FX MARKET STRUCTURE

The foreign exchange market is the generic term for the worldwide institutions that exist to exchange or trade currencies. Foreign exchange is often referred to as “forex” or “FX.”

The foreign exchange market is a worldwide ***decentralized over-the-counter (OTC) financial market*** for trading currencies. Unlike the Stock Market, the forex market does not have a physical central exchange like the NYSE does at 11 Wall Street. Without a central exchange, currency exchange rates are made, or set, by market makers.

There is no clearing house where orders are matched. Rather, trading is done ‘off-exchange’ or ***over-the-counter*** directly between two parties. FX dealers and market makers around the world are linked to each other around-the-clock via telephone, computer, and fax, creating one cohesive market.

Since there is no centralized exchange, competition between market makers prevents monopolistic pricing strategies. If one market maker attempts to drastically skew the price, then traders simply have the option to find another market maker. Moreover, spreads are closely watched to ensure market makers are not whimsically altering the cost of the trade.

Many equity markets, on the other hand, operate in a completely different fashion; the New York Stock Exchange, for instance, is the sole place where companies listed on the NYSE can have their stocks traded.

Centralized markets are operated by what are referred to as specialists; market makers, on the other hand, are the term used in reference to decentralized marketplaces.

Since the NYSE is a centralized market, a stock traded on the NYSE can only have 1 bid-ask quote at all times. Decentralized markets, such as foreign exchange, can have multiple market makers – all of whom have the right to quote different prices. Below is an illustration of how both centralized and decentralized markets operate:

CENTRALIZED MARKET

By their very nature, ***centralized markets tend to be monopolistic***: with a single specialist controlling the market, prices can easily be skewed to accommodate the interests of the specialist, not those of the traders. If, for example, the market is filled with sellers from whom the specialists must buy from but no prospective buyers on the other side, the specialist will be forced to buy from the sellers and be in a situation where they cannot sell a commodity that is being sold off and hence falling in value. In such a situation, the specialist may simply widen the spread, thereby increasing the cost of the trade and preventing additional participants from entering the market. Or, specialists can simply drastically alter the quotes they are offering, thus manipulating the price to accommodate their own needs.

FOREX – A BRIEF HISTORY

Bretton Woods

Determined to re-establish the gold standard and provide for the economic needs and stability of the postwar international system, 44 countries met in Bretton Woods, New Hampshire on July 1964 to establish a fixed exchange rate system. Goals included financial stability, convertible currencies, free trade, full employment, and economic growth. The system was centered on the US dollar. **Major currencies were pegged to the dollar**, which was in turn tied to gold at a value of $35 per ounce. **The dollar was the primary reserve currency and member countries were able to sell currency to the Federal Reserve in exchange for gold at the present rate**. In addition to these parameters, Bretton Woods established the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (World Bank). These multilateral organizations were designed to ensure that the Bretton Woods's system operated effectively.

Trading under the Bretton Woods system had unique characteristics. Since exchange rates were fixed, intense trading occurred surrounding devaluations or revaluations, known as "creeping pegs". Speculation against the British pound in 1967 demonstrated creeping pegs trading patterns. Following intense speculation the Bank of England, along with other central banks, took action to support the pound. However, despite their attempts they failed and the pound was devalued that November. The failure was monumental because it was the first time that central bank intervention failed under the Bretton Woods system.

Failure of central bank intervention continued in the following years in the case of the dollar. The Bretton Woods system was dependent on a strong US dollar. Therefore, when the dollar began to experience pressure in 1968, there were implications for the future of the system. Speculation against the dollar increased as investors suspected that it was overvalued and confidence plummeted. By 1971, the dollar was in crisis and devaluation became imperative.

Smithsonian Agreement

A multilateral effort to improve the exchange rate mechanism was finally accomplished in December 1971 when the Smithsonian Agreement was signed. The agreement devalued the dollar against major European currencies by around eight percent. Currency was allowed to fluctuate within a wider band, 2.25% instead of 1%, and the price of gold rose to $38 an ounce.

Despite the provisions of the Smithsonian Agreement, the US current account drastically deteriorated in 1972 and speculation against the dollar continued. In February 1973, intense speculation forced foreign exchange markets to close and a 10 percent devaluation of the dollar ensued. Following continued speculation, FX markets were once again forced to close.

Birth of the Current Market

The currencies of Japan and most European countries were floating against the dollar when the market reopened in March of 1973. As a result, the US Dollar was devalued at a full 10% and floating rates. The arrangement was considered temporary but continues to operate to this day.

The new method of placing value upon currency influenced the way that currency was traded and opened up new avenues for speculation. The majority of currency trading today is not for the purpose of buying or selling goods, but rather, is intended for profit.

During the 1970's the FX market was dominated by bank brokers. However, deregulation and electronic trading has made the FX market the most liquid market in the world and more easily accessible to smaller investors. Central banks remain powerful in this system; however, their influence has fallen from previous levels. Furthermore, the National Futures Association (NFA) and the Commodity Futures Trading Commission (CFTC) were established in the 1970's and the 1980's to protect individual market participants.

A Brief History of Electronic Trading in Foreign Exchange

Traditionally foreign exchange transactions took place over the phone, and to a much lesser extent on the telex machine. The old system of voice brokering was a conglomeration of two-way phone conversations between interbank dealers. Not only were these systems slow, and error prone, but they also allowed for a true market price that was "fuzzy" as prices could differ from dealer to dealer.

In order to stay current about the market price, dealers would execute smaller trades regularly throughout the trading session, not only for profit, but to get an idea of the current price. Now, this old system of telephones and brokers has been replaced by electronic systems, and most voice brokers have been forced out of the market due to cost savings and benefits provided by these systems.

The first venture into electronic trading in foreign exchange markets was the launch of Reuter's "Monitor Dealing Service" in the early 1980's, which was later replaced by Reuters Dealing 2000-1 in 1989. The earliest systems allowed for communication between foreign exchange dealers with a single counterparty, but did not serve as a matching system between numbers of potential counterparties.

In 1992, however, this changed when Reuters launched Dealing 2000-3, a true electronic brokering system that automatically matched buy and sell quotes from dealers. Next, the Minex Corporation, a Japanese group of brokers and bankers set up its own system in April 1993. In September 1993, EBS (Electronic Brokering Service) was formed by a group of large dealing banks and launched its trading system. Once Minex Corporation transferred its business rights to EBS in 1996; the foreign exchange market was left with two major inter-dealer electronic brokering systems. Order matching systems are

much more reliable, and faster, allowing traders to conduct many simultaneous trades, rather than one or two over the phone.

These systems have become the predominant vehicle for inter-dealer transactions. Because of the decentralized over-the-counter nature of foreign exchange markets, the exact share of global foreign exchange trading volume conducted through electronic brokering services cannot be determined precisely but comprises approximately 85% if not higher.

EBS℠ FOREIGN EXCHANGE

EBS Best Price

Displayed in red above the best Bid and Offer prices, the EBS Best Price represents the best single price (Bid and Offer) in the market regardless of credit.

Credit Screened Dealable Prices

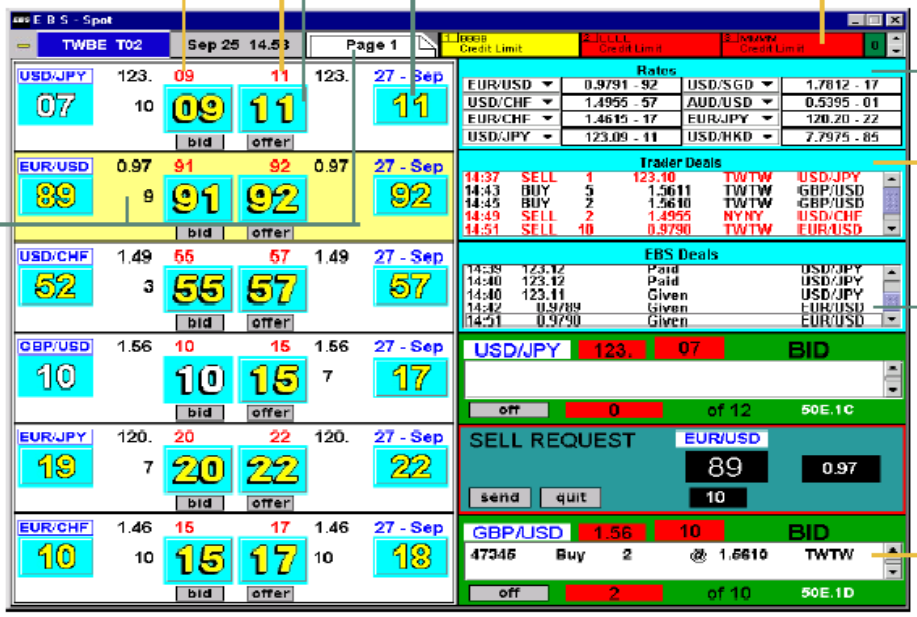
The best Bid and Offer prices, pre-screened for credit, are shown in the centre of each Price panel. Regular prices (the best price available at a pre-determined amount) are also shown either side of the best dealable price. A size indicator is shown next to a best dealable price if the size available is less than at the regular price.

Credit Information

Pre-trade credit screening and warning panels indicate that a counterparty is approaching or has reached its pre-determined credit limit (yellow) or has reached it (red), providing essential information critical to minimising risk.

Rates Panel

The best-quoted prices, displayed in real-time, give a continuous and comprehensive overview of the electronic broking market.



Trader Deals Panel

Deals completed by a dealer are listed in the Trader Deals panel in ime order. Deals done as a Price Maker are shown in black whilst Taker deals are shown in red.

EBS Deals Panel

Deals executed over EBS are listed in the EBS Deals Panel. Dealers can choose to view single or muliple currency pairs.

Transaction Panels

Clear, user friendly transaction panels allow you to adjust your order details prior to sub-mission. Transaction status panels allow you to track your orders as they go through the deal completion process.

Price Panels

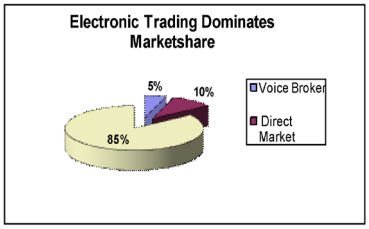
The EBS multi-page display enables dealers to group together currency pairs on up to 9 currency pages. Each currency page allows dealers to trade up to six pairs simultaneously. All dealable prices displayed are pre-screened for credit.

Liquidity

EBS has a leading presence in the global interbank spot foreign exchange market. With a global network of counter-parites, EBS prices are available 24 hours a day, seven days a week.

24-hour Help Desk

As part of EBS' commitment to the customer, round-the-clock technical assistance is available via a help desk in London.



Hierarchy of Participants:

While the foreign exchange market is decentralized, and hence employs multiple market makers rather than a single specialist, participants in the FX market are organized into a hierarchy where those with…

- superior credit access
- volume transacted
- sophistication

  - …receive priority in the market.

At the top of the hierarchy is the ***interbank market***, which trades the highest volume per day in relatively few, mostly G7 currencies.

The interbank market is the top-level foreign exchange market where banks exchange currencies. Banks can either deal with one another directly, or through electronic brokering platforms. It is a *wholesale* market through which most currency transactions are channeled.

In the interbank market, the largest banks can deal with each other directly, via interbank brokers or through electronic brokering systems like EBS or Reuters. The interbank market is a credit-approved system where banks trade based solely on the credit relationships they have established with one another.

All the banks can see the rates everyone is dealing at; however, each bank must have a specific credit relationship with that bank in order to trade at the rates being offered. Other institutions such as:

- online FX market makers
- hedge funds and
- corporations

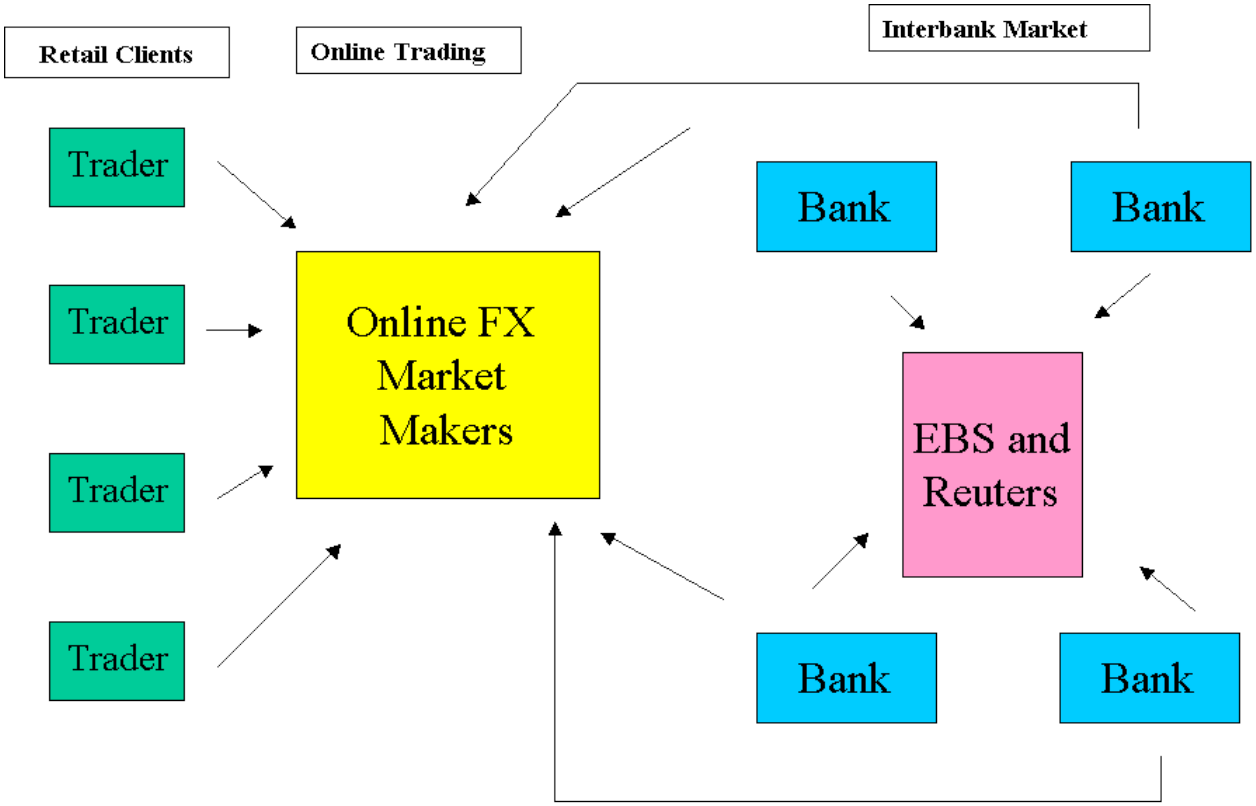
  - …must trade FX through commercial banks. Many banks (small community banks, banks in emerging markets), corporations, and institutional investors do not have access to these rates because they have no established credit lines with big banks.

This forces small participants to deal through just one bank for their foreign exchange needs, and often times this means much less competitive rates for the participants further down the participant hierarchy. Those receiving the least competitive rates are customers by banks and exchange agencies.

Recently technology has broken down the barriers that used to stand between the end-users of foreign exchange services and the interbank market. The online trading revolution opened its doors to retail

clientele by connecting market makers and market participants in an efficient low cost manner. In essence online trading platform serve as gateway to the liquid FX market.

Average traders can now trade alongside the biggest banks in the world, with virtually similar pricing and execution. What used to be a game dominated and controlled by the “big boys” is slowly becoming a level playing field where individuals can profit and take advantage of the same opportunities as big banks. FX is no longer a “good old boys” club, which means opportunity is abound for aspiring online currency traders.



In the last 25 years, increasing globalization has had a profound impact on the foreign exchange market, resulting in staggering growth as well as an impressive rise in the number and diversity of players. The market has expanded from one of banks trading predominately amongst each other to one in which many different kinds of financial and non-financial institutions all participate for a variety of reasons.

There have been many contributing factors to the growth of the foreign exchange market but the major developments that are worth noting are:

1) Advancement in technology and

2) The continuing growth of international and cross-border capital movement, i.e. foreign investment.

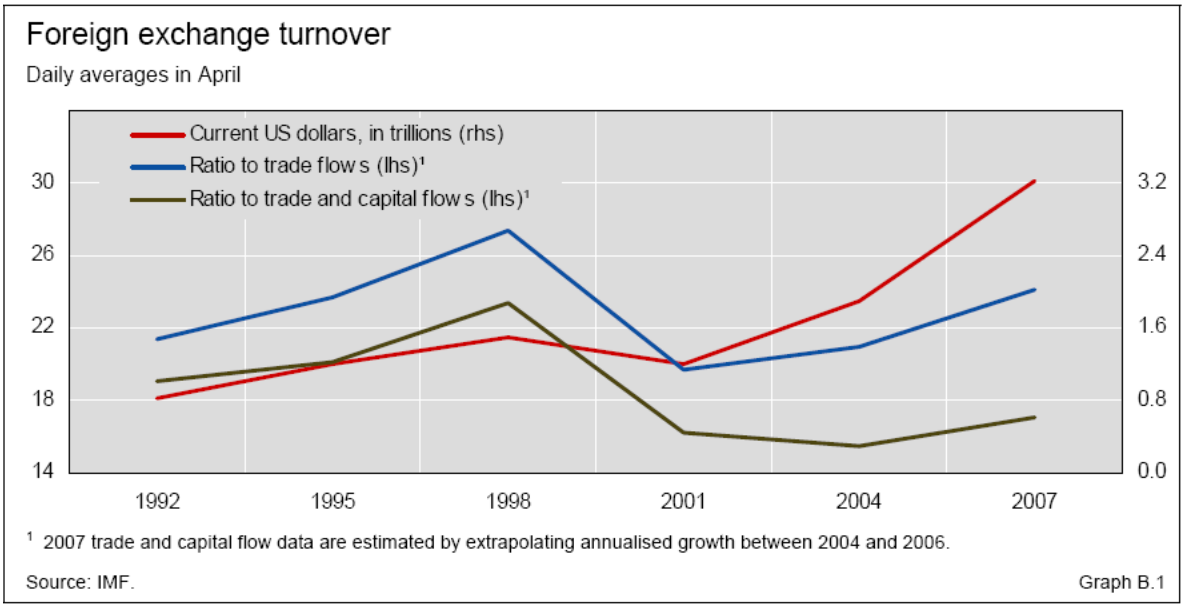
Only ten years ago, most foreign exchange activity in the US was focused on international trade in goods and services, i.e. for import/export purposes.

Now foreign exchange activity reflects the changing financial environment. Investment to and from overseas (i.e. capital flows) has expanded far more rapidly than trade.

Institutional investors, insurance companies and mutual funds have become major participants in the FX markets in addition to the more traditional players such as central banks, commercial/investment banks, and commercial participants. The size and diversity of players involved in the foreign exchange market contribute to the overall liquidity and price stability of the market. Simply put, in the foreign exchange market, there are always buyers and sellers, which creates an orderly market.

The equities market is a speculator's market, meaning the majority of market participants watch the market to buy low and sell high for profit. When any kind of market news is released which affects the intrinsic value of the stock, the market will immediately correct itself and trade at that level. For example, if Coca Cola releases corporate earnings that are substantially lower than market expectations, the stock will immediately begin trading at a level that reflects its new intrinsic value. The stock would have to reach a lower level then it is perceived to be worth before buyers will come back into the market looking to pick up the stock on the cheap.

FX Growth Continues to Impress Turnover in US $ Bln (Daily)



A Closer Look at the Key Participants

The foreign exchange market has become far more democratized in recent years due to advances in technology, expanding beyond simply banks executing transactions amongst themselves, to include a wide variety of market participants with many different reasons for participating in the market including:

- To earn short-term profits from fluctuations in exchange rates,
- To protect themselves from loss due to changes in exchange rates,
- To acquire the foreign currency necessary to buy goods and services from other countries,
- Seeking to influence the exchange rate.

Regardless of the motivation, the key market participants affect the supply and demand of the currencies involved, and subsequently play a role in determining the exchange rate at that moment; therefore it is important to know who the key market participants are. They include commercial/investment banks, central banks, corporations, funds, and individuals.

Commercial/Investment Banks (Tier 1)

Commercial banks account for the ***largest proportion of total FX trading volume***. The Interbank market caters to both the majority of commercial turnover as well as enormous amounts of speculative trading every day.

These banks will trade currencies among themselves as part of the system of balancing accounts. The Interbank market is a credit-approved system where banks trade solely on the credit relationships they have established with one another. About three quarters of all foreign exchange trading is between banks; in fact, ***billions of dollars worth of currency is traded between banks each day***. Essentially commercial/investment banks are the sell side of the FX market, as all other participants must trade through them. Commercial and investment banks are in the FX market on behalf of both their customers and themselves.

Authorized foreign exchange banks deal through electronic brokering systems, which automatically match sellers and buyers using orders for spot deals through terminals established at banks.

Reuters was set up in 1992, followed by Electronic Brokering Services Limited (EBS) in 1993, which primarily replaced the voice broker system. EBS has dramatically changed interbank trading. As a result,

spreads have tightened dramatically, making trading within the spread (a favorite strategy in the 1980's) virtually non-existent. The advance of electronic brokering owes much to…

- **lower costs,**
- **higher efficiency and, most importantly,**
- **greater transparency**

…compared to traditional means of dealing

All the banks can see the rates everyone is dealing at; however, each bank must have a specific credit relationship with that bank in order to trade at the rates being offered. Although most trading activity is undertaken on behalf of customers, proprietary desks also conduct a large amount of trading, where dealers are trading to make the bank profits. Banks are very much in the know, as they can see order flow and when other important participants, such as central banks and large hedge funds, are entering the market.

Central Banks (Tier 1)

Central banks are large players in the currency markets and can play an important role in spot price fluctuations. Central banks are not speculators and enter the FX markets primarily for:

1) Market supervision

2) To control money supply and interest rates.

Government and central banks closely monitor economic activity to keep ***money supply at a level appropriate to achieve their economic goals***. Central banks influence money supply and interest rates through:

1) Changing the Reserve Requirement
2) Changing the interest rates
3) Open market operations (active trading of government securities, treasury bills, foreign currency)

For example, too much money can lead to inflation whereby the value of money declines and real prices rise. Central banks also often attempt to restore order to volatile markets through interventions.

The reasons for central bank intervention may be a result of a variety of factors:

- to restore stability,
- protect a certain price level,
- slow down currency movements, or
- to reverse a trend

Interventions may be coordinated with other central banks or undertaken by a single central bank. The operations may be announced or unannounced. They may operate openly and directly, or through brokers or agents. Ultimately different objectives will require different approaches. To restore stability, the central banks often work together.

However, a country taking a conservative view on intervention would act only in response to unusual circumstances that require immediate action, like political unrest or natural disasters. Most monetary authorities would be less likely to intervene to counteract the fundamental forces that drive FX markets, such as trade patterns, interest rate differentials, and capital flows. There are some noteworthy exceptions however, such as the Bank of Japan, which has been known to intervene on behalf of the Yen on numerous occasions.

One reason is a result of Japan's major exporters influencing the banks to protect their interests. In protecting certain price levels, a central bank may intervene from time to time to resist moves that seem excessive in either direction. For example, the United States has on occasion sold dollars when the currency was deemed to be getting "too strong" relative to economic fundamentals and bought back dollars when it was regarded as becoming "too weak" (it should be noted that U.S. interventions are infrequent).

The transactions in the intervention are small compared to the total volume of trading in the FX market and these actions do not shift the balance of supply and demand immediately. Instead, intervention is used as a device to signal a desired exchange rate movement and affect the behavior of participants in the FX market. Often the mere mention of intervention will violently move a market. It is also important to note that a significant side effect of the increase of international economic activity over the past few decades has been the creation and growth of the Eurocurrency market (bank deposits in any country held in a different country's currency like U.S. dollars in a British bank).

A great deal of foreign exchange market activity involves the transfer of Eurocurrency deposits. Since central banks have such large amounts of reserves to juggle, it is easy for them to have "unintentional" influence on the currency markets when they make re—positioning decisions.

The Federal Reserve (Fed):

The Federal Reserve Board (Fed) is the central bank of the United States. They are responsible for setting and implementing monetary policy. The board consists of a 12- member committee, which comprise the Federal Open Market Committee (FOMC). The voting members of the FOMC are the seven Governors of the Federal Reserve Board, plus five presidents of the twelve district reserve banks. The FOMC holds 8 meetings per year, which are widely watched for interest rate announcements or changes in growth expectations. The Fed has a high degree of independence to set monetary authority. They are less subject to political influences, as most members are accorded long terms that allow them to remain in office through periods of alternate party dominance in both the Presidency and Congress. The US Treasury is responsible for issuing government debt and for making fiscal policy decisions. Fiscal policy decisions include determining the appropriate level of taxes and government spending. The US treasury is the actual government body that determines dollar policy. That is, if they feel that the USD rate on the foreign exchange market is under or overvalued, they are the ones giving the NY Federal Reserve Board the instructions to intervene in the foreign exchange market by physically selling or buying USD. Therefore, the Treasury's view on dollar policy and changes to that view is very important to the currency market.

The European Central Bank (ECB):

The European Central Bank (ECB) is the governing body responsible for determining the monetary policy of the countries participating in the EMU. The Executive Board of the EMU consists of the President of the ECB, the Vice President of the ECB and four other members. These individuals along with the governors of the national central banks comprise the Governing Council. The ECB is set up such that the Executive Board implements the policies dictated by the Governing Council. New monetary policy decisions are typically made by majority vote, with the President having the casting vote in the event of a tie, in biweekly meetings. Primary objective of European Central Bank is price stability. ECB is considered "inflation paranoid" as it has strong German influence. ECB and the ESCB are independent institutions from both national governments and other EU institutions giving them total control over monetary and currency policy. The European central bank is a strict monetarist and much more likely to keep interest rates high. Two edicts of monetary policy are: to keep Harmonized CPI below 2% and M3 annual growth (Money Supply) around 4.5%. Refinance rate is the main weapon used by the ECB to implement EU monetary policy. ECB watches the fiscal discipline of its members closely. If countries are undisciplined, the ECB is less likely to remain hawkish. ECB is considered an untested central bank and doubts linger as to how they will react to any future crisis. The ECB keeps close tabs on budget deficits of the individual countries as the stability and Growth Pact states that they must be kept blow 3% of GDP. The ECB does intervene in the FX markets, especially when inflation is a concern. Comments by the members of the Governing Council are widely watched by FX market participants and frequently move the EUR.

Bank of England (BoE):

The Bank of England (BoE) is the central bank of the United Kingdom. The Bank was founded in 1694, nationalized in 1946, and gained operational independence in 1997. The BoE is committed to promoting and maintaining a stable and efficient monetary and financial framework as its contribution to a healthy economy. In 1997 parliament passed the Bank of England act, giving the BoE total independence in setting monetary policy. Prior to 1997, the BoE was essentially a governmental organization with very little freedom. Treasury's role in setting monetary policy diminished markedly since 1997. However, the Treasury still sets inflation targets for the BoE, currently defined as 2.5% annual growth in Retail Prices Index excluding mortgages (RPIX). The treasury is also responsible for making key appointments at the Central Bank. The BoE's nine member Monetary Policy Committee (MPC) is responsible for making decisions on interest rates. Although MPC has independence in setting interest rates, the legislation provides that in extreme circumstances the government may intervene. The Bank of England's main policy tool is the minimum lending rate or base rate. Changes to the base rate are usually seen as a clear change in monetary policy. BoE most frequently affects monetary policy through daily market operations (the buying/selling of government bonds). The BoE is infamous for attempting to influence exchange rates through unsterilized market interventions.

Swiss National Bank (SNB):

The Swiss National bank is the central bank of Switzerland. The Swiss National Bank enjoys 100% autonomy in determining the nation's monetary and exchange rate policies. In December 1999, the SNB shifted from a monetarist approach to an inflation-targeting one (2% annual inflation target). Discount rate is the official tool used to announce changes in monetary policy however; it is rarely used as the bank relies more on the 3-month LIBOR to manipulate monetary policy. SNB officials often affect the money supply and the currency itself. Intervention is frequent; however, most often intervention is used to enforce economic policy and uses open market operations such as raising or lowering interest rates to affect the value of its currency. As a country where international trade has been the primary source of the country's economic development, its preference is for a weaker franc (in order for its exports to remain competitive). SNB is highly regarded as the Franc is considered by most market participants to be the "world's best managed currency."

Bank of Canada (BoC):

The Bank of Canada (BOC) is the central bank of Canada. The governing council of the Bank of Canada is the board that is responsible for setting monetary policy and is an independent Central bank that has a tight rein on its currency. This council consists of seven members: the Governor and six deputy Governors. The Bank of Canada does not have regular periodic policy setting meetings. Instead the council meets on a daily basis and exchanges in policy can be made at any time. Due to its tight economic relations with the United States, the Canadian dollar has a strong connection to the U.S. dollar.

Bank of Japan (BOJ):

The Bank of Japan (BoJ) is the key monetary policymaking body in Japan. In 1998, the Japanese government passed laws giving the BoJ operational independence from the Ministry of Finance (MoF) and complete control over monetary policy. However, despite the government's attempts to decentralize decision-making, the MoF still remains in charge of foreign exchange policy. MoF is considered the single most important political and monetary institution in the economy, which have notable impacts on the Yen. The BoJ is responsible for executing all official Japanese foreign exchange transactions at the direction of the MoF. Bank of Japan does possess total autonomy over monetary policy and can have significant indirect impacts on foreign exchange rates. The BoJ's main economic tool is the overnight call rate. The call rate is controlled by the open market operations and any changes to it often signify major changes in monetary policy. Since the introduction of a floating exchange rate system in February 1973, the Japanese economy has experienced large fluctuations in foreign exchange rates, with the Yen on a long risking trend. The reason for Yen strength (despite the plethora of problems that have 0lagued the Japanese economy) is the fact that Japan has a trade surplus accounting for 3% of GDP. This is the highest of the G-7 countries and therefore creates a strong inherent demand for the currency for trade purposes, regardless of their economic conditions. The Japanese government is notorious for directly

intervening on behalf of the Yen through market interventions. BoJ interventions are frequent and violent. As an export-driven country, there are strong political interests in Japan for maintaining a weak Yen in order to keep exports competitive. Accordingly, the BoJ has been known to go into the market and sell off Yen when the Yen rate is perceived to be too strong.

Commercial Participants (Tier 2)

With the rapid increase in globalization, corporations have been forced more and more to focus on foreign exchange and in the process have become very important players. Corporations comprise of a diverse group to include:

- small and large corporations,
- import/exporters,
- financial service firms, and
- consumer service firms, amongst others

Corporations' interests in foreign exchange are derived from several sources. For example, multinational corporations may need to make payments to foreign entities for materials, labor, marketing/advertising costs and/or distributions, which would require the exchange of currencies.

Generally, exporters prefer to be paid in their country's currency or in US dollars, which are accepted all over the world. The primary use of multinational corporations in the market place is to offset risk by hedging against currency depreciation, which would affect future payments.

The decision for a corporation to hedge depends on a variety of factors. For example, if the corporation believes that the home currency is expected to depreciate, and as a result the outstanding position is at risk, it would most likely enter the market via a hedging strategy.

Some currencies are more volatile than others. For example, an EU member may be less inclined to hedge its currency risk against the Swiss Franc (as these currencies tend to move in tandem due to their economic links); however, a company would surely consider hedging against the Japanese Yen.

The correlation between the Swiss Franc and the Japanese Yen is much lower for the Euro and Japanese Yen, which would certainly allow for more fluctuations in the EURJPY pair. Now, however, a minority has begun to use the market place as a speculative tool; meaning, they enter the foreign exchange market purely to take advantage of expected currency fluctuations. This group of corporations using the FX market for speculative purposes is growing, and as very active participants they have a great impact on spot market prices. Corporation's approach to trading tends to be longer-term since they use the market for covering commercial needs, hedging, and speculations. Generally corporations do not like volatility – they have a natural demand, which is derived from the nature of their business and are

therefore required to be actively involved in order to hedge their exposure. Accordingly the directions of the market and price levels are extremely important.

Global Fund Managers (Tier 2)

Global fund managers, large mutual, pension, and arbitrage funds that invest in foreign securities and other foreign financial instruments can have substantial impacts on spot price movements as they are constantly re-balancing and adjusting their international equity and fixed income portfolios. These portfolio decisions can be influential because they often involve sizable capital transactions. During periods where local stocks and bonds are attractive, a national economy can get substantial allocations of global capital driving that national currency up. Portfolio hedging activities are also beginning to affect the FX markets are more and more international funds have begun to implement currency-hedging strategies. When this group wishes to hedge existing investments, they can generate selling flows.

FX Funds (Tier 2)

Funds that invest in FX are commonly called Global Macro funds. These funds depending on size tend to take different positions in the FX market. Many large funds tend to take large carry trade positions exploiting global interest rate differentials (a detailed explanation of carry trades can be found in the “what moves the market” section of the manual). Others seek to take advantage of misguided economic policies or currencies that overshoot their “real value,” by entering large positions and betting on a return to equilibrium. Others simply gauge global events and take a longer-term view on which currencies will strengthen/weaken in the next six to eight months. Fund participation in the FX market has risen sharply in the recent years and its totaling trading share is now around 20%. There is no doubt that with the increasing amount of money some of these investment vehicles have under management, the size and liquidity of foreign exchange markets is very appealing. While relatively small compared to other market participants, when acting together, they can have a profound effect on the currency spot movements.

Individuals (Tier 3)

Retail spot currency trading is the new frontier of the trading world. Up until 1996 foreign exchange trading was only available to banks, institutions and extremely high net-worth individuals. The only access individual investors had to currencies prior to 1996 was through the highly illiquid futures and option markets and the un-tradable cash bank market. Prior to online retail FX dealers, individuals could not realistically participate in the foreign exchange market from a speculative standpoint.

The interbank market operated as a tight circle; it acted somewhat like a specialist, as it manipulated the fates of tires 2 and 3 to accommodate its own needs. Accordingly, individual traders looking to trade FX could not find a market maker capable of providing competitive spreads, fair quotes, and equitable customer service.

With the advent of online foreign exchange trading, retail clients are provided with access to trading functionality that is highly comparable to the offerings of the interbank market. Spreads are slightly wider – 5 pips on most currency pairs as opposed to the interbank standard of 3 – but execution is unsurpassed: competitive firms will honor all quotes and entry orders, and execute them at exactly the rate specified. Now retail clients and multinational institutions can participate in the FX market on a highly equitable playing field.

Investor Protections Reaches Retail Level:

For many years the retail online foreign exchange industry languished for years due to the lack of a regulatory environment to uphold investor protection.

In December 2000 however, Congress passed and the President signed the Commodities Modernization Act. The Act finally regulated the foreign exchange industry and placed its oversight under the auspices of the Commodities Futures Trading Commission (www.cftc.gov)

Government Regulation Enters the FX market:

The Commodity Futures Trading Commission (CFTC) was created by Congress in 1974 as an independent agency with the mandate to regulate commodity futures and option markets in the US.

The Agency protects market participants against manipulation, abusive trade practices and fraud. Through effective oversight and regulation, the CFTC enables the markets to better serve their important functions in the nation's economy – providing a mechanism for price discovery and a means of offsetting price risk. The CFTC sets forth many of the guidelines the National Futures Association is required to follow.

NFA: Maintaining Integrity

The National Futures Association (NFA) officially began operations on October 1, 1982, with the goal of maintaining the integrity of the futures marketplace. All companies trading in futures must become NFA members. Those companies that are not registered with the NFA are subject to closure by the CFTC.

The passage of the Commodities Modernization Act requires that any company trading online forex must be registered with the NFA. The NFA has many capital requirements and makes sure companies maintain high bookkeeping and ethical standards in order to be registered. With the passage of the Modernization Act, the NFA required forex market makers to register as Futures Commission Merchants (FCM).

Market Hours

The spot FX market is unique to any other market in the world, as trading is available 24-hours a day. Somewhere around the world, a financial center is open for business, and banks and other institutions exchange currencies, every hour of the day and night with only minor gaps on the weekend. The major financial centers around the world overlap; while some markets are winding up their business day, other markets around the world are just beginning to trade. Essentially foreign exchange markets follow the sun around the world.

The International Date Line is located in the western Pacific, and each business day arrives first in the Asian Financial Center – First in Wellington, New Zealand, then Sydney Australia, followed by Tokyo, Hong Kong and Singapore. Only a few hours later markets open in the Middle East (beginning in Bahrain). When the markets in Tokyo are beginning to wind down, Europe opens for business. Finally, New York and other US centers begin.

Towards the late afternoon in the United States, the next day has arrived in the Asia areas, and the first markets there have opened and the process begins again.

While spot trades just about everywhere, the three main markets of Tokyo, London, and New York are the most influential since they represent almost 70% of the world's FX volume. Foreign exchange activity does not flow evenly, and throughout the course of the international trading day, certain markets are characterized by very heavy trading activity in some (or all) currency pairs, and other periods are characterized by light activity in some (or all) currency pairs. Foreign exchange activity tends to be the most active when markets overlap, particularly the U.S. markets and the major European markets, i.e. when it is the morning in New York and the afternoon in London. On the next page there are major characteristics of the three main markets outlined:

TOKYO: 7:00 PM EDT – 3:00 AM EDT/AVG Daily Volume $150 Bln

As Japan's economy has dwindled over the past decade, Japanese banks have been unable to commit to FX the large amounts of capital they once did in the 1980's. Despite this, Tokyo is the first major market to open, and many large participants use it to get a read on dynamics or to begin scaling into positions. Approximately 10% of all FX Trading volume takes place during the Tokyo session. Trading can be relatively thin and hedge funds and banks have been known to use the Tokyo lunch hour to run important stop and option barrier levels. Yen, Kiwi, and Aussie pairs tend to be the biggest movers during Tokyo hours as other currencies are quite thin and usually do not move.

LONDON: 3:00 AM EDT – 11:00 AM EDT/AVG Daily Volume $570 Bln

London is by far the most important and influential FX market on the planet, with approximately 30% of all transactions. Most big bank's dealing desks are run out of London and the market is responsible for roughly 28% of total spot volume. London tends to be the most orderly market due to the large liquidity and ease of completing transactions. Most large market participants use London hours to complete serious FX deals.

NEW YORK: 8:00 AM EDT – 5:00 PM EDT/AVG Daily Volume $330 Bln

New York is the second most important market in FX, with approximately 16% of market volume. In the United States spot market, the majority of deals are executed between 8 AM and 12:00 PM, when European traders are still active. Trading often becomes quite choppy after midday however, as liquidity dries up. In fact, there is a drop of over 50% in trading activity since California never served to bridge the gap between US and Asia. As a result, traders tend to pay less attention to market development in the afternoon. NY is very much influenced by the US equity and bond markets and pairs will often move closely in tandem with the capital markets.