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CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	AN EMPIRICAL STUDY ON FACTORS INFLUENCING THE SELECTION OF VAS (VALUE ADDED SERVICES) IN MOBILE TELECOM INDUSTRY <i>VARUN BHARDWAJ & C. L. CHANDAN</i>	1
2.	DYNAMICS OF RURAL RETAILING IN INDIA: CHALLENGES AND OPPORTUNITIES <i>Dr. SATHYNARAYANA. S & SUDHINDRA GARGESHA</i>	7
3.	IMPACT OF EMOTIONAL INTELLIGENCE OVER THE TEACHING PERFORMANCE IN HIGHER EDUCATIONAL INSTITUTIONS <i>Dr. KANAGARAJ.N & KARTHICK.K</i>	17
4.	CRM: CONSEQUENCE IN ORGANISED RETAIL STORES AN EMPIRICAL STUDY <i>P. JANANI & V. PRIYANKA</i>	20
5.	NON PERFORMING ASSETS AND PROFITABILITY OF COMMERCIAL BANKS IN INDIA <i>Dr. REKHA GARG</i>	23
6.	EFFECTS OF STRESS AND ITS CONSEQUENCES ON CONSUMER SAVINGS PATTERN <i>Dr. L. A. RAZIA FATHIMA</i>	26
7.	HUMAN RESOURCE DEVELOPMENT AND THE OPERATIONAL PERFORMANCE OF ENTREPRENEURS IN NIGERIA <i>Dr. S.O. ONIMOLE</i>	28
8.	EFFECTIVENESS OF HEDGING A PORTFOLIO OF SELECTED SHARES USING INDEX FUTURES BASED ON THE STUDY CONDUCTED IN OUR INVESTMENTS ENTERPRISE LTD. (ERSTWHILE COCHIN STOCK EXCHANGE LTD.) <i>GREGORY JOHN</i>	34
9.	THE INFLUENCE OF MICROECONOMIC FACTORS TOWARDS NPL OF MICRO SMALL ENTERPRISES (MSE) BANK XYZ <i>DUDY BUDIANA, HERMANTO SIREGAR & TUBAGUS NUR AHMAD MAULANA</i>	44
10.	A STUDY OF EFFECTIVENESS OF TRAINING PROGRAM <i>SUJIT BABURAO CHAVAN</i>	48
	REQUEST FOR FEEDBACK & DISCLAIMER	51

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EFFECTIVENESS OF HEDGING A PORTFOLIO OF SELECTED SHARES USING INDEX FUTURES BASED ON THE STUDY CONDUCTED IN OUR INVESTMENTS ENTERPRISE LTD. (ERSTWHILE COCHIN STOCK EXCHANGE LTD.)

GREGORY JOHN
GUEST LECTURER
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ABSTRACT

The study was done at Cochin Stock Exchange, Kochi mainly concentrating on hedging of equity portfolio using index futures by constructing a portfolio which consists of 10 different companies from different sectors randomly selected. This study is an outcome of a study undertaken on the National Stock Exchange benchmark index-the Standard and Poor's Crisil Nifty Index and Nifty futures contract, on the present topic. The study is based on the concept that portfolio risk is dominated by the market risk, regardless of the composition of the portfolio. Index futures provide a solution for countering the market risk. Portfolio managers use index futures to hedge their portfolios against adverse future fluctuations in prices. For this study, a portfolio comprising of scrips traded in the National Stock Exchange were selected. A period from 31st March 2017 to 27th April 2017 was selected for the study. The secondary data are collected from the various websites and also information from various books, company publications etc. The interpretations and suggestions are on the basis of various analytical tools based on the prudence of the investigator.

KEYWORDS

futures, hedging, nifty, portfolio.

INTRODUCTION

Capital market is a market where buyers and sellers engage in trade of financial securities like bonds, stocks, etc. introduction of equity derivatives was essentially the beginning of a new era in the Indian capital market.

A derivatives is a contract whose value is derived from the value of another asset, known as the underlying asset, which could be a share, a stock market index, an interest rate, a commodity, or a currency. The most important use of derivatives is in transferring market risk, which acts as a protection against losses resulting from unforeseen prices or volatility changes. Thus, derivatives are a very important technique of risk management

HEDGING

Hedging is the prime reason for the advent of derivatives and continues to be a significant factor deriving financial managers to deal in derivatives. Hedging involves transfer of market risks-the possibility of market sustaining losses due to unforeseen unfavorable price changes.

HEDGING – COMPLETE & PARTIAL

Hedging is any act that tries to protect an investment from price risk to the maximum extent possible. So, it's just like insurance.

Full hedge is when you take exactly equivalent opposite position in order to protect 100% of your portfolio. Partial hedge is when you decide to hedge only a part of your holdings against risk.

TYPES OF DERIVATIVES

(1) FORWARD

A contract that obligates one counter party to buy and the other to sell a specific underlying asset at a specific price, amount and date in the future is known as a forward contract. They are the simplest derivatives. The change in the value of a forward contract is roughly proportional to the change in the value of its underlying asset.

Forward contracts are customized with the terms and conditions tailored to fit the particular business, financial or risk management objectives of the counter parties.

(2) FUTURES

A futures contract is a standardize forward contract which can be easily traded between parties other than the two initial parties to the contract. The parties initially agree to buy and sell an asset for a price agreed upon today (the forward price), with delivery and payment occurring at a derivative product.

Contracts are negotiated at futures exchanges, which act as a market place between buyers and sellers. The buyer of a contract is said to be long position holder, and the selling party is said to be position holder.

(3) OPTIONS

A derivative transaction that gives the option holder the right but not the obligation to buy or sell the underlying asset at a price, called the strike price, during a period or on a specific date in exchange for payment of a premium known as 'option'. Underlying asset refers to any asset that is traded. The price at which the underlying is traded is called the 'strike price'. There are two types of options be, call option and put option.

(a) CALL OPTION

A contract that gives its order the right but not the obligation to buy an underlying asset – stock or any financial asset, at a specified price on or before a specified date.

(b) PUT OPTION

A contract that gives its owner the right but not the obligation to sell an underlying asset-stock or any financial asset, at a specified price on or before a specified date is known as a 'Put Option'.

(4) SWAPS

Swaps are transactions, which obligates the two parties to the contract to exchange a series of cash flows at specified intervals known as payment or settlement dates. In case of swap, only the payment flows are exchanged and not the principle amount. Interest Rate swaps and currency Swaps are the two commonly used Swaps.

NIFTY

The CNX Nifty is a well diversified 50 stock index accounting for 22 sectors of the economy.

The NIFTY 50 index is National stock Exchange of India's benchmark stock market index for Indian equity market. Nifty is owned and managed by India Index service and products (IISL), which is a wholly owned subsidiary of the NSE Strategic Investment Corporation Limited.

NIFTY50 index has shaped up as a largest single financial product in India, with an ecosystem comprising exchange traded funds (onshore and offshore), exchange traded futures and options (at NSE in India and at SGX and CME abroad), other index funds and OTC derivatives (mostly offshore). NIFTY 50 is the world's most actively traded contract.

The NIFTY 50 cover 13 sectors of the Indian economy and offers investment managers exposure to the Indian market in one portfolio.

The NIFTY 50 Index gives 29.70% weightage to financial services, 0.73% weightage to agricultural sector.

The NIFTY 50 Index is a free float market capitalisation weighted index.

INDEX FUTURE IN HEDGING

The index futures act as a good substitute for many investment portfolios with own index representing the stock market as a whole. The transaction costs will be minimal and the administrative work will be less. The price of index, the cost of carry and expected dividend.

FUTURE CONTRACTS

Futures are exchange traded Contractual obligations to make or accept the delivery of a specified quantity of a commodity during a specified time in future at a price agreed upon at the time the commitment is made. Futures are highly standardized products.

PORTFOLIO

A portfolio is a grouping of financial assets such as stocks, bonds and cash equivalents as well as their funds counterparts, including mutual, exchange-traded and closed funds. Portfolios are held directly by investors and/or managed by financial professionals.

In finance, a portfolio is a collection of investments held by an investment company, hedge funds, financial institution or individual.

BETA

Beta is a measure of the volatility or systematic risk, of a security or a portfolio in comparison to the market as a whole.

Beta is a numeric value that measures the fluctuations of a stock to changes in the overall stock market

Beta is calculated using regression analysis. Beta represents the tendency of a security's returns to respond to swing in the markets. A security's beta is calculated by dividing the covariance of the security's returns and the benchmark's returns by the variance of the benchmark's returns over a specified period.

$$\text{Beta} = \frac{\text{covariance}(r_i, r_m)}{\text{Variance}(r_m)}$$

Similarly, beta could be calculated by first dividing the security's standard deviation of returns by the benchmark's standard deviation of returns. The resulting value is multiplied by the correlation of the security's returns and the benchmark's returns.

$$\text{Beta} = \text{Correlation}(r_a, r_m) \times \frac{\sigma_i}{\sigma_m}$$

MEASURES OF BETA

Beta is a measure of systematic risk. It measures the sensitivity of a scrip/ portfolio viz-a-viz index movement. Beta movement describes the relationship between the stocks return and the index return.

(a) Beta = +1.0

One percent change in market index returns causes exactly one percent change.

In the stock return hence they more random

(b) Beta = +0.5

One percent change in market index returns causes 0.5% change. So the stock is less volatile compared to the market.

(c) Beta = +2.0

One percent change in market index returns causes 2 % change in the stock market, so return is highly volatile and hence risky.

(d) Negative Beta

Negative Beta value indicates that the stock return moves in the opposite direction to the market return. A negative beta will give positive return.

PROBLEM OF THE STUDY

"Effectiveness of hedging a portfolio of selected shares using index futures based on the study conducted in Our Investments Enterprises Ltd (Erstwhile Cochin Stock Exchange Ltd)", deals with the construction of a portfolio on the basis of risk-return evaluation and loss minimization using hedging. Here ten securities from different sectors have been selected for construct a portfolio. This study is focused with the role of Index Future in hedging of securities. The study points out the significance of hedging in safeguarding the securities of an investor from the volatilities in the stock market. This study aims to analyze to what extent, the loss arising from the market risk can be reduced using the derivatives focusing on the Index Future by applying the hedging strategy in the market conditions.

HYPOTHESIS

Indian Capital Market is always uncertain. Anything can happen in the market. A stock picker carefully purchases securities base on the sense that they are worth more than market price. While doing so he faces a risk that the entire market moves against him and generate losses even though the underlying idea was correct. Hedging with index futures contract removes the unwanted exposure of index movements.

SCOPE OF THE STUDY

An investor holds a portfolio in the expectation that it is undervalued and likely to be appreciated. In taking this position, he carries not only the risk of his estimates of the stock being wrong but also faces the risk of the market moving against his thinking. So he can with index future contract.

METHODOLOGY OF DATA COLLECTION

The data are collected in the form of primary data and secondary data. The primary data was collected by inside discussion with the concerned authority in the CSE and observing the trading methods. In addition, secondary data are taken from published reports, annual company reports and library books and from the websites of NSE and various other websites. The data used for the study are historical or secondary nature. Section of companies among those listed on the S & P CNX Nifty.

OBJECTIVES OF THE STUDY**PRIMARY OBJECTIVES**

To examine how effective the hedging of index futures is in minimizing the market risk.

SECONDARY OBJECTIVES

- 1) To study about the impact of hedging in the derivative market.
- 2) To know the impact of hedging in trading with futures.
- 3) To analyze the level of profits through hedging of futures.
- 4) To analyze the effectiveness of hedging in reducing the risk.
- 5) To study about the different strategies in the derivative market.

RESEARCH DESIGN

The study is basically empirical in nature. The study was undertaken for a period of 1 month from 31st March 2017. The aim is to study the effectiveness of hedging strategy with respect to Nifty Index futures. The study is conducted by constructing a portfolio of 10 stocks from major industries mock trading on them and hedging index futures wherever necessary to reduce risk.

TYPES OF RESEARCH AND SAMPLING

This research is an analytical research. The sampling is convenient sampling. The sample size consists of data of ten company's stocks from 31st March 2017 to 27th April 2017. The companies selected belong to different sectors.

TOOLS FOR ANALYSIS

Various tools have been used to measure the effectiveness of hedging. Calculations have been carried on the following assumptions:

- There is no brokerage.
- No margin.
- Plenty of liquidity.

The tools used are as follows:

- Beta of portfolio – beta value of portfolio/ value of portfolio.
- Amount to be hedged = portfolio beta X value of the portfolio.
- Number of Nifty figures to be hedging = beta value of portfolio/ spot nifty,

Nifty to be hedge = number of nifty futures to be hedge/Nifty.

Hedged value = number of lots of nifty to be hedged X nifty market.

LIMITATIONS

1. The study has been limited to the Indian derivative market,
2. The study suffers from the limitations due to be undertaking in the securities market.
3. Time frame with which the study had to be complete was limited to 2 months.
4. The beta value for risk assessment is not precisely not current as it changes from time to time.
5. While applying the strategy, transaction cost and impact of cost are not considered.
6. The study mostly depended on the information from the web.
7. The sample size is small so it may not represent the opinion of the universe.
8. Past data has been taken for the analysis. Indian Capital Market is featured by the weak form of efficient market hypothesis.

INDUSTRY PROFILE & COMPANY PROFILE**INDUSTRY PROFILE**

A stock exchange means “anybody of individuals whether incorporated or not, consolidated for the purpose of assisting, regulating and controlling the business of buying, selling and dealing in securities”. The securities traded on a stock exchange include: shares issued by the companies, unit trust and other ported investment products and bonds. To be able to trade a security on a certain stock exchange, it has to be listed there.

The first organized stock exchange in India was started in 1875 at Bombay and it is started to be the oldest in Asia. At present there are 24 stock exchanges in the country, 21 of them being regional ones with allotted areas. Two others set up in the reform era, viz; the National Stock Exchange (NSE) and over the Counter Exchange of India (OTCEI), have mandate to have nation-wide trading.

The Stock Exchange are being administered by their governing boards and executive chiefs. Polices relating to their regulations and control are laid down by the Ministry of Finance. Government also constituted securities and Exchange Board of India (SEBI) in April 1988 for orderly development and regulation of securities industry and stock exchanges.

BOMBAY STOCK EXCHANGE

The stock exchange, Mumbai populations known as “BSE” was established in 1875 as “The Native Share and Brokers Association”. It is the oldest one in Asia. It is the first stock exchange in the country to have obtained permanent recognition in 1956 from the Govt. of India under the Securities Contracts Regulation Act, 1956. Bombay Stock Exchange is also one of the biggest Stock Exchange in the world in terms of listed companies. It introduced the screen based trading system in 1995, which is known as Bombay on-line Trading System (BOLTS).

NATIONAL STOCK EXCHANGE

With the Liberalization of the Indian Economy, it was found inevitable to lift the Indian Stock Market trading system on par with the International Standards. On the basis of the recommendations of high powered Pherwani Committee, the National Stock Exchange was incorporated in 1992 by Industrial Development Bank of India (IDBI), Industrial Credit and Investment Corporation of India, Industrial Finance Corporation of India, all Insurance Corporations, selected Commercial Banks and others. Trading at NSE take place through a fully automated screen based trading mechanism which adopts the principle of an order driven market.

The National Stock Exchange (NSE) is India’s leading stock exchange covering various cities and towns across the country.

It has played a catalytic role in reforming the Indian securities market in terms of micro-structure, market practices and trading volume.

OBJECTIVES OF NSE

The main objective of NSE is to establish a nationwide trading facility for equities, debt and hybrids.

Other objectives includes the following:

- a) To ensure equal access to investors all over the country through appropriate communication networks.
- b) To provide a fair, efficient and transparent security market to investors by using an electronic communication network.
- c) To enable shorter settlement cycle and book entry system.
- d) To meet current international standards of securities market.

NSE 50-INDEX

The NSE 50 Index, commonly known as Nifty is a market Capitalization weighted index. It was introduced in April 1996, replacing the earlier NSE-100.

The objective of the NSE-50 index is given below:

- a) To reflect the market movement more accurate.
- b) To provide fund manager with a bunch mark for measuring portfolio performance.
- c) To establish a basis for introducing index based derivative product.

OVER THE COUNTER EXCHANGE OF INDIA (OTCEI)

With the objective of providing more efficient services to investors, the country’s first electronic stock exchange which facilitates ring less, scrip less trading was set up in 1992 with the name Over the Counter Exchange of India (OTCEI). The shares and debentures of the companies listed on the OTC can be bought and sold at any OTC all over the country and they should not be listed anywhere else.

OTCEI has a unique feature of trading compared to other traditional exchanges. That is, certifies of listed securities and initiated debentures are not traded at OTC. The original certificate will be safely with the custodian. But, a counter receipt is generated out at the counter which substitutes the share certificate and is used for all transactions.

OTCEI has the following advantages compared to the traditional Exchanges.

- a) Greater transparency and accuracy of prices is obtained due to the screen based scrip less trading.
- b) OTCEI has widely dispersed trading mechanism across the country which provides greater liquidity and lesser risk of intermediary charges.
- c) Faster settlement and transfer process compared to other exchanges.
- d) Since the exact price of the transaction is shown on the computer screen, the investor gets to know the exact price at which he/she is trading.
- e) In the case of an OTC issue (new issue), the allotment procedure is completed in a month and trading commerce’s after a month of the issue closure, whereas it takes a longer period for the same with respect to other exchange.

SECURITIES AND EXCHANGES BOARD OF INDIA (SEBI)

The SEBI was established on April 12, 1988, through an administrative order but it becomes a statutory and really powerful organization only since 1992. The SEBI is under the overall control of the Ministry of Finance and it has its Head office at Mumbai.

The scope of operations of the SEBI is very wide; it can frame or issue rules, regulation, directives, guidelines, norms in respect of both the primary and secondary markets, intermediaries operating in these markets, and certain financial institutions. It has powers to regulate Depositories and participants, custodians, Debenture Trustees, and Trust Deeds, FIs, Insider trading, Merchant Bankers, Mutual Funds, Portfolio Managers, Investment Advisers, Registers to Issue and Sub-Brokers, Venture Capital Funds, and Bankers to Issues.

The SEBI can issue Guidelines in respect of:-

- a) Information disclosure, operational transparency and investor protection.
- b) Development of financial institutions.
- c) Pricing of issues
- d) Bonus issues.
- e) Preferential issues.
- f) Financial investment and
- g) Form allotment and transfer of shares among promoters.

SEBI'S POWER IN RELATION TO STOCK EXCHANGE

The SEBI ordinance has given it the following powers.

- 1) It may call periodically returns from Stock Exchange.
- 2) It has the power to prescribe maintenance of certain documents by the Stock exchange.
- 3) SEBI may call upon the exchange or any member to furnish explanation or information relating to the affairs of the stock exchange or any member.
- 4) It has the power to approve byelaws of the stock exchange for regulation and control of contracts.
- 5) It can amend byelaws of stock exchange.
- 6) In certain areas it can license the dealers in securities.

COMPANY PROFILE

COCHIN STOCK EXCHANGE

Cochin stock exchange (CSE) was an Indian stock exchange in Kochi, Kerala. The exchange stopped trading in 2005, and closed in 2014. Cochin stock brokers, which provides trading facilities on the Bombay Stock Exchange, and CSE Institute, an educational organization, continue to operate beyond the closure of the exchange. The new name of CSE is our investments enterprise Ltd.

Cochin stock exchange was established in 1978. Computerized trading was introduced in 1997. In order to keep pace with the changing scenario in the Capital Market, CSE took various steps including trading in dematerialized shares. CSE introduced the facility for computerized trading- "Cochin Online Trading (COLT)" ON March 17, 1997. CSE was one of the promoters of the "Interconnected Stock Exchange of India (ISE)". The objective was to consolidate the small, fragmented and less liquid markets into a national level integrated liquid market. With the enforcement of efficient margin system and surveillance, CSE has successfully presented defaults. Introduction of fast track system made CSE the stock exchange with the shortest settlement cycle in the country at that time.

Cochin Stock Brokers Ltd (CSBL) is the first subsidiary of a Stock exchange (100% subsidiary promoted by CSE) to get membership in both NSE & BSE. CSBL also become a depository participant in the Central Depository Services Ltd.

MANAGEMENT OF CSE LTD

The policy decisions of the CSE are taken by the Board of Directors. The Board is constituted with 12 members of whom less than one-fourth are elected from amongst the trading member of CSE, another one fourth are Public Interest Directors selected by SEBI from the panel submitted by the Exchange and the remaining are Shareholder Directors.

The Board appoints the Executive Director who functions as an ex-officio member of the administration of the Exchange.

FACILITY

Computerized trading was introduced in 1997. The major back office system software used are NESS and BOSS respectively for NSE and BSE. The trading software used in CSBL is Multex. Traders are provided Meta Stock and ERS software, trading terminals and optical fiber connections. DP holdings are maintained by Demat services like CDSL.

CSBL uses the up-to-date version of the MULTEX (CMC) and ODIN (Micro Sign Technologies) s front end trading softwares. MULTEX software combines NSE and BSE trade screens in a single computer monitor. This gives arbitrage opportunities and operational convenience to traders and investors. It is connected to NSE and BSE by VSATs and leased line. Further its sub brokers trade through a variety of networking options such as VSAT, ISP (Asianet), ISDN, Dial up and LAN, offering cost efficient connectivity options CSBL with its own Centralized VSAT network is in a position to provide the connectivity on all India basis.

DEMUTUALIZATION SCHEME

The Cochin Stock Exchange is directly under the control and supervision of securities & Exchange Board of India (the SEBI), and is today a demutualized entity in accordance with the Cochin Stock Exchange (Demutualization) Scheme, 2005 approved and notified by SEBI on 29th of August 2005. Demutualization essentially means de-linking and separation of ownership and trading rights and restructuring the Board in accordance with the provisions of the Scheme. The Exchange has been demutualized and the notification thereof published in the Gazette.

LISTING

Listing means admission of the securities of a company to trading privileges on a Stock Exchange. According to section 73 of the Companies Act, every company intending to offer shares or debentures to the public for subscription by the issue of prospectus shall, before such issue, make an application to one or more recognized Stock Exchanges for permission for the shares and debentures intending to be offered, to be dealt within the Stock Exchanges or each such Stock Exchange. Further if the issue amount exceeds 5 crores, the company has to make arrangements to list the securities in one more Stock Exchange, apart from regional Stock Exchange.

ELIGIBILITY CRITERIA FOR LISTING

The issuer who decides to come out with Public Issue has to mandatorily get its securities listed on the Regional Stock Exchange. The minimum issued capital of the Company should not be less than 3 Crores of which a minimum of 25% should have been offered to the public.

FINANCE

The finance Department controls the financial transactions of the Exchange and is the life line of the organization. The department is headed by a Finance officer. The activities of the department include

- Fund Management.
- Interaction with bankers.
- Maintaining general accounts of the Exchange.
- Preparation of various financial statements.
- Maintaining payrolls and Cash register.
- Co-ordinating accounting transactions of different branches and departments.
- Taxation
- Budgeting and Expense research.
- Maintenance of internal control system.
- Liaison with external and internal auditors.
- Annual Report Generation.

SETTLEMENT

Settlement Department is a key department of the Exchange, dealing with cash and securities. It assists the brokers in settling the matters relating to their pay-in and pay-out, recovery of dues and settling issues related to bad deliveries. This department is headed by a Deputy Manager assisted by two Senior Officers who take care of the operations involved in the settlement activities in CSE. The Exchange follows the T+2 settlement system.

SURVEILLANCE

The Exchange has set up the surveillance Department to keep a close watch on price movements of scrip and to detect market abuse like price rigging, monitor abnormal prices and volumes which are not consistent with normal trading pattern etc. the main objective of the department is to ensure a free and fair market, to avoid manipulations and to manage risks. The surveillance function at the exchange has assumed greater importance in the last few years. SEBI has directed the Exchange to set up a separate surveillance department with staff exclusively assigned for this function.

The Surveillance Department

- Keeps a close watch on the price movement of scrip.
- Detects market manipulations like price rigging.
- Monitors abnormal changes in price and volumes, which are not consistent with normal trading pattern.
- Monitors the member broker's positions to ensure that defaults do not occur.

The department conducts in-depth investigation based on preliminary enquiries made into trading of the scrip as also at the instance of SEBI.

Conducting investigators involves the following steps:

- Identification of scrip based on the alerts thrown by the online system and off line system reports.
- Identification of Members from whom the client details have to be called for preparation of company profile including Corporate News and Financial results.
- Completion of client details.
- Preparation of reports.

In case irregularities are found, necessary action is initiated.

ANALYSIS AND INTERPRETATION

Suppose an investor makes an investment in ten different companies of different sectors. He bought shares for the stock market at price on 31st march 2017 and which constitutes the total investment is determined by the formula Value of investment = close price of security x No. of shares.

The portfolio is assumed to be kept for a period ranging from 31st march 2017 to 27th April 2017.

He can minimize the risk and uncertainty by hedging in the market.

DETAILS OF PORTFOLIO AS ON 31/03/2017

TABLE 1 (TOTAL INVESTMENT = 104,70,500)

SL.NO	Security	Close Price	No. of shares	Value of Investment
1	AMBUJA CEM	236.65	1000	236650
2	AURO PHARMA	675.20	2000	1350400
3	AXIS BANK	490.50	500	245400
4	BANK BARODA	172.95	1000	172950
5	HDFC	1502.10	500	751050
6	IBULHSGFIN	997.75	1000	997750
7	LT	1574.90	1000	1574900
8	MARUTHI	6015.70	500	3007850
9	SBIN	293.40	2000	586800
10	YES BANK	1546.75	1000	154750

Source of data: www.nseindia.com

DETAILS OF PORTFOLIO

TABLE 2

Sl.No	Security	No. of shares	3/4/2017		5/4/2017		6/4/2017	
			Close Price	Value of Investment	Close Price	Value	Close Price	Value
1	AMBUJACEM	1000	237.55	237550	238.75	238750	243.35	243350
2	AURO PHARMA	2000	682.95	1365900	677.50	1355000	670.45	1340900
3	AXIS BANK	500	500.60	250300	508.30	254150	508.70	254350
4	BANK BARODA	1000	172.40	172400	174.55	174550	174.90	174900
5	HDFC	500	1533.65	766825	1490.15	745075	1482.60	741300
6	IBULHSGFIN	1000	995.90	995900	986.30	986300	977.00	977000
7	LT	1000	1661.00	1661000	1696.45	1696450	1683.20	1683200
8	MARUTHI	500	6072.00	3036000	6342.40	3171200	6291.65	3145825
9	SBIN	2000	293.15	586300	297.35	594700	292.85	585700
10	YES BANK	1000	1538.85	1538850	1567.50	1567500	1564.75	1564750
	TOTAL			10611025		10783675		10711275

Source of data: www.nseindia.com

DETAILS OF PORTFOLIO

TABLE 3

Sl.No	Security	No. of shares	7/4/2017		10/4/2017		11/4/2017	
			Close price	Value	Close price	Value	Close price	Value
1	AMBUJACEM	1000	242.45	242450	244.90	244900	248.90	248900
2	AURO PHARMA	2000	658.05	1316100	645.95	1309900	655.15	1310300
3	AXIS BANK	500	504.20	252100	510.75	255375	515.05	257525
4	BANK BARODA	1000	168.65	168650	171.10	171100	174.70	174700
5	HDFC	500	1484.75	742375	1467.50	733750	1476.85	738425
6	IBULHSGFIN	1000	955.85	955850	935.20	935200	937.15	937150
7	LT	1000	1685.50	1685500	1674.05	1674050	1704.90	1704900
8	MARUTHI	500	6259.35	3129675	6268.85	3134425	6247.80	3123900
9	SBIN	2000	289.45	578900	289.35	578700	294.50	589000
10	YES BANK	1000	1556.55	1556550	1599.60	1599600	1614.75	1614750
	TOTAL			10628150		10637000		10699550

Source of data: www.nseindia.com

DETAILS OF PORTFOLIO

TABLE 4

Sl.No	Security	No. of shares	12/4/2017		13/4/2017		17/4/2017	
			Close price	Value	Close price	Value	Close price	Value
1	AMBUJACEM	1000	249.10	249100	245.20	245200	246.85	2469850
2	AURO PHARMA	2000	656.50	1313000	658.05	1316100	652.85	1305700
3	AXIS BANK	500	506.00	253000	507.55	253775	502.85	251175
4	BANK BARODA	1000	172.35	172350	175.65	175650	175.95	175950
5	HDFC	500	1466.65	733325	1474.90	737450	1479.55	739775
6	IBULHSGFIN	1000	936.70	936700	956.80	956800	977.10	977100
7	LT	1000	1702.80	1702800	1678.55	1678550	1681.35	1681350
8	MARUTHI	500	6154.50	3077250	6077.95	3038975	6115.55	3057775
9	SBIN	2000	290.15	580300	291.55	583100	289.90	579800
10	YES BANK	1000	1631.45	1631450	1616.40	1616400	1610.60	1610600
	TOTAL			10649275		10602000		10626075

Source of data: www.nseindia.com

DETAILS OF PORTFOLIO

TABLE 5

Sl.No	Security	No. of shares	18/4/2017		19/4/2017		20/4/2017	
			Close Price	Value	Close Price	Value	Close Price	Value
1	AMBUJACEM	1000	240.75	240750	240.15	240150	241.10	241100
2	AURO PHARMA	2000	664.30	1328600	640.05	1280100	634.40	1268800
3	AXIS BANK	500	499.65	249825	499.50	249750	488.00	244000
4	BANK BARODA	1000	176.05	176050	174.85	174850	179.65	179650
5	HDFC	500	1480.05	740025	1490.20	745100	1517.10	758550
6	IBULHSGFIN	1000	962.25	962250	957.15	957150	979.25	979250
7	LT	1000	1669.50	1669500	1670.55	1670550	1681.20	1681200
8	MARUTHI	500	6137.15	3068575	6196.95	3098475	6273.50	3136750
9	SBIN	2000	290.30	580600	284.05	568100	284.80	569600
10	YES BANK	1000	1605.90	1605900	1605.45	1605450	1545.15	1545150
	TOTAL			10622075		10589675		10604050

Source of data: www.nseindia.com

DETAILS OF PORTFOLIO

TABLE 6

Sl.No	Security	No. of shares	21/4/2017		24/4/2017		25/4/2017	
			Close Price	Value	Close Price	Value	Close Price	Value
1	AMBUJACEM	1000	239.40	239400	246.70	246700	246.40	246400
2	AURO PHARMA	2000	633.20	1266400	627.35	1254700	622.80	1245600
3	AXIS BANK	500	486.25	243125	498.65	249325	516.40	258200
4	BANK BARODA	1000	175.20	175200	178.90	178900	181.80	181800
5	HDFC	500	1507.45	753725	1530.70	765350	1548.40	774200
6	IBULHSGFIN	1000	989.90	989900	1006.40	1006400	1015.60	1015600
7	LT	1000	1687.50	1687500	1732.70	1732700	1746.10	1746100
8	MARUTHI	500	6185.80	3092900	6318.35	3159175	6337.20	318600
9	SBIN	2000	282.20	564400	286.05	572100	286.05	572100
10	YES BANK	1000	1544.15	1544150	1554.30	1554300	1556.95	1556950
	TOTAL			10556700		10719650		10765550

Source of data: www.nseindia.com

DETAILS OF PORTFOLIO

TABLE 7

Sl.No	Security	No. of shares	26/4/2017		27/4/2017	
			Close Price	Value	Close Price	Value
1	AMBUJACEM	1000	246.00	24600	249.50	249500
2	AURO PHARMA	2000	624.65	1249300	607.05	1214100
3	AXIS BANK	500	517.15	258575	506.60	253300
4	BANK BARODA	1000	181.65	181650	181.40	181400
5	HDFC	500	1586.00	793000	1566.50	783250
6	IBULHSGFIN	1000	1010.90	1010900	100.40	1004400
7	LT	1000	1751.30	1751300	1766.75	1766750
8	MARUTHI	500	6406.30	303150	6374.05	3187025
9	SBIN	2000	286.45	572900	285.05	564100
10	YES BANK	1000	1582.05	1582050	1642.40	1642400
	TOTAL			10848825		10846225

Source of data: www.nseindia.com

ANALYSIS OF PORTFOLIO WITHOUT HEDGING FROM 31/03/2017 TO 27/04/2017

TABLE 8

Date	Total value of Investment	Profit/Loss
31/03/2017	10470500	0
03/04/2017	10611025	140525
05/04/2017	10783675	313175
06/04/2017	10711275	240775
07/04/2017	10628150	157650
10/04/2017	10637000	166500
11/04/2017	10699550	229050
12/04/2017	10649275	178775
13/04/2017	10602000	131500
17/04/2017	10626075	155575
18/04/2017	10622075	151575
19/04/2017	10589675	119175
20/04/2017	10604050	133550
21/04/2017	10556700	86200
24/04/2017	10719650	249150
25/04/2017	10765550	295050
26/04/2017	10848825	378325
27/04/2017	10846225	375725

Source of data: www.nseindia.com

ANALYSIS OF PORTFOLIO WITH HEDGING (DURING THE PERIOD 31/03/2017 TO 27/04/2017)
CALCULATIONS OF AMOUNT TO BE HEDGED ON 31/03/2017

TABLE 9

SL.NO	Strip name	Close price	No. of shares	Investment values	Beta values	Beta amount
1	AMBUJA CEM	236.65	1000	236650	1.3	307645
2	AURO PHARMA	675.20	2000	1350400	1.17	1579968
3	AXIS BANK	490.80	500	245400	1.18	289572
4	BANK BARODA	172.95	1000	172950	1.38	238671
5	HDFC	1502.10	500	751050	1.19	893749.5
6	IBULHSGFIN	997.75	1000	997750	1.3	1297075
7	LT	1574.90	1000	1574900	1.27	2000123
8	MARUTHI	6015.70	500	3007850	1.31	3940283.5
9	SBIN	293.40	2000	586800	1.46	856728
10	YES BANK	1546.75	1000	1546750	1.41	2180917.5
	TOTAL			104,70,500		135,84,732.5

Source of data: www.nseindia.com

Portfolio value = 104,70,500

Portfolio beta = Total value of beta amount / Value of portfolio

= 135,84,732.5 / 104,70,500

= 1.297

Value of Index = 9197.75

Hedge Ratio = Total beta amount / value of index

= 135,84,732.5 / 9197.75

= 1476.96

Rounded to 1477

Permitted lot size = 75

No of nifty Lots to be hedged

= Hedge ratio / Permitted lot size

= 1477 / 75

= 19.69 Rounded to 20

The amount to be hedged = Index x No. of nifty

Lots to be hedged x Permitted lot size

= 9197.75 x 20 x 75 = 13796625

NIFTY VALUES

NIFTY VALUES FROM 31/03/2017 TO 27/04/2017

TABLE 10

Date	Nifty values
31/03/2017	9197.75
03/04/2017	9263.25
05/04/2017	9286.55
06/04/2017	9272.25
07/04/2017	9211.45
10/04/2017	9209.35
11/04/2017	9264.45
12/04/2017	9223.20
13/04/2017	9182.25
17/04/2017	9168.35
18/04/2017	9123.35
19/04/2017	9135.00
20/04/2017	9162.60
21/04/2017	9127.00
24/04/2017	9224.45
25/04/2017	9293.90
26/04/2017	9342.10
27/04/2017	9345.75

Source of data: www.nseindia.com

CALCULATION OF HEDGE VALUE

CALCULATION OF HEDGE VALUE FOR THE PERIOD 31/03/2017 TO 27/04/2017

TABLE 11

Date	Nifty Values	Lots	Hedge Values
31/03/2017	9197.75	1500	13796625
03/04/2017	9263.25	1500	13894875
05/04/2017	9286.55	1500	13929825
06/04/2017	9272.25	1500	13908375
07/04/2017	9211.45	1500	1381775
10/04/2017	9209.35	1500	13814025
11/04/2017	9264.45	1500	13896675
12/04/2017	9223.20	1500	13834800
13/04/2017	9182.25	1500	13773375
17/04/2017	9168.35	1500	13752525
18/04/2017	9123.35	1500	13685025
19/04/2017	9135.00	1500	13702500
20/04/2017	9162.60	1500	13743900
21/04/2017	9127.00	1500	13690500
24/04/2017	9224.45	1500	13836675
25/04/2017	9293.90	1500	13940850
26/04/2017	9342.10	1500	14013150
27/04/2017	9345.75	1500	14018625

Source of data: www.nseindia.com

CALCULATION OF PROFIT OR LOSS FROM HEDGED PORTFOLIOS

CALCULATION OF PROFIT FROM HEDGED PORTFOLIOS DURING THE PERIOD 31/03/2017 TO 27/04/2017

TABLE 12

Date	Hedged Portfolio value	Profit/Loss
31/03/2017	13796625	0
03/04/2017	13894875	-98250
05/04/2017	13929825	-133200
06/04/2017	13908375	-111750
07/04/2017	13817175	-20550
10/04/2017	13814025	-17400
11/04/2017	13896675	-100050
12/04/2017	13834800	-38175
13/04/2017	13773375	23250
17/04/2017	13752525	44100
18/04/2017	13685025	111600
19/04/2017	13702500	94125
20/04/2017	13743900	52725
21/04/2017	13690500	106125
24/04/2017	13836675	-40050
25/04/2017	13940850	-144225
26/04/2017	14013150	-216525
27/04/2017	14018625	-222000

Source of data: www.nseindia.com

EFFECT OF HEDGING**EFFECT OF HEDGING DURING THE PERIOD 31/03/2017 TO 27/04/2017**

As on 31/03/2017

Portfolio Value = 10470500

Hedged Amount = 13796625

As on 27/04/2017

Portfolio Value = 10846225

Hedged Amount = 14018625

Gain from the portfolio = 10846225 - 10470500

= 375725

Loss from hedging = 13796625 - 14018625

= -222000

Net Gain = 375725 - 222000

= 153725

INTERPRETATION

On 31st March, 2017 the investor brought a portfolio with an objective of holding it for a longer period. He felt that there is a need for hedging to avoid risk due to high beta value of security so he decided to hedge the portfolio for the whole time period.

The full time hedging reduces risk and the loss. By looking the value of appreciation / depreciation from 31st March, 2017 the value of the portfolio got appreciated profit of Rs 375725. The investor expects downward trend in the market and he is going to hedge the portfolio. But the market showed upward trend. That is why hedged portfolio shows a loss of 222000. However, there is a net profit of 153725. If the market shows a downward trend, then an investor may incur huge loss. In such a situation, hedging is very useful for minimizing the loss. Many unforeseen and unexpected features may affect the market conditions adversely. So it is recommended to go for hedging to minimize the loss, risk can be reduced to a great extent by taking an offsetting position in the related security. Adverse price movements in an asset is a huge risk for an investor. So through hedging, he can reduce risk and minimize losses.

FINDINGS

1. The perception of the investor plays a vital role in risk reduction.
2. No strategy can assume zero percent risk
3. Future strategies can reduce the risk in to minimal level.
4. The time period while applying the strategies has an important role in the effectiveness.
5. On 31st March 2017, investor made a portfolio of Rs 10470500.

During this period, the market condition showed an upward trend and the value of his portfolio. Gradually grown and reached at Rs 10846225 and registered a profit of Rs 375725. But on hedging the investor experienced a loss of 222000. This is because of the continuous upward trend. However, there is a net profit of Rs. 153725. Otherwise, if there is adverse price movement, the investor may incur large loss without hedging.

HEDGING AS A TOOL TO REDUCE THE RISK OR UNCERTAINTY

- Hedging is a effective way to reduce the risk of a portfolio
- Hedging is only a risk reducer, not a tool to maximize the profit.
- Hedging is very effective in bearish market condition.
- Decision about the hedging strategy are depending on the beta value of the portfolio.
- Changes in the market index will adversely affect the portfolio values with high beta values.
- Share price changes is very much affecting the value of investment in each company.
- There is a huge investment in the derivative market as it is in the growth stage.

SUGGESTIONS

1. Investor should make clear assumptions about future market conditions from the facts and figures.
2. If the investors is confident about the growth of the market, he should not go for hedging.
3. The success of the hedge entirely depends on the trend and the hedgers ability in understanding the direction of the market trend. So the hedger must have a better understanding of the market. Otherwise, hedge will result in a loss to the hedger.
4. Before entering to any risk, reduction strategy the investor should determine the level to which he has to reduce the risk. He should compare the cost and benefit of each of the strategy in the existing market situations.
5. The investor should not stick to one strategy in the whole time; he should change his strategies according to the market situations.
6. Investors should create his portfolio in the proportion of returns fetched by the securities.
7. Speculation should be discouraged.

CONCLUSION

Hedging with Index Futures proved to be an effective instrument; by hedging, we can reduce the unnecessary risk of the index movement.

Hedging does not always make money. The best thing can be achieved by using hedging is the removal of unwanted exposure i.e., unnecessary risk. The hedging position will make less profit than unhedged position. One should not enter in to hedging strategy hoping to make excess profit for sure; all that can come out of hedging is reduced risk.

The investor should update this knowledge about the market condition to protect himself from losses. The investor should be wise to predict the future and patient to wait for the success.

From this study, it is revealed that hedging is only a risk reducer, not on profit maximiser. So one should not enter in to hedging strategy with the hope of making excess profit. The investor should not stick on one strategy in the whole time. He should change his strategies according to the market situations.

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APPENDIX

Survey on Hedging a portfolio of selected shares using index futures

Dear sir /madam

This questionnaire will hardly take fifteen minutes to answer.

This is a part of my project work (Topic –effectiveness of hedging a portfolio of selected shares using index futures based in the study conducted in our investments enterprise Ltd(Erstwhile cochin Stock exchange Ltd) for MBA finance. The data is for academic purpose only and your views will be kept strictly confidential. Requesting your co-operation.

QUESTIONNAIRE

(Answer by putting a tick (v)mark in the box against the most appropriate alternative)

1. Name and address :
2. Sex :
3. Religion and Caste :
4. Family status :
5. Monthly income : Below rs 5000
Rs 5000-10000
Rs 10000-20000
Rs 20000-50000
Rs 50000 and above
6. Education : Under graduates
Graduates
Post graduates
7. Year from which started savings
8. Name of the company in which share / Debenture is taken
9. Type of security
10. Are you aware of stock market index : yes / no
11. From where do you get the information about the performance of securities.
From stock exchange
From website
From business magazines
From others
12. How far are you satisfied with Trading on Stock Exchange?
0-25 % 25-50% 50-75% 75-100%
13. Do you face any risk? Yes/No
14. Do you face heard about hedging? Yes/No
15. Are you satisfied with hedging process? Yes/No
16. Do you think any change in risk after hedging a portfolio Yes/No
17. What are your opinion about hedging a portfolio Yes/No
(1) Reduces risk
(2) Reduces uncertainty
(3) More profit
(4) minimize losses
18. Have you applied hedging Process at any time
19. If yes, give your opinion
20. What rating you give for the hedging process?
Poor average Good Very good Excellent
21. Which type of portfolio do you prefer for investment?
Portfolio without hedging.....
Portfolio with hedging.....
22. Give specific reasons if any, for selecting the above portfolio

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With sincere regards

Thanking you profoundly

Academically yours

Sd/-

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