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CHAPTER 1

INTRODUCTION AND DESIGN OF THE STUDY

1.1 INTRODUCTION

“Derivatives are one type of securities whose price is derived from the underlying assets. These underlying assets are most commonly Stocks, Bonds, Currencies, Interest rates, Commodities and Market indices.”1 Derivatives play a vital role in risk management in both financial and non-financial institutions. The derivatives can be classified as Futures contracts, Forward Contracts, Options, Swaps and Credit derivatives.

Commodities were things of value of uniform quality that were produced in large quantities by many producers. It includes all kinds of goods other than actionable claims, money and securities. “A Commodity Exchange is an association, or a company of any other body corporate organizing futures trading in commodities. It includes any organized marketplace where trade is routed through one mechanism, allowing effective competition among buyers and sellers. It would include auction-type exchanges, but not wholesale markets, where trade is localized, and effectively takes place through many non-related individual transactions between different permutations of buyers and sellers.”2 The emergence of the derivatives markets as the effective risk management tools in 1970s and 1980s has resulted in the rapid creation of new commodity exchanges and expansion of the existing ones.

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1.2 FUTURES TRADING

Commodity Futures

“The futures market is a centralized market place for buyers and sellers from around
the world who meet and enter into commodity futures contracts. Pricing is based mostly on
an open cry system, or bids and offers that can be matched electronically. The commodity
contract will state the date of delivery and the price to be paid. Almost all futures contracts
end without the actual physical delivery of the commodity”\(^3\).

“A futures contract is an agreement between two parties: The party who agrees to
deliver a commodity (short position), and the party who agrees to receive a commodity
(long position). Everything is specified in every commodity contract (i.e.) the quantity and
quality of the commodity, the specific price per unit, the date and method of delivery. The
price of a futures contract is represented by the agreed - upon price of the underlying
commodity or financial instrument that will be delivered in the future”\(^4\).

The profits and losses of a future depend on the daily movements of the market for
that contract and is calculated on a daily basis. Unlike the stock market, futures positions are
settled on a daily basis, which means that gains and losses from a day's trading are deducted
or credited to a person's account each day. As the accounts of the parties in futures contracts
are adjusted every day, most transactions in the futures market are settled in cash, and the
actual physical commodity is bought or sold in the cash market. Prices in the cash and futures
market tend to move parallel to one another, and when a futures contract expires, the prices
merge into one price. So on the date either party decides to close out their futures position,

\(^4\) ibid
the contract will be settled. The farmer's loss in the commodity contract is offset by the higher selling price in the cash market.

The trading of commodities consists of direct physical trading and derivatives trading. The commodities markets have seen an upturn in the volume of trading in recent years. “Over 40% of commodities trading on exchanges was conducted on US exchanges and a quarter in China. Trading on exchanges in China and India has gained in importance in recent years due to their emergence as significant commodities consumers and producers”\(^5\).

1.3 HISTORY OF COMMODITY MARKETS

“The fundamental principles that underlie futures trading and the function of commodity exchanges are centuries old. The practice of preannounced markets at fixed times and places reemerged in the form of medieval fair, arranged by the first trade associations formed by merchants, craftsmen and promoters with the aid of political authorities”. “In the 13\(^{th}\) century, most trading at the fairs was spot for immediate delivery, but the practice of contracting for merchandise for late delivery with standards of quality established by samples, had begun”\(^6\).

The regional fairs declined in importance with improvements in transportation and communication and with the development of the modern city. Specialized market centres were developed in their place in many parts of the world. Initially these markets were held in the open air and later moved inside to tea houses and inns and finally found more permanent locations of their own. “The development of exchanges was not limited to England and

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5. Global Commodity Market-Commodities-www.marketoperation.com
6. History-Commodities-www.marketoperation.com
Europe, similar markets were found in Japan and the United States. Japan’s commodity exchanges date to the 1700’s and preceded the securities markets by nearly a century and half. Trading in rice in Japan dates from the early 1700’s and forward contracting in rice on the Osaka Rice Exchange was legally recognized in 1730”7. Though there were as many as eight commodity exchanges in major Japanese population centers, the Osaka market was the largest. There were also Japanese markets for edible oils, cotton and precious metals and their trading volume was small in comparison with that for rice.

There was an exchange in New York in 1752, for trading in domestic produce. A series of small markets developed in New York and in other cities and they are the foundations for several of the present New York commodity exchanges. These early markets served other functions like attracting diverse business interests, financiers, brokers, speculators with risk capital as well as primary producers and users of commodities.

“In the 1840s, Chicago (U.S) had become a commercial center. Midwest farmers came to Chicago to sell their wheat to dealers who, in turn, shipped it all over the country. The city had few storage facilities and no established procedures either for weighing the grain or for grading it. 1848 saw the opening of a central place where farmers and dealers could meet to deal in "spot" grain - that is, to exchange cash for immediate delivery of wheat. The futures contract, evolved as farmers (sellers) and dealers (buyers) began to commit to future exchanges of grain for cash. The two parties may have exchanged a written contract to this effect and even a small amount of money representing a "guarantee." Such contracts became common and were even used as collateral for bank loans. They also began to change hands before the delivery date. The price would go up and down depending on what was happening in the wheat market. It wasn't long before people who had no intention of ever buying or selling wheat began trading the contracts. They were speculators, hoping to buy low and sell high or sell high and buy low. In this way the commodity futures came into existence”8.

7. Ibid., p. 3
HISTORY OF INDIAN COMMODITY MARKET

1875 The First organized Futures Market established by 'Bombay Cotton Trade Association'

1900 Gujarati Vyapari Mandali Established

1919 The Calcutta Hessian Exchange Limited

1920 Futures Markets in Bullion began in Mumbai

1927 East India Jute Association Limited

1945 Amalgamation of Calcutta Hessian & East India Jute

1952 The Forward Contracts (Regulation) Act Enacted

1954 The Forward Contracts (Regulation) rules notified by the Central Government

1957 The Futures trade in spices first organised by IPSTA, Cochin

1964 Futures trading in Jute Suspended

1966 Futures trade was completely banned by the Government

1976 The reintroduction of futures were banned in 1966

1991 The introduction of economic reforms

1993 The Kabra Committee recommendations on futures trading

1994 National Agricultural Policy proposed Futures Markets coverage

2000 Forward Market Commision, invited applications to set up a Nation-wide Multi-Commodity Exchange

2002
1.4 INDIAN COMMODITY MARKET

History

India has long history of commodity futures trading extending over 125 years. Accordingly FMC gave approval to four entities to setup National Multi Commodity Exchanges namely National Multi Commodity Exchange, National Board of Trade, Multi Commodity Exchange, National Commodity and Derivative Exchange. At present, there are 26 exchanges operating in India and carrying out futures trading activities in as many as 146 commodity items.

The type of commodities traded in the commodity markets can be classified as

Table - 1.1

<table>
<thead>
<tr>
<th>Type of Commodities</th>
<th>Agricultural Products</th>
<th>Precious Metal</th>
<th>Other Metals</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pulses, Edible oil complex, Spices, Guar complex, Cotton, Sugar</td>
<td>Gold, Silver</td>
<td>Copper, Aluminium, Zinc, Nickel</td>
<td>Crude oil, Furnance oil</td>
</tr>
</tbody>
</table>

Source: * www.way2wealth.com

The most popular physical commodities contracts cover several broad categories like, metals, energy, grains, livestock, food and fiber. There are some modern additions to commodity futures that are unique such as chemicals and fertilizer futures. Commodities are mainly subject to price fluctuations based on supply and demand factors in consuming and producing countries.

Performance

- “Since 2003 two of the exchanges have emerged truly as a national level representative exchanges namely NCDEX and MCX.
- The combined turnover on daily basis has crossed 15000 Crore which has surpassed daily volume of BSE equity trading.

* Home>Commodities>Learning Center> Indian Commodity Exchanges>List of Commodities, www.way2wealth.com
In just two-year time MCX has reached on second position just after Comex for silver. It has surpassed TOCOM exchange volumes.

Few of the commodity introduced over Indian exchanges have never been traded or listed on any other exchange of the world like Mentha oil, pulses etc

These two exchanges have established themselves and set price discovery platform for various commodities.

Two of the exchanges and the commodities traded in it are having sync with other global financial and commodity markets

**The Regulator & Regulations**

“Commodity Futures and the Commodity Exchanges are regulated by the Central Government under the Forward Contracts (Regulation) Act and the Forward Contract Regulation Rules.

The Forward Market Commission (FMC), which functions under the Ministry of Consumer Affairs, Food and Public Distribution, regulates the Futures Market in Commodities

The FMC deals with exchange administration and seeks to inspect the books of brokers only if foul practices are suspected or if the exchanges themselves fail to take action.

Moreover brokers are not required to register themselves with the regulators as like the equity markets.

7. A brief History of Futures Markets-Commodity Charts-Trading Charts-futures.tradingcharts.com/tafm/tafml.html


They are responsible for intermediating and facilitating hedgers and speculators. Many established equity brokers have taken up membership of the new commodity exchanges as the online trading platforms are similar to those used for equity.

At the same time, some old-style commodity brokers are not yet conversant with online screen based trading, although they have the requisite knowledge about futures trading in commodities.

Thus, the commodity exchanges are more self-regulating than stock exchanges and this could change if retail participation in commodities grows substantially.

**Market Participants**

There are two basic types of participants in commodities markets, hedgers and speculators. Hedgers seek to minimize and manage price risk, while speculators take on risk in the hope of making a profit.

“Physical market participants (firms who play a key role within the production chain) include producers, trading houses, manufacturers, fabricators, importers & exporters.

Specialized Government agencies which have mandates for food security, Companies can use these markets to mitigate their exposure to fluctuations in raw materials and finished goods prices.

Commodities trading offer immense potential as a separate asset class for market savvy investors, arbitragers and speculators and for treasuries to invest their surplus cash flows”11.

“Indian commodity market a highly fragmented and unorganized market is undergoing a transaction phase with the advent of IT related services and futures market. Scientific approach to gather data, interpretation, and tailor made options has been now the
featured attraction. The retail segment has grown manifold with the booming economy and growing middle class incomes across the country which has in turn attracted the corporates to venture into this segment. Based on this fact the market has grown with a fast pace across the globe thanking to the activities in producing and consuming countries”

1.5 SIGNIFICANCE OF THE STUDY

Indian economy will be driven by seven major sectors in the next 25 years. They are: agriculture, textile and clothing, housing and infrastructure, energy, healthcare, education and leisure. Of them, the first four sectors are heavily dependent on commodities. This will make the growth of Indian economy commodity intensive. The trade in commodities will increase and expand. India will be a major producer, processor, consumer and importer of commodities. In such a situation, more and more Indian commodities will be integrated with the global market. Such integration makes the commodity participants to have a global view. Among the agricultural produce pepper and cardamom are one of the important cash crop which are being traded in futures market. Kerala is the state where in pepper and cardamom are largely grown and actively traded in futures market.

“Black Pepper” famous as “Black Gold” and also known as “King of Spices” is one of the important agricultural commodities of commerce and trade. It is the major source of income and employment for rural households in Pepper growing state of Kerala where more than 2.5 lakh farm families are involved in pepper cultivation”

Cardamom is known as the “Queen of Spices” occupies a unique position in spice trade. India was a leading producer of Cardamom until Guatemala overtakes India in 2000-01. Kerala has

dominant role as a cardamom producing area among the Indian states and accounts for 80-90% of the total pepper production in the country. Pepper is cultivated extensively in Idukki district, it also accounts for 79% Cardamom area and 90% of total production. Pepper produced in Idukki district has better quality. It is mostly an intercrop with coffee tea and cardamom.

In the Indian context there are very few studies available on the utility of futures trading in selected agricultural commodity in a skeleton manner. However there is no firm study on the Perception about the utility, factors hindering and prompting farmers and traders in taking up futures trading. This present study is an attempt to know the perception about the utility of futures trading from the farmers and traders of pepper and cardamom.

1.6 STATEMENT OF PROBLEM

The Futures Market in respect of Agricultural Commodities has led to increase the exposure of agricultural produce to price and other market risks. This study relates with the futures trading of Spices especially Pepper & Cardamom. Various literature work emphasize the importance of Futures Markets for Price Discovery and Price Risk Management.

“A Long-term relationship exists in case of pepper, sugar while a short-term relationship is found in case of Chick pea and Castor in considering the co-integration existing between the futures and spot prices of agricultural commodities (Jabir Ali 2000)”15.

“It has been found that An unexpected increase in futures trading volume uni-directionally causes an increase in cash price volatility for most commodities while examining the Lead-

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lag relationship between futures trading activity and cash price volatility for major agricultural commodities (Jian Yang, Brian Balyeat 2005)\textsuperscript{16}. “In examining the dynamic relationship between spot and futures prices of agricultural commodities found that spot prices are generally discovered in futures markets and the changes in futures prices lead changes in spot prices (Hernandez Manuel Jun 2010)\textsuperscript{17}. “A Bi-directional Causal relationship is also evident between spot and futures market of coffee suggesting that futures market are becoming increasingly efficient overtime (John M.Fry, Baoying Lai, Mark Rhodes Nov2010)\textsuperscript{18}. “With increased availability and lower cost there is faster assimilation of information resulting in effective Price discovery in futures market in case of Agri, Energy, Metal and Commodity Futures price Index and the reverse does not exist, while there is no co-integrating relationship between Metal futures and spot price index. The larger trading program and the speculative nature of futures trading reveals volatility spillover exist from futures to spot in case of Energy and Commodity index and the spillover exist from spot to futures in case of Agri index. Price discovery and volatility spillover being important aspects in formulating policy calls for government intervention to check the dynamics of both spot and futures commodity markets in India (Mantu Kumar Mahalik Apr 2012)\textsuperscript{19}. “In the Price Discovery process of few agricultural commodities Chana, Potato, Blackpepper, castor seeds, turmeric, a Long-run equilibrium relationship is confirmed for all commodities except


turmeric making futures market more informational efficient and cost competitive ensuring their lead role in price discovery function (Prof. Sanjay Sehgal Aug 2012)\textsuperscript{20}.

Though many of the literatures have explored the Efficiency of the Commodity Futures market in India on Various aspects, only very few literatures available were based on the Perception towards Commodities Futures trading in India. The present study aims to analyse the implications of Futures Trading on select spices items, pepper & cardamom in a three dimensional points. It focuses on Market trend, Farmers Perception and Traders Perception with respect to Futures Trading.

1.7 CONCEPTUAL FRAME WORK

Derivative Contract

A derivative contract is an enforceable agreement whose value is derived from the value of an underlying asset. The underlying asset can be a commodity, precious metal, currency, bond, stock.

Commodity Exchange

A commodity Exchange is an association or a company of any other body corporate organizing futures trading in commodities.

Forward Contract

It is a legally enforceable agreement for delivery of goods on a specific date in future at a price agreed on the date of contract and are settled by payment of money difference or where delivery and payment is made after a period of 11 days.

Futures Contract

Futures are exchange traded contracts to sell or buy standardized financial instruments or physical commodities for delivery on a specified future date at an agreed price.

Futures Market

The futures market is a centralized market place for buyers and sellers from around the world who meet and enter into commodity futures contracts.

Contango

It means a situation where futures contract prices are higher than the spot price.

Backwardation

The prices in the spot are higher than a particular futures contract.

Basis

It is normally calculated as cash price minus the futures price. A positive number indicates a futures discount (Backwardation) and a negative number, a futures premium (Contango).

Convergence

The futures and spot prices should be the same at the time of the maturity of the contract.

Hedgers

Hedgers are those who have an underlying interest in the commodity and are using futures market to insure themselves against adverse price fluctuations.

Speculators

Speculators are the persons who try to assimilate all possible price-sensitive information on the basis of which they can expect to make profit.
Arbitragers

Arbitragers work at making profits by taking advantage of discrepancy between prices of the same product across different markets.

Price Discovery

Price discovery in commodities market helps farmers take correct decisions on their future cropping pattern.

Price Risk Management

Hedging is the practice of off-setting the price risk inherent in any cash market position by taking an equal but opposite position in the futures market.

Forward Markets Commission

It is a regulatory body for regulating and promoting commodity futures/forward trade, set up under the Forward Contracts (Regulation) Act 1952.

1.8 OBJECTIVES OF THE STUDY

The present study seeks to examine the following objectives.

1. To identify the Short-Term and Long-Term relationship between Spot and Futures Prices of Pepper and Cardamom.

2. To ascertain the Preference Level of Futures from among the Pepper & Cardamom Farmers and factors influencing Preference.

3. To derive the Pepper & Cardamom Farmers Perception level about the utility of Futures Trading.

4. To study the awareness level about Futures from among the Traders of Pepper & Cardamom and extent of Preference of futures.

1.9 HYPOTHESES

1. There is no significant difference in the relationship between the spot and futures prices of pepper and cardamom.
2. There is no significant difference between preference for futures and factors influencing preference among pepper and cardamom farmers.

3. There is no significant difference between utility of futures trading by pepper and cardamom farmers.

4. There is no significant difference between Awareness level and extent of preference of futures by pepper and cardamom traders.

1.10 METHODOLOGY

This part of analysis deals with the description of the study area, sampling procedure adopted, method of survey, nature and sources of data and various techniques employed for analyzing the data.

Study Area

The present study pertains to Idukki district in Kerala where pepper and cardamom are growing on a large scale. “Kerala has dominant role as a cardamom producing area among the Indian states and accounts for 80-90% of the total pepper production in the country. Pepper is cultivated extensively in Idukki district, it also accounts for 79% Cardamom area”\textsuperscript{21}. Pepper produced in Idukki district has better quality.

The information pertaining to the study were collected both from primary and secondary sources to accomplish the various objectives of the study.

Primary Data

Primary data were collected through administering a well structured Interview Schedule from farmers who possess knowledge in commodity trading and traders of Pepper who are involved in commodity trading specifically in IPSTA and cardamom who had prior experience of commodity trading.
Secondary Data & Period of Study

The ready market prices and futures prices of pepper released by IPSTA in Kochi from January 2006 to March 2012 in case of pepper and for cardamom the spot and futures prices from February 2006 to March 2012 released by MCX Ltd., are utilized for analyzing the short-term and long-term relationship between the spot and futures prices of Pepper and Cardamom.

1.11 SAMPLING DESIGN

Spices are widely traded items in Commodity Futures Markets. From among the Spices, Pepper and Cardamom are the most popular Commodities on Future Trading both in terms of volume and trade.

Traders and Farmers perception on Futures Trading were elicited by conducting year survey among them. In the present study 320 cardamom farmers and 390 Pepper farmers were chosen as samples from Kumily and Nedungandam regions. Samples were chosen on Proportionate Sampling of (1%) total farmers from each area with the help of the officials of the Spice Board.

14 pepper traders dealing with IPSTA and 30 cardamom traders dealing with spice board were approached by adopting Proportionate Sampling of 10% of total Traders.

Sample Frame

Idukki District is the place in Kerala where Cardamom and Pepper are grown largely. The Spice Board divides it into 2 main regions.

1) Kumily Region with 4 zonal offices.

2) Nedungandam Region with 3 Zonal offices.

### SAMPLING FRAME OF PEPPER & CARDAMOM FARMERS & TRADERS

<table>
<thead>
<tr>
<th>REGION</th>
<th>POPULATION</th>
<th></th>
<th>SAMPLE (1 %)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CARDAMOM</td>
<td>PEPPER</td>
<td>CARDAMOM</td>
<td>PEPPER</td>
</tr>
<tr>
<td>KUMILY</td>
<td>17,000</td>
<td>16,000</td>
<td>170</td>
<td>160</td>
</tr>
<tr>
<td>NEDUNGANDAM</td>
<td>15,000</td>
<td>23,000</td>
<td>150</td>
<td>230</td>
</tr>
<tr>
<td>TOTAL FARMERS</td>
<td>32,000</td>
<td>39,000</td>
<td>320</td>
<td>390</td>
</tr>
<tr>
<td>TRADERS</td>
<td>SPICE BOARD</td>
<td>IPSTA</td>
<td>SAMPLE (10%)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>300</td>
<td>140</td>
<td>30</td>
<td>14</td>
</tr>
</tbody>
</table>

### 1.12 ANALYSIS OF DATA

The Secondary and Primary data collected were analyzed by using the following statistical techniques and econometric tools.

1. Co integration Analysis is used to determine the Long-term relationship between spot and futures prices of pepper and cardamom.

2. VECM Model is used to determine the Short-term relationship between spot and futures prices of pepper and cardamom.

3. Factor analysis by Principle Component Method is applied to determine the factors influencing Perception of Farmers and Traders towards Commodity Market.

4. The K-Means Cluster Analysis of farmers is appropriately used to classify the sample unit of farmers and traders into heterogeneous groups based on the factors influencing them.

5. The Multiple Regression Analysis is found more suitable to estimate the influence of Commodity Trading Market habits of Farmers & Traders on the dependent factors of their perception.
6. The Non-Parametric Chi-square Analysis is exploited to find the Association between Independent Commodity Market Variables and Perceptual Difference among Farmers and Traders.

7. The Karl-Pearson’s Coefficient of Correlation is used to verify the Parametric relationship between Farmers Perception as well as Traders Perception towards Commodity Market.

8. One-Way Analysis of Variance is brought to bear on the problem of comparing the influence of various segments, independent variables on farmers.

9. The Parametric T-test and Z-test are also applied to identify the significant difference between the perception of farmers and traders towards commodity market.

1.13 LIMITATIONS OF THE STUDY

The study pertains to selected spices Pepper and Cardamom cannot be generalized for all other spices.

The pattern of study undertaken in Idukki District of Kerala may not hold good for other states.

The present study considered the trading pattern of IPSTA a regional commodity exchange only.

1.14 CHAPTER SCHEME

The entire study has been presented in seven chapters.

I Chapter describes the origin and growth of commodity futures trading at the global level and at the nation level along with the specific objectives, methodology as well as limitations of the study were highlighted.
Chapter II deals with the reviews of the relevant research studies connected with the study.

Chapter III provides the conceptual and contextual overview of futures trading.

Chapter IV deals with the relationship between spot and futures prices of pepper and cardamom.

Chapter V is devoted to the analyse the Perception of farmers about Futures trading in terms of Factors Hindering their Participation, Preference level and utility of futures trading.

Chapter VI deals with Perception of traders about Awareness and Preference of Futures trading.

Chapter VII describes the Summary of the major findings with relevant suggestions and conclusion.