain amount of money that an outstanding position would roughly generate if it were closed at the current rate. The unrealized P&L changes continuously in tandem with the exchange rate.

**Forward Market.** On the forward Forex are used two tools: *forward outright deals* and exchange deals or *swaps*. A swap deal is a combination of a spot deal and a forward outright deal.

According to figures published by the Bank for the International Settlements, the percentage share of the forward market was 57 percent in 1998. (See Figure 1.2). Translated into U.S. dollars, out of an estimated daily gross turnover of US\$1.49 trillion, the total forward market represents US\$900 billion. In the forward market there is no norm with regard to the settlement dates, which range from 3 days to 3 years. Volume in currency swaps longer than one year tends to be light but, technically, there is no



**Figure 1.3.** Diagram of the trade activity (in %% of the volume) of US Forex in time distribution: 1 – from 12 pm till 4 pm, 2 – from 4 pm till 8 pm, 3 – from 8 am till 12 pm.

impediment to making these deals. Any date past the spot date and within the above range may be a forward settlement, provided that it is a valid business day for both currencies. The forward markets are decentralized markets, with players around the world entering into a variety of deals either on a one-on-one basis or through brokers.

The forward price consists of two significant parts: the spot exchange rate and the forward spread. The spot rate is the main building block. The forward spread is also known as the *forward points* or the *forward pips*. The forward spread is necessary for adjusting the spot rate for specific settlement dates different from the spot date. It holds, then, that the maturity date is another determining factor of the forward price.

**Futures Market.** Currency futures are specific types of forward outright deals. Because they are derived from the spot price, they are derivative instruments. (See Figure 1.2). They are specific with regard to the expiration date and the size of the trade amount. Whereas, generally, forward outright deals—those that mature past the spot delivery date—will mature on any valid date in the two countries whose currencies are being traded, standardized amounts of foreign currency futures mature only on the third Wednesday of March, June, September, and December.

The following characteristics of currency futures that make them attractive. They are open to all market participants, individuals included. It is a central market, just as efficient as the cash market, and whereas the cash market is a very decentralized market, futures trading takes place under one roof. It eliminates the credit risk because the Chicago Mercantile Exchange Clearinghouse acts as the buyer for every seller, and vice versa. In turn, the Clearinghouse minimizes its own exposure by requiring traders who maintain a non-profitable position to post margins equal in size to their losses. Although the futures and spot markets trade closely together, certain divergences between the two occur, generating arbitraging opportunities. Gaps, volume, and open interest are significant technical analysis tools (See Chapter 4) solely available in the futures market.

Because of these benefits, currency futures trading volume has steadily attracted a large variety of players.

Because futures are forward outright contracts and the forward prices are generally slow movers, the elimination of the forward spreads will transform the futures contracts into spot contracts.

For traders outside the exchange, the prices are available from on-line monitors. The most popular pages are found on *Bridge*, *Telerate*, *Reuters*, and *Bloomberg*. Telerate presents the currency futures on

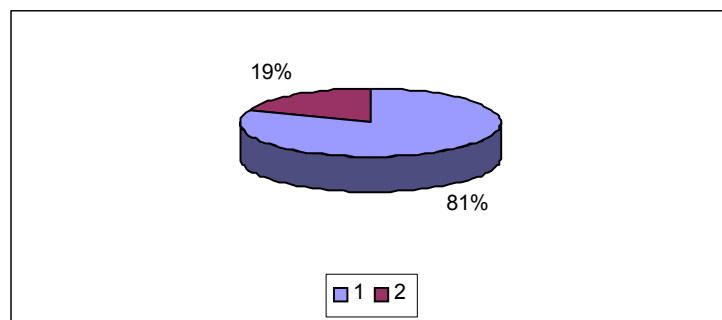
composite pages, while *Reuters* and *Bloomberg* display currency futures on individual pages shows the convergence between the futures and spot prices.

**Options Market.** A currency option is a contract between a buyer and a seller that gives the buyer the right, but not the obligation, to trade a specific amount of currency at a predetermined price and within a predetermined period of time, regardless of the market price of the currency; and gives the seller, or *writer*, the obligation to deliver the currency under the predetermined terms, if and when the buyer wants to exercise the option.

More factors affect the option price relative to the prices of other foreign currency instruments. Unlike spot or forwards, both high and low volatility may generate a profit in the options market. For some, options are a cheaper vehicle for currency trading. For others, options mean added security and exact stop-loss order execution. Currency options constitute the fastest-growing segment of the foreign exchange market. As of April 1998, options represented 5 percent of the foreign exchange market. (See Figure 1.4). The biggest options trading center is the United States, followed by the United Kingdom and Japan. Options prices are based on, or derived from, the cash instruments. Often, however, traders have misconceptions regarding both the difficulty and simplicity of using options. There are also misconceptions regarding the capabilities of options.

Trading an option on currency futures will entitle the buyer to the right, but not the obligation, to take physical possession of the currency future. Unlike the currency futures, buying currency options does not require an initiation margin. The option premium, or price, paid by the buyer to the seller, or writer, reflects the buyer's total risk.

However, upon taking physical possession of the currency future by exercising the option, a trader will have to deposit a margin.



**Figure 1.4.** Market share of the currency options (in % of the volume): 1 - OTC; 2 – organized exchanges.

The currency price is the central building block, as all the other factors are compared and analyzed against it. It is the currency price behavior that both generate the need for options and impacts on the profitability of options.

## 2. Kinds of major currencies and exchange systems

### 2.1. Major currencies

**The U.S. Dollar.** The United States dollar is the world's main currency – an universal measure to evaluate any other currency traded on Forex. All currencies are generally quoted in U.S. dollar terms. Under conditions of international economic and political unrest, the U.S. dollar is the main safe-haven currency, which was proven particularly well during the Southeast Asian crisis of 1997-1998.

As it was indicated, the U.S. dollar became the leading currency toward the end of the Second World War along the Breton Woods Accord, as the other currencies were virtually pegged against it. The introduction of the euro in 1999 reduced the dollar's importance only marginally.

The other major currencies traded against the U.S. dollar are the euro, Japanese yen, British pound, and Swiss franc.

**The Euro.** The euro was designed to become the premier currency in trading by simply being quoted in American terms. Like the U.S. dollar, the euro has a strong international presence stemming from members of the European Monetary Union. The currency remains plagued by unequal growth, high unemployment, and government resistance to structural changes. The pair was also weighed in 1999 and 2000 by outflows from foreign investors, particularly Japanese, who were forced to liquidate their losing investments in euro-denominated assets. Moreover, European money managers rebalanced their portfolios and reduced their euro exposure as their needs for hedging currency risk in Europe declined.

**The Japanese Yen.** The Japanese yen is the third most traded currency in the world; it has a much smaller international presence than the U.S. dollar or the euro. The yen is very liquid around the world, practically around the clock. The natural demand to trade the yen concentrated mostly among the Japanese *keiretsu*, the economic and financial conglomerates. The yen is much more sensitive to the fortunes of the Nikkei index, the Japanese stock market, and the real estate market.

**The British Pound.** Until the end of World War II, the pound was the currency of reference. The currency is heavily traded against the euro and the U.S. dollar, but has a spotty presence against other currencies. Prior to the introduction of the euro, both the pound benefited from any doubts about the currency convergence. After the introduction of the euro, Bank of England is attempting to bring the high U.K. rates closer to the lower rates in the euro zone. The pound could join the euro in the early 2000s, provided that the U.K. referendum is positive.

**The Swiss Franc.** The Swiss franc is the only currency of a major European country that belongs neither to the European Monetary Union nor to the G-7 countries. Although the Swiss economy is relatively small, the Swiss franc is one of the four major currencies, closely resembling the strength and quality of the Swiss economy and finance. Switzerland has a very close economic relationship with Germany, and thus to the euro zone. Therefore, in terms of political uncertainty in the East, the Swiss franc is favored generally over the euro.

Typically, it is believed that the Swiss franc is a stable currency. Actually, from a foreign exchange point of view, the Swiss franc closely resembles the patterns of the euro, but lacks its liquidity. As the demand for it exceeds supply, the Swiss franc can be more volatile than the euro.

## 2.2. Trade systems on Forex

**Trading with brokers.** Foreign exchange brokers, unlike equity brokers, do not take positions for themselves; they only service banks. Their roles are to bring together buyers and sellers in the market, to optimize the price they show to their customers and quickly, accurately, and faithfully executing the traders' orders.

The majority of the foreign exchange brokers execute business via phone using an *open box system* — a microphone in front of the broker that continuously transmits everything he or she says on the direct phone lines to the speaker boxes in the banks. This way, all banks can hear all the deals being executed.

Because of the open box system used by brokers, a trader is able to hear all prices quoted; whether the bid was hit or the offer taken; and the following price. What the trader will not be able to hear is the amounts of particular bids and offers and the names of the banks showing the prices. Prices are anonymous. The anonymity of the banks that are trading in the market ensures the market's efficiency, as all banks have a fair chance to trade.

Sometimes brokers charge a commission that is paid equally by the buyer and the seller. The fees are negotiated on an individual basis by the bank and the brokerage firm.

Brokers show their customers the prices made by other customers either two-way (*bid* and *offer*) prices or one way (*bid* or *offer*) prices from his or her customers. Traders show different prices because they "read" the market differently; they have different expectations and different interests. A broker who has more than one price on one or both sides will automatically optimize the price. In other words, the broker will always show the highest bid and the lowest offer. Therefore, the market has access to an optimal *spread* possible. Fundamental and technical analyses are used for forecasting the future direction of the currency. A trader might test the market by hitting a bid for a small amount to see if there is any reaction. Another advantage of the brokers' market is that brokers might provide a broader selection of banks to their customers. Some European and Asian banks have overnight desks so their orders are usually placed with brokers who can deal with the American banks, adding to the liquidity of the market.

**Direct dealing.** Direct dealing is based on trading reciprocity. A market maker—the bank making or quoting a price — expects the bank that is calling to reciprocate with respect to making a price when called upon. Direct dealing provides more trading discretion, as compared to dealing in the brokers' market. Sometimes traders take advantage of this characteristic.

Direct dealing used to be conducted mostly on the phone. Phone dealing was error-prone and slow. Dealing errors were difficult to prove and even more difficult to settle. Direct dealing was forever changed in the mid-1980s, by the introduction of dealing systems.

Dealing systems are on-line computers that link the contributing banks around the world on a one-on-one basis. The performance of dealing systems is characterized by speed, reliability, and safety. Dealing systems are continuously being improved in order to offer maximum support to the dealer's main function: trading. The software is rather reliable in picking up the big figure of the exchange rates and the standard value dates. In addition, it is extremely precise and fast in contacting other parties, switching among conversations, and accessing the database. The trader is in continuous visual contact with the information exchanged on the monitor. It is easier to see than hear this information, especially when switching among conversations.

Most banks use a combination of brokers and direct dealing systems. Both approaches reach the same banks, but not the same parties, because corporations, for instance, cannot deal in the brokers' market. Traders develop personal relationships with both brokers and traders in the markets, but select their trading medium based on price quality, not on personal feelings. The market share between dealing systems and brokers fluctuates based on market conditions. Fast market conditions are beneficial to dealing systems, whereas regular market conditions are more beneficial to brokers.

**Matching systems.** Unlike dealing systems, on which trading is not anonymous and is conducted on a one-on-one basis, matching systems are anonymous and individual traders deal against the rest of the market, similar to dealing in the brokers' market. However, unlike the brokers' market, there are no individuals to bring the prices to the market, and liquidity may be limited at times. Matching systems are well-suited for trading smaller amounts as well.

The dealing systems' characteristics of speed, reliability, and safety are replicated in the matching systems. In addition, credit lines are automatically managed by the systems. Traders input the total credit line for each counterparty. When the credit line has been reached, the system automatically

disallows dealing with the particular party by displaying credit restrictions, or shows the trader only the price made by banks that have open lines of credit. As soon as the credit line is restored, the system allows the bank to deal again. In the inter-bank market, traders deal directly with dealing systems, matching systems, and brokers in a complementary fashion.

### 3. Fundamental analysis by trading on Forex

Two types of analysis are used for the market movements forecasting: fundamental, and technical (the chart study of past behavior of currencies prices). The fundamental one focuses on the theoretical models of exchange rate determination and on the major economic factors and their likelihood of affecting the foreign exchange rates.

#### 3.1. Theories of exchange rate determination

**Purchasing power parity.** Purchasing power parity states that the price of a good in one country should equal the price of the same good in another country, exchanged at the current rate—the law of one price. There are two versions of the purchasing power parity theory: the absolute version and the relative version. Under the absolute version, the exchange rate simply equals the ratio of the two countries' general price levels, which is the weighted average of all goods produced in a country. However, this version works only if it is possible to find two countries, which produce or consume the same goods. Moreover, the absolute version assumes that transportation costs and trade barriers are insignificant. In reality, transportation costs are significant and dissimilar around the world. Trade barriers are still alive and well, sometimes obvious and sometimes hidden, and they influence costs and goods distribution.

Finally, this version disregards the importance of brand names. For example, cars are chosen not only based on the best price for the same type of car, but also on the basis of the name ("You are what you drive").

Under the PPP relative version, the percentage change in the exchange rate from a given base period must equal the difference between the percentage change in the domestic price level and the percentage change in the foreign price level. The relative version of the PPP is also not free of problems: it is difficult or arbitrary to define the base period, trade restrictions remain a real and thorny issue, just as with the absolute version, different price index weighting and the inclusion of different products in the indexes make the comparison difficult and in the long term, countries' internal price ratios may change, causing the exchange rate to move away from the relative PPP.

In conclusion, the spot exchange rate moves independently of relative domestic and foreign prices. In the short run, the exchange rate is influenced by financial and not by commodity market conditions.

**Theory of elasticities.** The theory of elasticities holds that the exchange rate is simply the price of foreign exchange that maintains the balance of payments in equilibrium. In other words, the degree to which the exchange rate responds to a change in the trade balance depends entirely on the elasticity of demand to a change in price. For instance, if the imports of country A are strong, then the trade balance is weak. Consequently, the exchange rate rises, leading to the growth of country A's exports, and triggers in turn a rise in its domestic income, along with a decrease in its foreign income. Whereas a rise in the domestic income (in country A) will trigger an increase in the domestic consumption of both domestic and foreign goods and, therefore, more demand for foreign currencies, a decrease in the foreign income (in country B) will trigger a decrease in the domestic consumption of both country B's domestic and foreign goods, and therefore less demand for its own currency.

The elasticities approach is not problem-free because in the short term the exchange rate is more inelastic than it is in the long term and additional exchange rate variables arise continuously, changing the rules of the game.

**Modern monetary theories on short-term exchange rate volatility.** The modern monetary theories on short-term exchange rate volatility take into consideration the short-term capital markets' role and the long-term impact of the commodity markets on foreign exchange. These theories hold that the divergence between the exchange rate and the purchasing power parity is due to the supply and demand for financial assets and the international capability.

One of the modern monetary theories states that exchange rate volatility is triggered by a one-time domestic money supply increase, because this is assumed to raise expectations of higher future monetary growth.

The purchasing power parity theory is extended to include the capital markets. If, in both countries whose currencies are exchanged, the demand for money is determined by the level of domestic income and domestic interest rates, then a higher income increases demand for transactions balances while a higher interest rate increases the opportunity cost of holding money, reducing the demand for money.

Under a second approach, the exchange rate adjusts instantaneously to maintain continuous interest rate parity, but only in the long run to maintain PPP. Volatility occurs because the commodity markets adjust more slowly than the financial markets. This version is known as the dynamic monetary approach.

**Synthesis of traditional and modern monetary views.** In order to better suit the previous theories to the realities of the market, some of the more stringent conditions were adjusted into a synthesis of the traditional and modern monetary theories.

A short-term capital outflow induced by a monetary shock creates a payments imbalance that requires an exchange rate change to maintain balance of payments equilibrium. Speculative forces, commodity markets disturbances, and the existences of short-term capital mobility trigger the exchange rate volatility. The degree of change in the exchange rate is a function of consumers' elasticity of demand. Because the financial markets adjust faster than the commodities markets, the exchange rate tends to be affected in the short term by capital market changes, and in the long term by commodities changes.

### **3.2. Economic for the fundamental analysis**

For the fundamental analysis on Forex, just as on any goods market, traders use the information from analytical reviews of specialists published in newspapers as well as charts and tables of many numerical indicators serving this purpose. All fundamental indicators generally released on a monthly basis, except of the Gross Domestic Product and the Employment Cost Index, which are released quarterly (See below).

All economic indicators are released in pairs. The first number reflects the latest period. The second number is the revised figure for the month prior to the latest period. For instance, in July, economic data is released for the month of June, the latest period. In addition, the release includes the revision of the same economic indicator figure for the month of May. The reason for the revision is that the department in charge of the economic statistics compilation is in a better position to gather more information in a month's time. This feature is important for traders. If the figure for an economic indicator is better than expected by 0.4% for the past month, but the previous month's number is revised lower by 0.4%, then traders can draw a justified conclusion about the economy situation.

Economic indicators are released at different times. In the United States, economic data is generally released at 8:30 and 10 AM ET. It is important to remember that the most significant data for foreign exchange is released at 8:30 AM ET. In order to allow time for last-minute adjustments, the United States currency futures markets open at 8:20 AM ET.



**Sources of information.** Information on upcoming economic indicators is published in all leading newspapers, such as the *Wall Street Journal*, the *Financial Times*, and the *New York Times*; and business magazines, such as *Business Week*. More often than not, traders use the monitor sources—*Bridge Information Systems*, *Reuters*, or *Bloomberg* — to gather information both from news publications and from the sources' own up-to-date information.

Separate groups of fundamental indicators are considered below in accordance with a generally accepted classification.

## Economic indicators

**The Gross National Product (GNP).** The Gross National Product measures the economic performance of the whole economy. This indicator consists, at macro scale, of the sum of consumption spending, investment spending, government spending, and net trade. The gross national product refers to the sum of all goods and services produced by United States residents, either in the United States or abroad.

**The Gross Domestic Product (GDP).** The Gross Domestic Product refers to the sum of all goods and services produced in the United States, either by domestic or foreign companies. The differences between the two are nominal in the case of the economy of the United States. GDP figures are more popular outside the United States. In order to make it easier to compare the performances of different economies, the United States also releases GDP figures.

**Consumption Spending.** Consumption is made possible by personal income and discretionary income. The decision by consumers to spend or to save is psychological in nature. Consumer confidence is also measured as an important indicator of the propensity of consumers who have discretionary income to switch from saving to buying.

**Investment Spending.** Investment — or gross private domestic spending — consists of fixed investment and inventories.

**Government Spending.** Government spending is very influential in terms of both sheer size and its impact on other economic indicators, due to special expenditures. For instance, United States military expenditures had a significant role in total U.S. employment until 1990. The defense cuts that occurred at the time increased unemployment figures in the short run.

**Net Trade.** Net trade is another major component of the GNP. Worldwide internationalization and the economic and political developments since 1980 have had a sharp impact on the United States' ability to compete overseas. The U.S. trade deficit of the past decades has slowed down the overall GNP. GNP can be approached in two ways: flow of product and flow of cost.

## Industrial sector indicators

**Industrial Production** indicator consists of the total output of a nation's plants, utilities, and mines. From a fundamental point of view, it is an important economic indicator that reflects the strength of the economy, and by extrapolation, the strength of a specific currency. Therefore, foreign exchange traders use this economic indicator as a potential trading signal.

**Capacity utilization** indicator consists of total industrial output divided by total production capability. The term refers to the maximum level of output a plant can generate under normal business conditions. In general, capacity utilization is not a major economic indicator for the foreign exchange market. However, there are instances when its economic implications are useful for fundamental analysis. A "normal" figure for a steady economy is 81.5 percent. If the figure reads 85 percent or more, the data suggests that the industrial production is overheating, that the economy is close to full capacity.

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