

Future Contracts – Future of Financial Derivatives in India

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Abstract: Derivatives have been around in the global market for a very long time. The evidence of characteristics of derivative contracts can even be found in the incidents that date back to the ages before Jesus Christ and in India in epic as old as Mahabharata. The first recorded instance of futures trading appears to have been occurred with Yodoya rice market in Osaka, Japan around 1650. Futures are one of the most popular derivative contracts in India as compared to traditional securities market. The stock exchanges in India have been in existence for more than a century now. Bombay Stock Exchange (BSE) is a stock exchange located in Mumbai, Maharashtra and was established in 1875. Subsequently, the National Stock Exchange (NSE) was set up in November 1992. The road for stock exchange traded derivatives contracts was cleared with the removal of prohibition of options on securities by way of amendment to Securities Laws through Securities Laws (Amendment) Ordinance, 1995. A Bill was introduced on October 28, 1999 and was converted into an Act on December 16, 1999 making way for derivatives trading in India. This study focus on the understanding the price movements and behaviours of futures market in India with special reference selected futures. The study also reveals the relationship among various future contracts of different companies.

Keywords: Derivatives, Futures, Future Price.

INTRODUCTION

Derivatives are financial instruments whose values depend on the values of other, more basic underlying assets. They do not have value of their own & they derive their values from another asset or multiple of assets. Derivatives are useful in reallocating risk either across time or across individuals with different risk bearing preferences. The underlying asset can be equity, forex, commodity or any other asset class.

The current study is carried out on only the equity derivatives i.e. derivatives where the underlying is equity shares traded on the stock exchanges. The equity derivatives trading in India initially was offered by two stock exchanges namely National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) in June 2000. Subsequently, MCX Stock Exchange (MCX SX) was allowed to offer equity derivatives trading in India in 2012 [¹].

Need for study

In recent times the Derivative markets have gained importance in terms of their vital role in the economy. The increasing investments in derivatives (domestic as well as overseas) have attracted my interest in this area. Through the use of derivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. As the volume of trading is tremendously increasing in derivatives market, this analysis will be of immense help to the investors.

Objectives of the study

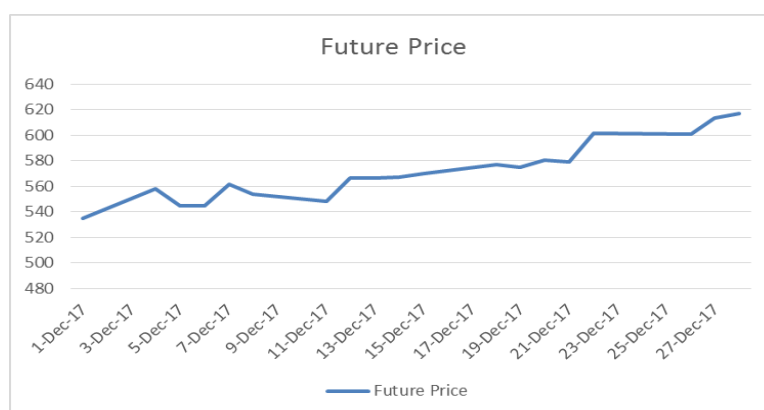
- To find the profit/loss position of futures buyer and seller.
- To study about risk management with the help of derivatives.

RESEARCH METHODOLOGY

The design applied in this research is descriptive research design. A sample of 5 companies was selected from the IT sector for the analysis. The period of study is for one month during December 2017.

¹ (Bishnu Priya Mishra)

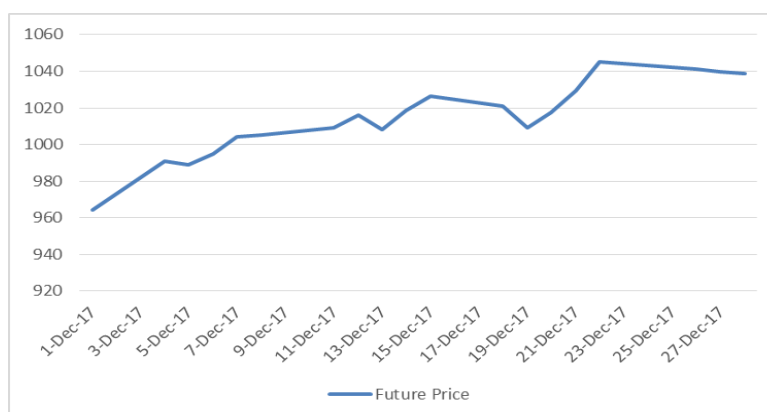
Data analysis



Market Movements of Mindtree Futures [²]

Interpretation

- If a person buys 1 lot i.e. 1200 futures of MINDTREE on 1.12.2017 and sells on 28.12.2017 then he will get a PROFIT of $616.90 - 535.05 = 81.85/\text{share}$. So he will get a PROFIT of i.e., $81.85 \times 1,200 = 98,220$.
- If a person buys 1 lot i.e. 1200 futures of MINDTREE on 4.12.2017 and sells on 6.12.2017 then he will get a LOSS of $544.60 - 557.80 = 13.20/\text{share}$. So he will get a LOSS of i.e., $13.20 \times 1,200 = 15,840$.
- The closing price of MINDTREE at the end of the contract period is 616.90 and this is considered as settlement price.
- The trend of Mindtree futures is in upward direction. There is no much volatility of the future price. This company would be an ideal for the investors to invest in futures. The price of future was started at the price 535.05 and at the end of the month the price is 616.90. This means that the price of the future is in increasing direction.



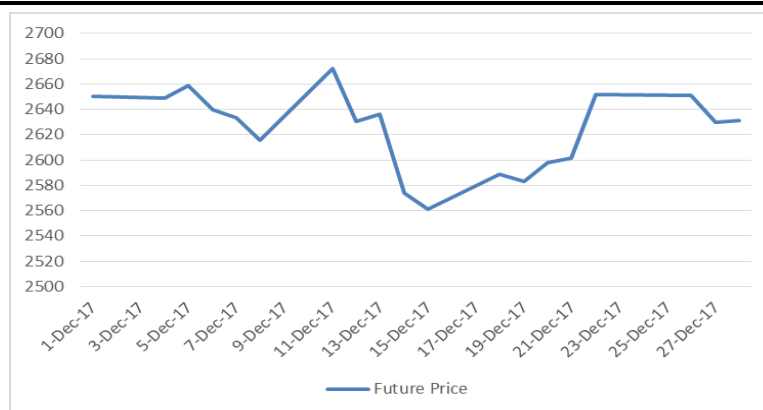
Market Movements of Infosys Futures [³]

Interpretation

- If a person buys 1 lot i.e. 1200 futures of INFOSYS on 1.12.2017 and sells on 28.12.2017 then he will get a PROFIT of $1,038.80 - 964.40 = 74.40/\text{share}$. So he will get a PROFIT of i.e., $74.40 \times 1,200 = 89,280$.
- If a person buys 1 lot i.e. 1200 futures of INFOSYS on 14.12.2017 and sells on 19.12.2017 then he will get a LOSS of $1,018.35 - 1,008.95 = 9.40/\text{share}$. So he will get a LOSS of i.e., $9.40 \times 1,200 = 11,280$.
- The closing price of INFOSYS at the end of the contract period is 1,038.80 and this is considered as settlement price.
- The trend of Infosys futures is also in upward direction. There is no much volatility of the future price. This company would also be an ideal for the investors to invest in futures. The price of future was started at the price 964.40 and at the end of the month the price is 1,038.80. This means that the price of the future is in increasing direction. On Dec 22, 2017 the price of the future was at its peak with 1,045.15.

² (Money Control, n.d.)

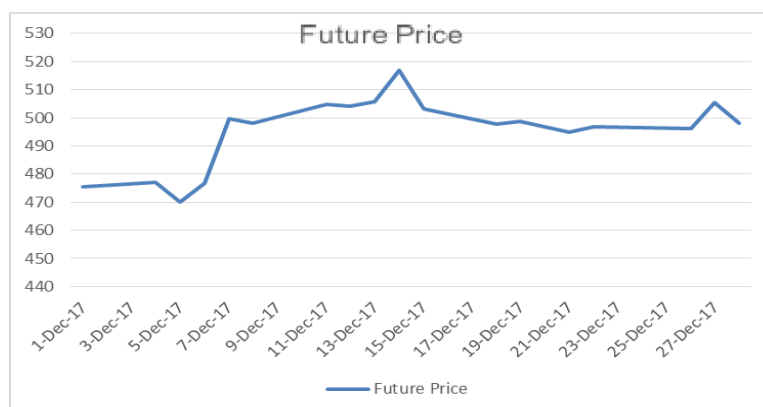
³ (Money Control, n.d.)



Market Movements of TCS Futures [⁴]

Interpretation

- If a person buys 1 lot i.e. 1200 futures of TCS on 1.12.2017 and sells on 28.12.2017 then he will get a LOSS of $2,650.45 - 2,631.30 = 19.15/\text{share}$. So he will get a LOSS of i.e., $19.15 * 1,200 = 22,980$.
- If a person buys 1 lot i.e. 1200 futures of TCS on 1.12.2017 and sells on 11.12.2017 then he will get a PROFIT of $2,650.45 - 2,672.30 = 21.85/\text{share}$. So he will get a PROFIT of i.e., $21.85 * 1,200 = 26,220$.
- The closing price of TCS at the end of the contract period is 2,631.30 and this is considered as settlement price.
- The trend of TCS futures is more volatile. There is no normal trend. This company would not be an ideal for the investors to invest in futures. The price of future was started at the price 2,650.45 and at the end of the month the price is 2,631.30. This means that the price of the future is not in a single direction. On Dec 15, 2017 the price of the future was at a drastic level with 2,561.45.



Market Movements of Tech Mahindra Futures [⁵]

Interpretation

- If a person buys 1 lot i.e. 1200 futures of TECH MAHINDRA on 1.12.2017 and sells on 14.12.2017 then he will get a PROFIT of $475.50 - 516.95 = 41.45/\text{share}$. So he will get a PROFIT of i.e., $41.45 * 1,200 = 49,740$.
- If a person buys 1 lot i.e. 1200 futures of MAHINDRA on 14.12.2017 and sells on 28.12.2017 then he will get a LOSS of $516.95 - 498.20 = 18.75/\text{share}$. So he will get a LOSS of i.e., $18.75 * 1,200 = 22,500$.
- The closing price of TECH MAHINDRA at the end of the contract period is 498.20 and this is considered as settlement price.
- The trend of Tech Mahindra futures is also in upward direction. There is no much volatility of the future price. This company would be an ideal choice for the investors to invest in futures. The price of future was started at the price 475.50 and at the end of the month the price is 498.20. There is lateral moment in the stock price but on an average the stock price is showing a positive trend. On Dec 15, 2017 the price of the future was at its peak with 516.95.

⁴ (Money Control, n.d.)

⁵ (Investopedia, n.d.)

Market Movements of Wipro Futures [⁶]

Interpretation

- If a person buys 1 lot i.e. 1200 futures of WIPRO on 1.12.2017 and sells on 28.12.2017 then he will get a PROFIT of $299.20 - 292.20 = 7.00/\text{share}$. So he will get a PROFIT of i.e., $7.00 \times 1,200 = 8,400$.
- If a person buys 1 lot i.e. 1200 futures of WIPRO on 1.12.2017 and sells on 15.12.2017 then he will get a LOSS of $285.85 - 292.20 = (6.35/\text{share})$. So he will get a LOSS of i.e., $6.35 \times 1,200 = 7,620$.
- The closing price of WIPRO at the end of the contract period is 299.20 and this is considered as settlement price.
- The trend of Wipro futures is also in upward direction. There is no much volatility of the future price. This company would be an ideal for the investors to invest in futures. The price of future was started at the price 292.20 and then there was a downfall but later picked up and by the end of the month the price is 299.20. There is lateral moment in the stock price but on an average the stock price is showing a positive trend. On Dec 27, 2017 the price of the future was at its peak with 301.15 where the value is just above the closing value for the month of December.

Calculation of Risk and Return

Risk and return of all the companies

	Infosys	Mindtree	TCS	Wipro	Tech M
Mean	0.412863%	0.517806%	-0.04028%	0.186934%	0.259082%
Standard Deviation	0.930114%	1.348737%	1.076690%	1.241250%	1.632652%

On an average the return for one month of Infosys stock is positive. This is the best sign for the investor to invest in the futures. The risk involved in Infosys is low i.e., 0.930114% this in turn the returns for this asset is also low i.e., 0.412863%.

On an average the return for one month of Mindtree stock is positive. This is the best sign for the investor to invest in the futures. The risk involved in Mindtree is low i.e., 1.348737% this in turn the returns for this asset is also low i.e., 0.517806%.

On an average the return for one month of TCS stock is negative. This is not a good sign for the investor to invest in the futures. The risk involved in TCS is high i.e., 1.076690% this in turn the returns for this asset is negative i.e., -0.040286%. If the investor wishes to invest in TCS stocks they would rather lose their investment instead gaining returns out of it.

On an average the return for one month of WIPRO stock is positive. This is a good sign for the investor to invest in the futures. The risk involved in WIPRO is moderate i.e., 1.24125% this in-turn provides return for this asset is also moderate i.e., 0.186934%. If the investor trade in WIPRO stocks they would not have much risk.

On an average the return for one month of TECH MAHINDRA stock is positive. But, this is the not a good sign for the investor to invest in the futures of this company. Why because, the risk as well as return for TECH MAHINDRA stock is quite opposite. This means that the risk involved in TECH MAHINDRA is high i.e., 1.632652% this in turn the returns for this asset is quite opposite i.e., -0.259082%. If the investor invests in TECH MAHINDRA stocks they would rather gain less returns with very high risk.

⁶ (Money Control, n.d.)

Combined Returns						
Company		Infosys	Mindtree	Tcs	Wipro	Tech M
	Returns	0.412863%	0.517806%	-0.040286%	0.186934%	0.259082%
Infosys	0.41286%	-	0.47583%	0.32223%	0.34508%	0.35135%
Mindtree	0.51781%	0.47583%	-	0.29457%	0.45163%	0.44019%
TCS	-0.04029%	0.32223%	0.29457%	-	0.11877%	0.19921%
Wipro	0.18693%	0.34508%	0.45163%	0.11877%	-	0.23022%
Tech M	0.25908%	0.35135%	0.44019%	0.19921%	0.23022%	-
Correlation						
Company		Infosys	Mindtree	TCS	Wipro	Tech M
	Returns	0.412863%	0.517806%	-0.040286%	0.186934%	0.259082%
Infosys	0.41286%	-	0.207539358	(0.00866932)	0.006894190	0.120319018
Mindtree	0.51781%	0.207539358	-	(0.00100374)	0.267110413	(0.03461579)
TCS	-0.04029%	(0.00866932)	(0.00100374)	-	0.571260022	(0.15334245)
Wipro	0.18693%	0.006894190	0.267110413	0.571260022	-	0.123563277
Tech M	0.25908%	0.120319018	(0.03461579)	(0.15334245)	0.123563277	-
Combined Standard Deviation						
Company		Infosys	Mindtree	TCS	Wipro	Tech M
	SD	0.930114%	1.348737%	1.076690%	1.241250%	1.632652%
Infosys	0.93011%	-	0.00918%	0.00597%	0.00566%	0.00653%
Mindtree	1.34874%	0.00918%	-	0.00840%	0.01512%	0.01099%
TCS	1.07669%	0.00597%	0.00840%	-	0.01180%	0.01666%
Wipro	1.24125%	0.00566%	0.01512%	0.01180%	-	0.01326%
Tech M	1.63265%	0.00653%	0.01099%	0.01666%	0.01326%	-

OBSERVATION AND FINDINGS

- The concept of stock index futures in India is only a decade old one. In these years it has achieved a lot. The spectacular growth and success in index futures is because of its liquidity. The liquidity of a contract is related to the cost of trading, the lower cost of trading of index futures leads to higher liquidity and leading to higher market capitalization.
- The very objective behind the introduction of stock index futures in India was to reduce the volatility of the underlying stock index. Thus, the research work investigated the nature and causes of spot and index futures market. And, it has been found the evidence of high persistence of time varying volatility and its asymmetric effects. Furthermore, the futures market is showing high level of volatility from that of the spot market. The result also exhibits that bad news have more role in the volatility in the futures as well as in the spot market.
- There is a huge variation of return and standard deviation given by different companies. In fact, Infosys is providing returns at less rate of risk. On the other hand, TCS is giving negative returns with high rate of risk.
- There is an inconsistency in rate of return of the selected companies. On an average the rate of return of few portfolio is too low when compared to rest other. For eg., portfolio of Wipro and TCS, Tech Mahindra and TCS etc.,
- Most of the securities in the portfolio are going in a same direction which means they are positively correlated. On the side few companies' portfolio is negatively correlated. TCS is highly correlated with Wipro with 0.57126 where as with rest other companies it is negatively correlated.
- Wipro is the only company which is positively correlated with rest other company in this analysis.
- There is huge risk reduction and maximum returns when securities of Infosys as well as securities of Mindtree are combined together. Before building them into portfolio the returns were 0.412863% and 0.517806% respectively. And the risk involved was 0.930114% and 1.348737%. When these two securities were put in one portfolio the return is 0.47583% and the risk is 0.00918%. Here there is huge reduction in risk. This is a good positive sign for the investor.
- At the end the portfolio where Infosys securities are involved that portfolio are returning good yield with less rate of risk.

CONCLUSION

Financial derivatives have earned a well deserved extremely significant place among all the financial instruments (products), due to innovation and revolutionized the landscape. Derivatives are tool for managing risk. Derivatives provide an opportunity to transfer risk from one to another. Launch of equity derivatives in Indian market has been extremely encouraging and successful. The growth of derivatives in the recent years has surpassed the growth of its counterpart globally. India is one of the most successful developing country in terms of a vibrant market for exchange-traded derivatives. The equity derivatives market is playing a major role in shaping price discovery. Volatility in financial

asset price, integration of financial market internationally, sophisticated risk management tools, innovations in financial engineering and choices at risk management strategies have been driving the growth of financial derivatives worldwide, also in India. Finally, we can say there is big significance and contribution of derivatives to financial system.

Exchange traded derivatives market helps investors in many different ways in planning the finances, hedging/mitigating various risks, appropriate price discovery, arbitrage opportunities, ease of speculations etc. There are various strategic applications, uses and benefits of the equity derivatives market in the Indian Markets in today's economic scenario such as providing efficiency to capital markets, helping investors in mitigating risks, providing equitable price discovery, comforting foreign investors, creating jobs and developing human capital, preserving value of assets during stressed market scenario and many more ways.

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