Financial derivatives: A tool of risk management

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Abstract

A special branch of engineering named as financial engineering led to the introduction of financial derivatives. The main purpose behind the development of financial derivatives was to manage the systematic risk arising out of primary assets. From the viewpoint of portfolio there arises two types of risk namely unsystematic risk and systematic risk. Unsystematic risk is that risk which can be minimized by forming diversified portfolio whereas the systematic risk is that risk which cannot be minimized through diversified portfolio. This systematic risk can only be minimized or managed through financial derivatives. Risk is a basic feature which is possessed by all commodities as well as the financial assets which are traded in the capital market. Prices of the various commodities like rice, wheat, cotton, oil, precious commodities like gold, silver, jewelry are always subject to price fluctuation in the short run as well as in the long run. A general discussion has been done on the concept, types and major participant in the derivatives market. In this paper it has been discussed that how financial derivatives are used as a tool of risk management.

Keywords: Financial Derivatives, Hedging, Forward Contract, Future Contract, Options, Risk Management.

Introduction

A special branch of engineering named as financial engineering led to the introduction of financial derivatives. The main purpose behind the development of financial derivatives was to manage the systematic risk arising out of primary assets. From the viewpoint o portfolio there arises two types of risk namely unsystematic risk and systematic risk. Unsystematic risk is that risk which can be minimized by forming diversified portfolio whereas the systematic risk is that risk which cannot be minimized through diversified portfolio. This systematic risk can only be minimized or managed through financial derivatives. Risk is a basic feature which is possessed by all commodities as well as the financial assets which are traded in the capital market. Prices of the various commodities like rice, wheat, cotton, oil, precious commodities like gold, silver, jewelry are always subject to price fluctuation in the short run as well as in the long run. Producers or manufacturers of these commodities are not sure about the future prices of these products. The producers are not sure that at what price they would be able to sale these products in the

market since this product prices are subject to fluctuation. Similarly, the prices of shares and debentures are also constantly changing. The foreign exchange rates are also subject to the exchange rate fluctuation. In case of international transaction an importer of certain a piece of a product say a physical asset is not sure of the amount which he will be paying in the near future since Indian rupee is subject to exchange rate fluctuation. Similarly, an exporter of a certain commodity is also not sure about what amount of foreign currency he will be receiving in the near future if he sells the product on credit as Indian rupee is subject to the exchange rate fluctuation.

Thus, the derivatives product emerged as a tool of risk management through such derivative products one can protect him against unforeseen price fluctuation in the near future.

Objectives of the study

- To understand the concept of financial derivatives.
- To focus on the meaning, types and risk management aspect of financial derivatives.

Methodology

This study is totally based on the secondary data.

Meaning

Financial derivatives are the instruments that derive its value from the change of value of underlying assets. The underlying assets are being referred to as the primary assets. It has been seen that the contracts between the financial derivatives and the corresponding stocks of assets and liabilities are composed separately. The capital flows which are raised from the financial derivatives regarded as gross changes that means the flow data are turn down into assets and liabilities. The payment flows or the cash flows are also resulting from the contract which entered into non-residents and materialized during the reference period. Due to these gross changes is recorded in the financial derivatives. Like the capital flows the stock data of financial derivatives also turn down into assets and liabilities. The assets stock is regarded as the sum of derivative contract which have the positive market value and on the other hand the liabilities stock is regarded as the sum of derivative contract which have the negative market value. From this statement it can be clearly said that the market value of a contract will be positive for a finish reporting entity when the contract were to be settled immediately and it will be negative when the finish reporting entity of contract were not to be settled immediately.

Definition:

A derivative is a financial contract whose pay of structure is influenced by the value of an underlying asset which may be a security or an interest rate or share price index, oil price, exchange rate etc. All derivative instruments are based on some cash products. The derivative instrument may be a product which includes the following:

- Commodities including food grains, potato etc.
- Precious metal like gold, silver jewellery etc.
- Foreign currency
- Bonds of different types.

Other than these four instruments the financial derivatives also includes various options, warrants, forward contracts, futures and currency and interest rate swaps and so on.

Jason Fernando in his study on Derivatives (2021) stated that the financial derivatives are generally leveraged instruments of the market which are able to increase their potential risks as well as rewards in the market. This is a complex type of financial securities that is supposed to be set between two or more parties as said before. The financial derivatives generally used to hedge a position, able to hypothesize directional movement of the underlying assets. This also helps in the balancing the exchange rates for internationally traded goods.

It has been seen that most of the largest companies of the world uses the financial derivatives to decrease the risk of the product in the market during exchange or contract between two or more parties. Kimberly Amdeo in the paper "Financial Derivatives: What Makes Derivatives So Dangerous (2022)" stated that during 2019 32 billion derivatives contracts were traded between top level companies to minimize the risk in the market. The financial derivatives help to make future cash flows much predictable. Due to this reason, it helps the top level companies to predict their future earning more accurately. From this it is surely identified that this predictability boosts stock prices which helps the companies to take less amount of money in their hands during emergency period in the market. Therefore, the companies are able to reinvest more resources in their business.

James Chen (2022) stated that the financial derivatives are the secondary securities of the market to minimize the risk which is solely dependent on the value of the primary securities of the market. According to the author that is why the financial derivatives are also considered as the advanced investing as this is a contract between two or more parties of the market whose value totally based on an "agreed-upon underlying financial asset, index, or security." The financial derivatives have two classes of products. One is Lock products which bind the parties from the agreed upon terms on the life of the contract of the parties. On the contrary, the second product Option offers the rights to the parties, not the obligations of the markets.

Example of financial derivatives:

Now, I would like to illustrate an example to simplify the understanding of financial derivatives. Let us assume, corn flakes manufacturing company manufactured corn flakes for which they have to buy corn of 10 dollar per quintal from a supplier. For this purchase of 10 dollar corn the company has to require the margin. However, there is a possibility of heavy rainfall and other issues which may cause the destruction

of the crops which may cause the increase of the rate of corn in the market. Due to this reason, the corn flakes production company may hamper the profit margin. However, the supplier have made all the possibilities to save the crops and must be use the better farming equipment for the corns which will cause the higher growth of the corn than the normal instead of risk of rains and other corn damaging aspects.
Therefore, the corn flakes manufacturer company and the supplier came to a contract of six months to fix the price of corn at 10 dollar per quintal. Even if the rain or other issues may destroy the crop and the prices increases in the market then the corn manufacturing company will still pay $10 per quintal and the supplier also maintain the same term and the vice versa that means if the rainfall is not heavy and the production is good and demand is risen still the corn manufacturing company will pay $10 per quintal. It might be hampering the margin of the corn manufacturing company and the supplier makes clear profit from that forward contract between them.

Types

The most popular types of financial derivatives are as follows:
Forward Contracts:

A deal for the buying and selling of a commodity or a security or any other type of asset can be made in the spot market or in the forward market. Spot market is popularly known as the cash market where the trading is done on day to day basis. Apart from spot market another way buying and selling of any asset can be done in the derivatives market through forward contract. In forward contract the purchaser enters into a contract with the seller to pay cash on a future date after the receiving of goods from the seller. In forward contract the price of which the commodity or the asset which will be traded is specified at the point of entering into the forward agreement. The logic behind of entering into a forward contract is to fix the price in order to avoid the price volatility or fluctuation. Thus, by entering into a forward contract or agreement the person is certain of the price of which he or she will purchase or sell a commodity or any other type of asset. On the day of maturity of the contract if the market price of the commodity is more than the fixed price then the buyer gains from the contract whereas the seller bears a loss and vice versa.
Future Contracts:

Future contracts are modified version of the forward contracts in terms of standardization, performance and proximity to cash. A future contract is a standardized contract between two parties where one party accomplish to sell and the other to buy a specified quantity or quality of a commodity, currency, security, index etc. Forward contracts are traded on recognized exchanges. When an investor purchases a future contract he occupies a long position in an organized future exchange. On the other hand, when an investor sells a contract he occupies a short position. There is no risk of non-performance in trading with future contracts.

Options:

An option is the right but not an obligation to buy or sell a specified amount of a commodity, currency, index or any other financial instruments at a specified price on or before given date of future. Like all the other contracts, in option there exists to parties: the buyer who takes a long position and the seller who takes a short position. The options contracts give the owner of the option a right to buy/ sell a particular commodity or any other asset at a pre-determined price by a specified date. It is to be taken into consideration that an option contract gives the option holder the right and not the obligation buy/sell. On the contrary, the option writer has the obligation to sell/buy the primary asset if that suits the option holder.

Swaps:

Swaps are the derivative products that aid two parties to exchange their financial obligations. Companies use the swap contracts to minimize and manage the uncertainty of risky projects.

Traders in the derivative markets:

The following are the various traders or participants in the derivative market.

Hedgers:

Hedging is the main reason which leads to the development of derivatives. Hedgers are the traders who want to eliminate the price risk to which they are exposed while trading in the market. Let us take an example in order to illustrate the concept of hedging. Mr. X a trader buys a large quantity of potato that would be reaching to him within four weeks. Now, he anticipates that potato prices might fall in the coming four weeks and he has to sell the potatoes at a lower price. The trader can sell future or forward contracts in order to protect himself from the fall in price of the potato through hedging. Thus, I the potato price fall in the coming two weeks he would be losing from the sale of potato but will be able to earn profit from the forward or future contracts which would set off the loss. Again, the traders dealing in imports and exports are subject to the volatility in foreign exchange rate which is being referred as the forex risk. This forex risk can also be to certain extent being controlled through hedging.

Speculators:

Hedgers are the person who always wants to avoid or eliminate the price risk whereas the speculators are the person who is always eager to take such price risk. They are the people who are willing to take position in the market and are always ready to take risk from fluctuation or change in prices.

Arbitrageurs:

Arbitrage means making riskless profit by simultaneously entering into transactions in two or more markets. According to ICAI the ‘Arbitrage’ has been defined as follows: Simultaneous purchase of securities in one market where the price thereof is low and sale thereof in another market, where the price thereof is comparatively higher. These are done when the same securities are being quoted at different prices in the two markets, with a view to make a profit and carried on in with the conceived intention to

derived advantage from difference in prices of securities prevailing in the two markets. Let us illustrate an example in order to understand the concept of arbitrage. Suppose the share price of a company is priced at Rs 350 per share in Bombay Stock Exchange (BSE) and the same share is quoted at NSE at Rs 352.50. Then one would buy the shares from BSE and sell the shares at NSE simultaneously thereby earning a riskless profit of Rs 2.50 per share. The person who purchases the share from BSE and sales it at the NSE is known as the arbitrageurs.

Financial derivatives: A tool of risk management

Financial Derivatives are regarded as the tool of risk management. In order to understand the concept of risk it is very much essential that one must have a clear idea about investment and return. In finance Investment is defined as the sacrifice of current money or other financial resources for the expected benefit in the future. Investment has two key aspect namely return and risk. Return is the reward for undertaking investment whereas Risk is the variability of its rate of return. The question of risk arises when there is a mismatch between expected return and actual return. In other words when there is a variation between actual return and expected return risk exists.

Risk is of different types namely Business Risk, Financial risk, Market Risk, Interest rate risk etc. In this paper I would like to focus on the Foreign exchange risk aspect and how such risk is being managed through financial derivatives.

Suppose an importer is importing machinery from USA worth $ 10000 on credit for 3 months on 10th May 2022.Now the importer is subject to the foreign exchange risk as he will be paying the money after 3 months from now. On 10th may2022, $1 = Rs77.29. That means if the importer have paid on 10th may, 2022 he would have to pay 10000* 77.29= Rs772900 .Since he is not paying the money today ,i.e. paying after 3 months the importer has to face the foreign exchange risk. After 3 months the exchange rate may be greater than $1= Rs77.29 or less than it. If the exchange rate is greater than $1=Rs77.29 say $1= Rs80 after 3 months then the importer have to pay Rs800000. Due to increase in the rupee dollar exchange rate the importer has to pay an extra amount of Rs27100. Now in order to minimize the risk if the importer enters into a 3 months forward contract at $1=Rs79 then he will be able to save to manage Rs10000.

Conclusion:

In this paper I have tried to highlight on different aspect of the financial derivatives like its meaning, types, the major participants or traders. Business is all about risk. The important thing is how one manages the risk. There are different types of risk as discussed in this paper which will affect the business. Risk management is one of the important parts of business. One should know the process through which one can minimize the risk. Therefore, after the brief discussion about the financial derivatives it can be stated that it is the one of the basic major tool of risk management.

Reference

1. Amadeo, K. (2022), "Financial Derivatives: What Makes Derivatives So Dangerous", US & World Economics.
2. Chen, J, (2022), "Derivatives", Options and Derivative Trading.
3. Fernando, J. (2021), "Derivative" Options and Derivative Trading, Vol.1
4. Malleswari, B. (2013), "Derivatives as a Tool of Risk Management", International Journal of Humanities and Social Science Invention, Vol. 2 (4), Pp-12-15
5. Vohra, N.D. Bagri, B.R. (2003), "Futures and Options", McGraw Hlil Education (India) Private Limited, Vol.2 Pp.1-17.