

CHAPTER II

FINANCIAL INSTRUMENTS: AN OVERVIEW

In order to understand the need for regulation of financial instruments, and particularly financial derivatives, it is imperative that one should know the history and development of financial markets, as well as financial instruments. It would be interesting to note how these instruments evolved over time from a trade necessity to financial weapons of mass destruction, through financial innovation. Different forms of financial markets, financial instruments, and financial derivatives, as is necessary to understand the complexity of these products are also covered in this chapter.

FINANCIAL MARKETS**History:**

Financial markets initially evolved from a location where buyers and sellers of securities congregated for transacting business. Initially the markets transacted in commodities, but occasionally some instruments or contracts evolved, which helped the traders face the risk while dealing with the perishable agricultural commodities¹.

¹Capasso mentions that during the 12th century, medieval European merchants created a forward contract called a *lettre de faire* (letter of the fair). These letters allowed merchants to trade on the basis of a sample of their goods, thus relieving them of the need to transport large quantities of merchandise along dangerous routes with no guarantee of a buyer at the journey's end. The letter acted as evidence that the full consignment of the specified commodity was being held at a warehouse for future delivery. Eventually, the contracts themselves were traded among the merchants, Capasso, D. R, *Trading on the Seattle Merc*, J. Wiley, New York, USA (1995).

The evolution of financial markets dates back to 12th century France. *Courratier de Change* was the first recorded financial broker who managed and regulated the debts of agricultural communities on behalf of the banks.² In the late 13th century, commodity traders of Bruges (now Belgium) started the first Bourse³, which was institutionalized in 1309 and it soon become a relevant idea leading to starting of similar bourses in Ghent and Amsterdam.

In 14th century Venice, the government made the first known issue of bonds, which incidentally also became the first traded security. Later the Dutch East India Company started trading its stocks in The Amsterdam Stock exchange. Around 1750's, this practice spread to England, where the traders in shares of companies used to meet in Jonathan's Coffee House to trade shares and make business deals. They used to write their share bids and offers on the walls of the Coffee House, and insider trading formed the basis of most investor decisions. By 1773, these informal exchanges became institutionalised in the form of trading clubs, which was further formalised when a group of traders started the London Stock Exchange in Capel Court by raising a capital of £20,000/-. In the US also the trading in stocks and shares started by the end of 16th century. Initially these traders used to meet in coffee houses, but in 1792, 24 brokers signed the "Buttonwood Tree Agreement" and paid \$ 400/- for a trading seat, institutionalising stock trading in USA. In 1817, the New York Stock Exchange was formed.

²Hemendra Aran, Alpesh B Patel, *Global Financial Markets Revolution*, Palgrave Macmillan, Great Britain, (2006), p. 1.

³Named after Van der Bourse, a Belgian trader who hosted the meetings of the traders in his house, and was called the "Bruges Bourse". These are exchanges where financial instruments were sold. See for details https://deutsche-boerse.com/dbg/dispatch/en/kir/dbg_nav/about_us/20_FWB_Frankfurt_Stock_Exchange/70_History_of_the_FWB, accessed on 11.06.2016 at 20.26 hrs.

Similarly, futures trading and commodities exchanges also have an interesting history, since the history of financial derivatives and scams are almost intertwined. There is evidence that trading in options and futures began in Amsterdam Stock Exchange as early as 1611, and in a period of 25 years the first major bubble which related to futures markets busted, with the burst of a speculative boom in Dutch Tulip futures. During the latter part of 17th century, Feudal Japanese landlords started shipping surplus rice to storage warehouses in the cities and issue tickets promising future delivery of the rice. The tickets represented the right to take delivery of a certain quantity of rice at a future date at a specified price. This was intended to protect the traders from inclement weather or war. These rice tickets, which provided flexibility to rice traders, were traded on the *Dojima* rice market near Osaka in and around 1730. These rice tickets can be rightly said to be the precursor of the modern derivative instruments, since, someone holding a rice ticket, who was not a holder of rice and who do not want to take delivery of rice could sell it in the market for a price. The rules governing the trading in *Dojima* market were similar to the modern day futures market.⁴

As in the case of Japanese markets, forward trading emerged in USA also as a result of extreme volatility in agricultural prices due to seasonal production. In early 1800's, forward arrangements began to appear to deal with the price volatility

⁴ See "The Origins of Derivatives", <http://highereducation.com/sites/dl/free/007337590x/238719/TheOriginsOfDerivatives.pdf>, accessed on 02.10.2015 at 18.25 hrs.) See also <http://finance.maps of world.com/finance/instrument/origins-of-derivative.html>, accessed on 02.10.2015 at 17.09 hrs. See further: http://www.personal.ceu.hu/students/13/Patrik_Korda/files/Financial%20Markets.pdf, accessed on 02.10.2015 at 17.09 hrs.

attached to availability of surplus food grains in particular seasons leading to extremely low prices and extremely high prices during the rest of the year due to shortage of the same items. A contract called “to arrive” contracts were devolved, which involved an agreement between a buyer and seller for the future delivery of grain. The quantity and grade of the grain would be specified as well as the delivery date, and also an agreed-upon price. Subsequently these contracts themselves began to be traded in anticipation of changes in prices of food grains. With the increase in trade of such documents in the place of food grains, the need for standardisation of the contracts and the need for an organized exchange to trade the documents emerged. Hence in 1848, Chicago Board of Trade was founded. In 1870, New York Cotton Exchange specialized in futures trade of cotton products and in 1885 New York Coffee Exchange which specialized in futures trade of coffee products were established in USA, to give a boost to trading on financial derivatives.

The first attempt to regulate the financial markets can be seen from the early 16th century ban on short selling in 1610. However in Antwerp, contracts for differences⁵ were outlawed shortly after forward contracts had been made transferable, around 1541.⁶ But it is unlikely that this restriction was effective because a forward contract does not show how it will be settled. Even if the

⁵A contract for differences (CFD) is an arrangement made in a futures contract whereby differences in settlement are made through cash payments, rather than the delivery of physical goods or securities. See: definition of Contract For Differences (CFD) in Investopedia <http://www.investopedia.com/terms/c/contractfordifferences.asp#ixzz49VOPvZwz>, accessed on 24.05.2016 at 00.09 hrs.

⁶Edward J. Swan, *Building the Global Market: A 4000 Year History of Derivatives*, The Hague: Kluwer Law International, (2000) at p.144.

contract requires the delivery of the underlying asset, the parties to the contract can informally agree on a cash payment at the delivery date. In Amsterdam, contracts for differences were not made illegal. Instead, in 1621, 1630 and 1636, three edicts were issued with the intention to undermine contracts for differences by making them unenforceable in the courts.⁷ In 1734, the British Parliament passed the *Sir John Barnard's Act*, which declared contracts for the future delivery of securities to be “null and void”. Fines amounted to £500/- for “refusals⁸” and “putts⁹” and £100/- for short-selling operations. The Act applied only to derivatives on securities because, as debated in Parliament, it was feared that commodity markets would move back to Amsterdam if contracts for the future delivery of commodities were outlawed in London. Hence for a long time, the trade in derivatives was based on reputation of traders rather than on the basis of legal backing. In France too the *Commercial Code* of 1807 outlawed the trading in securities otherwise than in authorized exchanges. A Police Order of January 24, 1823 again restricted the trading in securities and commodities to authorized dealers at stock exchanges. However the noted scholar Jureg¹⁰ notes that this did not prevent trading in such commodities or derivative trading, but only took them out of the premises of stock

⁷ Ernst Juerg Weber, “A Short History of Derivative Security Markets” (June 2008). Available at SSRN: <http://ssrn.com/abstract=1141689>, accessed on 29.08.2015 at 20.51 at p. 17.

⁸ During the South Sea Bubble, what is called today as “call options” were known as “refusals.” “Refusals” were call options, given the buyer of the option the right to buy stock (or, to refuse to buy stock) at some future date. See Paul Harrison, “The Economic Effects of Innovation, Regulation, and Reputation on Derivatives Trading: Some Historical Analysis of Early 18th Century Stock Markets”, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.580.6697&rep=rep1&type=pdf>, accessed on 11.06.2016 at 20.47 hrs.

⁹ “Putts” were put options, giving the buyer of the option the right to sell stock at some future date. See Paul Harrison, “The Economic Effects of Innovation, Regulation, and Reputation on Derivatives Trading: Some Historical Analysis of Early 18th Century Stock Markets”, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.580.6697&rep=rep1&type=pdf>, accessed on 11.06.2016 at 20.47 hrs.

¹⁰ *Supra* n. 7 at p. 27.

exchange, based on reputation, with no recourse to court in case of breach of contract. In the 1820s, derivative trading with government bonds flourished in Paris. Contracts such as contracts for future delivery, forwards contracts and options, a call option called an “*achat à prime*”, a put option called “*vente à prime*” and repurchase agreements which were called “reports” were greatly traded in Paris. By 1857 however, contracts of future delivery were made legal if the delivery date did not exceed 2 months (1 month for railway shares). In Germany, contracts for future delivery were called “*Zeitgeschäfte*”, which were subdivided into Contracts for future delivery, and were further subdivided into forward contracts and options.

In 1885, derivative contracts became legally enforceable in France, although it was still possible to raise the objection against gambling under some circumstances. In Germany the regulatory framework was similar to that in France for most of the nineteenth century, i.e. derivatives were traded in a legal limbo. In Prussia, contracts for future delivery were outlawed for Spanish government bonds in 1836, for all foreign securities in 1840, and for securities of railways in 1844. After Bismark united Germany in 1871, it was up to the courts to decide whether a contract for future delivery was legitimate or whether it was motivated by illegal gambling. The courts took into consideration the contract’s terms, the profession and wealth of each party and anything else that might shed light on the contract’s purpose, which all gave rise to considerable legal uncertainties. In 1896, Germany passed a law that severely restricted derivative dealings. It became illegal to conclude contracts for the future delivery of wheat and milling products, and for

shares of mines and factories. The government also could regulate and prohibit contracts for all other goods and financial assets. These severe restrictions disrupted commodity markets and financial markets in Germany, diverting trade in commodities and securities to foreign exchanges.¹¹ The German law of 1896 also determined that contracts for future delivery were enforceable only if both parties had registered as dealers. However instead of facilitating any meaningful regulation, this law took the derivatives trade largely into the unregulated zone, since many traders opted not to register themselves and instead opted to carry on trade in derivatives on reputation basis.

In India also the financial markets evolved during the same time when the financial markets started evolving as an organised trading worldwide. During early 20th Century, there were a number of well-established commodity markets in India, trading in futures and other similar derivatives.¹² The history of futures trading in commodities in India dates back to the later part of 19th century when the first commodity exchange, viz. The Bombay Cotton Trade Association Ltd was set up for organising futures trading. The early 20th century saw the mushrooming of a number of Commodity Exchanges. They were regulated by social control of close-

¹¹ *Id* at p. 39.

¹² The principal commodity markets functioning in pre-independence era were the cotton markets of Bombay, Karachi, Ahmedabad and Indore, the wheat markets of Bombay, Hapur, Karachi, Lyallpur, Amritsar, Okara and Calcutta; the groundnut markets of Madras and Bombay; the linseed markets of Bombay and Calcutta; Jute and Hessian markets of Calcutta; Bullion markets of Bombay, Calcutta, Delhi and Amritsar and sugar markets of Bombay, Calcutta, Kanpur and Muzaffarnagar.

knit groups and whenever such control failed, there would be a crisis.¹³ There were no uniform guidelines or regulations. These exchanges were essentially outcomes of needs of particular trade communities and operated based on mutual trust and faith. Some analysts are of the view that by the beginning of 1900's India had one of the world's largest futures' industry.¹⁴

Financial Markets: Purpose:

As can be seen from the detailed narration of history of financial markets, initially the market places evolved as a location where buyers and sellers congregated to buy and sell securities. Slowly these market places took the form of institutionalised exchanges, which took on the function of settling disputes that arose during the course of transactions, by formulating certain regulations to protect innocent investors from professional manipulators trading with insider information. This made the financial marketplace attractive to public and more and more people started coming into the market place (exchanges) to transact business in securities. This required more and more good players, or sellers, who were financially sound to come and place their securities in the exchanges, so that demand from the public could be met. To keep a balance between ethical playing and maximising profits, exchanges began to develop listing regulations so as to attract financially sound companies to the exchange. These listing regulations stipulated the minimum requirements a company should satisfy to enlist on the

¹³ *Report of the Expert Committee to Study the Impact of Futures Trading on Agricultural Commodity Prices*, (Abhijit Sen Committee), Ministry of Consumer Affairs, Food & Public Distribution, Government of India, (2008), p. 2 para 2.1.

¹⁴ Asani Sarkar, "Indian Derivatives Market" in Kaushik Basu (Ed.), *The Oxford Companion to Economics in India*, Oxford University Press, New Delhi (2007) at p. 100.

exchange. Later, with the development of technology, exchanges developed stock ticker - which enabled exchanges to effectively control and disseminate last sale information and other relevant market data, that served at the same time as advertisements and also provided transparency to the trading that made prospective investors comfortable with the fairness of the market. The volume of trade in each market increased and the markets started providing clearing and settlement functions first through third parties and then by themselves.

A financial market serves three economic functions. Firstly, it creates a *Price Discovery Process* i.e. interactions of buyers and sellers in the market place will determine the price, and consequently the return on traded asset. Secondly, it creates a *Liquidity Management Mechanism* i.e. it provides a mechanism for an investor to sell the financial instrument in his hand (Liquidity). While all markets provide some sort of liquidity, the degree of liquidity varies from various types of financial markets. Finally, it creates *Economy of Information* i.e., it reduces the search and information cost, and thereby the overall costs of transacting the financial instruments.

In addition to the above, the financial markets provides for a permanent system for exchange of goods and services, enables pooling of funds to undertake large scale operations, provides for a mechanism for spatial and temporal transfer of funds, provides a way for managing uncertainty and controlling risk, generates information that helps in coordinating decentralised decision making, helps in dealing with the problem of informational asymmetry, facilitates efficient life-cycle risk bearing by households and allows for separation of the providers of working

capital for real investments (i.e. personnel, plant and equipment) from the providers of risk capital who bear financial risk of those investments.

Types of Financial Markets

Financial markets are usually divided into two: Primary Markets and Secondary Markets. The Primary Market is the market for first or initial issuance of financial instruments. Primary Markets do not need a formal market place, and it is usually done through an investment banker who typically assembles a syndicate of financial market dealers who will sell the new stock. Once the company has issued shares to public, it has to ensure liquidity for the investing public. For this, the financial instruments need to be brought to a market place where the public who has shares or other financial instruments in their hands find prospective buyers for their instruments. This secondary sale of shares and other financial instruments happen in Secondary Market, which is usually institutionalised though not always necessary.

Financial markets can be divided by type of financial claim, such as debt markets (where debt based financial instruments are traded) and equity markets (where equity based financial instruments are traded).

Another way of classification of financial markets is by period of maturity of claim, such as (a) *Money Market*, being market for short term debt instruments and (b) *Capital Markets*, being market for long term debt instruments and equity instruments.

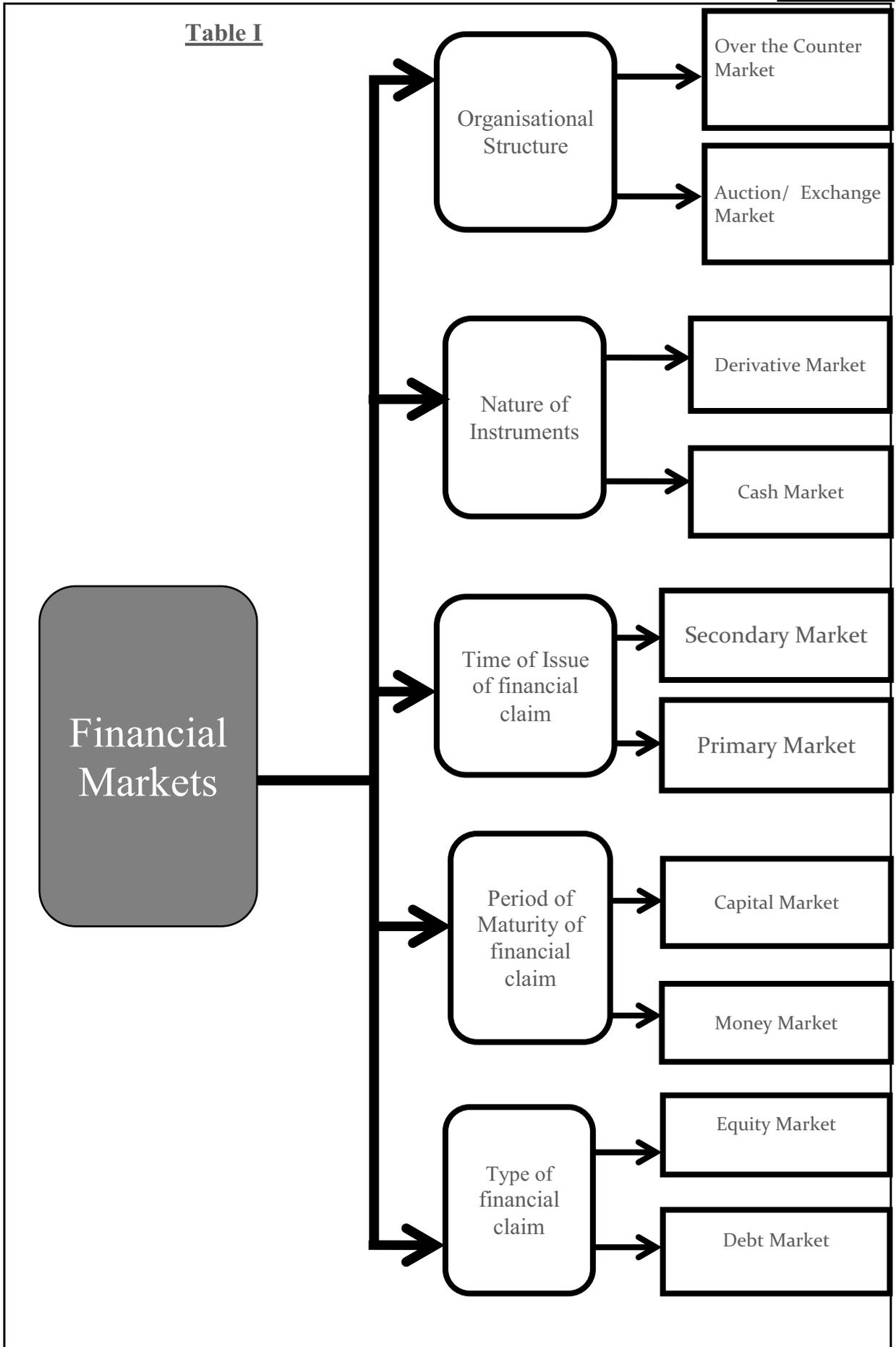
The financial markets can also be divided by nature of instruments (a) Cash Market, where the returns are in the form of cash and into (b) Derivatives Market, where financial derivatives are traded.

Financial markets are also divided sometimes by the method adopted by the organisation, or simply by organisational structure such as (a) Auction (Exchanges) Market where financial instruments are sold by auction and (b) Over the Counter Markets where financial instruments are sold over the counter or on the basis of contract between individual parties.¹⁵

A pictorial representation of different types of financial markets is given below as Table I:

¹⁵Frank J Fabozzi (Ed.), *A Handbook of Financial Instruments*, John Wiley and Sons, Inc., Hoboken, New Jersey, (2002) at p. 13.

Table I



Whatever be the type of markets, what are sold in these markets are financial instruments. Hence it is essential to understand the concept of financial instruments and their true nature.

FINANCIAL INSTRUMENTS

Definition:

Devoid of all technicalities, financial instruments are nothing but contracts. Financial instrument is defined as a real or virtual document representing a legal agreement involving some sort of monetary value¹⁶. They can be thought of as easily tradable packages of capital, each having their own unique characteristics and structure. The draft note on Financial Instruments issued by Public Sector Accounting Board of Canada¹⁷ defines financial instrument as a contract between entities that gives rise to a financial resource (an asset) for one entity and a financial obligation (a liability) or equity interest for another entity. Another definition of financial instruments is that these are legal agreements that require one party to pay money or something else of value or a promise to pay under stipulated conditions to the other party in exchange for the payment of interest, for the acquisition of rights, for premiums, or for indemnification against risk. In exchange for the payment of the money, the other party hopes to profit by receiving

¹⁶<http://www.investopedia.com/terms/f/financialinstrument.asp>, accessed on 02.10.2015 at 16.54 hrs.

¹⁷“Exposure draft of Public Sector Accounting Board for Proposed Accounting Standards entitled Financial Instruments”, dated September 2009.

interest, capital gains, premiums, or indemnification for a loss event.¹⁸ International Accounting Standard defines a financial (markets) instrument as a contract that gives rise to a financial asset of one entity and a financial liability (or equity instrument) of another entity¹⁹. This definition highlights the fact that financial instruments represent a store of value without possessing an intrinsic value of its own. Another definition, featuring in the Dodd-Frank Act passed by US Senate in 2010 defines financial instruments as:

A financial contract in which the terms and conditions are publicly available, and the roles of one or more of the counterparties are assignable without the consent of any of the other counterparties (including common stock of a publicly traded company, government bonds, or exchange traded futures and options contracts).²⁰

It may be noted that this definition restricts the scope of application of the term financial instruments to financial contracts²¹ whose terms and conditions are publicly available, thereby excluding a large variety of exotic privately traded financial instruments. Perhaps, this definition was adopted under the assumption that privately traded financial instruments do not affect the economy of the nation as much as Exchange Traded Derivatives affects the economy.

¹⁸<http://thismatter.com/money/banking/financial-instruments.htm>, accessed on 02.10.2015 at 16.43 hrs.

¹⁹ See International Accounting Standards, IAS 32.11 available at. <http://www.iasplus.com/en/standards/ias/ias32>, accessed on 17.06.2016 at 23.19 hrs.

²⁰“Dodd Frank Wall Street Reform and Consumer Protection Act, 2010”, popularly known as Dodd-Frank Act. S. 151(8).

²¹ *Id* s.151(7) defines financial contracts as “a legally binding agreement between two or more counterparties, describing rights and obligations relating to the future delivery of items of intrinsic or extrinsic value among the counterparties.

Classification of Financial Instruments:

Typically the market place for sale of the financial instruments is stock exchanges, which permit sale in primary securities such as shares, government securities, gilts²² and secondary securities like derivatives. Thus financial instruments can be basic, like an account receivable or an account payable, and also more complex, such as derivatives.

Financial instruments are classified on the basis of type of transaction, issuer of the instrument, underlying or backed up securities, nature of instrument, asset class, etc.

First type of classification of financial instruments is on the basis of type of transaction. This could be for exchange of money for (a) future interest payments and repayment of principal²³ (b) possible capital gains or interest²⁴ or (c) possible capital gains or to offset risk.²⁵ Financial Instruments where the underlying transaction is for exchange of money for future interest payments and repayment of principal are (1) *Loans and Bonds*, where a lender gives money to a borrower in exchange for regular payments of interest and principal, (2) *Asset backed securities*, where lenders pool their loans together and sell them to investors. The lenders receive an immediate lump-sum payment and the investors receive the payments of

²² Gilts are bonds that are issued by the British government, and they are generally considered low-risk investments. Gilts are the U.K. equivalent of U.S. Treasury securities, and the name originates from the original certificates, issued by the British government, which had gilded edges. See www.investopedia.com/terms/g/gilts.asp, accessed on 25.06.2016 at 11.58 hrs.

²³ See http://www.bcci.bg/projects/latvia/pdf/7_Financial_markets.pdf accessed on 25.06.2016 at 12.15 hrs.

²⁴ *Ibid.*

²⁵ *Ibid.*

interest and principal from the underlying loan pool. Financial Instruments where the underlying transaction is for exchange of money for possible capital gains or interest, are (1) *Stocks*: A company sells ownership interests in the form of stock to buyers of the stock, and (2) *Funds*: Includes mutual funds, exchange-traded funds, Real Estate Investment Trusts, hedge funds, and many other funds. The fund buys other securities earning interest and capital gains which increases the share price of the fund. Investors of the fund may also receive interest payments. Financial Instruments where the underlying transaction is for exchange of money for possible capital gains or to offset risk, such as (1) *Options and Futures* (2) *Currency Trading*, which is done for capital gains or to offset risk and sometimes to earn interest, as is done in the carry forward trade. Financial Instruments where the underlying transaction is for exchanges of money for protection against risk, such as insurance contract, which promise to pay for a loss event in exchange for a premium. For instance, a car owner buys car insurance so that he will be compensated for a financial loss that occurs as the result of an accident.²⁶

The second type of classification of financial instruments is based on the nature of issuer of such instruments, such as (a) Instruments issued by the ultimate borrower, as Primary Securities and (b) Instruments issued by the intermediaries on behalf of ultimate borrower, as Indirect Securities or Secondary Securities.

²⁶See also <http://thismatter.com/money/banking/financial-instruments.htm>, accessed on 25.06.2016 at 12.20 hrs.

The third type of classification of financial instruments is based on the nature of underlying or backed up securities. These include (a) Primitive securities, which are based on real assets or on the promise or performance of the issuer,²⁷ (b) Financial derivatives, which are based on the underlying asset which consists of other financial instruments or some benchmark, such as stock indexes, interest rates, or credit events²⁸.

The financial instruments are also classified based on the nature of instrument into (1) Cash Instruments and (2) Derivative Instruments. Cash Instruments are financial instruments whose value is determined directly by markets. Cash Instruments include securities, which are readily transferable, and other cash instruments such as loans and deposits, where both borrower and lender have to agree on a transfer. Derivative Instruments, on the other hand, are financial instruments which derive their value from the value and characteristics of one or more underlying assets. Financial Derivatives include exchange-traded derivatives and Over The Counter (OTC) derivatives, the details of which are dealt with subsequently.²⁹

Another method of classification of financial instruments is on the basis of asset class. There are (1) equity based instruments (Equity Instruments) which are financial instruments which reflect ownership of the issuing entity on the

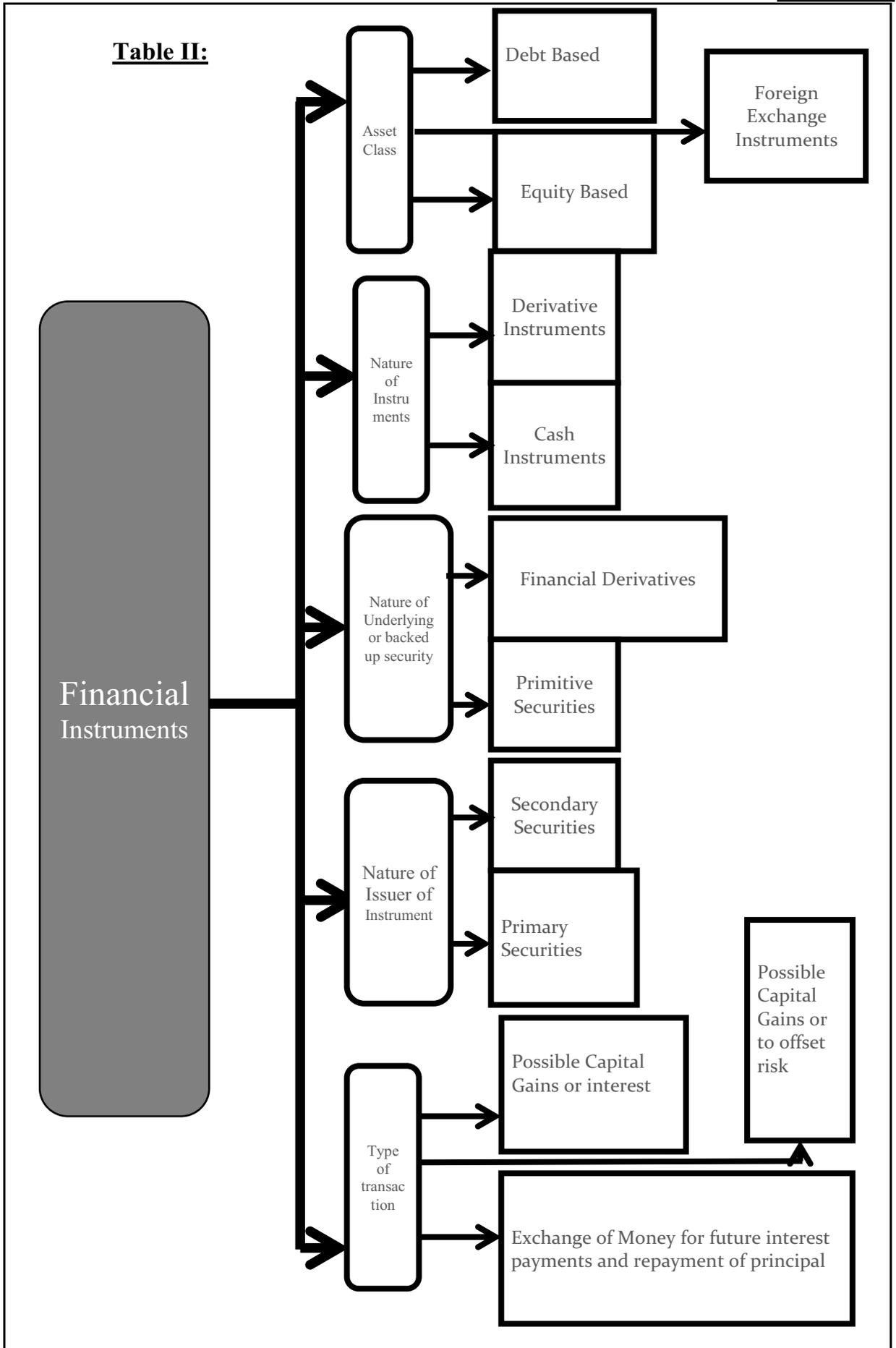
²⁷ For example, bonds are based on the issuer's ability to pay interest and principal and stocks depend on the performance of the company that issued the stock.

²⁸ For example, the value of stock options depends on the price of the underlying stock, and mortgage-backed securities depend on an underlying pool of mortgages.

²⁹ Major part of this study will adopt this classification, and all references to financial derivatives will include all instruments other than cash instruments. See *infra*.

instruments. (2) Debt based Instruments (Debt Instruments) which are financial instruments which reflect the loan which the investor has made to the issuing entity, by subscribing to the instrument. Debt Instruments are further classified into short term debt based instruments (less than one year) and long term debt based instruments (more than one year). (3) Foreign Exchange Instruments, which are financial instruments based on foreign exchange. These are neither equity based nor debt based and are a separate category on its own. The above classification is pictorially shown in Table II below:

Table II:



Apart from these common forms of financial instruments, numerous instruments are getting invented in the financial sector by the day, and most of them remain unknown to the public until they start to make an impact. Many of the new generation instruments are often sold first to a closed circle of enthusiasts, and they become public only when they fail. It is difficult, therefore, to deal in the present work on all forms of financial instruments and hence the current work is focused mainly on derivative instruments.

FINANCIAL DERIVATIVES

Derivatives are a species of financial instruments. Derivatives are financial contracts, or financial instruments, whose values are derived from the value of some other thing (underlying security). The underlying security on which a derivative is based can be an asset (e.g., commodities, equities (stocks), residential mortgages, commercial real estate, loans, bonds), an index (e.g., interest rates, exchange rates, stock market indices, consumer price index (CPI) which are called inflation derivatives, or other items (e.g., weather conditions, or other derivatives). The word derivative is used here in the restricted meaning as referring to modern day financial derivatives.³⁰

History of Financial Derivatives:

It is not known when humans first started using financial derivatives. Neither derivatives nor their trading are a new phenomenon and the history of

³⁰Every financial product is a derivative product also in so far as money is only a perception and all depictions of money is only a symbolisation and derivative of that perception.

institutionalised derivative trading began almost simultaneously with trading in securities.

It should be also kept in mind that though the known history of derivatives date back to 12th century AD, there is evidence of instruments which can properly be termed as financial derivatives in use in Ancient Greece. Siems³¹ quotes Aristotle's story about Greek philosopher Thales who profited from the forecast that the next olive harvest would be an exceptionally good one. As a poor philosopher, he did not have many financial resources at hand. But he used what he had to place a deposit on the local olive presses. As nobody knew for certain whether the harvest would be good or bad, Thales secured the rights to the presses at a relatively low rate. When the harvest proved to be bountiful, and so demand for the presses was high, Thales charged a high price for their use and reaped a considerable profit. This is similar to what we call options in the modern financial jargon, though the option exercised by Thales was more in the nature of a betting than a shrewd financial calculation, since none was sure whether the crops could survive the harvest when the prediction was made.

Van de Mieroop³² reproduces a cuneiform tablet³³ in which a supplier of wood, whose name was Akshak-shemi, promised to deliver 30 wooden planks to a client,

³¹ Aristotle, *Politics*, trans. Benjamin Jowett, Vol. 2, in Robert Maynard Hutchins(Ed.), *The Great Books of the Western World*, University of Chicago Press, Chicago (1952), Book 1, Chap. 11, p. 453.

³² Marc Van de Mieroop, "The Innovation of Interest - Sumerian Loans" in William M. Goetzmann and K. Geert Rouwenhorst (Eds.), *The Origins of Value: The Financial Innovations that Created Modern Capital Markets*, Oxford University Press, Oxford, (2005).

³³ Cuneiform tablet is an instrument of writing. The name comes from the Latin word *cuneus* for 'wedge' owing to the wedge-shaped style of writing. In cuneiform, a carefully cut writing

called Damqanum, at a future date. This contract was written in the nineteenth century BC and is similar to a modern futures contract³⁴.

Swan³⁵ speaks of a cuneiform tablet from about 1700 BC, in which two farmers received from the King's daughter three kurru of barley, which had to be returned at harvest time. The farmers, who were brothers, probably used the barley, about 0.9 cubic meters, as seed stock for planting a field. The wordings of the contract were as follows:

Three kurru of barley, in the seah-measure of Shamash, the mesheque measure, in storage, Anum-pisha and Namran-sharur, the sons of Siniddianam, have received from the naditu-priestess Iltani, the King's daughter. At harvest time they will return the three gur of barley in the seah-measure of Shamash, the mesheque measure, to the storage container from which they took it. Before two witnesses whose names are listed. Month Ulul, 19th day, year in which King Abieshuh completed the statue of Entemena as god³⁶.

This contract may either be viewed as a commodity loan or as a short-selling operation, in which the brothers borrowed barley, used it for planting the crop, and then returned it after harvest. This operation was less innocuous than it looks

implement known as a stylus is pressed into soft clay to produce wedge-like impressions that represent word-signs (pictographs) and, later, phonograms or 'word-concepts' (closer to a modern day understanding of a 'word'). All of the great Mesopotamian civilizations used cuneiform (the Sumerians, Akkadians, Babylonians, Elamites, Hatti, Hittites, Assyrians, Hurrians and others) until it was abandoned in favour of the alphabetic script at some point after 100 BCE. See <http://www.ancient.eu/cuneiform/>, accessed on 25.06.2016 at 15.03 hrs.

³⁴ The wording of the contract is as follows: "Thirty wooden [planks?], ten of 3.5 meters each, twenty of 4 meters each, in the month Magrattum Akshak-shemi will give to Damqanum. Before six witnesses (their names are listed). The year that the golden throne of Sin of Warhum was made. See *Id* at p. 23.

³⁵ Edward J. Swan, *Building the Global Market: A 4000 Year History of Derivatives*, Kluwer Law International, Hague (2000), p. 28.

³⁶ *Ibid.*

because the brothers carried some risk. If the crop failed they were required to buy barley in order to be able to return it to the royal granary. This operation would not have been possible without the sophisticated Mesopotamian irrigation system, which reduced the risk of crop failure due to drought. It is also possible that the King's daughter, who represented the state, did not enforce the contract if a widespread crop failure due to climatic conditions or a locust plague, which led to famine. In that case the state carried the risk of general crop failure.

Zohary and Hopf³⁷ speak about a contract regarding sesame seeds interpreting a tablet from Indus valley. They maintain that the sesame plant was cultivated in the Indus Valley between 2250 and 1750 BC. The following tablet, which is from 1809 BC, shows that a Mesopotamian merchant borrowed silver, promising to repay it with sesame seeds "according to the going rate" after six months. He may have used the silver to finance a trading mission to the Indus Valley to obtain sesame seeds. This contract combines a silver loan with a forward sale of sesame seeds.

The wording of the contract is as follows:

Six shekels silver as a šu-lá loan, Abuwaqar, the son of Ibqu-Erra, received from Balnumamhe. In the sixth month he will repay it with sesame according to the going rate. Before seven witnesses (their names are listed). These are the witnesses to the seal. In month eleven of the year when king

³⁷Daniel Zohary and Maria Hopf , *Domestication of Plants in the Old World: The Origin and Spread of Cultivated Plants in West Asia, Europe, and the Nile Valley*, , Oxford University Press, Oxford,(2000).

Rim-Sin defeated the armies of Uruk, Isin, Babylon, Rapiqum and Sutium, and Irdanene, king of Uruk³⁸.

A tablet from 1750 BC was about providing a slave trader with funding and insurance. At the time when the contract was written, he received a certain measure of oil in return of a promise to deliver healthy slaves from Gutium after one month, with an option of paying a fixed amount of silver instead of delivering slaves. The wording of this contract is as follows:

204 $\frac{2}{3}$ qu of oil in the measure of Shamash, to the value of $\frac{1}{3}$ mina $\frac{2}{3}$ shekels of silver, as the price for healthy slaves from Gutium, Warad-Marduk son of Ibni-Marduk has received from Utul-Ishtar the troop-commander on the authority of Lu-Ishurra son of Ili-usati. Within one month he shall bring healthy slaves from Gutium. If he does not bring them within one month, Lu-Ish (k) urra son of Ili-usati will repay $\frac{1}{3}$ mina $\frac{2}{3}$ shekels of silver to the bearer of this tablet. Before four witnesses whose names are listed. Month Ab, sixth day, year in which King Ammisaduqa etc.³⁹

This contract provided the slave trader with capital to procure slaves from Gutium. The option to pay $\frac{1}{3}$ mina $\frac{2}{3}$ shekels of silver limited his loss if he was not able to buy slaves at a price that made the transaction profitable. It also provided insurance against all other hazards of the slave trade, including the risk that the slaves fell ill, they ran away, etc. The opposite party agreed to this transaction if the price of $\frac{1}{3}$ mina $\frac{2}{3}$ shekels of silver for 204 $\frac{2}{3}$ qu of oil exceeded the spot price of oil by an amount that was sufficient to adequately compensate for

³⁸*Id* at pp. 140-141. See also John C. Hull and Shankarshan Basu, *Options, Futures and other Derivatives*, Dorling Kindersley (India) Pvt. Ltd, New Delhi (2010), at p. 21.

³⁹ Wolfgang Hafner, Heinz Zimmerman (Eds.), *Vinzenz Bronzin's Option Pricing Models: Exposition and Appraisal*, Springer, Switzerland, (2009), at p. 436.

supplying the initial loan of oil and for the risks inherent in the slave trade. The cuneiform tablet gave the slave trader the option to pay silver to the *bearer* of the tablet. This suggests that the holder of the tablet could transfer the contract to a third party. But not enough is known on Mesopotamian trading practices to determine the significance of the transfer of tablets.

Sextus Pomponius a lawyer who wrote in the second century AD, distinguished between two types of contracts. The first, *vendito re speratae*, which was void if the seller did not have the goods at the delivery date, provided insurance against crop loss and the hazards of long-distance trade, including the loss of ships in maritime trade. The second, *vendito spei*, was a straightforward forward contract that did not provide for any reprieve to the seller in case he was unable to deliver the goods. It is unclear whether *vendito re speratae* involved the same rights as a modern put option⁴⁰ because the seller may have been obliged to deliver the goods if he had them.⁴¹

There were no corporations in Roman times, with one notable exception that is documented by Malmendier.⁴² *Societas publicanorum*, which were private companies that tendered for government contracts, issued shares that were widely held by Romans. Cicero, who lived from 106 to 43 BC, commented on the trade in these shares, which is said to have taken place near the Temple of Castor on the

⁴⁰ A Put option is a right to sell without a corresponding obligation to buy in the other party. See for details *infra*.

⁴¹ *Supra* n. 35.

⁴² Ulrike Malmendier, "Roman Shares", in William M. Goetzmann and K. Geert Rouwenhorst (Eds.), *The Origins of Value: The Financial Innovations that Created Modern Capital Markets*, Oxford University Press, Oxford, (2005), at p. 40.

Forum Romanum. The fact that the subscriber to a share could sell it implies that there existed no exclusive relationship between the subscriber and the company.

As has been already mentioned when dealing with the history of financial markets, during the 12th century, medieval European merchants had created a forward contract called a *lettre de faire* (letter of the fair). These letters allowed merchants to trade on the basis of a sample of their goods, thus relieving them of the need to transport large quantities of merchandise along dangerous routes with no guarantee of a buyer at the journey's end. Pezzolo⁴³ provides a detailed account of the finances of Italian cities and their use of Monti shares. Monti shares were the first securities that were traded in secondary markets. They were followed by bills of exchange, which provided the medium of exchange in long-distance trade from the fifteenth century until the early twentieth century. The buyer of some commodity accepted a bill of exchange and passed it to the payee instead of sending gold or silver coins. The payee either held on to the bill until maturity or he sold it to a third party. In fact, bills of exchange, whose maturity typically ranged from a few days to 90 days, could pass through many hands. The holder of a bill earned interest because bills were traded at a discount that gradually diminished until maturity. The domestic currency price of foreign bills of exchange was the exchange rate. The main trading centres in northern Europe were Bruges from the twelfth to the fifteenth century, Antwerp in the sixteenth century, and Amsterdam in the seventeenth century. Bruges was a centre for the trade of wool, cloth and

⁴³ Luciano Pezzolo, "Italian Monti: The origins of Bonds and Government Debt", Provisional Paper, available in <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.5977> & rep=rep1& type=pdf, accessed on 10.06.2016 at 19.58 hrs.

other commodities. Around 1540, Antwerp legalized the negotiability of bills of exchange and a royal decree made contracts for future delivery transferable to third parties.

At about this time, an important innovation occurred in derivative markets. Merchants discovered that there is no need to settle forward contracts by delivering the underlying asset, as it is sufficient if the losing party compensates the winning party for the difference between the delivery price and the spot price at the time of settlement. Contracts For Differences were written on bills of exchange, government bonds and commodities. Although it is likely that similar deals had been done in Bruges and with Monti shares in Italy, Contracts For Differences were used on a large scale for the first time in Antwerp. During the 14th century there existed a type of Contract For Differences on bills of exchange, which was settled by a cash flow that depended on the exchange rate between bills of exchange in Antwerp and Spain. These Contracts For Differences were precursors of futures contract. After the unseating of Antwerp by Spanish troops, Amsterdam became the centre for European trade. Amsterdam was the first city where derivatives that were based on securities were used freely for a long period of time.

Later we see that during 17th century the Japanese Rice merchants also used such contracts to hedge the risk.⁴⁴ Hence it can be safely assumed that derivative

⁴⁴ See Steve Kummer, Christian Pauletto “The History of Derivatives: A Few Milestones”, EFTA Seminar on Regulation of Derivatives Markets, Zurich, available at https://www.seco.admin.ch/dam/seco/de/dokumente/Aussenwirtschaft/Wirtschaftsbeziehungen/Handel%20mit%20Dienstleistungen/Artikel_Studien/History_of_Derivatives.pdf.download.pdf/10%20The%20History%20of%20Derivatives%20-%20A%20Few%20Milestones.pdf, accessed on 25.06.2016 at 15.37 hrs.

instruments are not products of 20th century economic revolution, but traditional products modified to suit the needs of time. However such instruments came to be collectively named as derivatives only much recently, in the latter part of 20th Century.

Definition of Financial Derivatives:

The word derivative is defined in *Black's Law Dictionary*⁴⁵ as coming from another or taken from something which has no origin in itself, and owes its existence to something foregoing, anything obtained or deduced from another. In law, derivative contracts are thus contracts derived from some preceding transaction or contract or conveyance.

However since financial derivatives have come to be regulated comparatively recently, traditional dictionaries do not have any definition of the term “financial derivatives”. We need to look at online dictionaries for an understanding of the dictionary meaning of this term. *FindLaw's Online Law Dictionary* defines a financial derivative as:

...a contract or security that derives its value from that of an underlying asset (as another security) or from the value of a rate (as of interest or currency exchange) or index of asset value (as a stock index).⁴⁶

It has also given a note that derivatives often take the form of customized contracts transacted outside of security exchanges, while other contracts, such as

⁴⁵Black's Law Dictionary, (1971) at p. 528.

⁴⁶<http://dictionary.lp.findlaw.com/scripts/results.pl?co=dictionary.lp.findlaw.com&topic=95/9596328a78e23d0974862a6f44b091bb>, accessed on 04.05.2010 at 21.30 hrs.

standard index options and futures, are openly traded on such exchanges. Derivatives often involve a forward contract.⁴⁷

Nolo Law Dictionary, another popular online law and financial terms dictionary defines derivative as:

...a financial instrument whose value is based on the value of an underlying security, such as a commodity, currency, or bond⁴⁸.

The most common derivatives are futures⁴⁹, options⁵⁰, and swaps⁵¹. They are used to manage risk and fluctuations in the value of the underlying security but are often risky and complicated investments.

Another popular definition of derivative contract is from International Swaps and Derivatives Association,⁵² an association of professionals dealing with derivatives and trying to bring in self-regulation in the arena of derivatives trading. They define derivatives as follows:⁵³

A derivative is a risk transfer agreement, the value of which is derived from the value of an underlying asset. The underlying asset could be an interest rate, a physical commodity, a company's equity shares, an equity index, a currency, or virtually any other tradable instrument upon which parties can agree.⁵⁴

⁴⁷ *Ibid.*

⁴⁸ <http://www.nolo.com/dictionary/derivative-term.html>, accessed on 01.10.2015 at 21.41 hrs.

⁴⁹ See *Infra*.

⁵⁰ See *Infra*.

⁵¹ See *Infra*.

⁵² Hereinafter referred to as I.S.D.A.

⁵³ See <http://www.isda.org/educat/faqs.html#1>, accessed on 02.09.2015 at 16.03 hrs.

⁵⁴ During 2010, the definition was slightly different. It read as "Derivative is a ***risk-shifting agreement***, the value of which is derived from the value of an underlying asset. The underlying

Another definition of derivatives is that derivatives are financial securities whose value is derived from another "underlying" financial security.⁵⁵ However there are many experts who say that such a definition is not acceptable since in derivatives such as those based on weather movements or on electricity, there is no underlying financial security.⁵⁶

However some other analysts dispute even this definition as they fail to take account of the risk that the counter party derivative may default. Analysts of this school define derivatives as a "promise" whose market value depends, first, on the strength of the promisor's ability to perform and, second, on the value of the underlying asset or variable.⁵⁷ Ernst Juerg Weber in his article entitled "A Short History of Derivative Security Markets,"⁵⁸ opines that:

...defining a derivative as a promise with a default option, is crucial in historical research because differences in legal institutions and customs created wide disparities in non-performance costs across places and time.⁵⁹

asset could be a physical commodity, an interest rate, a company's *stock*, a *stock* index, a currency, or virtually any other tradable instrument upon which *two* parties can agree." This definition was available in <http://www.isda.org/media/pdf/resourcesfaqs.pdf>, accessed on 27.04.2010 at 13.03 hrs. (The website has since then been removed.) It may be noted that in the latest definition, the words "risk transfer" is used instead of risk shifting" which is more positive than the earlier word "risk shifting". The word "equity" has replaced "stock", and the words "two" has been omitted to denote that there could be more than two parties to a derivatives agreement.

⁵⁵ <http://www.finpipe.com/derivatives.htm>, accessed on 27.04.2010 at 12.50 hrs. Hedging is defined as a transaction that offsets an exposure to fluctuation in financial prices of some other contract or business risk. It may consist of cash instrument or derivatives.

⁵⁶ Edward J. Swan, *Building the Global Market: A 4000 Year History of Derivatives*, The Hague: Kluwer Law International, (2000) at p 142. Some financial textbooks like Hull (2006) defines derivatives as financial instruments whose value can depend upon almost any valuable.

⁵⁷ Ernst Juerg Weber, "A Short History of Derivative Security Markets" (June 2008). Available at SSRN: <http://ssrn.com/abstract=1141689>, accessed on 29.08.2015 at 20.51 hrs at p 18.

⁵⁸ *Ibid.*

⁵⁹ *Id* at p 4.

In India, there are two statutes which contain definition of derivative instrument - Securities Contracts (Regulation) Act, 1956⁶⁰ and Payments and Settlements Systems Act, 2007. S. 2 (ac) of SCRA gives an inclusive definition to derivatives in the following words:

Derivative includes – (A) a security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security; (B) a contract which derives its value from the prices, or index or prices, of underlying securities.

S. 2(1) (b) of Payment and Settlement Systems Act, 2007 defines “derivative” as follows:

Derivative means an instrument, to be settled at a future date, whose value is derived from change in interest rate, foreign exchange rate, credit rating or credit index, price of securities (also called “underlying”), or any other underlying or a combination of more than one of them and includes interest rate swaps, forward rate agreements, foreign currency swaps, foreign currency rupee swaps, foreign currency options, foreign currency rupee options or any other instrument, as may be specified by the Reserve Bank from time to time⁶¹.

Before we move on to the nature of derivatives, it would also be pertinent to note how judiciary has attempted to define these complex instruments. In *Barings plc (in liquidation) and another v. Coopers & Lybrand (a firm) and others*, *Barings*

⁶⁰Hereinafter referred to as SCRA.

⁶¹ Apart from defining the term derivatives, the Payment and Settlement Systems Act, 2007 does not contain any clear provision for regulating these instruments. However, the terms “payment obligation under S. 2(1)(h) of the said Act includes indebtedness as a result of payment instructions relating to derivatives and “Settlement” in S.2(1)(n) of the said Act includes settlement of derivatives. Further S. 23 of the Act provides that settlement is final and irrevocable as soon as the derivatives payable as a result of such settlement is determined, whether or not they are actually paid.

*Futures (Singapore) Pte Ltd (in liquidation) v. Mattar and others*⁶² the Chancery

Division of High Court of England defined derivatives as follows:

A derivative is a contract or instrument which changes in value depending on price movements in another instrument or in an index. Futures contracts and options are derivatives⁶³.

Another definition of derivatives was adopted by the Court of Appeal in England in *Lomas and others (Together the Joint Administrators of Lehman Brothers International (Europe) v. JFB Firth Rixson Inc. & Others*⁶⁴, based on a definition proposed by Mr. Simon Firth of Linklaters⁶⁵. The Court of Appeal chose to define derivatives as:

...a transaction under which the future obligations of one or more of the parties are linked in some specified way to another asset or index, whether involving the delivery of the asset or the payment of an amount calculated by reference to its value or the value of the index. The transaction is therefore treated as having a value which is separate (although derived) from the values of the underlying asset or index. As a result, the parties' rights and obligations under the transaction can be treated as if they constituted a separate asset and are typically traded accordingly.⁶⁶

⁶²[2003] EWHC 1319 (Ch.).

⁶³*Id* at p. 21.

⁶⁴ [2012] EWCA Civ 419, [2010] EWHC 3372 (Ch), [2011] EWHC 718 (Ch), [2011] EWHC 1692 (Comm) & [2011] EWHC 692 (Comm).

⁶⁵ Linklater's LLP is a global law firm which specialises in advising governments and financial institutions.

⁶⁶ *Supra* n.64 at p. 3.

In India, the Madras High Court in *Rajshree Sugars and Chemicals Limited v. AXIS Bank Limited and another*⁶⁷ has defined derivatives based on definition adopted by the International Accounting Standards as follows:

In simple terms, derivatives are financial instruments whose values depend on the value of other underlying financial instruments. The International Accounting Standard (IAS) 39 defines "derivatives" as follows:

A derivative is a financial instrument:

(a) whose value changes in response to the change in a specified interest rate, security price, commodity price, foreign exchange rate, index of prices or rates, a credit rating or credit index, or similar variable (sometimes called the 'underlying');

(b) that requires no initial net investment or little initial net investment relative to other types of contracts that have a similar response to changes in market conditions; and

(c) that is settled at a future date.

Actually, derivatives are assets, whose values are derived from values of underlying assets. These underlying assets can be commodities, metals, energy resources, and financial assets such as shares, bonds, and foreign currencies.⁶⁸

Nature of Derivatives:

As can be seen from this statutory definition in India, the derivatives are given only an inclusive definition, due to the complex nature of these instruments. To understand derivatives better, it is necessary to understand that one of the purposes

⁶⁷ 2011 KHC 2472, A.I.R. 2011 Mad. 144, (2008) 8 M.L.J. 261, 2008 Bus. L.R. 908, 2009(1) C.T.C. 227. (Popularly known as *Rajshree Sugar's Case*).

⁶⁸ *Id* at p.4.

of financial instruments is liquidity, and unless an instrument is sufficiently clear as to the impact and the terms, the financial instrument cannot serve the purpose of liquidity. The solution is to create standardised financial instruments, which are nothing but contract with standard terms and conditions. Normally only such standardised financial instruments, otherwise called securities can be traded in financial markets such as organised exchanges and over the counter markets. The securities are classified as: (a) securities based on real assets (money or money's worth) like stocks, cheques, etc. and (b) securities whose value is derived from some other underlying asset like another financial instrument or some bench mark like stock indexes, interest rates or credit events. The value of any financial instrument depends on the returns it is expected to bring to the investor. The factors affecting the value are the amount of returns, the likelihood of payment, present value of payment and risk associated with the payment. The value of the instrument is inversely proportional to the risk associated with it. Derivatives can be used as insurance cover against certain types of business risks such as fluctuations in the rate of foreign exchange, fluctuations in the rate of interest on borrowings, fluctuations in the value of specified assets, etc. Derivatives can also be used for hedging, protecting against financial risk or can be used to speculate on the movement of commodity or security prices, interest rates or the levels of financial indices. The valuation of derivatives makes use of the statistical mathematics of uncertainty, which is very complex.

However in many cases the actual risk is either not communicated to the investor or the risk is communicated in such complex language that the investor does not get

a correct picture of the risk in subscribing to the financial instrument. This is especially true in the case of financial derivatives whose risk is extremely high compared to primary securities. Therefore the current study is mostly centred on the regulation of financial derivatives rather than other forms of financial securities.

Types of Financial Derivatives:

Alastair Hudson⁶⁹ puts forward a hypothesis that there are only three forms of financial derivative products - the swap, the option and the forward. According to him, all else is embroidery based on these building blocks. However there are different categories of derivatives like options, futures, swaps, swaptions, structured notes, etc. The derivatives are classified mainly based on:

1. **Classification based on Marketplace:** Some of the derivatives are traded through exchanges and they are known as Exchange-Traded-Derivatives (ETD). Others are traded directly between the parties and they are known as Over-The-Counter (OTC) derivatives. An OTC derivative transaction is a privately negotiated bilateral contract or payments exchange agreement whose value derives from the value of an underlying asset, reference rate or index. In contrast to exchange-traded derivatives such as futures contracts, OTC derivatives are customized contracts provided directly by dealers to end-users or to other dealers.
2. **Classification based on Content:** In this type of classification, the derivatives are classified into plain vanilla type and exotic derivatives. The classification is

⁶⁹Alastair Hudson, *Law on Financial Derivatives*, Sweet & Maxwell, London, (1998), at p.1.

derived from classification of ice creams, and the plain vanilla type, as the name indicates are the ordinary old generation type of instruments whereas the exotic varieties are those which are of recent invention.

Plain vanilla derivatives: These are old generation financial derivatives and include forwards, futures, swaps and options.

1. Forwards or Forward Contract: A contract between two parties where one party agrees to buy a commodity or financial asset on a date in the future at a fixed price, while the other agrees to deliver that commodity or asset at the pre-determined price. These are not generally traded on exchanges because they are negotiated directly between two parties. Another way to define forwards are to define it as a privately negotiated investment contract in which a buyer commits to purchase something (as a quantity of a commodity, security or currency) at a pre-determined price on a set future date.

2. Futures or Futures Contract: Here the contract is essentially the same as a forward contract⁷⁰, except that the deal is struck via an organized and regulated exchange. Here a contract is purchased or sold on an exchange in which a party agrees to buy or sell a quantity of a commodity on a specified future date at a set price. In other words, a financial futures contract is an agreement to buy or sell a standard quantity of a specific financial instrument at a predetermined future date and an agreed price.

⁷⁰ There are three key differences between forwards and futures: (i) Futures contract is guaranteed against default. (ii) Futures are standardised and (iii) Futures are settled on a daily basis.

3. Swaps: A swap is an agreement made between two parties to exchange payments on regular future dates. Swaps are Over The Counter (OTC) products. Swaps are used to manage or hedge risk associated with volatile interest rates, currency exchange rates, commodity prices and share prices. Swaps can be considered as series of forward contracts. There are two types of swap contracts:

(i.) *Interest Rate Swaps*: These contracts allow swapping only the interest related cash flows between the parties in the same currency.

(ii.) *Currency Swaps*: These contracts allow swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

4. Options: An 'option' gives the holder the right to buy or sell an underlying asset at a future date at a predetermined price. There are two types or ways of exercising option, a call option and a put option. A 'call option' is the right to buy. The buyer of a "call option" has the right, but not the obligation to buy an agreed quantity of a particular commodity or financial instrument⁷¹, from the seller⁷² at a certain time⁷³ for a certain price.⁷⁴ The buyer pays a premium for this right. In contrast, a 'put option' is the right to sell. The buyer of a "put option" has the right, but not the obligation to sell an agreed quantity of a particular commodity or financial instrument to the seller at a certain time for a certain price). There are a variety of

⁷¹ Called in technical terms underlying instrument.

⁷² Called in technical terms writer.

⁷³ Called in technical terms expiration date.

⁷⁴ Called in technical terms strike price.

options such as American⁷⁵ and European⁷⁶ options, depending upon the time of exercise of the right. Both call option and put option can be combined to achieve “zero cost option”.⁷⁷

Exotic Derivatives: These are basically derivatives of derivatives or derivative products evolved out of a combination of plain vanilla derivative products.

1. Swaptions: Swaptions are options to buy or sell a swap that will become operative at the expiry of the options. Thus a swaption is an option on a forward swap. Rather than have calls and puts, the swaptions market has receiver swaptions and payer swaptions. A receiver swaption is an option to receive fixed and pay floating. A payer swaption is an option to pay fixed and receive floating.

2. Warrants: Options generally have lives of up to one year and the majority of options traded on options exchanges have a maximum maturity of nine months. Longer-dated options are called warrants and are generally traded Over The Counter.

3. LEAPS: The acronym LEAPS means Long-Term Equity Anticipation Securities. These are options having a maturity of upto three years.

⁷⁵ An American option is an option that can be exercised anytime during its life. American options allow option holders to exercise the option at any time prior to and including its maturity date, thus increasing the value of the option to the holder. See http://www.investopedia.com/terms/a/american_option.asp#ixzz4CaRYsVQd, accessed on 25.06.2016 at 16.15 hrs.

⁷⁶ A European option is an option that can only be exercised at the end of its life, at its maturity. See <http://www.investopedia.com/terms/e/europeanoption.asp>, accessed on 25.06.2016 at 16.18 hrs.

⁷⁷ Zero Cost Option is a contract where one option is purchased and simultaneously a matching option of the same value is sold. See <http://www.businessdictionary.com/definition/zero-cost-option.html>, accessed on 25.06.2016 at 16.12 hrs.

4. Baskets: Basket options are options on portfolios of underlying assets. The underlying asset is usually a moving average or a basket of assets.⁷⁸

5. Variance Swap: This is an Over The Counter financial derivative that allows one to speculate on or hedge risks associated with the magnitude of movement, i.e. volatility of some underlying product like an exchange rate, interest rate or stock index. One leg of the swap will pay an amount based upon the realised variance of the price changes of the underlying product. Conventionally, these price changes will be daily log returns, based upon the most commonly used closing price. The other leg of the swap will pay a fixed amount, which is the strike, quoted at the deal's inception. Thus the net payoff to the counterparties will be the difference between these two and will be settled in cash at the expiration of the deal, though some cash payments will likely be made along the way by one or the other counterparty to maintain agreed upon margin.

6. Contract For Difference⁷⁹ (CFD): This derivative instrument is basically a contract between two parties, typically described as "buyer" and "seller", stipulating that the seller will pay to the buyer the difference between the current value of an asset and its value at contract time. If the difference is negative, then the buyer pays instead to the seller. In effect CFD's are financial derivatives that allow investors to take advantage of prices moving up (long positions) or prices moving down (short positions) on underlying financial instruments and are often used to speculate on those markets. For example, when applied to equities, such a

⁷⁸ Equity index options are a form of basket options.

⁷⁹ Hereinafter referred to as CFD.

contract is an equity derivative that allows investors to speculate on share price movements, without the need for ownership of the underlying shares.⁸⁰

7. Credit Linked Note⁸¹: This is a form of funded credit derivative. It is structured as a security with an embedded credit default swap allowing the issuer to transfer a specific credit risk to credit investors. The issuer is not obligated to repay the debt if a specified event occurs. This eliminates a third-party insurance provider. It is issued by a special purpose company or trust, designed to offer investors par value at maturity unless the referenced entity defaults. In the case of default, the investors receive a recovery rate. The trust will also have entered into a default swap with a dealer. In case of default, the trust will pay the dealer par minus the recovery rate, in exchange for an annual fee which is passed on to the investors in the form of a higher yield on their note. The purpose of the arrangement is to pass the risk of specific default onto investors willing to bear that risk in return for the higher yield it makes available. The CLN's themselves are typically backed by very highly-rated collateral, such as U.S. Treasury securities.

8. Constant Proportion Portfolio Insurance⁸²: This is a capital guarantee derivative security. It is primarily used for hedging of risk. Simply stated, the investor maintains a portfolio of products with the manager, comprised of a mixture of different kinds of securities. The investor sets a limit on the dollar value of the

⁸⁰ CFD's are currently available in the United Kingdom, The Netherlands, Poland, Portugal, Germany, Switzerland, Italy, Singapore, South Africa, Australia, Canada, New Zealand, Sweden, France, Ireland, Japan Hong Kong and Spain. CFD's are not permitted in the United States, due to restrictions by the U.S. Securities and Exchange Commission on OTC financial instruments.

⁸¹ Here in after referred to as CLN.

⁸² Hereinafter referred to as CPPI.

portfolio and then structures asset allocation around the decision. This helps the investor a minimum guaranteed amount to the investor at the time of maturity. The manager allocates funds dynamically to a mixture of risky assets such as equities or stock indices and non-risky assets such as bonds and money market funds. The manager then defines a cushion, or a percentage of the assets which could be put at risk without any effect on the level of protection. The manager will then compute the multiplier to apply to the cushion to get the portfolios exposure to the risky underlying. The adjustment of indexing level will depend on the changes in the performance of the risky assets-the more risky assets performs, the stronger the indexing level will be and manager will increase exposure to risky assets and vice versa.⁸³

9. Credit Derivatives: This is a securitised derivative whose value is derived from the credit risk on an underlying bond, loan or any other financial asset. In this way, the credit risk is on an entity other than the counter parties to the transaction itself. This entity is known as the reference entity and may be a corporate, a sovereign or any other form of legal entity which has incurred debt. Credit derivatives are bilateral contracts between a buyer and seller under which the seller sells protection against the credit risk of the reference entity. Where credit protection is bought and sold between bilateral counter parties, this is known as an unfunded credit derivative. If the credit derivative is entered into by a financial institution or a

⁸³ See <http://www.next-finance.net/What-is-CPPI-Constant-Proportion>, accessed on 25.06.2016 at 00.09 hrs.

Special Purpose Vehicle⁸⁴ and payments under the credit derivative are funded using securitization techniques, such that a debt obligation is issued by the financial institution or SPV to support these obligations, and this is known as a funded credit derivative. This synthetic securitization process has become increasingly popular over the last decade, with the simple versions of these structures being known as synthetic Collateralised Debt Obligations,⁸⁵ credit linked notes, single tranche CDOs, to name a few. In funded credit derivatives, transactions are often rated by rating agencies, which allows investors to take different slices of credit risk according to their risk appetite.

10. Equity-Linked Note⁸⁶: This is a debt instrument, usually a bond that differs from a standard fixed-income security in that the final pay-out is based on the return of the underlying equity, which can be a single stock, basket of stocks, or an equity index. A typical ELN is principal-protected, i.e. the investor is guaranteed to receive 100% of the original amount invested at maturity but receives no interest. Usually, the final pay-out is the amount invested, times the gain in the underlying stock or index times a note-specific participation rate, which can be more or less than 100%.⁸⁷ Generally, the participation rate is better in longer maturity notes, since the total amount of interest given up by the investor is higher. ELN can be thought of as a combination of a zero-coupon bond and an equity option. Indeed,

⁸⁴ Hereinafter referred to as SPV.

⁸⁵ Hereinafter referred to as CDO.

⁸⁶ Hereinafter referred to as ELN.

⁸⁷ For example, if the underlying equity gains 50% during the investment period and the participation rate is 80%, the investor receives 1.40 dollars for each dollar invested. If the equity remains unchanged or declines, the investor still receives one dollar per dollar invested (as long as the issuer does not default).

the issuer of the note usually covers the equity pay-out liability by purchasing an identical option. In some ELN's, the pay-out structure is more complicated, resembling an exotic option. ELN's are one type of structured product. Most ELN's are not actively traded on the secondary market and are designed to be kept to maturity. However, the issuer or arranger of the notes may offer to buy back the notes. Unlike the maturity pay-out, the buy-back price before maturity may be below the amount invested in first place.

11. Equity options: These are the most common type of equity derivatives. They provide the right, but not the obligation, to buy (call) or sell (put) a quantity of stock (1 contract = 100 shares of stock), at a set price (strike price), within a certain period of time (prior to the expiration date).

12. Convertible bonds: Convertible bonds are bonds that can be converted into shares of stock in the issuing company, usually at some pre-announced ratio. It is a hybrid security with debt and equity like features. It can be used by investors to obtain the upside of equity like returns while protecting the downside with regular bond like coupons.

13. Equity futures, options and swaps: These equity derivatives derive their value from the price of the underlying stock or stocks.

14. Stock market index futures: Stock market index futures are futures contracts used to replicate the performance of an underlying stock market index. They can be

used for hedging against an existing equity position, or speculating on future movements of the index⁸⁸.

15. Equity basket derivatives: Equity basket derivatives are futures, options or swaps where the underlying is a non-index basket of shares. They have similar characteristics to equity index derivatives, but are always traded OTC (Over The Counter), between established institutional investors. These are used normally for correlation trading⁸⁹.

16. Single-stock futures: Single-stock futures are exchange-traded futures contracts based on an individual underlying security rather than a stock index. Their performance is similar to that of the underlying equity itself, although as futures contracts they are usually traded with greater leverage. Another difference is that holders of long positions in single stock futures typically do not receive dividends and holders of short positions do not pay dividends. Single-stock futures may be cash-settled or physically settled by the transfer of the underlying stocks at expiration, although in the United States only physical settlement is used to avoid speculation in the market.

17. Equity Index Swaps: An equity index swap is an agreement between two parties to swap two sets of cash flows on predetermined dates for an agreed number of years. The cash flows will be an equity index value swapped, for instance, with

⁸⁸ Indices for futures include well-established indices such as S&P, FTSE, DAX, CAC40 and other G12 country indices.

⁸⁹ See <http://www.investopedia.com/university/guide-pairs-trading/pairs-trading-correlation.asp?o=40186&l=dir&qsrc=999&qo=investopediaSiteSearch&ap=investopedia.com>, at p. 26.06.2016. at 00.17 hrs.

LIBOR.⁹⁰ Swaps can be considered as being a relatively straightforward way of gaining exposure to an asset class you require. They can also be relatively cost efficient.

18. Equity swap: An equity swap, like an equity index swap, is an agreement between two parties to swap two sets of cash flows. In this case the cash flows will be the price of an underlying stock value swapped, for instance, with LIBOR. A typical example of this type of derivative is the Contract For Difference (CFD) where one party gains exposure to a share price without buying or selling the underlying share making it relatively cost efficient as well as making it relevantly easy to transact.

19. Intellidex: An Intellidex is a securities product created by and proprietary to the American Stock Exchange. Intellidexes are created by analysing groups of stocks and selecting specific stocks to include in an investment portfolio. These portfolios range from narrow to broad in scope and are usually created based on criteria matching the market as a whole, specific investment styles, or certain industry sectors. Intellidexes and similar products, like exchange-traded funds, are usually traded like normal listed or over-the-counter securities.

20. Exchange Traded Fund⁹¹: An ETF is an investment fund traded on stock exchanges, much like stocks. An ETF holds assets such as stocks or bonds and trades at approximately the same price as the net asset value of its underlying assets

⁹⁰ London Interbank Exchange Rate.

⁹¹ Hereinafter referred to as ETF. Also known as Exchange-Traded Product (ETP).

over the course of the trading day. Most ETFs track an index prepared by rating agencies. ETFs may be attractive as investments because of their low costs, tax efficiency, and stock-like features. Only so-called authorised participants (typically, large institutional investors) actually buy or sell shares of an ETF directly from/to the fund manager, and also only in creation units, which are large blocks of tens of thousands of ETF shares, and are usually exchanged in kind with baskets of the underlying securities. Authorised participants may wish to invest in the ETF shares long-term, but usually act as market makers on the open market, using their ability to exchange creation units with their underlying securities to provide liquidity of the ETF shares and help ensure that their intra-day market price approximates to the net asset value of the underlying assets. Other investors, such as individuals using a retail broker, trade ETF shares on this secondary market. An ETF combines the valuation feature of a mutual fund or unit investment trust, which can be bought or sold at the end of each trading day for its net asset value, with the tradability feature of a closed-end fund, which trades throughout the trading day at prices that may be more or less than its net asset value. Closed end funds are not considered to be ETFs, even though they are funds and are traded on an exchange.⁹²

21. *Binary options*: This is a type of option where the payoff is either some fixed amount of some asset or nothing at all. The two main types of binary options are the cash-or-nothing binary option and the asset-or-nothing binary option. The cash-or-nothing binary option pays some fixed amount of cash if the option expires

⁹² ETFs have been available in the US since 1993 and in Europe since 1999. ETFs traditionally have been index funds, but in 2008 the U.S. Securities and Exchange Commission began to authorize the creation of actively managed ETFs.

while the asset-or-nothing pays the value of the underlying security. Thus, the options are binary in nature because there are only two possible outcomes.⁹³

22. Fund Derivative: A fund derivative is a financial structured product related to a fund, normally using the underlying fund to determine the payoff. This may be a private equity fund, mutual fund or hedge fund. Purchasers might want exposure to a fund to get exposure to a star fund manager or management style as well as the asset class. Typical fund derivatives might be a call option on a fund, a CPPI on a fund or a leveraged note on a fund. More complicated structures might be a guarantee sold to a fund that ensures it cannot fall in value by more than a certain amount. Maturities might range from three to ten years.⁹⁴

23. Inflation Derivative: inflation derivative (or inflation-indexed derivatives) refers to an over-the-counter and exchange-traded derivative that is used to transfer inflation risk from one counter party to another. Typically, real rate swaps also come under this bracket, such as asset swaps of inflation-indexed bonds (government-issued inflation-indexed bonds, such as the Treasury Inflation Protected Securities, UK inflation-linked gilt-edged securities (ILGs), French OATeIs, Italian BTPEis, German Bundeis and Japanese JGBis are prominent examples). Inflation swaps are the linear form of these derivatives. They can take a similar form to fixed versus floating interest rate swaps (which are the derivative form for fixed rate bonds) but use a real rate coupon versus floating and also pay a

⁹³ They are also called all-or-nothing options, digital options (more common in forex/interest rate markets) and Fixed Return Options (FROs) common in the American Stock Exchange).

⁹⁴ 1. The major players in this field are BNP Paribas, Societe Generale, Barclays, Deutsche Bank, Citigroup, Credit Suisse, etc.

redemption pickup at maturity (i.e., the derivative form of inflation indexed bonds). Inflation swaps are typically priced on a zero-coupon basis⁹⁵ with payment exchanged at the end of the term. One party pays the compounded fixed rate and the other the actual inflation rate for the term. Inflation swaps can also be paid on a year-on-year basis⁹⁶ where the year-on-year rate of change of the price index is paid.⁹⁷ Options on inflation including interest rate caps⁹⁸, interest rate floors⁹⁹ and straddles can also be traded. These are typically priced against YOY swaps, whilst the swaption is priced on the ZC curve. Asset swaps also exist where the coupon payment of the linker (inflation bond) as well as the redemption pickup at maturity is exchanged for interest rate payments expressed as a premium or discount to LIBOR¹⁰⁰ for the relevant bond coupon period, all dates are co-terminus. The redemption pickup is the above par redemption value in the case of par/par asset swaps, or the redemption above the proceeds notional in the case of the proceeds asset swap. The proceeds notional equals the dirty nominal price of the bond at the time of purchase and is used as the fixed notional on the LIBOR leg. Real rate swaps are the nominal interest swap rate less the corresponding inflation swap.

⁹⁵ In short ZC. An example is Zero Coupon Inflation Indexed Swap or ZCIIS.

⁹⁶ In short YOY basis. An example is Year on Year Inflation Indexed Swap.

⁹⁷ Exchange is made yearly in the case of most European YOY swaps, but monthly for many US notes. Even though the coupons are paid monthly, the inflation rate used is still the year-on-year rate.

⁹⁸ Interest rate cap is a series of call options with a particular interest rate. Each of these options will expire on the date when the floating loan rate will be reset. At each interest payment date, the holder decided whether the exercise the option or to let it expire.

⁹⁹ Interest rate floors are a series of European interest put options, with a particular interest rate. It works similar to Interest rate cap, and at each interest payment date, the seller agrees to compensate the buyer for a rate falling below the specified rate during the contract period.

¹⁰⁰ London Inter Bank Offered Rate.

24. Interest Rate Derivative: An interest rate derivative is a derivative where the underlying asset is the right to pay or receive a notional amount of money at a given interest rate. The interest rate derivatives market is the largest derivatives market in the world¹⁰¹. Types of Interest rate instruments are:

(i.) Interest Rate Cap: An interest rate cap is designed to hedge a company's maximum exposure to upward interest rate movements. It establishes a maximum total dollar interest amount the hedger will pay out over the life of the cap. The interest rate cap is actually a series of individual interest rate caplets, each being an individual option on the underlying interest rate index. The interest rate cap is paid for upfront and then the purchaser realizes the benefit of the cap over the life of the instrument.

(ii.) Range Accrual Note: Range Accrual Note pays interest only if the floating interest rate (i.e. LIBOR) stays within a pre-determined band. This note effectively contains an embedded option which, in this case, the buyer of the note has sold to the issuer. This option adds to the yield of the note¹⁰². In this way, if volatility remains low, the bond yields more than a standard bond.

(iii.) Bermudan Swaption: Suppose a fixed-coupon callable bond was brought to the market by a company. The issuer however, entered into an interest rate swap to

¹⁰¹ The BIS estimates that the notional amounts outstanding in June 2009 were US\$437 trillion for OTC interest rate contracts, which increased to US \$505,454 billion by second quarter of 2014. Notional amounts outstanding for OTC interest rate swaps in June 2009 were US\$342 trillion, which increased to US\$ 381,028 billion by Second Quarter of 2014. According to the International Swaps and Derivatives Association, 80% of the world's top 500 companies as of April 2003 used interest rate derivatives to control their cash flows. This compares with 75% for foreign exchange options, 25% for commodity options and 10% for stock options.

¹⁰² Suppose a manager wished to take a view that volatility of interest rates will be low, he or she may gain extra yield over a regular bond by buying a range accrual note instead.

convert the fixed coupon payments to floating payments (perhaps based on LIBOR). Since it is callable however, the issuer may redeem the bond back from investors at certain dates during the life of the bond. If called, this would still leave the issuer with the interest rate swap. Therefore, the issuer also enters into Bermudan swaption when the bond is brought to market with exercise dates equal to callable dates for the bond. If the bond is called, the swaption is exercised, effectively cancelling the swap leaving no more interest rate exposure for the issuer.

(iv.) *Power Reverse Dual Currency Note*¹⁰³: A dual currency note (DC) pays coupons in the investors' domestic currency with the notional in the issuer's domestic currency. A reverse dual currency note (RDC) is a note which pays a foreign interest rate in the investor's domestic currency. A PRDC Note or Bond is an exotic financial structured product where an investor is seeking a better return and a borrower a lower rate by taking advantage of the interest rate differential between two countries. The power component of the name denotes higher initial coupons and the fact that coupons rises as the domestic/foreign exchange rate depreciates. The power feature comes with a higher risk for the investor. Cash flows may have a digital cap feature where the rate gets locked once it reaches a certain threshold. Other add-on features are barriers such as knockouts and cancel provision for the issuer.

¹⁰³ In short PRDC Note. Also called Power Reversal Dual Currency Bond or PRDC Bond.

25. Real Estate Derivatives: A Real Estate Option is a contract based on a time horizon and an expected property value. It is developed based on financial options contracts and adapted to individual real estate assets. The following are the different types of Real Estate Options:

(i.) *Call Option*: Buying real estate upside with the Real Estate Call Option, a property owner can sell an option in exchange for debt-free cash today. The investor, who buys the Real Estate Call Option, benefits from property price appreciation and price volatility.

(ii.) *Put Option*: Financing real estate price decline insurance with the Real Estate Put Option (Selling price decline insurance) an investor can sell an option. Thus an investor underwrites price decline insurance. A Property owner, who buys the option, is protected against price decline of the value of property.

Apart from these specific derivatives, there are a large number of small variants of these derivatives which are both innumerable and evolving. Since OTC derivatives are individual contracts, it only requires an innovative mind and a potential buyer to invent a new form of derivative. As such it would be both difficult and unnecessary to list out all possible types of derivatives as the thrust of this work is on the legal framework for regulation of derivatives.

I.S.D.A. has classified the financial derivatives into (a) Credit Derivatives/Credit Default Swaps (b) Equity Derivatives (c) Interest Rate Derivatives (d) Foreign Exchange Derivatives (FX Derivatives) (e) Energy, Commodities, Developing

Products¹⁰⁴. (f) Structured Products and Other Products, and (g) Islamic Finance Derivative Products.¹⁰⁵ It needs to be kept in mind that this broad classification applies only to Over the Counter (OTC) derivatives and that there are a number of custom made derivatives which can have features that are different from those mentioned above. It should be also kept in mind that the financial markets are innovating rapidly and many a times innovations have the aim of overriding regulatory goals. For example, there would be products which are designed as swaps to meet the regulatory requirements but interpreted as options to satisfy cost of funding needs.

LEGAL ANALYSIS OF FINANCIAL DERIVATIVES

Alastair Hudson¹⁰⁶ has identified six analytical patterns for legal analysis of different types of derivative transactions, which are (i) Financial Forward Analysis (ii) Executory Contract Analysis (iii) Mutual Debt Analysis (iv) Repayment Analysis (v) Condition Precedent Analysis and (vi) Disjoined Option Analysis.

According to him, executory contract analysis and repayment analysis have arisen from the case laws dealing with financial derivatives in USA and UK. He points out that the complex transactions involving derivatives should actually be construed as being simple transactions packaged together. According to him, in the mind of the trader, a swap is often analysed as a series of forward transactions. The approach of the documentation is usually to create a Master Agreement which

¹⁰⁴These include derivatives value of which is based on prices or futures of oil, gas, emissions, coal, gold, bullion etc.

¹⁰⁵ These include Profit Rate Swap (Mubadalatul Arbaah), Packaged Structured Investment Bonds etc.

¹⁰⁶*Supra* n. 69 at p.62.

operates as an umbrella agreement. Each individual transaction is then expressly incorporated into the Master agreement. Hudson points out that this raises two possibilities: firstly, considering the entire swap as a single executory contract, it requires elements within it to be offset to reach the final payable amount. Secondly, it can also be viewed as a series of reciprocal debts which are capable of being offset individually under the terms of the central Master Agreement¹⁰⁷. According to him, though the documentation would suggest that the individual interest rate swaps must be considered as separate contracts, the question remains whether these are individual debts or individual executory contracts. To him, rationally, there is no reason to consider these as individual executory contracts and that they should be properly considered as reciprocal debts linked by a Master Agreement for the purpose of set off. However, Hudson points out that Market Standards Swaps Contracts contain provisions for the early termination of the transaction either because of the default of one or other of the parties or as a result of the agreement of the party. In such circumstances, the early termination terminates all of the resulting transactions indicating a composite agreement requiring a series of payments. However losses or gains flowing from terminated executory contract can be categorised as ordinary debt¹⁰⁸. In swap contracts, where each party is required to make periodical payments which will continue over a period of time till expiry, each payment made by either party should be seen as a distinct contractual debt obligation. In certain option and forward transactions, the obligation of payment is required only when some condition precedent is satisfied. This is the starting point

¹⁰⁷*Id* at p.64.

¹⁰⁸*Id* at p.65.

of condition precedent analysis. Thus an interest rate swap agreement can be read as being made up of a series of individual contracts all subject to a condition precedent.

Repayment analysis was evolved judicially. In simple terms, it only means that where reverse payments are involved in respect of the same swap, reverse payments *pro-tanto* reduce pre-existing equity. Since payments were made pursuant into the same void transaction, they are considered together. There is no equity in respect of one payment, independent of equity in respect of others¹⁰⁹. In *Kleinwort Benson v. Birmingham City Council*¹¹⁰, the Court of Appeal had declined the defence of “passing on”¹¹¹, on the basis of repayment analysis. The plaintiff bank had contended that the defence of passing on should be available to it on the basis that it had entered into further interest rate swap agreements with third parties to hedge its risk under the agreement with the local authority. According to the bank, this hedge constituted passing on. The Court of Appeals held that that the hedging agreement was not part of the main agreement and therefore the amounts paid under it would not attract the defence of passing on¹¹². According to

¹⁰⁹*Westdeutsche Landes bank Girozentrale v. Islington London Borough Council*, [1994] 4 All E.R. 890; [1994] 1 W.L.R. 938.

¹¹⁰[1996] 4 All E.R. 733. In this case, the plaintiff bank had paid Birmingham City Council money under interest rate swap agreements that were later declared to be *ultravires* and void by House of Lords. The defendant City Council argued that it need not repay the money as the bank had passed on its losses through hedging transactions long before.

¹¹¹ The defence of “passing on” is a common law defence. It is recognised as a defence in Canada and European Court of Justice, and to a certain extent in England. Simply stated, the defence is that in a claim for restitution, the defendant can raise a defence that that it had passed on some or full gains to the plaintiff and hence the claim has to be reduced to the extent of the said gain passed on to the plaintiff.

¹¹²The Court of Appeal, speaking through Saville LJ, held that if restitutionary remedies were concerned with what the claimant has lost, the passing on defence would be highly relevant, because the fact that claimant had passed on his or her loss would mean that he or she would

Hudson,¹¹³ this would give rise to certain practical problems. Usually in swap transactions, normally two payments are not made. In most cases, payment netting applies and only one payment is made. Therefore practically it would not make sense to say that a single payment is repayment of the payment which was never made. Moreover, since payments under the contract are amounts payable one way calculated after set off of simultaneous reciprocal obligations, even if the contract is considered as a series of executory contracts or as a single agreement with multiple obligations, the payment made under the contract will not be considered to be repayments of one another. *In Re Vandervell (No. 2)*¹¹⁴, it was held that on exercise, the right represented by an option cease to exist. Therefore, there would be no automatic vesting of those rights in the subject matter of the option (the underlying security or cash settlement equivalent). These option rights would simply vanish. This is the disjoint analysis.

As Hudson aptly points out, the question of which approach is to be followed depends on the intention of parties and type of instrument. His last analysis, on the basis of the analysis of the litigation, is that there is no need to consider the questions how to analyse the derivatives. Where contracting parties need to protect themselves against insolvency of the counter party, and calculate their capital adequacy standards on that basis, it is of enormous systemic importance whether

require less compensation from the defendant. But because law of restitution is concerned with the recovery of what the defendant has gained, it follows that the fact that the claimant has passed on his or her loss is irrelevant defence to a restitutionary claim.

¹¹³ *Supra* n. 69 at p. 62-74.

¹¹⁴ [1967]1 All E.R.1.

these contractual provisions will be given effect to by the courts in the event that one party cannot perform its obligations¹¹⁵.

The crux of the above analysis is that so far as derivatives are considered, it is not that significant whether the derivative contracts are considered in law as a single contract or as a number of executory contracts, common terms or as mutual debts. At the same time, the readiness of the courts to give effect to the contractual terms, in terms of a contingency is of enormous systemic importance.

NEED FOR REGULATION OF FINANCIAL MARKETS

The next aspect we need to consider is why anybody should regulate financial markets. Generally, under the *laissez-faire* theory of economics, there is no need to regulate markets. They will work on their own. However, a number of factors would require governments to regulate the markets. Market failures including risk of monopolistic tendencies, requirement of better opportunities, demands for better and effective participation by a segment of the society, development of certain preferences at an aggregate level,¹¹⁶ demands for professional etiquette and public welfare, desire to prevent certain conduct that would create irreversible harm to a different set of people including future generations and efforts by interest groups

¹¹⁵ *Supra* n.69 at p. 75.

¹¹⁶ See <https://www.boundless.com/business/textbooks/boundless-business-textbook/business-ethics-and-social-responsibility-3/promoting-ethical-behavior-34/government-regulation-178-1954/>, accessed on 14.06.2016 at 22.44 hrs. This is called endogenous preferences. See Samuel Bowls, “Endogenous Preferences: The Cultural Consequences of Markets and other Economic Institutions”, *Journal of Economic Literature*, Vol. XXXVI (March 1998), pp. 75–111 at p. 78. See also, Cass R. Sunstein, *After the Rights Revolution: Reconceiving the Regulatory State*, Harvard University Press, USA, (1993) at p. 64, where the endogenous preferences are explained in detail. It means that over time, even with perfect information and perfect foresight, an economic unit with endogenous preferences would be forced to follow an action which is different by the standards of units themselves.

for redistribution of wealth are some of the common reasons that are cited as the grounds that necessitate regulation.

Looking specifically at financial markets, the following are the reasons why markets need to be regulated. Firstly, at several points in history, financial sector had exhibited market irregularities and failures that can have devastating consequences. Secondly, there are social externalities, which make the costs of failures of financial systems far in excess of the cost to the shareholder¹¹⁷. Thirdly free money available in the financial markets attracts fraudsters. Fourthly regulation helps to increase information available to investors thereby increasing transparency, soundness and better control over the financial system¹¹⁸. Fifthly there are a large variety of risks in financial markets based on knowledge of the players about the products and regulation, which can ensure better transparency and more knowledge to the players¹¹⁹. Sixthly financial markets have increased complexity detrimental to the political process¹²⁰, and the control of economic process will be taken fully out of the hands of government if the same is left unregulated. Seventhly, the process of governance requires that the government should be able to plan to manage markets during periods of exceptional

¹¹⁷ “The Warwick Commission on International Financial Reform: In Praise of Unlevel Playing Fields”, Chapter I, “Why Regulate?” The Warwick Commission, University of Warwick, U.K., November, 2009 available in http://www2.warwick.ac.uk/research/warwickcommission/financialreform/report/chapter_1.pdf, accessed on 18.04.2015 at 13.34 hrs.

¹¹⁸ See http://econc10.bu.edu/Ec341_money/exams/regulateornot.htm accessed on 22.04.2015 at 09.09 hrs.

¹¹⁹ Alastair Hudson, *The Law on Financial Derivatives*, Sweet & Maxwell, London, (1998), at p. xi.

¹²⁰ *Id* at p. 353.

volatility.¹²¹ Eighthly, after the liberalisation, the government has taken serious steps to attract retail investors into the financial sector, including by providing tax benefits. Thus, the government has a moral responsibility to protect unsuspecting retail investors in the financial sector from the unscrupulous elements operating in the financial sector, so that the retail investors do not stand to lose.

As all critics agree, financial markets need to be controlled. There is difference of opinion as to who should control i.e. whether it should be self-regulation, executive regulation or legislative regulation of financial markets.

A study of history of the financial markets would show that financial derivative were in existence from the very beginning of history of financial markets, or at least for a considerably long period. As has been examined, these are basically contracts, and their usefulness depends upon goodwill and trust between parties. In small markets, the parties know each other and there is no additional requirement for protection of buyers or sellers. However, in a big and complicated market, which is spread over different legal jurisdictions and with parties coming from different legal, political, economic and cultural settings, there is a dire need to ensure that all parties have a level playing field. This is not a requirement of the regulators or the governments, but an inherent requirement for the markets themselves to sustain its competitiveness in the long run. This necessitates regulation. Financial Action Task Force (FATF)¹²² report of 1999-2000 refers to

¹²¹ *Id* at p. 354.

¹²² Financial Action Task Force is an inter-governmental body established in 1989 by the Ministers of its member jurisdictions. The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering,

the possibility of the money laundering operations through the derivative markets¹²³, which also is a compelling reason for the governments to regulate derivative markets.

A comparative study of the regulatory regimes existing in various countries only could show the similarities and dis-similarities in the approach adopted by regulators in various national jurisdictions. Such a study that would also reveal the effectiveness of regulation is undertaken in the next chapter.

terrorist financing and other related threats to the integrity of the international financial system. The FATF is therefore a “policy-making body” which works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.

¹²³ See the website of FATF containing Annual Report of FATF, 1999-00 <http://www.fatf-gafi.org/media/fatf/documents/reports/1999%202000%20ENG.pdf>, accessed on 23.04.2016 at 19.37 hrs.