



Bahrain Financial Exchange سوق البحرين المالي



# The Exchange Business: An Insight





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# Foreword by Mr. Rahman Al Baker

**Executive Director of Financial Institutions, the Central Bank of Bahrain**

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I am very pleased to be given the opportunity to introduce this detailed insight into the Exchange world which has been compiled with the purpose of providing the market with an understanding of the business of exchange operations. 'The Exchanges Business: An Insight' from the Bahrain Financial Exchange (BFX), is full of essential information on the multi asset market operations. The BFX will enhance the opportunity for the market participant in the region by providing a variety of investment and risk management solutions thus reinforcing Bahrain's position as the financial centre of the region.

The Gulf Cooperation Council (GCC), located in Arabian Gulf and consisting of six states (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates) is one of the fastest-growing markets in the world and has become increasingly significant to the global economy.

It attracts an increasing amount of foreign investment across a broad range of sectors, and its rapid expansion and growth makes it an active seeker for modern infrastructure development, technological capacities and business services. Reforms and improvements have been made to strengthen the private sector to be less dependent on government or natural resources, making the area an attractive location for enterprises and expatriate workers and considering overseas expansions in a competitive market.

As of the end of 2009, the combined GDP of the GCC reached around \$1.15trn. By 2018, total investment in the GCC could reach up to \$670mn (Goldman Sachs Economic Paper No: 166, 2008).

The GCC's share of the world economy is projected to expand slightly higher than aggregate global growth with an annual average of 4.5%, compared to 3.3% globally. Within 10 years, the GCC is expected to provide nearly one-quarter of the world's oil supplies as well as increasing quantities of petrochemicals, metals and plastics (Economist Intelligence United Limited, 2009).

The GCC is an attractive investment destination and consumer market for imported goods, information technology, and of services to a population that is considered one of the youngest and highest spending powers in the world. The total population in 1998 was over 28 million, but rose to 39 million by 2008, which makes it one of the highest rates of population growth in the

world. Food imports alone will double from US\$24bn (2008) to US\$49bn by 2020 (The GCC in 2020: Outlook for the Gulf and the Global Economy, Economist Intelligence Unit, March 2009).

Within the Mena region, Bahrain is the most mature and well-established business hub. With a track record of nearly 40 years, Bahrain is the financial services leader in the entire region. The Central Bank of Bahrain (CBB), the country's single regulator, is unquestionably the region's most respected regulator. Bahrain is known for its own regulations and structures, and enforced rule of law.

Bahrain provides a free, open and transparent environment for businesses and has a globally competitive, value-creation story which focuses on sustainability, skills and good governance. Also, Bahrain has always focused its efforts on the building of foundations, ahead of the building of landmarks. What's exceptional about Bahrain is that its economy is mature and diversified, which means that instead of depending on oil, it has focused on productivity-led growth. According to the Conference Board Survey, Bahrainis are five times more productive than the regional average. There is a unique vision for the future which is based on sustainable and productive economic diversification across various sectors. Bahrain is committed to free market and democratic principles as the best means of respecting the rule of law, serving the needs of businesses and individuals, and above all, ensuring the long-term prosperity of its people.

The Central Bank of Bahrain ('CBB') is responsible for maintaining monetary and financial stability in the Kingdom of Bahrain. It succeeded the Bahrain Monetary Agency, which had previously carried out central banking and regulatory functions since its establishment in 1973.

The CBB inherits the BMA's 33-year track record and wide range of responsibilities. It implements the Kingdom's monetary and foreign exchange rate policies, manages the government's reserves and debt issuance, issues the national currency and oversees the country's payments and settlement systems. It is also the sole regulator of Bahrain's financial sector, covering the full range of banking, insurance, investment business and capital markets activities.

The CBB's wide scope of responsibilities allows a consistent policy approach to be undertaken across the whole of the Kingdom's financial sector. It also provides a straightforward and efficient regulatory framework for financial services firms operating in Bahrain.

Given this background and the importance of Bahrain's financial services sector, I am pleased to include the BFX within the regulatory framework of the CBB and I look forward to sharing in the successes of this innovative exchange in broadening the regions financial landscape.

Similarly, I am pleased that the BFX is giving significant attention to education and knowledge creation in Bahrain and the region. The development of this book is a great step in that direction. This book has been written in an easy to understand language whilst at the same time the detail makes for useful reading material to all kind of readers. Those studying for professional degrees in finance or individuals working in the financial industry wishing to enhance their skills on the exchanges business will benefit from this.

I congratulate BFX and its team for producing this useful guide which will go a long way in contributing towards the higher levels of professional literacy that we are striving to achieve in the Kingdom of Bahrain.

9<sup>th</sup> May 2010

Abdul Rahman Al Baker  
Executive Director, Central Bank of Bahrain

# Introduction from Mr. Arshad Khan

Managing Director and Chief Executive Officer, Bahrain Financial Exchange (BFX)

It gives me great pleasure to introduce this publication, 'The Exchanges Business: An Insight', as a guide to understanding the complex and often misunderstood business of exchanges and the benefits they bring to financial markets. The business of Exchange trading has a long history of service with commodity exchanges dating back to over 3,000 years with Indian traders shipping exotic spices and silks to Egypt, Greece and the Roman Empire. Similarly, stock exchanges tracing its origins back to 11<sup>th</sup> century France where the *courtiers de change* were providing debt management services to agricultural communities on behalf of banks. As these men also traded in debts they are often referred to as the first brokers.

In today's world, Exchanges are highly sophisticated and operate in a global environment where cross border trading is supported by integrated networks of brokers and traders acting on behalf of clients using state of the art trading technology and telecommunication systems.

At the most basic level an Exchange will provide the following benefits to its participants:

**Price Discovery:** An exchange facilitates the price discovery of assets or financial instruments by acting as a central meeting place or venue that crystallizes the diverse opinion of financial market participants into an observable price.

**Transparency:** An exchange serves to provide information about the supply-demand dynamics of the market to the various market participants. This in turn promotes efficiency as prices tend to reflect information on a dynamic or real time basis and inhibits extreme volatility by providing critical information at times of panic.

**Reduced Transaction Costs:** An exchange serves to increase the intermediation efficiency in the economy by reducing transaction costs related to investment, hedging and capital-raising due to the relative higher aggregation efficiency of an exchange platform as compared to the Over-The-Counter or OTC market.

**Democratization:** An exchange platform promotes inclusion of the masses into the financial system by providing access to regulated markets at a reasonable cost. This in turn enhances aggregate economic efficiency and promotes social and economic justice.

**Secure payment infrastructure:** Transactions over an exchange platform are far more secure than the OTC platform on account of the central counterparty clearing provided by clearinghouses that clear all the trades. Since the clearinghouse takes on the role of a counterparty for both sides of the trade through 'novation'

With these elements in mind, this publication is designed to demystify the complex world of Exchanges and highlight the important role they play in the global flow of finance and trade. Particular reference will be made to the Bahrain Financial Exchange or BFX as this is the first multi asset exchange at the time of writing where it will offer services in both cash and derivatives instruments in the conventional and Islamic Finance markets. The BFX is situated in the financial centre of the Middle East, Bahrain, and it is home to a diverse talent pool, a robust regulatory framework and the international home of Islamic finance.

The basic foundations of Exchanges have remained consistent since the establishment of a modern financial system and these roles are the same regardless of where the Exchange is located. These foundations or roles involve the availability for market participants to invest, raise capital and manage risk. In addition to these foundations, exchanges have developed supporting or ancillary services which complete the cycle of trade and afford the user the confidence that trading is well regulated, unbiased, and transparent operated within a robust risk management environment. These aspects amongst others will be covered in detail with this publication.

The origins of this book were at first a mixture of publications or industry reports that the BFX team had written as a result of the market participants wishing to learn either an overview or the details of on-exchange trading. As a result of which, the decision was made to compile all of this proprietary information into a handbook which would serve also a guide to the business of Exchanges. The book has been divided into 4 key sections: strategic and operational aspects of an exchange, the basics of trading and market terminology, a snapshot of the Islamic finance market with particular attention to the Sukuk market and a glossary of terms to support the introduction of concepts and terms used in this market and within the market.

I am confident that as the Exchanges world evolves further you will see new editions of this book and I look forward to presenting these to you in the future. However in the meantime, I do hope that you enjoy the book and you use this for what is designed, as a guide to the Business of Exchanges.

Arshad Khan

# Chapter 1

## Exchange Business – Functional Description

The primary purpose of this section is to provide a concise briefing about the functioning of exchanges their trading, clearing and the settlement cycle, the role played by various service providers like clearinghouses, depositories and various kinds of derivative products that are listed on exchanges.

### ***What is an Exchange***

Exchanges are central marketplaces, approved by relevant regulatory authorities, which exist in either physical or electronic form. These marketplaces provide the facilities needed to bring together buyers and sellers of financial products for spot or future settlement. Exchanges do not set prices, nor do they participate in trading for their own accounts, they simply supply the infrastructure needed to facilitate *price discovery* in relevant instruments.

Physical exchanges feature trading floors (*or pits*) with brokers who buy and sell contracts on an *open-outcry* basis – through hand signals or verbal communication. Those that exist in electronic form function in the same way, except that buying and selling are done through screen-based technologies. Some exchanges feature both physical and electronic trading in order to extend trading hours or support specific contracts that cannot generate enough volume in the trading pit.

Physical or electronic exchange trading flows through exchange members, who have acquired the right to transact on behalf of their own accounts and for the client accounts. Broadly speaking, exchange members may be *clearing members* or *non-clearing members*; clearing members can clear proprietary and client trades directly with the clearinghouse, while non-clearing members have to utilise the services of a clearing member to get their trades cleared.

## **Clearing Corporation**

One of the main characteristics, and advantages, of an exchange is a centralized clearing process that reassigns all trades to the exchange's clearinghouse, a creditworthy central counterparty. Clearing is the process of recording a trade passing through the exchange and assigning it to the clearinghouse so that it becomes the counterparty to that transaction.

The clearinghouse is responsible for calculating and collecting margins on new and existing trades and organizes processes related to physical or cash delivery of futures and options contracts that are not closed out prior to maturity. A clearinghouse is typically structured as a wholly owned subsidiary of the exchange; however, in some cases it may be constituted as an integrated division of an exchange or an independently operated entity.

By routing all trades through a central clearinghouse, participants eliminate credit risk (*or the risk of loss due to counterparty default*); this is a key consideration for those who prefer not to be exposed to the credit performance of other parties. From a practical perspective a clearinghouse intermediates, or stands between, every buyer and seller so that they do not face each other directly.

Since the value of trade may be highly volatile, time is a critical aspect of counterparty risk. Exchanges and clearinghouse require participants to mark their portfolios to market, using the market price at the close of the business day to determine the value of each instrument they hold. In this way, margins and collateral can be adjusted on a daily or intra-day basis.

## ***Central Securities Depository***

At the urging of national authorities and central banks, some markets set up Central Securities Depositories (CSDs) many decades ago to immobilise the securities certificates for the whole market, so that physical movements would be eliminated. The prime reason behind this trend was to increase reliability and efficiency of the system.

Advances in technology enabled other markets to dematerialise, whereby securities would only exist in electronic form. Whether by immobilisation or dematerialisation, securities are transferred from one holder to another in CSDs by “book entry settlement” between securities account holders, which are commonly called members or participants.

The immobilisation or dematerialisation of securities and their transfer by book entry within a CSD significantly reduces the total costs associated with securities settlements and custody. By centralising the operations associated with custody and transfer within a single entity, costs can be reduced through economies of scale. In addition, efficiency gains can be achieved through increased automation, which reduces the errors and delays inherent in manual processing. By reducing costs and improving the speed and efficiency of settlement, book entry settlement also supports the development of securities lending markets, including markets for repurchase agreements and other economically equivalent transactions. These activities, in turn, enhance the liquidity of securities markets and facilitate the use of securities collateral to manage counterparty risks, thereby increasing the efficiency of trading and settlement.

The immobilisation or dematerialisation of securities also reduces or eliminates certain risks, for example destruction or theft of certificates. The transfer of securities by book entry is a precondition for the shortening of the settlement cycle for securities trades, which reduces replacement cost risks. Book entry transfer also facilitates delivery versus payment, thereby eliminating principal risks.

Thus, for both safety and efficiency reasons, securities should be immobilised or dematerialised in CSDs to the greatest extent possible.

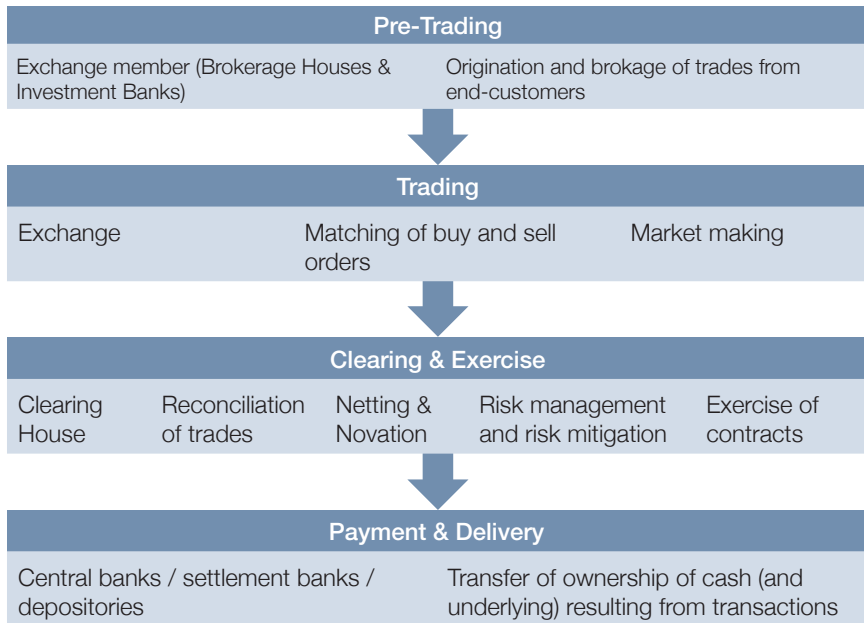
## **Exchange Business – Value Chain Analysis**

The Exchange value chain can be broken down into pre-trading, trading and clearing including payment and delivery. Brokerage houses, investment banks, exchanges and clearing houses are the main service providers along the value chain.

Pre-trading comprises the origination and channelling of orders to marketplaces for the execution of transactions. This phase usually involves the interaction between exchange members (*brokerage houses and investment banks*) and their customers (*institutional actors like fund management houses, retail clients and physical market participants like commodity producers, traders etc.*) for the generation of trading decisions related to investment and / or hedging. The orders that are collected by the exchange members are forwarded to the exchange trading system through multiple access routes.

The exchanges are central marketplaces where all orders are collected and matched. Trading parties usually remain anonymous. Matched orders add new open contracts, alter the counterparties of existing open contracts or offset existing open contracts. Execution means that the buyer and the seller respectively enter into the contract. Often dedicated dealers constantly provide price offers for contracts. This is called market making and is also a part of trading.

## Exchange Trading Value Chain



At the time that a trade matches, the clearing house (*usually referred to as a Central Counterparty or CCP*) becomes the buyer to the selling clearing member and the seller to the buying clearing member. In technical terms, this process is referred to as '*novation*'. In this way, clearing members do not need to make a credit assessment of the other clearing members or their clients. In an electronic trading environment, clearing provides valuable anonymity; buyer and seller (*and buying clearing member and selling clearing member*) rarely know (*or need to know*) each other's identity.

Clearing houses that step in between the two trading parties as a CCP provide clearing for all trades and position management of all open contracts. The clearing house nets all offsetting open contracts of each trading party across all other trading parties (*multilateral netting*) and serves as a CCP to each trading party guaranteeing the fulfilment of each contract.

A buy or sell trade creates an “open” contract or open position. Clearing houses and members manages these “open” contracts until their termination. An essential element of clearing is therefore position management, which deals with keeping track of open contracts. This usually also includes managing the risks present during the life of a contract.

In order to guarantee the performance of all clearing members, a CCP collateralizes, or “margins,” the financial performance exposure that the CCP has to each of its clearing members. This is called performance bond collateral, and it is based upon the historical price volatility of the instruments, multiplied by the number of open positions that a clearing member has with a CCP. By setting the performance bond collateral requirements at levels that anticipate a likely one-day market (*price*) movement, a CCP should have any potential liquidation risks reasonably well collateralized.

Should a clearing member fail to satisfy its financial obligations to a CCP, that CCP would declare the clearing member to be in default and would transfer or liquidate its positions, liquidate the relevant performance bond collateral, and apply the proceeds to cover the costs of liquidation. Should the costs of liquidation exceed the proceeds of the performance bond collateral, any residual loss would be covered by the very substantial financial assets held in reserve.

Clearing members satisfy their performance bond (*initial margin*) collateral requirements by depositing eligible assets (*which are largely composed of cash, government securities, and corporate bonds*) with the CCP. Similarly, clearing members’ clients collateralize the risk of their positions with their respective clearing members by providing eligible performance bond collateral assets, most of which are simply passed through by the clearing members to the CCP.

Part of clearing is also the termination of a contract, which can be triggered by four actions or events:

1. Cancelling out the original contract with an offsetting contract
2. Giving up the contract to another trading party
3. Expiry
4. Exercise – the only event that requires settlement

In order to be admitted to a CCP, clearing members must satisfy and maintain minimum financial requirements and establish a settlement banking relationship with one or more settlement banks. Settlement banks provide specialized commercial banking services to CCPs and to clearing members of those CCPs.

# Chapter 2

## Secular Business Trends

The key goal of this section is to provide guidance regarding the secular (long-term non-periodic in nature) trends that are driving the evolution of the exchange business across the world. This information presented in this section should provide the reader with information that will be crucial in the formulation of long-term success strategies for the business.

The past decade has witnessed the emergence of Exchanges as a growth industry that is currently experiencing tectonic shifts in market structure and correspondingly in the companies' core operations. The confluence of more demanding clients, narrowing spreads and technology-enabled liquidity growth is driving a sharp increase in trading activity across products and regions. Trading venues have raised the stakes in the technology race, and those best positioned are best equipped to leverage the growing trading volume on a fixed-cost platform.

Regulatory changes such as Regulation National Market System or Reg NMS in the U.S., and Markets in Financial Instruments Directive or MiFID in Europe, growing clamour for increased regulation with special emphasis on risk management in wake of the global financial crisis, regulator's focus on best execution enforced by new policies, also represent substantial risks and opportunities to market participants.

Overriding all of this is the sustained momentum in global capital markets growth. There is growing opinion that the recent crisis is unlikely to halt the momentum of financial market globalisation. We examine below the drivers of these secular changes in the capital markets that are reshaping the landscape for the trading venues for these products.

## Technology

Rapid technological advancements in telecommunications and the Internet are transforming the basic business model of an Exchange. In an increasingly competitive world with low barriers to entry, exchange-owners are rapidly recognizing that efficient market design and trading mechanism are keys to winning higher market shares for both trading volume and number of listings or products.

Over the past decade, scores of stock exchanges around the world have abolished their trading floors on which brokers manually matched orders using an open-outcry system. Fully automated and transparent electronic systems have replaced those outcry mechanisms. During the last 5 years most new exchanges have started as fully electronic as the costs of developing, operating and maintaining electronic systems are typically far lower in comparison to traditional floor trading.

Advancements in exchange technology can also add benefit to additional aspects of the business model whereby computerisation can improve liquidity in secondary markets through the following several means:

1. Electronic trading systems can significantly lower investors' trading costs (*spreads, fees, brokerage, and commissions*) and increase the amount of publicly available information about a stock's supply and demand.
2. In addition, electronic trading systems are capable of attracting new pools of liquidity by providing affordable remote access to investors and by retaining unexecuted orders in a consolidated order book for possible matching with future orders.
3. On automated electronic trading systems, profit-seeking value traders can closely monitor the market and become suppliers of liquidity even without their presence on the trading floor. This phenomenon is further facilitated by the increased speed of execution and settlement of trades on electronic systems.
4. Electronic systems are also more transparent than trading floors in displaying detailed order-flow information such as quotes, order depth, and recent transactions from the order book to the market participants in real time.

5. This information can also be archived more efficiently in electronic formats and then used by regulators in audit trails.
6. Exchange officials in both developed and emerging markets have commonly cited cost reduction and investor protection as the main reasons cited for switching from floor to electronic trading.

In parallel, most exchanges have also significantly improved the organizational model for trading in the course of becoming fully electronic with, for instance, the introduction of the electronic central order book. Other elements of this modern organisational model include transparent price discovery, pre- and post-trade anonymity, enhancing liquidity and seamless integration of trading and clearing, increasing efficiency and reducing operational risks.

### ***Increasing Sophistication of Market Participants***

Investors are driving the evolution of financial marketplaces enabled by better technology. Money managers and institutions that serve these investors evolve to meet their changing needs, in turn pressuring the marketplaces and trading venues for more product options, lower costs, tighter spreads and more efficient trading.

The model for institutional investment has changed, which in turn is driving change in the marketplaces that served that model. Investors want to trade more for less, tighter spreads, faster markets and more product options. In addition, alternative investments such as real estate and commodities are becoming increasingly common tools for market participants.

The need for greater breadth of investment products and greater access to derivatives is leading institutional money managers to become multi-asset-class investors. The institutions that serve pension funds, wealthy individuals and their intermediaries in turn look to their service providers, such as trading venues, to increase ease of trading within the growing range of products. Pressure to reduce connectivity requirements and improve trading technology and, importantly, tighten trading spreads, is an important part of expanding the breadth of products to be traded.

## ***Risk Management Imperative***

As in many other crises, during the global financial turmoil occurred in last few years also, it was true that no major derivative clearing house in the world encountered distress while many banks were pushed to the brink and beyond. This was despite the fact that the exchanges deal with more volatile underliers – equities are about twice as volatile as real estate and natural gas is about ten times more volatile than real estate. Clearly, risk management at the world's leading exchanges proved to be superior to that of the banks. The most important lesson from the recent financial turmoil is that the quality of risk management models does matter.

Since the early 1990s, there have been three major advances in the theoretical foundations of risk management:

1. Abandoning Value at Risk (VaR) in favour of coherent risk measures like Expected Shortfall (ES)
2. Moving away from the normal distribution to fatter tailed distributions
3. Discarding linear correlation measures in favour of copula based models of tail dependence

The cumulative effect of these three advances is so great that we must today regard the risk measurement methodologies developed in the early 1990s as largely obsolete. Banking regulations are however still stuck in the models of early 1990s vintage.

The derivative exchanges have a huge advantage in that the Standard Portfolio Analysis of Risk (*SPAN which is a portfolio margining method developed by the Chicago Mercantile Exchange in 1988. It calculates the portfolio loss under several price and volatility scenarios and determines the margin based on these loss levels*) system that most of them use is a coherent risk measure.

The SPAN risk measure can also be interpreted as an ES measure under certain simplifying distributional assumptions. Additional layers of capital requirements and other regulations might bring the exchanges' risk models even closer to a realistic ES measure.

# Chapter 3

## Exchange Business – Societal & Systemic Welfare

The aim of this section is to provide a succinct summary of the critical benefits of exchanges to the aggregate economy and the society at large.

To many, an exchange connotes a highly sophisticated market system, with an electronic-based, highly evolved system of trading

However, at its core, an exchange is simply a central place where sellers and buyers meet to transact in an organized fashion, with certain clearly specified and transparent “rules of the game.” In its wider sense, an exchange is any organized market place where trade is funnelled through a single mechanism, allowing for maximum effective competition among buyers and among sellers.

The difference between an exchange and a typical wholesale or terminal market is that an exchange creates a mechanism for price discovery to occur in an organized manner, through a system of price bidding and through a set of rules governing the products brought to the market, the market actors, and the contracts between buyers and sellers.

An exchange is an institutional response, at a basic level, to the fundamental problem of achieving self-coordinating market order in the trade of products, which by their nature, are risky. An exchange provides the following benefits to the aggregate economy and society:

## ***Integrity & Trust***

An exchange operates with a certain set of rules or conventions that are widely known. These rules pertain to four key dimensions of the market: the product, its price determination, the actors, and the contractual relations that bind them. These rules and modalities together create much needed integrity and trust in the system.

With commodity products, goods traded on an exchange must be standardized according to known standards of quality and quantity. The grading and certification of grade must be done by licensed inspectors that are qualified and regulated. Grading is accomplished through a laboratory based at the exchange on a sample basis or by other parties, such as the state or private actors.

What is critical is that the product grades are widely accepted by the market and are developed with the participation of all market actors, including farmers, traders, processors, and consumers. The certification must be considered by all to be fair and neutral. Thus, whether the grading is done by the exchange or not, a key function of the exchange is to ensure that goods are brought to the market properly graded.

Second, an exchange operates a given system of price bidding that is aimed at publicly displaying buy and sell offers in a transparent and low-cost manner.

Third, in order to ensure that the rules are followed, exchanges operate with membership based trading, where membership is based on the ability to comply with the rules of the exchange and to meet certain standards. Exchanges are essentially self-regulatory systems which prescribe rules and codes of ethics to which all the registered market actors strictly adhere.

Fourth, the exchange's regulations and directives usually make it mandatory for members to make use of standard contracts prepared by the exchange to which they belong. Thus, members are required to strictly adhere to the terms and conditions laid down in the contracts, to keep appropriate records of their transactions; and to submit to be bound by the disciplinary rules of the exchange. The advantages of an exchange are that:

1. It permits the development of uniform contracts that would be hardly achievable through private negotiations
2. It makes it possible to develop contracts of maximum utility to both parties
3. It brings certainty of understanding between parties to the contract.

Another major role to consider for the exchange pertains to enforcement and the consequences of non-performance. In an organized market where all contracts are facilitated through the exchange, most default cases are handled and straightened out by the exchange itself. Exchanges have developed rules, ethical codes and procedures for contract enforcement and dispute settlement. Self-regulation in the market is an integral part of the system. It is employed as a means of assuring that every market participant is living up to expectations.

### ***Transparency & Market Information***

A core attribute of an exchange, implied within the four dimensions noted above, is that it enhances market transparency by generating and disseminating information. Through its own functioning, the exchange creates market information about the underlying supply and demand conditions in the economy. An exchange becomes the market information system as it undertakes its function of price discovery based on the public posting of buy and sell orders.

When the volumes of trade on the exchange are sufficiently large to justify that price discovery according to true market fundamentals is occurring, then the dissemination of that information of market prices provides a great service to the market, and the wider economy. This fact alone is a compelling reason to justify an exchange.

# Chapter 4

## Basics of Exchange Markets

### ***Cash Market:***

This market represents the ready market or the presence of buyers and sellers for initiating and materializing buy or sell transactions, on the same day, or defer or a period in the future. In this market there is exchange of the physical asset between seller and buyer. This is an important component, from the perspective of trading in futures, since the factors affecting the cash market under normal conditions, influences the direction of the futures market. We can also characterize the cash market as a relationship between the spot price and “net demand,” i.e., the difference between production and consumption. A cash market may take the following forms: self-regulated centralized markets, such as commodity exchanges; decentralized over-the-counter markets where private transactions may occur; or localized community organizations. Various products are traded in the cash segment are stocks, bonds, currencies, agro commodities such as soy oil, palm oil, grains etc, and non agro commodities like gold, crude oil, base metals etc.

### ***Derivatives market:***

It can be classified as a market where price discovery is constantly occurring through different participants like exporters/importers/investors/arbitragers, hedgers, etc, such that any change in the underlying asset fundamental or price outlook has an immediate impact on the respective derivative. This simply explains the dependency of derivatives on the underlying asset to derive its value. Derivative comprises futures and options. Perhaps the most important purpose of derivative markets is risk management. We define risk management as the process of identifying the desired level of risk, identifying the actual level of risk, and altering the latter to equal the former. Often this process is described as hedging, which generally refers to the reduction and in some cases the elimination, of risk.

## Exchange Traded contracts

An *exchange-traded contract* is a standardized financial instrument, traded on an established exchange that derives its value from an underlying financial or physical/ commodity reference.

Financial references can include interest rates/bond prices, equities/indices, and currencies, while commodity references can include agricultural (e.g. *grains, livestock, dairy*), “softs” (e.g. *coffee, cocoa, sugar, orange juice*), hard assets (e.g. *lumber, chemicals*), energy (e.g. *oil, natural gas, electricity*) and other references (e.g. *weather, catastrophe, transportation prices, and so on*). As the value of the underlying reference moves up or down based on supply and demand forces, the value of the derivative contract moves up or down as well.

Exchange-traded contracts are offered in the form of:

1. Futures
2. Options
3. Futures Options

A *future* is a contract that represents an obligation to buy or sell:

1. A specific quantity of an underlying reference asset
2. At a price agreed, but not exchanged, today
3. For settlement at a future time

A future can thus be considered a contract for deferred payment and delivery. The contract might feature ‘financial settlement’ (i.e. *cash exchange*) or ‘physical settlement’ (i.e. *underlying commodity/asset exchange*). A *long position* – one that is purchased or owned – in a futures contract increases in value as the reference price rises and loses value when the price falls; a *short position* – one that is borrowed or sold – increases in value as the price falls, and decreases in value as the price rises.

An *option* is a contract that gives the purchaser:

1. The right, but not the obligation, to buy (*call option*) or sell (*put option*) the underlying reference asset
2. At a specified price level known as a *strike price*
3. At any time until an agreed expiry date (*American option*) or only on the expiry date (*European option*)

In exchange for this right the buyer pays the seller a *premium payment*. By accepting the premium the option seller has an obligation to buy or sell the underlying asset at the specified strike if the option is exercised.

A *futures option* is simply an option granting the purchaser the right to enter into an underlying futures transaction in exchange for a premium. A *futures put* gives the purchaser the right to sell a futures contract at a set strike price, while a *futures call* gives the purchaser the right to buy a futures contract at a set strike price. Futures options are normally traded in financial instruments other than commodities.

All exchange-traded contracts – whether futures, options, or futures options – are characterized by standard terms, including:

1. *Trading units*: the size of the contract (also known as *notional value*) and the minimum price fluctuation per contract (also known as *tick value*)
2. *Delivery date*: the date when the contract settles/matures
3. *Deliverable grades*: the classes and types of assets that are acceptable for delivery against a contract
4. *Delivery points*: the approved location where underlier can be delivered
5. *Contract months*: the month(s) on which contracts are offered for trading
6. *Last trading day*: the final date on which trading in a given contract can occur
7. Other terms and conditions as applicable, including:
  - a. *Price limits*, or the maximum amount a contract is permitted to fluctuate during a given trading session
  - b. *Strike price/exercise style (for options/futures options)*

## ***Futures contracts***

Futures market is a derivative of the cash market, i.e. it constantly derives its values from the dynamics of the cash market. In the true sense, it reflects the outlook of the cash market, whether it be a few days, weeks, months, and years into the future. Therefore a futures contract is the main component of the futures market and are contracts which will be traded by market participants (such as like speculators/arbitragers/hedgers) in order to derive at a value, which will simultaneously reflect the price outlook of the asset in near future. This value is derived after considering various factors influencing the underlying asset in present term. This process known as price discovery is one of the primary functions of futures markets.

Futures markets provide valuable information about the prices of the underlying assets on which futures contracts are based. Firstly, many of these assets are traded in geographically dispersed markets. Recall that the current price of the underlying asset is called the spot price. With geographically dispersed markets, many different spot prices could exist. In the futures markets, the price of the contract with the shortest time to expiration often serves as a proxy for the price of the underlying asset.

Secondly, the prices of all futures contracts serve as prices that can be accepted by those who trade contracts in lieu of facing the risk of uncertain future prices. For example, a company that mines gold can hedge by selling a futures contract on gold expiring in two months, which locks in the price of gold two months later. In this manner, the two-month futures price substitutes for the uncertainty of the price of gold over the next two months. Few examples of products traded in futures segment are as follows:

**Commodities:** Gold, Silver, Crude oil, Aluminium, Copper, nickel, Palm oil, Soy oil, etc.

**Currencies:** Euro-USD, JPY-USD, GBP-USD, USD-INR etc.

**Stocks/ Indices:** Securities or shares and different series of MSCI, S&P, FTSE etc.

## ***Nature of participants active in the futures market***

- **Investors or Speculators:** Participants who trade in the markets essentially for making profit from the anticipated up/down movement in the price. These participants enter the market without risk and actively seek this from other market participants. Speculators provide the necessary liquidity to the markets by offering ample demand and supply of different price levels.
- **Hedgers:** Uses stock/ commodity/ Indices/ currency futures primarily for hedging the risks arising out of extreme volatility in the cash market. A hedger is an important player in the derivatives markets. It would also be right if we say that the sole aim of hedgers for initiating trades in the futures market will be to safeguard the risk of incurring any loss in the respective cash market. Hedgers are the opposite of speculators in that they wish to offload risk inherent in their current business.
- **Arbitragers:** They are involved in the process of simultaneous buying and selling of the same financial instrument in different markets in order to make immediate profits with reduced risk. Arbitragers make profit by spotting price discrepancies between the values of the same financial asset in different markets.

## ***Importance of speculators in futures markets***

The role of speculators is often misunderstood. A key aspect of the role of the speculator is to take on the risk that is already prevalent in the market. The misunderstanding relates to the fact that the intentions of a speculator have been wrongly associated with manipulation. While a manipulator tries to push prices in the reverse direction of the market equilibrium, a speculator enters the market mainly to make profit from volatile conditions.

Futures are designed primarily to assist hedgers to manage their exposure to price risk. But without the participation of speculators, this would hardly be possible. It is the price risk which is taken by the speculators, which the hedgers attempt to reduce in the market. Therefore it would not be wrong to say that speculators' participation is essential for hedgers in taking the opposite side of the trade, and eventually adding depth as well as liquidity to the market.

## ***Pricing Futures – The cost of carry model***

The cost of carry is an important element in determining pricing in relation to the spot price and the price of the underlier in the future. This model defines futures prices as a function of spot prices, i.e. futures prices depend on the spot price of the underlying and the cost of holding the underlying from the date of spot prices to the date of delivery of the futures contract. The cost of storage and insuring the underlier for the period in question and cost of financing contribute to the cost of carry.

So, as per the model:

**Futures Price = Spot price + Cost of carry\***

\*Cost of financing, storage and insurance

Fair value of a futures contract can be calculated using the following equation:

$$F = S (1+r)^n$$

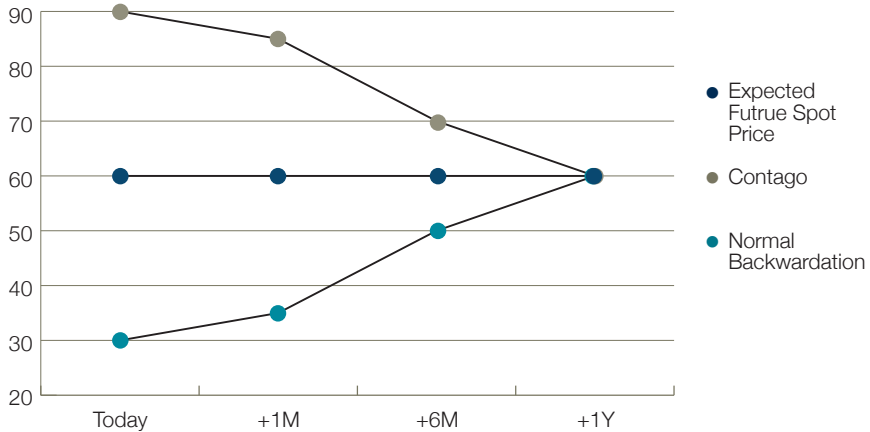
Where r = cost of financing (annually compounded)

N = time till expiration of the contract

## ***Contango and Backwardation***

When the futures price is higher than the current spot price, it is known as a Contango market. In a backwardation market, the futures price is lower than the spot price. implies that as the contract approaches expiration, the futures contract will trade at a higher price compared to when the contract was further away from expiration. This is said to occur due to the convenience yield being higher than the prevailing risk free rate. Both have been developed in respect to the price of a futures contract and the contract's time to expire. A normal graph for the same shall appear like:

## Futures prices at different contract maturities



Contango and normal backwardation refer to the pattern of prices over time. Specifically, is the price of our contract rising or falling? Suppose we enter into a December 2010 futures contract, today, for \$100. Let's say we go forward one month. The same December future contract could still be \$100. But it might also have increased to \$110 (this implies normal backwardation) or it might have decreased to \$90 (implies Contango). In Contango, because the futures price must converge on the expected future spot price, implies that futures prices are falling over time as new information brings them into line with the expected future spot price. Likewise, normal backwardation is when the futures price is below the expected future spot price, and this is desirable for speculators who are "net long" in their positions, i.e. they expect the futures price to increase towards the contract maturity. So, normal backwardation is when the futures prices are increasing ahead of contract expiry. As observed in the graph, the brown line graph represents futures prices maintaining at a premium with the spot prices, and as the expiry approaches, the levels begin moving downwards so as to match the spot prices. In backwardation, which is shown with the green line, exactly a reverse phenomenon will occur, i.e. futures are available at a discount to spot prices therefore to reflect the fair price at expiry, the contracts will start moving higher as the time to contract maturity decreases.

It is worth noting that normal backwardation and normal Contango refer to the expected future spot prices. The situation in contango provides a normal condition for commodity that is non-perishable and involves cost of carry such as warehousing costs, interests, lease income, and others. However, in the case of perishable commodities such as eggs, the price disparities of near and far delivery will not be considered as contango since the quality of the commodity will not be the same for over a certain period of time. As a rule even in the online futures trading, the situation of contango should not go beyond the overhead cost of the delivery since consumers and producers normally compare the prices of futures contract against the spot price and storage. Hence, they will choose the better trade. In addition, if a market indicates that it is in contango, it means that there is a surplus in the current supply of the commodity. Backwardation happens when the price of the futures contract consists of the compensation for the risk that is transferred from the asset holder. In this case, the actual price on expiry will be less than the futures contract price. Some trade experts hold that backwardation is entirely an abnormal occurrence since it suggests insufficiencies in the corresponding supply the spot market in futures trading. But in reality, backwardation normally happens especially if seasons are considered such as in the case of perishable commodities. For example, during the harvesting season of soybean, good amount of soy oil will be produced hence the actual spot prices during the expiry months, which will match the supply season, shall tend to remain lower than the current price levels.

## ***Index Futures***

An index can be defined as a statistical measure of change in an economy, a security or commodity market. In financial markets, an index is a defined portfolio of securities representing a particular market or a portion of it. Each index has its own calculation methodology and is usually expressed in terms of a change from a base value.

For example the Standard & Poor's 500 index is one of the most commonly used benchmark for the stock market. Other prominent indexes include the DJ Wilshire 5000 (total stock market), and various indices of MSCI and FTSE. Participants such as stock portfolio managers normally use index futures to increase their exposure to movements in a particular index, essentially leveraging their portfolios.

## ***Key features or benefits of Index futures***

### **1. Indices provide broad access to many markets**

A stock index is designed to represent a particular class of assets. For example the Dow Jones Industrial Average is made up of the 30 largest capitalized (stock price times the number of shares outstanding) American-based companies, and the S&P 500 represents a broader measure of large cap stocks. NASDAQ represents 100 largest technology companies. Today, there are stock indices for country risk, sector risk, industry risk and credit risk. An index is just the cumulative stock of all companies meeting the characteristics of that index. Indices are usually weighted according to the market capitalization of each company.

### **2. Stock Index Futures are margined like normal futures**

Stock index futures allow investors, in a single trade, to own a representative sample of the major stocks of the index. It is cheaper and more effective to purchase a stock index rather than a proportionate share of every stock in the index. Stock Index futures like normal futures, are purchased on margin or leveraged. That means that if the value of the contract is deemed to be \$100,000 an investor would place a deposit of perhaps 20 percent. The investor is still liable for the remaining value whether the index rises or falls. The margin allows traders substantial leverage subject to tight regulatory conditions.

### **3. Efficient means of speculation and free from having to deliver**

Generally, stock index futures are used for speculation or hedging. Speculation refers to investing for profit by trading stock index futures contracts. The investor does not have to concern himself with credit risk when using stock index futures, only with market direction. In neither case can the stock index futures trader take physical delivery of the stock. At expiration date all outstanding stock index contracts can only be settled by cash.

#### 4. Investors can hedge and manage local and overseas stock investments

Hedging activity is often conducted with index futures. For example portfolio managers who believe that small caps will outperform growth stocks will buy the Russell 3000 index and sell the Russell 1000. Investors use stock indices, because they provide liquidity and diversification. Hedging is also used when investors fear a brief market downturn and sell futures contracts rather than try to sell their stock positions in an uncertain market. Even in commodity markets, it will be convenient to hedge one's exposure in the commodity cash or commodity futures market with index products.

#### 5. Affordability

One of the advantages of trading stock or commodity index is its affordability. Or in other words, one can trade on the index without having to maintain the extremely large account balances required to day trade stocks on margin. With just a small amount one could have the ability to trade the market index futures, hence participate in the overall performance of stock or commodity markets – be it local or internationally.

#### 6. Fast execution

One can enjoy the benefit of fast execution on the market value of a basket of stocks immediately, rather than initiating on individual stock or stock futures.

### ***Options contracts***

Options contracts are agreements between two parties, namely a buyer and seller in that the buyer of the option retains the right but not the obligation to transfer his ownership, unlike the seller of the option contract who is obliged to close the transactions, on instruction from the buyer on or before the expiry date depending on the option contract (see American option in the Glossary).

Options are like futures contracts, that continue to depend on the underlying asset to derive its value but unlike futures, they are instruments of trade with lower risk, because in this case only the seller of an option has to pay margin, while buyer has only a the premium to part with.

Options also work in a slightly different manner to futures contracts. They are used in a different form of hedging, one that permits the holder to protect against loss while allowing participation in gains if prices move favourably. Options do not so much reveal prices as they reveal volatility. The volatility of the underlying asset is a critical factor in the pricing of options. It is possible, therefore, to gauge investor sentiment from the prices of options.

Options are of two types:

- 1) **Put Option** – Options whose primary users are those with a price view that is bearish or on the downward side. A plain vanilla put option is a contractual agreement, which gives the owner or holder, the right but not the obligation to sell a pre-determined quantity of the underlying asset (commodities, shares, indices etc) at a specified price or the strike price, on the date of expiry.
- 2) **Call Option** - Options whose primary users are those with a price view that is bullish or on the upward side. A plain vanilla call option is a contractual agreement, which gives the owner or holder of the option, the right but not the obligation to purchase a pre-determined quantity of the underlying asset (commodities, shares, indices, etc), at a specified price, also known as strike pace, on the date of expiry.

### Advantages of trading options:

- When buying option contracts, the right, but not the obligation, to buy or sell a futures contract at a given price is obtained. Therefore when price movements are not favorable, this right will be exercised by the buyer or holder of the option, and therefore the purchase of options provides protection against unfavorable price movements, while permitting to profit from favorable ones.
- Positions need to be taken so that option profits will offset the losses on the exposure in the physical market. The result of exposure in options is that total losses have been limited (to a level that the company finds affordable which is nothing but the option premium paid for purchasing option contracts), while the possibility to profit from favorable price movements still exists.

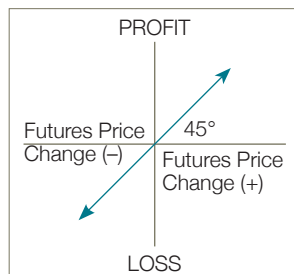
- Only the sellers of options have to pay margins. Hence producers in countries with non convertible currencies who are contemplating a hedging strategy can, by buying options to sell their products, avoid the possible problems caused by the need for foreign exchange to meet the margin deposits or maintenance margins.
- During supply crisis or uncertainty, options will be a better tool for hedging, especially by metal mining firms. Suppose the firm is not sure of the quantity it will be able to ship. Now if a fixed price deal with a seller has been concluded, and this position is covered with a futures contract, one may get struck with a loss making uncovered if the physical leg of the transaction disappears. Here option trading comes in play since the firms' losses are limited to the upfront premium being paid.

## The futures Price Curve

The futures price curve represents the prices at which the market is willing to transact at a future date, today. The curve is actually the different price points of either forward quotes or expected rates for upcoming months. The price graph can also be viewed as a graph of forward interest rate values over different time periods and is a way of evaluating the time value of money.

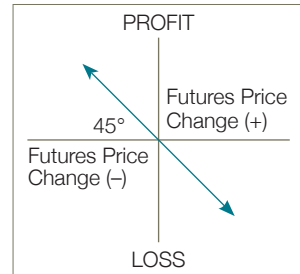
## Long Position in Futures

Taking a long position in a commodity futures contract implies buying the contract expecting prices to rise in the future. Before expiry of the futures contract, a trader has to settle the outstanding position by either closing with cash or 'squaring' off the position by selling back the original contract. If the position is closed at a price higher than the purchased price, he will receive a profit, while if the position is closed at a price lower than the purchased price, then a loss will occur. In order to close the long position, one has to take a reverse position i.e. sell the futures contract. The 'pay off' profile of a long position will appear as follows:



## Short Position in Futures

Taking a short position in a commodity futures contract implies selling the contract initially, expecting prices to fall in the future. As with the long position above, a trader has to settle the outstanding position by either closing with cash or 'squaring' off the position by buying back the original contract. If the position is closed at a price higher than the purchased price, a loss will occur. Alternatively, if the closed position is at a price lower than the purchased price, then he will generate profit. In short selling, one has to take a reverse position i.e. buy the futures contract, in order to close out his position, or complete the transaction. The Payoff profile of a short position will appear as:



## Hedging & Arbitrage

Hedging can be classified as an investment made in order to reduce the risk of adverse price movements in a security, by taking an offsetting position in the same security.

Arbitrage on the other hand means locking in profit by simultaneously entering into two or more markets. This would mean that if the relationship between spot and futures prices or between the spread prices of two futures contracts changes, then it will provide opportunity to initiate arbitrage trades. Also, the difference in equilibrium prices at two different markets will also offer arbitrage opportunities.

Finally, there should be theoretically no difference between spot and first month futures prices at expiry otherwise it will be a give additional opportunities for arbitragers. While hedging can be classified as a zero sum game as the objective is to manage price risk inherent in the trade, arbitrage is mainly an activity for seeking and securing profits by the price difference in associated market.

## Examples of Hedging:

### Commodities

**Gold:** On April 29, the jeweler is setting the price of jewelry to be sold during or after July through the catalogue he is printing. His major input expense is the cost of gold, which changes from day to day in the market. Today, the jeweler sees the following prices:

Spot gold: USD 1125 per troy ounce

Gold futures: for July delivery is USD 1150 per troy ounce. (Take the expiry date to be July 1)

**Criteria:** The price he pays for gold for jewellery in July, should not be affected by the daily price fluctuations

Scenario 1: Price Increases	
Spot Market	Futures Market
29/4 No physical Transaction	29/4 Buy a futures contract for July Delivery @ USD 1,150
1/7 The Jeweler buys from normal supplier at spot price @USD 1,200	1/7 sell back the contract to close his obligation in the futures market @USD 1,200
Bought on the spot @ USD 1,200 Less the profit from the futures @ -USD 50 Net Result as wanted on 29/4 @ USD 1,150	Sold @ USD 1,200 Bought @ USD 1,150 Profit @ USD 50

Scenario 1: Price Decreases	
Spot Market	Futures Market
29/4 No physical Transaction	29/4 Buy a futures contract for July Delivery @ USD 1,150
1/7 The Jeweler buys from normal supplier at spot price @USD 1,100	1/7 sell back the contract to close his obligation in the futures market @USD 1,100
Bought on the spot @ USD 1,100  Plus the loss from the futures @ USD 50  Net Result as wanted on 29/4 @ USD 1,150	Sold @ USD 1,100  Bought@ USD 1,150  Loss @ USD 50

As exhibited through the example, in either case, the jeweler's effective cost of gold is USD 1,150 per ounce; i.e. the futures price he "locked in" during end of April. This implies importance of using futures as an efficient tool to prevent loss in the spot market against volatile conditions, in commodities like gold.

**Currencies**

Let's take the case of a local banker who has concerns, regarding USD, to strengthen against the Euro. Let's say an investor invests Euro 100,000 in foreign markets, which gives him a return of 10% in 6 months. After earning the return, he decides to invest the proceedings in USD with the BFX. But in between Euro weakens against the dollar therefore in dollar term, he generates a negative pay off of 4.67% versus gain of 10% when invested in Euro market. Suppose he would have been aware of the hedging benefit, then against concerns of euro to weaken, he would have entered a short position in Euro-USD futures, so as to mitigate his risk. The entire matrix for this strategy can be explained as:

	Spot market	Futures Market
<b>Leg 1</b>	Current spot Rate is USD 1.5 per Euro. Therefore the current investment of Euro 100,000 in USD will be 150,000	EUR-USD contract is at USD 1.5 Price per contract is USD 18,750(1.5x12500). The appropriate number of contract he should sell is USD 150,000/ USD18,750 = 8
<b>Leg 2</b>	The spot rate is 1.3. He receives USD 110,000 from his 6 month old investment. Therefore revenue in USD after selling at this spot price will be 1.3x110,000 = USD 143,000	Buy back 8 contracts at prevailing rate of EUR-USD 1.35. Price per contract is USD 16,250(1.3x12500). Hence total value of 8 contracts will be USD 135,000

Without Hedging	Hedging with Currency futures
<p>Invests Eur 100,000(Eur = USD 1.5)</p> <p>Investment grows to Euros 110,000 after 6 months</p> <p>Offloads investment when exchange rate is EUR = USD 1.3</p> <p>Return in Eur terms = 10%</p> <p>Return in dollar terms(after Euro weakens) = -4.67%</p> <p>i.e. <math>(110,000 \times 1.3) - (100,000 \times 1.5) / (100,000 \times 1.5)</math></p>	<p>Invests and sells 8 futures contracts @ USD 1.5</p> <p>After 6 months, squares off futures position @1.35</p> <p>Return in dollar terms:</p> <p>On investment:-USD 7,000(Loss)</p> <p>On futures: USD 15,000(Gain)</p> <p>Net Return: <math>5.33\% (15,000 - 7,000) / 150,000</math></p>

Thus, hedging in currency futures has improved his return profile significantly, which otherwise would have been turned negative, had he invested without applying hedging strategy

**Index:** Selling index futures as a short hedge against an equity portfolio

An investor holds a diversified portfolio of shares, which broadly matches movements in BFX FTSE All World Emerging Market index, and he anticipates a temporary fall in the market value. But he is unwilling to liquidate his portfolio as it is a part of his long term strategy. Say, the BFX FTSE index is trading at 500, and with a contract size of 15, the contract value becomes USD 7500. So for the investor who has let's say, portfolio worth USD 1,500,000, he would be required to sell 200 contracts ( $USD\ 1,500,000/7,500$ ) to hedge his portfolio. Now let's assume the index drops to 495, i.e. by 1%. The net payoff will then be:

	Calculations	Payoff
Portfolio	$(-1\% * USD\ 1,500,000)$	-USD 15,000
Futures	$(500-495)*15*200$	USD 15,000
Net Payoff		Zero

Suppose the BFX index goes up by 5 points or by 1%, then the new index value becomes 505. Then the net payoff will be:

	Calculations	Payoff
Portfolio	$(1\% * USD\ 1,500,000)$	USD 15,000
Futures	$(500-505)*15*200$	-USD 15,000
Net Payoff		Zero

Therefore as depicted through above mentioned cases, the hedge either compensates for the loss in value of his equity portfolio, or the upside gains are being sacrificed by the presence of hedge, eventually abiding by the zero sum game theory. This example also suggests that long term investors with a decent equity portfolio can hedge against the risk for the portfolio, with no concern to liquidate the stocks he is holding.

# Chapter 5

## Introduction to Islamic markets: Sukuks

### **Shariah Concepts**

Within Shariah, there are many principles that relate to finance and trade. The majority originate from the:

1. Qur'an, the first source of Islamic jurisprudence
2. Sunnah, the way of the Prophet Muhammed
3. Hadith, the narrative records of the Prophet's life, actions and sayings

The principles that are most relevant to our understanding of Sukuk follow below.

### **The Importance of Assets**

Shariah requires that financing should only be raised for trading in, or construction of, specific and identifiable assets. Trading in 'indebtedness' is prohibited, so the issuance of conventional bonds would not be compliant as they are usually traded and represent interest based funding for general corporate purposes. A non-interest bearing loan however, could be traded if priced at par value.

Thus, all Sukuk returns and cash flows should be linked to assets purchased, or (*in the case of project finance*) those generated from an asset once constructed and not simply be income that is interest based.

For borrowers to raise compliant financing they will need to utilise assets in the structure (*note this could be equity*). These borrowers that provide the assets are commonly referred to as 'originators'. It is worth noting that equity financing is Shariah compliant and fits well with the risk/return precepts of Islam.

## ***Prohibition of Interest or ‘Riba’***

As Shariah considers money to be a measuring tool for value and not an ‘asset’ in itself, it requires that one should not be able to receive income from money (*or anything that has the genus of money*) alone. This generation of money from money (*simplistically interest*) is ‘Riba’, and is forbidden.

The implications for Islamic financial institutions and securitisations are that the trading/selling of debts or receivables for anything other than par is not permissible. However it should be noted that for some of the existing Sukuk, some Shariah boards seem to accept that, as long as such receivables are a ‘small’ portion of the overall income flows, their presence is acceptable.

## ***Prohibition of Uncertainty or ‘Gharar’***

This principle and its consequences for Sukuk is currently among the most studied in the context of Islamic finance. It is widely understood to mean uncertainty in the contractual terms and/or the uncertainty in the existence of an underlying asset in a contract.

Shariah also incorporates the concept of ‘Maslahah’ or ‘Public benefit’, denoting that, if something is overwhelmingly in the public good, it may yet be transacted – and so the hedging or mitigation of avoidable business risks, may fall into this category but there is still much discussion to come.

## ***Evolution of Shariah and ‘Ijtihad’***

In recent years, there has been a significant increase in the economic and intellectual resources devoted to understanding Islamic finance and this is resulting in continuing debate amongst Shariah scholars.

This concept is recognised in Islam and is called ‘Ijtihad’. This literally means ‘effort’, but is used in the context of Islamic scholars and their ‘efforts’ to study and reinterpret the Islamic sources of jurisprudence mentioned above where there is no universally clear directive. For investors, arrangers and issuers this ‘evolution’ has an impact on the nature of Sukuk structures and their possibilities.

## **Shariah Boards**

Islamic Financial institutions and funds typically have a Shariah Board that monitors transactions and operations to ensure compliance with Shariah. These boards are staffed with Shariah scholars who are regarded as expert in Islam, particularly as it relates to finance. Given that Shariah is core to the operations of any Islamic financial institution, these boards have significant authority regarding investment decisions and potential financings (*which must all be Shariah compliant*).

## **Interaction with Legal Environment**

Like transactions in any new jurisdiction, there may be a lack of precedent and uncertainty regarding matters of law. Shariah is similar in that it introduces a new type of ‘legal’ concern, which is unlikely to be quantifiable for the purposes of cash flow analysis, but on which opinions must be provided if there are any material and contingent credit risks.

It is worth noting that for the benefit of the global investor community, many of existing Sukuk transactions are governed by the English or the New York law due to their ‘creditor friendly’ nature. The consequences of Shariah non-compliance or disputes should be specified in advance in order to minimise exposure to such risk, with one solution being that, if both parties agree at the outset that the transaction is Shariah-compliant, they waive the right to dispute it in the future.

## **Islamic Contracts**

Islamic Finance itself is not a recent phenomenon but has developed over many hundreds of years. Over that time a variety of different contractual instruments have become well established as common ways of financing, and been given the green light by Islamic scholars tasked with developing Islamic jurisprudence and interpreting the principles laid down in (*most importantly*) the Quran. Traditionally these instruments have formed the basis for commercial banking, although as we will see later they are now being used as the basis for many Sukuk and hence are being translated into the investment banking arena.

Before delving into the anatomy of Sukuk we will briefly touch on some of the most common contracts in Islamic Finance, which form the building blocks of Sukuk. Given the Shariah restrictions on the trading of indebtedness, the contracts have been divided into two groups: those which are tradable at a market price and those that can only be transferred at face value. Naturally the ones in the former group are the most important for Sukuk, although the ones in the latter do occur within some Sukuk – hence their inclusion here.

### ***Contracts which can be transferred at a negotiated price***

1. Ijara – an Ijara is essentially a lease contract whereby assets (*or the usufruct of an asset*) are leased out with the lessor retaining all the rights and responsibilities that go with ownership. Ijara represents the typical Islamic mortgage structure. As Ijara bonds represent ownership in well defined securities they can be freely traded in the secondary market at a market price.
2. Mudaraba – a Mudaraba can be thought of as an asset management agreement whereby one party provides finance to another party and the second party (*known as the mudarib*) invests the capital according to some pre-agreed business plan. The profit of the business is distributed according to a pre-determined ratio, but any financial loss is incurred only by the finance providers.
3. Musharaka – this agreement is somewhat similar to that of a Mudaraba, but in this case both parties provide capital (*or assets*) and both may be involved in the management of the assets. Essentially a Musharaka is a joint-venture. As with the Mudaraba, the profit of the business is distributed according to a pre-determined ratio, however, in a Musharaka the loss is distributed in proportion to each partner's share of the capital.

### ***Contracts only transferable at face value***

1. Murabaha – the most common instrument in Islamic Finance, the Murabaha is essentially a tool for financing the purchase of specific assets. Under the contract the counterparty providing the financing purchases the required assets and sells them to the buyer at a pre-agreed marked-up price. The payment can be settled in installments or as a lump sum within an agreed period.

2. Istisna'a – a contract which exchanges an upfront payment for the future delivery of an asset. An Istisna'a contract requires that the asset is made to order. Full payment need not necessarily be made in advance and can be phased. This is the most common form of financing for construction projects.

## **Structure Analysis**

Sukuk are often thought of as the Islamic equivalent of bonds and while such a comparison captures many of the characteristics of Sukuk, it is important to understand to what extent this comparison is valid. In essence, Sukuk exist as a means of translating established Shariah compliant financing tools into a form which in many ways mimics that of traditional bonds, and by extension provides the degree of standardisation, transparency, transferability and liquidity which has made the international bond markets such a powerful and efficient vehicle for financing and investing.

It is important to note that while Shariah is clearly central to the concept of Sukuk, it does not generally act as the legal basis for the securities. The majority of international Sukuk are governed by English or New York law but are structured in a way as to be Shariah compliant, for the benefit of issuers and investors who seek to manage their affairs in accordance with Shariah principals.

It is somewhat misleading to think of Sukuk as being designed specifically for Muslim investors (*and/or issuers*). Certainly an entity need not be Islamic in order to issue or to buy a Sukuk. A better way to think of a Sukuk is as a conventional bond, but one which has been constructed in a way as to be Shariah compliant.

A useful analogy can be found in the food industry. Many mass produced foods are manufactured in a way that allows them to be certified as halal, kosher, organic etc. Such certification is clearly designed for certain groups of consumers, but it does not prohibit other groups from consuming the product. Indeed, some food lines are only produced in such certified form as it is cheaper than producing several different lines.

The first Sukuk were issued in the Malaysian domestic market in the mid-1990s and since then over USD 90 billion have been issued globally. Sukuk can be divided into two main groups: Malaysian domestic Sukuk (*primarily ringgit-denominated and governed by Malaysian law*) and international

Sukuk (*being primarily USD / GCC currency denominated and governed by English or US law*). Although the former group is the older and larger of the two, the market for international Sukuk is growing rapidly and it is this group that forms the focus of this article.

Although the international Sukuk market is a comparatively young market, the first international Sukuk having been issued in 2001, the industry is rapidly approaching critical mass. The main source of issuance is from corporate / quasi-sovereign issuers in the GCC countries – in particular from the UAE – looking to finance real estate development / lending.

The cash flows and credit risk of a Sukuk are remarkably similar to those of a conventional bond. As a result, the specific way in which a Sukuk has been constructed so as to be Shariah compliant is generally not of importance to an investor who is not concerned by its Shariah compliance.

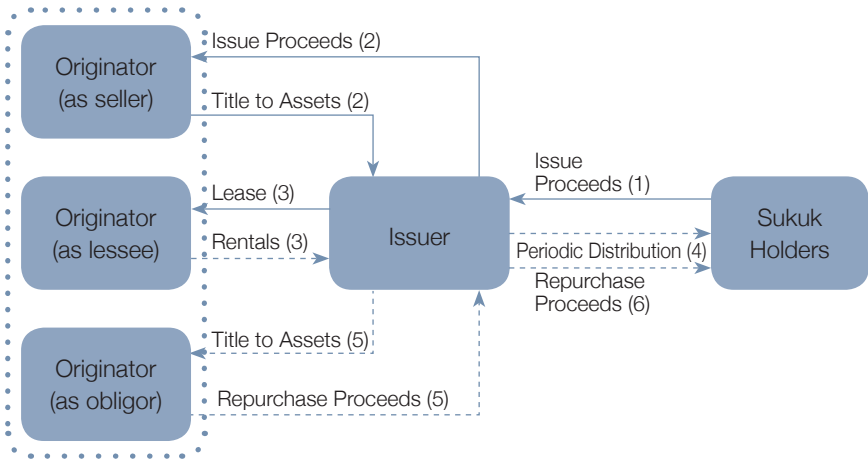
In order for a Sukuk to be considered Shariah compliant the issuer will apply to a Shariah board of Islamic scholars. If the board considers the Sukuk to be Shariah compliant it issues a pronouncement (*a fatwa*) to certify its decision. This fatwa is similar to a legal opinion in that it is (*generally*) not legally binding and other scholars may disagree with the decision. For this reason, many Sukuk issuers (*particularly those within the GCC*) will work with a small group of Shariah scholars who are very familiar with Sukuk and whose judgments are widely respected in the field of Islamic jurisprudence.

### **Sukuk-al-Ijara**

Sukuk based on Ijara (*sale and leaseback*) agreement are formally known as Sukuk-al-Ijara. The exhibit below illustrates the typical structure of a Sukuk-al-Ijara. In this structure the issuer of the Sukuk – often a SPV – uses the proceeds of the issue to purchase the specific assets from the originator. It then leases them back to the originator (*or often to an affiliate of the originator*).

The lease payments made by the originator are then passed on to the Sukuk holders as periodic distributions. At the end of the specified term, the originator repurchases the assets from the issuer, with the repurchase proceeds being passed on by the issuer to the Sukuk holders, in effect redeeming the Sukuk.

## Typical structure of Sukuk-al-Ijara



1. The issuer - usually an SPV - issues Sukuk to Sukuk holders in exchange for proceeds.
2. The issuer purchases title to assets from the originator
3. The Originator enters into a lease agreement with the issuer to lease the assets
4. The originator makes periodic rental payments on the lease to the issuer which the issuer passes on to the Sukuk holders.
5. At maturity (or upon a dissolution event ) the issuer sells the assets back to the originator (purchase undertaking )
6. The issuer passes the proceeds on to the Sukuk holders and the SPV is dissolved.

The rental payments on the lease agreement (*i.e. the periodic distribution received by the Sukuk holders*) are generally structured as semi-annual payments often with a rate determined by LIBOR plus a specified margin.

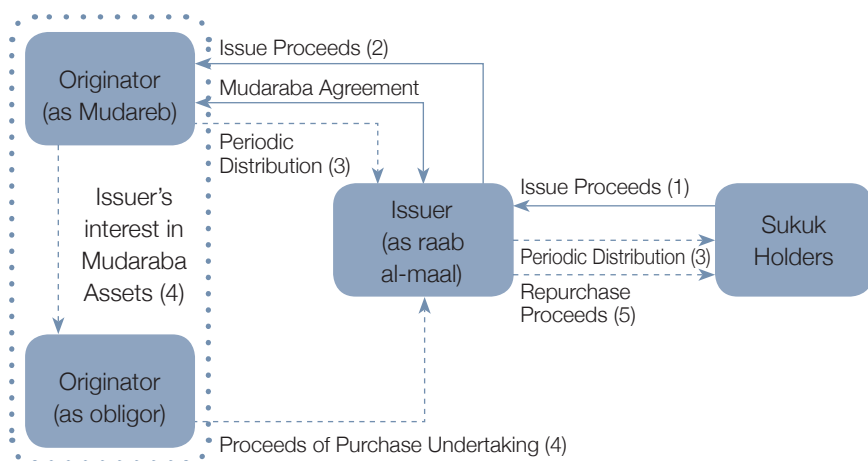
The repurchase of the assets by the originator from, in effect, the Sukuk holders, is governed by a purchase undertaking which is invoked at the scheduled dissolution date (*i.e. the maturity date*) or on the occurrence of a dissolution event. Such dissolution events generally include many of the clauses which are analogous to events of default on a conventional bond. As a result of the purchase undertaking, such events effectively result in an acceleration of the Sukuk, much like a conventional bond and would convert the trust certificates into a debt claim on the originator.

The underlying assets which are so essential to a Sukuk-al-Ijara transaction are often land parcels, but can also be specific buildings or other property, or even simply the rights to use the property (*a more recent development*). The size of the Sukuk is restricted to the value of the assets being transferred from the originator to the special purpose vehicle, and once the assets have been used they cannot be used for another purpose until the Sukuk has matured – this implies some loss of flexibility on the amount of paper that can be issued by an individual borrower, though in practice this has not yet posed serious constraints.

### ***Sukuk-al-Musharaka and Sukuk-al-Mudaraba***

Sukuk based on Musharaka or Mudaraba agreements are very similar in structure, both entailing an agreement with a business plan with profit-sharing terms. The exhibit given below illustrates the typical structure of a Sukuk-al-Mudaraba.

## Typical structure of Sukuk-al-Mudaraba



1. The issuer - usually an SPV - issues Sukuk to Sukuk holders in exchange for proceeds.
2. The issuer enters into a Mudaraba agreement with the originator (acting as the ‘Mudareb’)
3. Typical Mudaraba agreement
  - a. The Mudareb invests the proceeds in accordance with the agreed business plan.
  - b. The profit generated by the business plan is shared between the issuer and the Mudareb according to a pre-agreed schedule
  - c. If the issuer’s profit share exceeds the amount required for the periodic distribution, the Mudareb retains the difference.
  - d. If the issuer’s profit share falls short of the amount required for the periodic distribution, the Mudareb supplements the difference.
4. The Mudareb makes periodic payments to the issuers which are passed on to the Sukuk holders.
5. The originator (as obligor) purchases all of the issuer’s ownership interest in the Mudaraba assets
6. The issuer passes the proceeds on to the Sukuk holders and the SPV is dissolved.

In this structure the SPV (*the issuer of the Sukuk*) acts as raab al-maal and enters into a Mudaraba agreement with the originator (*acting as the Mudareb*). The specific nature of the agreement varies from Sukuk to Sukuk, but generally it will entail the Mudareb investing the proceeds provided by the SPV (*obtained from the issue of the Sukuk*) according to some agreed business plan.

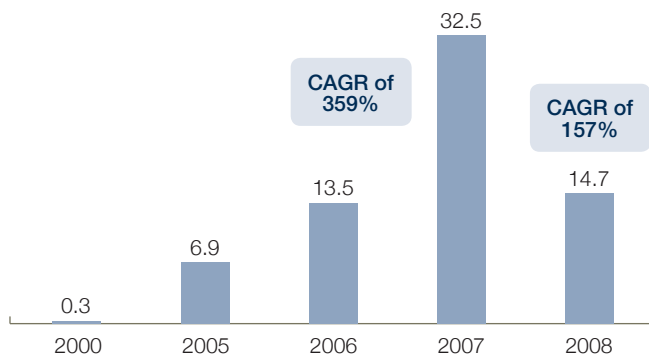
The profits-sharing terms of the agreement are often heavily weighted in favour of the SPV (*often 99% to 1%*). However, if the resultant share of the profits exceeds the periodic distribution amount specified in the Sukuk terms, the issuer foregoes the excess. Alternatively, if the share of profits is less than the periodic distribution amount, the Mudareb is committed to fund the short-fall by extending financing to the issuer.

As with Sukuk-al-Ijara, the redemption of the notes is achieved by means of a purchase undertaking by the obligor. However, in the case of a Sukuk-al-Mudaraba, the obligor purchases the issuer's ownership interest in the Mudaraba assets (*rather than purchasing assets owned by the issuer*). The purchase price for the purchase undertaking is equal to the aggregate principal amount of the certificates outstanding. The issuer then passes the proceeds of this purchase on to the Sukuk holders, effectively redeeming the Sukuk.

The primary difference between Sukuk-al-Mudaraba (*described above*) and Sukuk-al-Musharaka are that the joint venture embedded in the latter entails the originator providing a share of the capital (*and/or assets*), in addition to the finance provided by the issuer (*ultimately by the Sukuk investors*), rather than simply providing the management expertise.

Compared to Ijara structures, both these Sukuk variants permit greater flexibility in the cash to be raised relative to the magnitude of asset transfer, as the amount of cash to be raised does not need to correspond to the assets available for transfer into the Mudaraba/Musharaka.

## Global Sukuk Issuance (USD Billions)



The market reached critical mass in 2007 as gross issuance increased by 139% to reach the level of USD 32.5 billion on account of the significant increase in number of issues and moderate increase in the median size of issues. The highlight deals of the period were an USD 2 billion five-year Sukuk-al-Musharaka from the Jebel Ali Free Zone (*Government of Dubai*), a USD 2.1 billion Sukuk from SABIC with a tenor of 20 years and a USD 1.5 billion Sukuk-al-Mudaraba from DP World (*Government of Dubai*) with a tenor of 10 years.

The year 2008 witnessed a decline in the amount of Sukuk issuance, after years of massive growth. Gross issuance decreased by 54.6% in 2008 to USD 14.7 billion, as compared to USD 32.5 billion in 2007. Despite that, the number of global Sukuk issues increased from 129 in 2007 to reach 165 in 2008. The decline in Sukuk issuance is due to the credit crunch that forced investors to step aside from the fixed income market, including the Islamic one. The crucial role played the global financial crisis in halting the momentum of the Islamic bond markets is evident from the quarterly issuance analysis. Issuances in the fourth quarter of 2008 were weak when compared with other quarters in the same year. In the first three quarters of last year, the number of Sukuk issuances was 139 raising USD 14.3 billion, averaging USD 4.8 billion per quarter. On the other hand, total issuance was just USD 0.4 billion in Q4 2008.

## Sukuk Secondary Markets

While the Sukuk market is developing rapidly, it remains primarily a market where holders tend to keep bonds to maturity with limited secondary market trading. As the following exhibit clearly shows, the lack of secondary market liquidity in the Sukuk market is multi-faceted in nature.

### Reasons Behind Illiquidity In Sukuk Market



Source: BFX Analysis

#### Strong Demand

Relatively few conventional global investment banks and investors have been able to gain exposure to the Sukuk market. That's partly because of the small size of issuance, but is also due to strong demand from Islamic investors keen to put their cash to work in investments that comply with Shariah.

This situation was particularly acute from 2005 to mid-2008 as high oil prices and consequent speculation regarding currency revaluation induced a liquidity glut in the Gulf Cooperation Council (GCC) region. The fact that Dubai Ports World's issue of a \$2.8 billion Sukuk was more than four times oversubscribed was a living testimony to the strong inherent demand in the system.

The illiquidity in the Sukuk market is quite different from the conventional market as it is the result of too much money chasing too few instruments in the case of Sukuk markets. This is amply demonstrated by the fact that there are around USD 500 billion of Islamic assets and currently only around USD 40 billion in Sukuks in the Middle East.

This demand is likely to continue in the near future on account of the growing 'Islamification' of the financial systems in the GCC countries and the lack of alternatives available to the Islamic banks to invest their surplus liquidity.

### ***Buy & Hold Mentality***

The buy-and-hold mentality of the vast majority of institutional investors in the GCC region has also prevented a secondary market trading from emerging. Middle Eastern banks hold the majority portion of the Sukuks outstanding. In the period 2005 to mid-2008, most of these banks were flush with liquidity and were desperate for assets, so there was hardly any incentive for them to trade these assets. Instead, it was much preferable to keep them in the portfolio.

### ***Fragmented Markets***

Lack of standardisation regarding structures and legal documentation among the various GCC states has led to the creation of a fragmented marketplace. Each new bond in the GCC region must comply with the issuing country's interpretation of Shariah - something that has led to the emergence of around 14 different Sukuk structures.

### ***Lack Of Repo Market***

A well-functioning Repo market is a pre-requisite in guaranteeing good secondary market liquidity. Malaysia is a case in point in this regard. Other countries have attempted to launch their own repo markets, while still meeting the requirements of their own Shariah scholars.

Until Islamic banks are able to make use of short-term funding markets offering money at a variety of tenors, they will remain vulnerable to a bank run scenario as the predominance of asset-based financing and specialised lending products found on the typical Islamic bank balance sheet serves to lengthen the liquidity gaps because exits from these transactions are not

always agreed in advance. Thus, a repo market is a prime determinant of financial market stability.

### ***Sukuk Market – Future Structural Drivers***

The Sukuk market experienced a dreadful year in 2008, largely as a result of deteriorated global market conditions. For instance, the Gulf Cooperation Council (GCC) countries, one of the two key markets for Islamic finance, experienced a major shift in liquidity flows. The liquidity inflow into the Gulf – mainly into the United Arab Emirates (UAE) and Saudi Arabia – started to reverse from the second half of 2008 when investors betting on the revaluation of the domestic currencies left these markets. This led to a significant downturn in local and regional debt and equity markets, including the Sukuk market.

Overall, total Sukuk issued globally dropped to USD 14.7 billion in 2008 from USD 32.5 billion in 2007. The appetite for Sukuk declined dramatically, along with that for international debt issuances, loan syndications, and other wholesale debt.

Sukuk constitute an expansion of the Emerging Market asset class and provide a unique opportunity to gain exposure to the previously difficult to access Middle Eastern region and to diversify portfolios. However, how fast and furious the growth of the Sukuk asset class will be is likely to depend on the ability to continue expanding the investor base, to improve liquidity and transparency, to create a more unified regulatory framework, and to move to some standardization in the structures being used (*at present each transaction is different*).

# Chapter 6

## Exchange Glossary

### A

**Abandon:** To elect not to exercise or offset a long option position.

**Aggregation:** The principle under which all securities/futures positions owned or controlled by one trader (or group of traders acting in concert) are combined to determine reporting status and compliance with speculative position limits.

**Allowances:** The discounts or premiums allowed for grades or locations of a commodity lower or higher than the par or basis grade or location specified in the futures contract. See Differentials.

**All or None** - Refers to the order requests for a broker to fill an order completely at a predetermined price or not at all. Refers to both buy and sell orders.

**American Option:** An option contract that may be exercised on any day up to and including the expiry date. (See Option)

**American Depositary Receipt (ADR)** - Security representing the ownership interest in a foreign company's common stock. ADRs allow foreign shares to be traded in the United States much like any other security.

**Arbitrage:** simultaneously buying and selling a financial asset or commodity in different markets to take advantage of price differentials.

**Arbitration:** The procedure available to customers for the settlement of disputes. Brokers and exchange members are required to participate in arbitration to settle disputes. Arbitration is available through the exchanges and the regulator for that exchange/jurisdiction.

**Asset classes** - Categories of assets, such as stocks, bonds, real estate, derivatives and foreign securities.

**Assignable Contract:** A contract that allows the holder to convey his rights to a third party. Exchange-traded contracts are not assignable.

**Ask or asking price:** the price at which a dealer offers to sell.

**Assay:** To test a metal for purity to ascertain the fineness and weight of a precious metal.

**Ask Rate** - The lowest price that shares will be offered for sale, such as the bid/ask spread in the foreign exchange market.

**Ask Size** - The number of shares a seller is willing to sell at his/her ask rate.

**Assignment:** Options are exercised through the option purchaser's broker, who notifies the clearinghouse of the option's exercise. The clearinghouse then notifies the option seller that the buyer has exercised the right attached to that option. When options on futures are exercised, the buyer of a call option is assigned a long futures contract, and the seller receives the corresponding short position. Conversely, the buyer of a put option is assigned a short futures contract upon exercise, while the seller receives the corresponding long position.

**At the market:** When issued, this order is to buy or sell a security/futures or options contract as soon as possible at the best possible price. See Market order.

**At-the-money:** An option is at-the-money when its strike price is equal, or approximately equal, to the current market price of the underlying asset/futures contract.

**Au:** The chemical symbol for gold, originating from the Latin word "aurum" meaning "shining dawn" after Aurora, the goddess of dawn.

**Automatic Exercise:** A provision in an option contract specifying that it will be exercised automatically on the expiration date if it is in-the-money by a specified amount, absent instructions to the contrary.

**Authorized User** - A person authorized by the member broker and recognized by the exchange to use the Trading Work Station for execution of orders received by his/her clients.

**Away From the Market** - When the bid on an order is lower (or the ask price is higher) than the current market price for the security/contract.

## B

**Backwardation:** A market condition where the forward price is lower than the nearby price.

**Back Months:** Also known as “back contracts” are the futures or futures options contracts that are the farthest from delivery/expiration.

**Back Office:** The department in the financial institution that processes the post trade activities and handles delivery, settlement, and regulatory procedures.

**Back pricing:** Fixing the price of a commodity for which the commitment to purchase has been made in advance. The buyer can fix the price relative to any monthly or periodic delivery using the futures markets.

**Bank Rate -** The rate at which a central bank is prepared to lend money to its domestic banking system.

**Bar chart:** A graphic representation of price movement disclosing the high, low, close, and sometimes the opening prices for the day. A vertical line is drawn to correspond with the price range for the day, while a horizontal “tick” pointing to the left reveals the opening price, and a tick to the right indicates the closing price. After days of charting, patterns start to emerge, which technicians interpret for their price predictions.

**Bar:** Typical gold product, either for trading or for accumulation. Bars come in a variety of shapes weights and purities and different bars are favored in different parts of the world. See Bullion, Tola, Tael, Kilo-bar

**Basis:** The difference between the cash price and the futures price of a commodity.  $CASH - FUTURES = BASIS$ . Basis also is used to refer to the difference between prices at different markets or between different commodity grades.

**Basis Convergence -** The process whereby the basis tends towards zero as the contract expiry approaches.

**Basis Risk:** The risk associated with an unexpected widening or narrowing of basis between the time a hedge position is created and the time that it is reversed.

**Beta:** A measure correlating stock price movement to the movement of an index. Beta is used to determine the number of contracts required to hedge with stock index futures or futures options.

**Bear market:** a market in which the primary trend is downward.

**Beta (Beta Coefficient):** A measure of the variability of rate of return or value of a stock or portfolio compared to that of the overall market, typically used as a measure of riskiness.

**Bid-Ask Spread:** The difference between the bid price and the ask or offer price.

**Bid:** the price at which a dealer or other prospective buyer is willing to buy. See Spread.

**Black-Sholes Model:** An option pricing model initially developed by Fischer Black and Myron Scholes for securities options and later refined by Black for options on futures.

**Block Trade:** A large transaction that is negotiated off a market and then executed/notified on an exchange's trading facility, as permitted under exchange rules.

**Bollinger Bands** - An indicator that allows users to compare volatility and relative price levels over a period time. This indicator consists of three bands designed to encompass the majority of a security's price action - a simple moving average in the middle; an upper band 2 standard deviations away from the simple moving average (usually set to a time frame of 20); and a corresponding lower band that is also 2 standard deviations away from the moving average. Since the band width is a function of standard deviation, assets with greater volatility will have wider bands.

**Bonds** - Bonds are debt instruments used to raise capital, which are issued for periods greater than one year. Bondholders are lending money to companies and governments, at the end of which they will be paid a specified interest rate. Bond prices are inversely related to interest rates, as interest rates rise, bond prices fall. There are numerous types of bonds, including treasury bonds, notes, and bills; municipal bonds and corporate bonds.

**Broker:** An agent who executes trades (buy or sell orders) for customers. He receives a commission for these services.

**Brokerage** - Commission charged to the investor by a broker for executing trades/clearing and settlements/any other related services.

**Brokerage house** - A firm that handles orders to buy and sell securities/futures and options contracts for customers.

**Bull market:** a market in which the primary trend is upward.

**Bullion:** Precious metals in the form of bars that are usually at least 99.5% pure. Originally meaning 'melting place' or 'mint', probably from the French bouillon or boiling.

## C

**Call:** an option granting the option buyer the right, but not the obligation, to buy the underlying asset or a financial security at a predetermined price (the strike price) on or before a specified date in the future.

**Calendar Spread:** (1) The purchase of one delivery month of a given futures contract and simultaneous sale of a different delivery month of the same futures contract; (2) the purchase of a put or call option and the simultaneous sale of the same type of option with typically the same strike price but a different expiration date.

**Carrying Charges:** Cost of storing a physical commodity or holding a financial instrument over a period of time. These charges include insurance, storage, and interest on the deposited funds, as well as other incidental costs.

**Cash Commodity:** The physical or actual commodity as distinguished from the futures contract, sometimes called spot commodity or actuals.

**Cash Market:** The market for the cash securities/foreign currency/commodity (as contrasted to a futures contract)

**Cash Settlement:** A method of settling certain futures or option contracts whereby the seller and the buyer exchange the difference in the cash value of the underlying assets like securities/ indices/commodity/etc at the time of settlement and the different in the contract value when traded according to a procedure specified in the contract.

**Circuit Breakers:** A system of harmonized trading halts and/or price limits on securities and derivative markets designed to provide a cooling-off period during large, intraday market movements.

**Clearing Corporation/ Clearing House:** Undertakes the clearing and settlement of funds and securities/assets on the settlement date for a corresponding trade/contract.

**Clearing Member:** A member of a clearing corporation. All trades of a non-clearing member must be processed and eventually settled through a clearing member.

**Closing-Out:** Liquidating an existing long or short position with an equal and opposite transaction.

**Closing Price:** The price recorded during trading that takes place in the final period of a trading session's activity that is officially designated as the "close."

**Commodity Price Index:** Index or average, which may be weighted, of selected commodity prices, intended to be representative of the markets in general or a specific subset of commodities, e.g., metals, agriculture, etc

**Contract Size:** The actual amount of assets/underlying/commodity represented in a contract.

**Counterparty Risk:** The risk associated with the financial stability of the party entered into contract with. Forward contracts impose upon each party the risk that the counterparty may default, but futures contracts executed on a designated exchange are guaranteed against default by the clearing corporation.

**Contango Market:** A market condition where the forward price is higher than the nearby price

**Cover:** To offset a short position in securities, futures or options.

**Covered Option:** A short call or put option position that is covered by the sale or purchase of the underlying futures contract or other underlying instrument. For example, in the case of options on futures contracts, a covered call is a short call position combined with a long futures position. A covered put is a short put position combined with a short futures position.

**Credit Default Swap:** A bilateral contract traded usually over-the-counter (OTC) in which the seller agrees to make a payment to the buyer in the event of a specified credit event in exchange for a fixed payment or series of fixed payments; the most common type of credit derivative; also called credit swap; similar to credit default option.

**Currency Swap:** A swap that involves the exchange of one currency (e.g., U.S. dollars) for another (e.g., Japanese yen) on a specified schedule.

## D

**Daily Price Limit:** The maximum price advance or decline from the previous day's settlement price permitted during one trading session, as fixed by the rules of an exchange.

**Day Order:** An order that expires automatically at the end of each day's trading session.

**Day Trader:** A trader, often a person with exchange trading privileges, who takes positions and then offsets them during the same trading session prior to the close of trading. They look for small profits and offset the positions even in small losses without holding for a long time

**Delivery:** The transfer of the asset from seller to buyer. This does not necessarily involve physical shipment but can be done on paper with the asset remaining in the designated depository/warehouse/ vaults.

**Delta:** The proportion by which the price of an option changes in response to a change in the price of the underlying asset. The delta measures the sensitivity of the option's price to changes in the asset's price.

**Delivery:** The tender and receipt of the actual security/commodity, the cash value of the commodity, or of a delivery instrument covering the securities/commodity (e.g., depository transfer receipts warehouse receipts or shipping certificates), used to settle a futures contract.

**Delivery Date:** The date on which the security/commodity or instrument of delivery must be delivered to fulfill the terms of a contract.

**Delivery Month:** The specified month within which a futures contract matures and can be settled by delivery or the specified month in which the delivery period begins.

**Delivery Notice:** The written notice given by the seller of his intention to make delivery against an open short futures position on a particular date. This notice, delivered through the clearing corporation, is separate and distinct from the warehouse receipt or other instrument that will be used to transfer title.

**Delivery Option:** A provision of a futures contract that provides the seller or buyer with flexibility to opt for physical delivery or cash settle the open positions at expiry.

**Derivative:** A financial instrument, traded on or off an exchange, the price of which is directly dependent upon (i.e., “derived from”) the value of one or more underlying securities, equity indices, debt instruments, commodities, other derivative instruments, or any agreed upon pricing index or arrangement (e.g., the movement over time of the Consumer Price Index or freight rates). Some of the common forms of derivative instruments are forwards, futures, options, swap, etc.

## **E**

**Electronic Trading:** A trading facility that operates by on an electronic platform using telecommunications network instead of a trading floor and maintains an automated audit trail of transactions.

**European option:** An option that may be exercised only on the date of expiry.

**Exchange for Physical (EFP):** A mechanism that allows a client to swap the long or short futures contract through the physical/spot market. The differential in the price between the spot and the futures contract is often itself referred to as the EFP.

**Exchange Rate:** The price of one currency stated in terms of another currency.

**Exercise Price (Strike Price):** The price, specified in the option contract, at which the underlying futures contract, security, or commodity will move from seller to buyer.

**Expiration Date:** The date on which an option contract automatically expires; the last day an option buyer may exercise the right associated with the option.

**Exercise notice:** A notice tendered by a brokerage firm to the Clearing Corporation for exercising the right attached to an option.

**Exchange-Traded Fund (ETF):** An Exchange-Traded Fund (ETF) is an open-ended investment instrument issued by an investment company that trades on a stock exchange. By investing in the components of an index or in the commodity, the ETF makes available to small investors the opportunity to invest in the index or commodity. For example, an ounce of gold may cost \$1100.00, but a share in gold ETF may cost \$110.00, making it a more viable investment for many more people.

## F

**Fill:** The execution of an order.

**Fill or Kill Order (FOK):** An order that demands immediate execution or cancellation. Typically involving a designation, added to an order, instructing the broker to offer or bid (as the case may be) one time only; if the order is not filled immediately, it is then automatically cancelled.

**Final Settlement Price:** The price at which a cash-settled futures contract is settled at maturity, pursuant to a procedure specified by the exchange.

**Fixed Exchange Rate:** Official rate set by monetary authorities for one or more currencies. In practice, even fixed exchange rates are allowed to fluctuate between definite upper and lower bands, leading to intervention by the central bank.

**First-in-first-out (FIFO):** A method of valuing the costs of goods sold that uses the cost of the oldest item in inventory first.

**F.O.B. (Free On Board):** Indicates that all delivery, inspection and elevation, or loading costs involved in putting commodities on board a carrier have been paid.

**Forced Liquidation:** The situation in which a customer's account is liquidated (open positions are offset) by the brokerage firm holding the account, usually after notification that the account is under-margined due to adverse price movements and failure to meet margin calls.

**Force Majeure:** A clause in a supply contract that permits either party not to fulfill the contractual commitments due to events beyond their control. These events may range from strikes to export delays in producing countries.

**Forward Market:** The over-the-counter market for forward contracts.

**Forward Months:** Futures contracts, currently trading, calling for later or distant delivery. See Back Months.

**Forward Rate:** The rate at which a foreign exchange contract is struck today for settlement at a specified future date which is decided at the time of entering into the contract.

**Forward contract:** A contract entered into by two parties who agree to the future purchase or sale of a specified commodity. This differs from a futures

contract in that the participants in a forward contract are contracting directly with each other, rather than through a clearing corporation. The terms of a forward contract are negotiated between the buyer and seller, while exchanges set the terms of futures contracts.

## **G**

**Give up:** An order executed by one brokerage house, but cleared by another house at the request of the customer.

**Good Delivery Standard:** The specification to which a gold bar must conform in order to be acceptable on a certain market or exchange. Good delivery for the London Bullion Market is the internationally accredited good delivery standard. A good delivery bar for London weighs between 350 and 430 ounces (gold content), of minimum purity 99.5% (two nines five).

**Good Till Week Order (GTW):** Order which is valid only for the week in which it is placed.

**Good Till Canceled Order (GTC):** An order which is valid until cancelled by the customer.

## **H**

**Haircut:** In calculating the value of assets for purposes of capital, segregation, or margin requirements, usually a percentage reduction from the stated value (e.g., book value or market value) to account for possible losses in value that may occur before assets can be liquidated.

**Hallmark:** A mark or stamp on a bullion item or precious metals jewelry that identifies the producer and sometimes the karat fineness.

**Hedging:** The use of derivatives instruments to protect against price risk. A hedge transaction has the specific intent of protecting an existing or anticipated physical market exposure from unexpected or adverse price fluctuations.

**Hedge Ratio:** Ratio of the value of futures contracts purchased or sold to the value of the cash assets being hedged, a calculation necessary to minimize basis risk.

**Historical Volatility:** A statistical measure of the change in price over a specified time frame. Higher volatility suggests that the asset is more likely to trade within a wider range, while reduced volatility suggests the asset will trade in a tighter range.

**High/Low** - Refers to the daily traded high and low price.

**Holder:** The purchaser of an option. Also known as the option buyer

## I

**Implied Volatility:** The volatility of a futures contract, security, or other instrument as implied by the prices of an option on that instrument, calculated using an options pricing model.

**Initial Margin:** Initial deposit required to be maintained with the clearing corporation to open a new position in a derivatives contract.

**In-The-Money:** A term used to describe an option contract that has a positive value if exercised.

**Intrinsic Value:** A measure of the value of an option or a warrant if immediately exercised, that is, the extent to which it is in-the-money. The amount by which the current price for the underlying asset or futures contract is above the strike price of a call option or below the strike price of a put option for the underlying asset or futures contract.

**Inverted Market:** A futures market in which the nearer months are selling at prices higher than the more distant months; a market displaying “inverse carrying charges,” See Backwardation.

**Initial margin requirement:** When buying securities on margin, the proportion of the total market value of the securities that the investor must pay for in cash/collateral.

## J

**Junk bond:** Also called a high-yield bond, one with a quality rating below triple B.

## K

**Karat:** A measure of the purity or fineness of a precious metal scaled from one to 24. For example, 24-karat gold (or pure gold) has at least 999 parts pure gold per thousand, 18-karat gold has 750 parts pure gold and 250 parts alloy, while 12-karat gold has 12 parts pure gold and 12 parts alloy.

**Kilobar:** A bar weighing one kilogram or approximately 32.1507 troy ounces.

**Knock-in Option:** An option the existence of which is conditional upon a pre-set trigger price trading before the option's designated maturity. If the trigger is not touched before maturity, then the option is deemed not to exist.

**Knock-out Option:** - An option the existence of which is conditional upon a pre-set trigger price trading before the option's designated maturity. The option is deemed to exist unless the trigger price is touched before maturity.

## L

**Last Notice Day:** The final day on which notices of intent to deliver on futures contracts may be issued.

**Last Trading Day:** Day on which trading ceases for the maturing (current) delivery month.

**LBMA:** The London Bullion Market Association acts as the coordinator for activities conducted on behalf of its members and other participants in the London Bullion Market.

**Leverage** - The use of a small amount of assets to control a greater amount of assets.

**Limit order:** An order placed by a client for a transaction to be executed at a specified price. The order is triggered if the market touches or betters that price.

**LIBOR:** The London Interbank Offered Rate. The rate of interest at which banks borrow funds from other banks, in marketable sizes, in the London interbank market.

**Limit (Up or Down or Daily Price Range (DPR)):** The maximum price advance or decline from the previous day's closing price permitted during one trading session, as fixed by the rules of an exchange.

**Lot:** - The term used to describe a designated number of contracts.

**Long Position:** - One who has bought a futures or option contract to establish a market position and who has not yet closed out this position through an offsetting procedure. The opposite of short.

## **M**

**Market Maker:** A dealer who makes a market, i.e. quotes bid and offer prices to counterparties and is prepared to deal at those prices.

**Market Order:** An order to buy or sell a futures contract at whatever price is obtainable at the time it is entered.

**Mark-to-Market:** Part of the daily cash flow system used by the clearing corporation for open positions in futures contracts to maintain a minimum level of margin equity by calculating the gain or loss in each contract position resulting from changes in the price of the futures contracts at the end of each trading session. These amounts are collected/paid to the brokers losing/gaining money. The open positions are carried forward at the latest closing price.

**Metric ton:** In the metric system, the unit of weight equal to 1,000 kilograms or 32,150.7 troy ounces. A metric ton is equivalent to 2,204.61 pounds.

**Minimum Price Fluctuation (Minimum Tick):** Smallest increment of price movement possible in trading a given contract.

**Minimum Tick:** See Minimum Price Fluctuation.

## **N**

**Naked Option:** The sale of a call or put option without holding an equal and opposite position in the underlying instrument.

**Net Position:** The difference between the open long contracts and the open short contracts held by a trader in any one commodity.

## **O**

**Offer:** Indicates a willingness to sell a securities/derivatives contract at a given price. (See bid.)

**Option assignment** - The random selection of an option writer to take a futures position when an option is exercised.

**Option Class** - All options of the same type - calls or puts -listed on the same underlying instrument.

**Option Series** - All options of the same class having the same exercise/ strike price and expiration date.

**Option Premium:** The price paid for an option is known as the premium; the strike price is the pre-determined price at which an option may be exercised.

**Option:** A contract granting the right, but not an obligation, to buy (a call option) or sell (a put option) a commodity or financial security at a specified price (strike price) on a specified date in the future.

**Open Interest:** The total number of futures contracts long or short in a delivery month or market that has been entered into and not yet liquidated by an offsetting transaction or fulfilled by delivery. Also called open contracts or open commitments.

**Open Order (or Orders):** An order that remains in force until it is canceled or until the futures contracts expire. See Good 'Till Canceled and Good This Week orders.

**Option Writer:** The person who originates an option contract by promising to perform a certain obligation in return for the price or premium of the option. Also known as option grantor or option seller.

**Option Pricing Model:** A mathematical model used to calculate the theoretical value of an option. Inputs to option pricing models typically include the price of the underlying instrument, the option strike price, the time remaining till the expiration date, the volatility of the underlying instrument, and the risk-free interest rate (e.g., the Treasury bill interest rate). Examples of option pricing models include Black-Scholes and Cox-Ross-Rubinstein.

**Order** - An instruction by a customer to a broker/trader to buy or sell at certain price or market price. The order remains valid until executed or cancelled by the customer/exchange.

**Out-Of-The-Money:** A term used to describe an option that has no intrinsic value.

## P

**Physical market:** A marketplace in which a physical commodity or product is traded, as opposed to a futures market where contracts to deliver at some future date are traded and physical delivery of the product may or may not take place.

**Prompt Date:** The date on which the buyer of an option will buy or sell the underlying commodity (or futures contract) if the option is exercised.

**Price-earnings (P/E) ratio:** The current market price of the stock divided by some measure of earnings per share.

**Put Call Parity -** The equilibrium relationship between premiums of call and put options of the same strike and expiry.

**Put/Call Ratio -** Calculated by dividing the number of put options traded by the number of call options traded for a particular asset, the put/call ratio offers Explanation into expectations of the options market.

## Q

**Quotation:** The actual price or the bid or ask price of either cash commodities or futures contracts.

## R

**Rally:** An upward movement of prices following a decline; the opposite of a reaction.

**Risk/Reward Ratio:** The relationship between the probability of loss and profit. This ratio is often used as a basis for trade selection or comparison.

## S

**Settlement Date:** The date on which a contract is scheduled for delivery and payment. Spot settlement in the bullion market is two days after the bargain has been struck.

**Self-Regulatory Organization (SRO):** Exchanges that enforce financial and sales practice requirements for their members. The members of such exchanges are governed by the rules and regulations set by the exchange.

**Security:** Generally, a transferable instrument representing an ownership interest in a corporation (equity security or stock) or the debt of a corporation, municipality, or sovereign. Other forms of debt such as mortgages can be converted into securities. Certain derivatives on securities (e.g., options on equity securities) are also considered securities for the purposes of the securities laws. Security futures products are considered to be both securities and futures products.

**Settlement price:** The price established by the clearing corporation from the closing range of prices (like average of last  $n$  trades in  $x$  seconds). The settlement price is used to determine the next day's allowable trading range, and to settle all accounts between clearing members for each contract month. Margin calls and invoice prices for deliveries are determined from the settlement prices. In addition to this, settlement prices are used to determine account values and determine margins for open positions.

**Short Covering:** The closure of short positions.

**Short Sale:** The sale of an asset for future delivery without possession of the asset sold.

**Speculative Long:** A trader who has bought a forward or futures contract in the expectation of closing it out at a higher price.

**Speculative Short:** A trader who has sold a forward or future contract in the expectation of buying it back at a lower price.

**Spot Market:** A market in which delivery and payment must be made within a pre-specified number of days, usually two days, of the transaction date.

**Spot Price:** The price for physical delivery of bullion bars, usually 100-ounce bars of gold or platinum and 1,000-ounce bars of silver.

**Spread:** The difference between the bid (or the price a buyer is prepared to pay) and the asking (or the price at which a seller offers to sell) of a security/derivative contract or trading unit.

**SPAN® (Standard Portfolio Analysis of Risk®):** As developed by the Chicago Mercantile Exchange, the industry standard for calculating performance bond requirements (margins) on the basis of overall portfolio risk. SPAN calculates risk for all enterprise levels on derivative and non-derivative instruments at numerous exchanges and clearing organizations worldwide.

**Speculator:** In commodity futures, an individual who does not hedge, but who trades with the objective of achieving profits through the successful anticipation of price movements.

**Spot Month:** The futures contract that matures and becomes deliverable during the present month.

**Strike Price (Exercise Price):** The price, specified in the option contract, at which the underlying futures contract, security, or commodity will move from seller to buyer.

**Stop Loss Order:** An order that will close out a loss-making position when the price reaches a specific level. The stop loss order activates in the market once the price is the market reaches/breaches the trigger price set in the order.

**Synthetic Futures:** A position created by combining call and put options. A synthetic long futures position is created by combining a long call option and a short put option for the same expiration date and the same strike price. A synthetic short futures contract is created by combining a long put and a short call with the same expiration date and the same strike price.

## T

**Tender:** To give notice to the clearing corporation of the intention to initiate delivery of the physical asset/commodity in satisfaction of a short futures contract.

**Theta** - The measure of the change in an option's premium given a change in the option's time until expiration. Equal to the change in the option's premium divided by the change in time to expiration.

**Time Decay:** The tendency of an option to decline in value as the expiration date approaches, especially if the price of the underlying instrument is exhibiting low volatility. See Time Value.

**Time Value:** That portion of an option's premium that exceeds the intrinsic value. The time value of an option reflects the probability that the option will move into-the-money. Therefore, the longer the time remaining until expiration of the option, the greater its time value.

**Troy Ounce:** The standard weight in which gold is most often quoted in the international market. One troy ounce is equivalent to 31.1035 grams or 480 grains. One troy ounce equals 1.09711 avoirdupois ounces. Its name derives from the old French city of Troyes, where during medieval times this unit of weight was used at an annual trading fair.

## V

**Vega:** Coefficient measuring the sensitivity of an option value to a change in volatility.

**Volatility Trading:** Strategies designed to speculate on changes in the volatility of the market rather than the direction of the market.

**Volume** - The number of transactions in futures or options on futures made during a specified period of time.

## W

**Warehouse Receipt:** A document certifying possession of a commodity in a licensed warehouse that is recognized for delivery purposes by an exchange.

**Wash Trading:** Entering into, or purporting to enter into, transactions to give the appearance that purchases and sales have been made, without incurring market risk or changing the trader's market position.

**Writer:** One who sells an option. A "writer" (or grantor) obligates himself to deliver the underlying futures position to the option purchaser, should he decide to exercise his right to the underlying futures contract position. Option writers are subject to margin calls because they may have to produce the long or short futures position. A call writer must supply a long futures position upon exercise, and thus receive a short futures position. A put writer must supply a short futures position upon exercise, and thus receive a long futures position.

## Y

**Yield:** A measure of the annual return on an investment expressed as a percentage.

**Yield to Maturity:** The rate of return an investor receives if a fixed income security is held to maturity.

## Z

**Zero Coupon:** Refers to a debt instrument that does not make coupon payments, but, rather, is issued at a discount to par and redeemed at par at maturity.

# About the BFX

The Bahrain Financial Exchange (BFX) is a pioneering cross border and multi product exchange in the Middle East and North Africa, which will be internationally accessible to trade cash instruments, derivatives, structured products and shariah-compliant financial instruments. The BFX is regulated by the Central Bank of Bahrain and is a wholly owned initiative of Financial Technologies Group (FT Group), which currently owns one of the world's largest networks of 10 exchanges connecting fast-growing economies of Africa, Middle East, India and South East Asia.

The BFX has set up its Clearing and Depository Corporation (BCDC) to clear and settle the contracts it trades and has appointed Standard Chartered as the Clearing and Settlement bank for the BCDC.

The BFX Training Institute is an international standard in – house training facility, providing world class conventional and Islamic financial training and education courses.

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