

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

The customized commodities markets are one of the oldest forms of commodity markets developed with the development of human civilization and prevailing markets in the human history. Simply, commodity is defined as agricultural products. The need and development of derivative market especially commodity market started since 17th century to protect farmers themselves against the continuous change in price of commodity. Derivative market fully or partially helps farmer to hedge against the price risk. The world's first commodities arose from agriculture practices (crop production and raising livestock). Archaeological discoveries indicate that agriculture developed around 10,000 BC, as humans began settlements and farming. An agricultural revolution started around 8,500 BC, which led to trading commodities between settlements. As trading developed, producers and dealers looked for ways to preserve the price of their products. Factors such as weather, conflict, and supply and demand wreaked havoc on pricing. In addition, as supplies became more plentiful, storage was necessary; merchants sought ways to raise money while their product sat until being sold. This is how futures agreements began. According to Bruce Babcock, a noted commodity authority, the first recorded commodity futures trades occurred in 17th century Japan, though there is some evidence that rice may have been traded as far back as 6,000 years ago in China (Babcock, 2009).

Before the evolution and development of organized commodity exchanges there was trading of commodity exchanges through customized exchanges. It was evolved with the need of continuous supply of seasonal agricultural crops and fluctuation in general price level. The concept of organized trading in commodities evolved in Chicago, in 1848. But different research paper and articles trace its roots in Japan. Big merchants in Japan used to store rice in warehouses for further use. To raise cash warehouse holders sold receipts against the stored rice. These were known as “rice tickets”. Latter on rules came in to being, to standardize the trading in rice tickets. With the need of formal and organized commodity exchanges, in 19th century Chicago in

United States had emerged as a major commercial hub. So that wheat producers from Mid-west attracted here to sell their produce to dealers & distributors. Due to lack of organized storage facilities, absence of uniform weighing & grading mechanisms producers often confined to the mercy of dealers discretion. Gradually sellers & buyers came into a common meeting place and started making commitments to exchange the produce for cash in future and thus contract for “futures trading” evolved. Thereby the producer agreed to sell his produce to the buyer at a certain future delivery date at an agreed upon price. This kind of agreement becomes beneficial to both sellers and buyers. The price of such contract would dependent on the price movements in the wheat market. Latter on by making some modifications these contracts transformed in to an instrument to protect involved parties against adverse factors such as unexpected price movements and unfavorable climatic factors. This promoted traders entry in futures market, which had no intentions to buy or sell wheat but would purely speculate on price movements in market to earn profit (Babcock, 2009).

Wheat trading became highly profitable due to which several other commodities entered into future markets. This created a platform for establishment of a body to regulate and supervise these contracts. That’s why Chicago Board of Trade (CBOT) was established in 1848. In 1870 and 1880s the New York Coffee, Cotton and Produce Exchanges were born. Agricultural commodities were mostly traded but as long as there are buyers and sellers, any commodity can be traded. In 1872, a group of Manhattan dairy merchants got together to bring chaotic condition in New York market to a system in terms of storage, pricing, and transfer of agricultural products. In 1933, during the Great Depression, the Commodity Exchange, Inc. was established in New York through the merger of four small exchanges – the National Metal Exchange, the Rubber Exchange of New York, the National Raw Silk Exchange, and the New York Hide Exchange.

The largest commodity exchange in USA is Chicago Board of Trade, The Chicago Mercantile Exchange, the New York Mercantile Exchange, the New York Commodity Exchange and New York Coffee, sugar and cocoa Exchange. Worldwide there are major futures trading exchanges in over twenty countries including Canada, England, India, France, Singapore, Japan, Australia and New Zealand.

As number of commodities entered into the market such as energy and financial contracts the term "commodities market" has become to futures market. During the late 20th century, exchanges opened and merged (such as the Chicago Board of Trade merging into the Chicago Mercantile Exchange) as the volume of traded contracts increased dramatically. In most cases, the underlying commodity is not even exchanged between the contract seller and buyer. Activity in the markets is measured in volume – the number of contracts traded.

The different commodity exchanges around the world involves in trading of various commodities from single commodity exchange. Most of the commodity exchanges prefer trading of bullion, metals, agricultural products and energy because there is higher possibility of fluctuation of prices. This gives the investor motivation to trade in fluctuated market to have higher benefit and margin of profit. It doesn't mean that there is always profit sometimes investors have to bear a loss also.

Table 1.1 : Commodity exchanges and traded commodities

Country	Exchange name	Future class traded
USA	CME	Energy, precious metals, industrial metals, livestock, financials.
USA	CBOT	Agriculture, livestock
USA	NYBOT	Agriculture.
UK	London metal exchange	Industrial metals
AUSTRALIA	Australian stock exchange	Energy, environmental, financial, agricultural products.
JAPAN	Tokyo commodity exchange	Energy, precious metals, industrial metals, rubber
USA	Kansas City Board of Trade	Wheat
USA	Minneapolis Grain Exchange	Wheat, Oats, corn.
	Intercontinental Exchange	Oil, natural gas, jet fuel, emissions, electric power, commodity derivatives.

Source: UNTCAD 2009

The above table shows the major commodities exchanges established in 1900s. During 1900s most of the exchanges are incorporated in USA and they preferred to trade some particulars commodities. At that time, agricultural products are traded most because of future uncertainty of price.

Table 1.2 : The different commodities grouped into different asset class:

Asset Class	Commodity/Future
Agriculture	Corn, Oats, Rice, Soybeans, Wheat, Orange Juice
Livestock	Hogs, frozen pork bellies, live cattle, feeder cattle
Precious metals	Gold, platinum, palladium, silver
Industrial metals	Aluminum, steel, copper
Financial (equities)	US treasury Bond Futures, US Treasury Bill Futures, Indexes, Currencies
Soft commodities	Sugar, Cocoa, coffee, cotton
Pulp	Lumber

Source: Bruce Babcock (2009)

This table shows the brief classification of asset into different commodities. Here in this table soft commodities and agricultural commodities are separated into different groups and financial products are also added consists of indexes, currencies, etc.

1.1.1 Study of Commodity Markets

Nepal is an agricultural country with 2/3rd of total population engaged in agriculture and contributes 29.37 % of total GDP (Economic Survey 2016/17). The share of the agriculture in the GDP has fallen significantly from 72% in 1975 to 29.37 % in 2016/17 .Though the percentage of agriculture to total GDP is decreasing, the total productivity is increasing. It is due to lack of modern technology, lack of knowledge about modern cash crops and its market, lack of fertilizer, problem of irrigation and transportation. Out of total population 82.93 % population are lived in rural area (CBS, 2068).

During the period of Rana Regime (1904-2007) B.S. Nepal was a self-independent and exporting country. After the declaration of democracy and failure of multiparty system, Nepal became dependent and importing country. The trade deficit becomes 47.1% in the fiscal year 2015/16 (economic survey 2016/17).

Still the majority of population directly and indirectly engaged in agriculture, the scope of commodity market is increasing day by day. Most of the people perceive that commodity market is difficult to understand and complex phenomenon because of

difficulty in understanding the nature of future markets, their trading and how it actually works.

The global market has been changing with the passage of time due to many factors and change is inevitable. International market is composed of many traders and investors who are always looking for opportunities to invest to have a healthy return. In doing so, commodity market provides different ways of investing and whose value depends upon the interest rate, currencies, equity and equity indices also known as underlying assets.

First, Commodity can be defined as the tangible product which has demand market is a place where trading is placed. So, commodity market or commodity future or commodity trading is defined as market where number of buyers and sellers come together through a standardized contract. The commodity market in simple terms defined as the public marketplace where commodities are contracted for purchase or sale at an agreed price for delivery at a specified date. The purchase and sale function is made through broker who is a member of an organized exchange. The process of purchase or sale of commodities must be made through and organized exchange broker and the purchase should be made under the terms and conditions of a standardized futures contract (Choudhry, 2004). It is similar to an equity market, but instead of buying or selling shares one buys or sells commodities. Not all the commodities are suitable for future trading, it should be competitive as well as having demand and supply of that commodity. Commodity should have long shelf live and gradation.

Table 1.3 : Sector Wise Commodities

Sector	Commodities
Bullion	Gold, silver, platinum, etc.
Base metals	Zinc, lead, nickel, steel, aluminum, etc.
Energy	Oil, natural gas, electricity, etc.
Agriculture	Grains, coffee, cotton, potato, sugar, etc.
Other	Carbon credits, freight, forest products, etc.

Source: MEX Nepal 2009

The commodities are split over into two parts: a) Soft commodities include agricultural products such as wheat, coffee, cocoa, fruit and sugar. b) Hard commodities include mined, such as gold and oil. The commodities in international markets are agricultural products and raw materials and are based upon contracts. The commodities are traded by using various contracts such as future contract, forward contract, option contract and swap contract.

a) Forward Contract

A commodity forward contract is a customized contract between buyers and sellers without any clearing member to buy and sell commodity at predetermined price after maturity period. The forward contract may be settled through cash or physical delivery.

b) Future Contract

A commodity future contract is a standardized forward contract in which commodity exchange and organized exchange broker play the role of mediator. This contract is based upon the well-defined rules, regulation and laws.

c) Option Contract

A commodity option contract is divided into long position and short position. A commodity option is an agreement between buyers and sellers gives the holder of option (for long position), it gives right but not obligation to sell(put option) or to purchase(call option) at predetermined price and time and in short position, it gives obligation to sell(call option) or to purchase(put option) for the issuer of option. Mandal (2017), SEBON.

d) Swap Contract

A commodity swap is an agreement between two parties to exchange cash on or before a specified future date based on the underlying value of commodity currency, stock or other assets. Unlike futures, swaps are not exchange-traded instruments. Swaps are usually designed by banks and financial institutions that also arrange the trading of these bilateral contracts. Mandal(2017), SEBON.

Before a decade ago, population was lower and majority of people were illiterate due to which online trading of commodity was limited. Now, knowingly and unknowingly people are engaged in derivative to minimize the risk of price fluctuation. Derivative is something derived from other. The need of derivatives can be traced from 17th century where farmers use derivative to protect themselves against continuous change in price level. From the time of sowing to crop harvest, farmers would face the problem of price uncertainty. This would help to reduce the price risks to farmer fully or partially. Farmer started to store agro products for future uncertainty of price as the market is more volatile. People started to hedge against price risk.

Commodity market not only helps to minimize price risk, it also creates investment opportunity and helps to discover price in spot market too. Different participants engaged in commodity market and they are:

1.1.2 Participants Engaged in Commodity Market

a) Hedgers: Especially, hedgers (farmers) are the risk minimizer. They try to minimize the price risk as it is more volatile in nature. They involved in different contract to cope with future price fluctuation.

b) Speculators: Speculators are those participants who prefer to fluctuate price in near future. The change in price becomes the motive for investment in commodity market. Small margin of money is required to invest in different contract so that they can take large position on the market. As a result of this leveraged speculative position, they increase the potential for large gains as well as large losses.

c) Arbitrager: Arbitragers are those participants whose intention is to make profit without making huge investment i.e. small amount of investment is required. The profit is only possible if there are different prices in different market. Arbitragers work at making profits by taking advantage of discrepancy between prices of the same product across different markets.

Commodity trading is done in the form of futures and that throws up a huge potential for profit and loss as it involves predictions of the future and hence uncertainty and risk. Risk factors in commodity trading are similar to futures trading in equity

markets. A major difference is that the information availability on supply and demand cycles in commodity markets is not as robust and controlled as the equity market.

The commodities market exists in two distinct forms, namely, the Over the Counter (OTC) market and the exchange-based market. The spot markets are essentially over-the-counter markets and the participation is restricted to people who are involved with that commodity, say, the farmer, processor, wholesaler, etc. A majority of the derivative trading takes place through exchange-based markets with standardized contracts, settlements, etc.

1.1.3 Forms of Commodity Markets

a) Counter (OTC) Commodity Markets

The OTC markets are essentially spot markets and are localized for specific commodities. Almost all the trading that takes place in these markets is delivery based.

The buyers as well as the sellers have their set of brokers who negotiate the prices for them. This market is restricted to only those people who are directly involved with the commodity. In addition to the spot transactions, forward deals also take place in these markets. However, they too happen on a delivery basis and hence are restricted to the participants in the spot markets.

b) Exchange Traded Markets

The exchange-traded markets are essentially only derivative markets and are similar to equity derivatives in their working. That is, everything is standardized and a person can purchase a contract by paying only a percentage of the contract value. A person can also go short on these exchanges. Also, even though there is a provision for delivery most of the contracts are squared-off before expiry and are settled in cash. As a result, one can see an active participation by people who are not associated with the commodity.

Investment is the major factor and has significant role for the overall development of a nation. Earning is basis for investment, higher the income higher the investment. Investment is done in two ways real investment (land, building, fixed income

property) and financial investment (money market, capital market and derivative market). The financial economics allows buying and selling of financial securities, commodities and facilitates:

-) Raising capital (capital market)
-) Transfer of money (money market)
-) Transfer of risk (derivative market)

In the regulation part, the commodity market is self-operating. With the increasing volume of trading, increase in total turnover and increase in number of trading clients, the GON placed a bill on commodities in the parliament to establish separate independent regulatory body to protect investors and suggested SEBON as the main regulatory body of commodity future market.

The main commodities products traded at Exchanges in Nepal are Gold, silver, Platinum, Palladium, Copper, Crude oil, Natural Gas, Coffee, Cotton and agricultural products etc. There is high concentration on the trading of futures contracts of Gold, Silver, Crude oil, Copper, Platinum, and other non-precious metal rather than trading in the futures contracts of local agriculture commodities.

Table 1.4 : Commodity Exchanges, Location and Trading Commodities

Location	Exchanges	Commodity/ Future
Shesh Marga, House No. 25, Charkhal, Dillibazar, Kathmandu, Nepal	MEX	Cocoa, coffee, corn, cotton, soybean, soybean oil, sugar, wheat, Brent crude, crude oil, heating oil, natural gas, gold, micro gold, silver , micro silver, platinum, palladium, copper
1st Floor, Alfa Beta House, New Baneshwor, Kathmandu.	DCX	Exchange-traded futures and options contracts on precious metals, base metals, agriculture commodities and energy.
Subidhanagar, Tinkune, Kathmandu.	NDEX	Gold, silver, copper, platinum, palladium, crude oil, coffee, wheat, corn, natural gas, heating oil, soybeans, soybeans oil, cotton.

Source: Official Pages of MCX, DCX & NDEX

The above table shows only three commodity exchanges, their location and trading commodities. On the basis of economic survey 2016/17 chapter entitled capital market consists of MEX, DCX and NDEX so I selected my study area on the above mentioned commodity exchanges.

1.2 Statement of Problem

Nepal is a least developed country along with remittance and service sectors, agriculture contributes about 1/3rd of total GDP of Nepal, Economic Survey 2016/17. The contribution of agriculture is degrading as the productivity declines. The major problems are poor working condition, lower wage level and rising cost of living and lack of social protection. Most of the Nepalese youth are interested to involve in service sector as well as in foreign employment due to which barren land has been increased tremendously. Another crucial problem is that there is lack of stored facility.

It is just that commodities market has been enter in the financial hub of Nepal but there is not any further development in the commodities market. This is due to lack of trading strategy. Most of the investors are looser. If this wrong trend in commodity market continues the market may fall in the accident and will be declared as problematic. So it's time to think by the stakeholders itself for the betterment of trading and earning opportunities

The commodity future market is in increasing trend still there is a problem of physical delivery of commodities. Majority of population are unaware about commodity exchange due to lack of education and awareness programs. People literally feel difficulty in trading and complex procedure as it is performed through online basis. The problem is that below 1% people are participated in commodity future market.

Some people are involved in commodity exchange for various purposes such as hedging, speculating and arbitraging. Among these purposes hedging is done in order to minimize future price risk whereas speculating and arbitraging are done to make profit by speculating future price. Some journals and articles are published by bankers, lecturer and businessman regarding which is not sufficient to know about

commodity market. This study mainly attempts to address the following research questions.

- a) How does commodity market developed and its present status?
- b) How does commodity market operate and perform its function?
- c) Does commodity market helps to boost up country's economy?

1.3 Objectives of the Study

The general objective of the study is to analyze the overall performance of major commodity exchanges especially in Kathmandu valley. The specific objectives of the study are given as:

- a) To analyze the development stages and present status of commodity market.
- b) To evaluate the performance and functioning of commodity market in Kathmandu valley.
- c) To find the economic function performed by commodity market.

1.4 Significance of the Study

In terms of market capitalization, commodity market is flourished after the establishment of first commodity market in Nepal in 2006. A COMEN was the first to provide commodity trading in Nepal though it only facilitated to trade precious metals. MEX was started in 2007 but entered into the market for trading in 2008, facilitating the trading of agro-based products as well. At present 4470 clients are engaged in commodity trading which is negligible in terms of global market.

The study of commodity market helps to generate different data which would be useful to understand the development stage and present status of commodity future market. It may be useful to some extent for the researchers, students for those who want to carry out further study. Similarly, this study may be useful to government, SEBON, policy makers, NRB and others. This study will help to provide information related to role of commodity future market for transaction. As this study provides information related to prospects and challenges this might be very much useful for existing as well as new investors.

1.5 Limitation of the Study

There are many facts and issues associated with the slow growth and development of commodity market in Nepal, all the issues cannot be included within a single study. The commodity exchanges facility possible through only major cities of Nepal. Among them, Kathmandu valley is taken as research area of the study. Due to lack of financial resources, human resources and time, this study is limited to major commodity exchanges of Kathmandu valley. The major limitations of the study are as following.

- a) The study is based the major commodity exchanges of Kathmandu valley because most of the trading is done through major three commodity exchanges.
- b) The commodity market is still in infant stage and data available for three to four years may not give proper result.
- c) Out of total population only 4470 clients are engaged in commodity future market so it might not give significant result.
- d) This study is based on time series data i.e. yearly data will be collected though price change is updated in weekly basis.

1.6 Organization of the Study

This study has been divided into five chapters, each devoted to some aspects of the development of commodity market and its status in Nepalese market. This scientific division of the study helps anyone to achieve their goals by devoting a little time. These five chapters are as follows:

Chapter I: Introduction

This chapter includes the introductory matter which describes the background of the study, statement of problem, objective of the study, significance of the study, limitation of the study and organization of the study

Chapter II: Review of Literature

This chapter deals with the review of available literature. It includes conceptual framework, review of previous studies like book, reports, article journal, previous thesis etc. It helps to discover the gap between past studies and current problems.

Chapter III: Research Methodology

This chapter incorporates the research methodology used in the study, which includes research design, population and sample, nature and sources of data collection procedure, data processing procedures and analysis and description of key variables, etc. This chapter produces an attractive way to facilitate the analysis of relevant data to achieve pre-stated objectives.

Chapter IV: Presentation and Analysis of Data

This chapter deals with the analysis of data collected from different sources. The collected data has been analyzed using various statistical tools. This chapter also includes major findings of the study. This chapter produces an attractive way to facilitate the analysis of relevant data to achieve pre-stated objectives.

Chapter V: Summary, Conclusion and Recommendation

This chapter includes summary, conclusion and recommendations or suggestions for further improvement.

Bibliography and appendixes have been included at the end of the study.

CHAPTER-II

REVIEW OF LITERATURE

Review of literature means reviewing past research studies or other relevant proposition in the related area of the study so that all the past studies, their conclusions and deficiencies may be known and further research can be conducted. It is an integral and mandatory process in research works. The main reason for the full review of research in the past is to develop some expertise in one's area, to see what new contribution can be made and to receive some ideas for developing a research design. There is significant importance of review of literature:

-) To identify the problem,
-) To determine the methodology for research work,
-) To draw the scope of studies,
-) To avoid unintentional replication of previous studies, and
-) To interpret the significance of researcher's results in a precise manner.

This chapter is related to examine and review of some related books, articles, published and unpublished different business journals, bulletins, magazines, articles, newspapers, websites and major findings of previous studies of the relevant fields are included in precise manner.

2.1 Conceptual Framework

Derivative market is broadly divided into financial derivative and commodity derivative. In the context of Nepal financial derivative is operated with the establishment of NEPSE in 1993, where securities of listed commercial banks, development banks, financial companies, some hotels and other few manufacturing companies are traded. In the exchange investors can trade stock, bonds, preferred stocks and other securities. After 13 years of establishment of NEPSE, commodity market in Nepal started. The commodity market in Nepal is still in infant stage. The development of formal commodity market in Nepal started with the establishment of COMEN in 2006. It is located in Laldurbar, Kathmandu. With the establishment of

COMEN formally commodities market has been entered in Nepal before 11 years ago.

At present there are three major commodity exchanges in Nepal namely MEX, NDEX and DCX. Around 200 brokers are existing in the current market and about 4470 trading clients are engaged in the trading of commodities. The major commodities traded at exchanges in Nepal are Gold, Silver, Platinum, Palladium and Copper, Crude oil, Natural Gas, Coffee, Cotton and agriculture products. There is high concentration on the trading of future contracts of Gold, Silver, Crude oil, Copper, Platinum and other non-precious metal rather than trading of local agricultural commodities. Due to lack of advanced warehousing facility, the physical delivery of commodity is not possible. In case of Nepal the contract is settled through cash payment.

Conceptual Framework

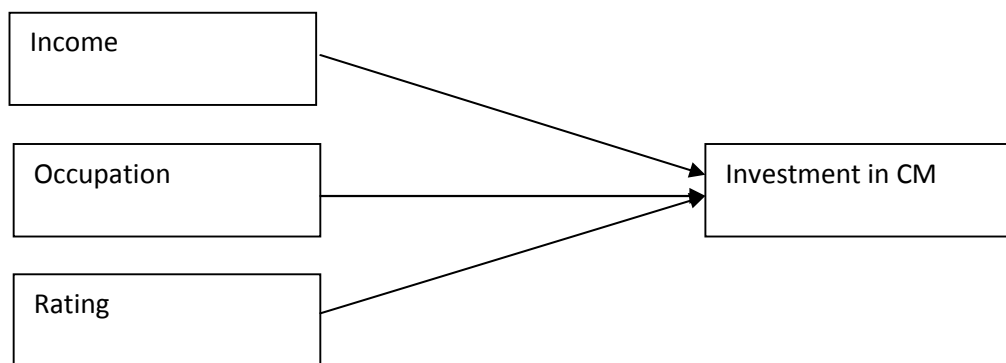


Figure 2.1, Schematic Diagram

In the above Schematic diagram, the dependent variable is investment in CM and independent variables are income, occupation and rating.

Investment in CM

Investment in CM is shown by total transacted volume and total turnover of total trading in commodity exchanges. Higher the income higher will be the investment in CM

Income

This variable is directly proportional to the growth and development of CM.

Rating

Rating consists of positive and negatives points or we can say that strength and weakness of CM

Occupation

It defines which occupation group mostly engaged in CM, employee doing private jobs are higher in the trading of commodity exchanges.

$$\text{Investment in CM} = I_0 + I_1 + I_2 + I_3 + \dots + I_n + e$$

Where,

I_n =investment

O_c =occupation

R_t =rating

2.1.1 Commodity Markets Operating in Nepal

Mercantile Exchange Nepal

MEX limited various integral aspects of commodity economy, viz, warehousing, cooperatives, private and public sector marketing of agricultural commodities, research and training were adequately addressed in structuring the exchange. Today, MEX is the only exchange in Nepal to have such investment and technical support from the commodity relevant institutions. It has robust delivery mechanism making it the most suitable for the participants in the physical commodity markets. It has also established fair and transparent rule based procedures and demonstrated total commitment towards eliminating any conflicts of interest.

MEX commenced futures trading in numbers of commodities on a national scale and the basket of commodities has grown substantially since then to include cash crops, food grains, vegetables, spices, oil seeds, metals and bullions among others. MEX is the first exchange to take up the issue of differential treatment of speculative loss. It is also the first exchange to enroll participation of high net worth corporate securities members in commodity derivatives market. It is the exchange, which shows a way to introduce warehouse receipt system within existing legal and regulatory framework. It

is the first exchange to complete the contractual groundwork for dematerialization of the warehouse receipts.

Derivative and Commodity Exchange

The Derivative and Commodity Exchange Nepal is a multi-product commodity and derivatives exchange situated in Nepal . Derivative trading is a diversified basket of commodities and derivatives (CFD) including futures and options contracts on precious metals, base metals, agriculture commodities energy, currencies and commodity indices. In Nov 2011 the Derivative and Commodity exchange Nepal Ltd. Was granted company recognition by company registrar office, qualifying operating license by the company registrar office of Nepal to operate as a regulated and licensed exchange recently. The commodities act was passed by Govt. of Nepal and the commodities market are under full-fledged regulation monitored by the Securities Exchange Board of Nepal (SEBON).

Nepal Derivative Exchange

NDEX is a state of art online commodity and derivative exchange operating in Nepal. In the world of increasing volatility, NEDX is the best platform to manage risk across the major commodities from precious metals to base metals, from agro commodities to energies. It is one of the best and most diverse derivative exchanges encompassing the widest trading floor of NDEX. It provides you with the tools you need to meet your objectives and achieve financial goals.

NDEX, professionally managed by a team of young Nepal based entrepreneurs, was incorporated on November 20, 2008 under the company Act, 2063 of Nepal. It is committed towards revolutionizing the commodity derivative market in Nepal. Their aim is to empower the market participants, stakeholders, investors through innovative product offering, technology and risk assessment, forecasting and managing tools.

2.2 Review of Related Studies

Alibekov and Lukinov, (1994), focused on commodity exchanges and they are prominent as a key element for organization of futures trading. In attendance is a need for prevalent education of agricultural producers in elementary of business and

marketing, and also essential for organization of futures trading in grain, sugar, and vegetable oils, creation of proper futures market infrastructure, introduction of clearing accounts for participants, and stipulation of sufficient information services.

According to the theoretical literature, price risk reduction is key as future is uncertain through hedging either by using forward cash contracts or future contracts so that producers may not be the victim of volatile price. (Johnson 1960; Stein 1961; McKinnon 1967; Danthine 1978; Holthausen 1979; Feder, Just and Schmitz 1980; Anderson and Danthine 1983).

Jabir and Kriti (2007), regression analysis is prominent for analyzing the effectiveness of commodity futures market. For this purpose they have taken both future prices and spot prices of commodities. There is high level of uncertainty in both spot and future prices of commodities. Positive coefficients for agricultural commodities in dissimilar equations supported the effectiveness of commodity market in hedging the price risk.

Kamal (2007), described that in small span of time, the commodity futures market has achieved exponential development in revenue. Researcher originates various factors that necessitate to be considered for making commodity market as a well-organized instrument for risk management and price discovery and recommended that policy makers should believe specific affairs connected with agricultural commodities marketing, export and processing and the interests involved in their real production.

Bhatta, (2010). Examines how the commodity prices are regulated through futures. The futures market also shows the spot price in future time period so it helps to discover price. In futures contract, both supplier and receiver agree to deliver and receive a given commodity at a certain future date and time for a price which is determined now. The investors will get risk hedging and speculating opportunities from this market too. The trading of standardized and graded commodities will help to ensure quality products in market that protects consumer's right.

According to Jiwarajika (2000), "Derivatives are used as a tool of risk management; the risks are associated with derivatives including market risk, credit risk and liquidity risks. The risks are directly related to size and price volatility of the cash flows they represent are to the size of the national amounts on which the cash flows are based."

The IMF (2001), in the developments and trends in mature capital market defines derivatives as "financial instruments that are linked to a specific financial instrument or indicator or commodity and through which specific risks can be traded in financial markets in their own right. The value of a financial derivative derives from the price of an underlying asset and index. Unlike debt securities, no principal is advanced to be repaid and no investment income accrues."

For the purpose of hedging, speculating, arbitraging price differences and adjusting portfolio risks, derivatives allow financial institution and other participants to identify, isolate and manage separately the market risks in financial instruments and commodities.

Thapa (2010) Nepalese banks have limited exposure towards commodities. Although commercial banks have been importing precious metals, but trading activity has been negligible. At present context, where there are adequate financial institutions in market catering limited customer segments., trading in commodities would be a new segment where Nepalese banks could hedge themselves with exposure within the sectors and can also be a medium to generate revenue. However, considerable awareness is required before exposing towards this sector which is regarded as one of the most volatile and riskier than other sectors.

SEBON (2012) studied commodity market, SEBON as a regulating body of capital market also trying to conduct detail study of c commodity market to know whether derivative market is effective or not. There are more than 50 companies registered as brokerage and exchange which are in difficult stage if necessary actions are not taken shows the data of CRO. Commodity exchanges are operating without any regulating body and exchanges do not publish any statistics showing how much money involved in this market. SEBON being the regulatory body of capital market has been asked to supervise the commodity market in an efficient way.

It also concludes that commodity market is less volatility, better price discovery, greater liquidity, and information assimilation. Many theories also suggest that derivative market helps to boost the efficiency of economy and competes the capital market.

Christian (2010), Commodity exchanges are inevitable in the globalized economy as the economic activities are globalized over past few decades given much more importance to commodities. The economic activity consists of consumption and economic developments and commodities remain key building blocks for economic activity. The industrial revolution reduced the percentage of overall economic activity represented by agricultural commerce, but it led to an enormous explosion in the production and consumption of agricultural commodities.

Janabi (2006) , "Derivative and hedge funds research paper" mentioned the uses of derivative 'given the rising need for measuring and controlling commodity price risk exposure, trading risk prediction under liquid and adverse market conditions plays an increasing role in commodity and financial markets.

Fama and French (1987), combined 21 commodities and studied monthly returns of them. Researchers found weak statistical evidence of an average risk premium also conclude that when commodities are combined into portfolios, statistical power is increased and marginal evidence of normal backwardation is obtained. But the evidence is not strong enough to resolve the long-standing controversy about the existence on nonzero expected premiums and also observe that spot price is a decreasing function of inventory; their model implies that price volatility decreases with higher inventory. Fama and French (1988) also had reflection on inventory yet another observation was that when inventory is low, the convenience yield is high and the interest adjusted basis is negative. Thus interest adjusted basis can be proxy for high and low inventory. Concludes by stating metal spot prices are more variable than futures prices when inventory is low.

Gorton and Rouwenhorst,(2006), This paper examined commodity futures return over the period of July 1959 to December 2004 based on an equally weighted index and concludes that commodity futures returns have provided effective diversification for stock and bond portfolios. Commodity futures have offered the same return and risk premium as equities over the study period and are negatively correlated with equity and bond returns due to different behavior over the business cycle and positively correlated with inflation, unexpected inflation and changes in expected inflation.

Ke Tang and Wei Xiong, (2012),The primary objective of this paper was to find out the effect growing investment in commodity futures markets has had on commodity price co-movements. In order to find out the relationship between the two the authors conducted a regression test between the oil and selected commodities from various sectors and the major finding was that with the increase in investment by investors observed since the early 2000s futures prices of non-energy commodities have become increasingly correlated with oil.

Body and Rosansky (1980) suggests that the portfolio of 60 Percent equity and 40 percent of commodity reduces the risk by one third without sacrificing return. The study is focused on return distribution with or without risk. Commodities having a positive skewness, meaning that the chance of positive extremeness is higher when the returns are normally distributed. They studied about the performance of investment during both bad and good years. During bad years with acceleration of inflation, commodities are performing well, which financial derivatives shows negative. Financial derivatives shows positive when the economy is in good condition or when the inflation is decreasing. Hence, during economic growth financial derivatives are expected to be positive and during recession period commodities are expected to be positive.

Hathaway (1998), clarifies the need of regulation in derivative markets. The major contributing factors for success and failure of derivative market are market culture, the underlying market including its depth and liquidity and financial infrastructure including the regulatory framework. The effectiveness of derivative markets can be impaired through government interventions. For example government allows price control aimed at stabilizing prices, which do not allow derivative market to flourish.

Yergin(2008),The commodity markets are among the most volatile in the world, and their volatility is a source of both profits and risks for the actors involved. In order to manage these risks the physical spot markets have from an early stage been accompanied by forward markets, later transforming into financial derivatives markets. The Chicago Board of Trade introduced exchange-traded futures contracts on agricultural products in 1848, and crude oil was traded forward from its beginnings in the 1860s.

2.3 Economic Functions Performed with the help of Derivative Market

- The prices of derivatives converge with the prices of the underlying at the expiration of the derivative contract. Thus, derivatives help in discovery of future as well as current prices.
- Derivatives, due to their inherent nature, are linked to the underlying cash markets.
- With the introduction of derivatives the underlying market witnesses higher trading volumes, because of participation by more players who would not otherwise participate for lack of an arrangement to transfer risk.
- Speculative traders shift to a more controlled environment of the derivatives market. In the absence of an organized derivatives market, speculators trade in the underlying cash markets.
- Derivatives have a history of attracting many bright, creative, well-educated people with an entrepreneurial attitude. They often energize others to create new businesses, new products and new employment opportunities, the benefit of which are immense.
- Derivatives markets help increase investment in the long run. The transfer of risk enables market participants to expand their volume of activity

2.4 Current Future Trading

While the first futures trading involved primarily the farmers and dealers, today's traders could include your neighbor or coworker. Currently, the ten most active exchanges conduct over one billion trades per year, and there are exchanges in over 30 countries. During the early years of the 21st century, several markets combined to form super-exchanges which offer a broader selection of contracts that can be traded. Through Internet activity, futures traders on remote islands can interact through brokers in large cities worldwide, thus creating a diverse global marketplace for establishing commodity pricing.

A commodities exchange is an exchange where various commodities and derivatives products are traded. Most commodity market across the world trade in agricultural products and other raw materials (like wheat, barley, sugar, maize, cotton, cocoa, coffee, milk products, pork bellies, oil, metals, etc.) and contracts based on them. These contracts can include spot prices, forwards, futures and options on futures. Other sophisticated products may include interest rates, environmental instruments, swaps, or ocean freight contracts.

Commodities exchanges usually trade futures contracts on commodities, such as trading contracts to receive something, say corn, in a certain month. A farmer raising corn can sell a future contract on his corn, which will not be harvested for several months, and guarantee the price he will be paid when he delivers; a breakfast cereal producer buys the contract now and guarantees the price will not go up when it is delivered. This protects the farmer from price drops and the buyer from price rises.

Speculators and investors also buy and sell the futures contracts in attempt to make a profit and provide liquidity to the system. However, due to the financial leverage provided to traders by the exchange, commodity futures traders face a substantial risk.

2.5 Research Gap

Since the above mentioned studies offer limited findings and they are not exactly similar to the present study. In other words, there are not any past study regarding the development and economic function of CM but Nepalese commodity market is in infancy stage and there are varies factors remaining to improve as compared to the developed commodity market. Majority of the investors of the Nepalese commodity market are making investment decision without analyzing the price trend of commodities and related variables properly. Hence, in Nepalese commodity derivatives market, to examine the exact trend and status of the commodity markets only secondary sources of date are not sufficient and complete.

This study aims to attempt to study about the growth trend and status of commodity market. The previous relevant literature more of less similar to this study has just reviewed to support the study and this study tries to fulfill the weakness of the past

studies because the study is based on primary as well as secondary sources of data and findings have been made on the basis of analysis of collected data using various statistical tools. Therefore, the current study is probably a first study in this field which supplements to overcome the weakness and limitation of previous studies.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology is an important component of a study. This section includes research design, source of data, method of data collection, sampling methods and instruments of data collection and the technique of data analysis. It systematically solves the various sequential steps to adopt by a researcher in studying problem with the objectives in view. This chapter is to outline the nature and sources of data, sample selection and classification of variables, techniques and steps adopted in interpreting and analyzing the data. It also focuses on how to collect required data, what is the population and sample, and what techniques to be adopted to analyze and interpret etc.

3.1 Selection of Study Area

This study is conducted in Kathmandu valley which is located in the central development region in Bagmati zone. The selection of area is based upon the operation of major commodity exchanges in Kathmandu valley. The major commodity exchanges are MEX, NDEX and DEX which are located in Kathmandu.

3.2 Research Design

Research design is a plan structure and strategy of investigation conceived so as to obtain answer to research questions and to control variances (Kothari, 1994:43). The research design refers to the entire process of planning and carrying out a research study. It describes the general framework for collecting, analyzing and evaluating data after identifying: (i) what the researcher wants to know, and (ii) what has to be dealt with in order to obtain required information (Wolf and Panta, 2003:74).

The research design of the study includes both descriptive as well as analytical. Descriptive in the sense that all the primary data are collected and presented in the table and described but it doesn't provide cause and effect relationship. Analytical means, there are various cause and effect relationship of commodity market and perception of people towards trading of commodities.

3.3 Sources of Data

This study is based on both primary and secondary data. Secondary data are used to represent the background of the study and also helpful for the major findings of the study. Secondary data are collected from various sources such as books, journals, and government publication. Primary data are collected through questionnaire and face to face interview with concerned people of commodity exchanges.

3.4 Sample Size

This study is based on both primary and secondary data collected from different commodity future market. Major commodity exchanges are taken as sample size and data are collected from questionnaire and face to face interview with office personnel. The various publication regarding commodity exchanges shows that MEX, NDEX and DEX are major commodity exchanges on the basis of trading volume and turnover.

3.5 Methods of Data Collection

This study is based on primary as well secondary data. The primary data collection is done through questionnaire, face to face interview and key informants. The secondary data are collected via. Journals, various books, economic survey, etc.

3.5.1 Questionnaire

The questionnaire is the most important step of the data collection in this study. Questions involve in the questionnaire are best fit to achieve the objective of the study. The information regarding the commodities trading, operation of trading, number of clients, preference of commodities (hard or soft commodity), leverage, etc. collected.

3.5.2 Face to Face Interview

An interview is a major support of the data collection. Interview is taken from staffs of different commodity exchanges.

3.6 Data Processing Procedures and Analysis

The raw data collected from various sources have no meaning unless they are presented in a systematic way. The data collected from both primary and secondary sources are verified, simplified, classified for the purpose of analysis. Different statistical tools and technique are used while analyzing the data. Collected data and information are presented by using simple mathematical and statistical tools such as table and graph, percentage, correlation, regression analysis, two factor and multifactor model, etc.

3.6.1 Statistical Tools

Statistical tools are used for the purpose of analysis and interpretation of the collected data. It is used to measure the relationship of two or more variables. The main statistical tools used to analyze the data are as follows:

i) Chi-square Test

Chi-square, symbolically written as χ^2 , is a statistical measure used in the context of sampling analysis for comparing a variance to a theoretical variance. As a non-parametric test, it can be used to determine if categorical data shows dependency or the two classifications are independent. It can also be used to make comparisons between theoretical populations and actual data when categories are used. Thus, the chi-square test is applicable in large number of problems. In fact, chi-square test is used to test the goodness of fit, the significance of association between two attributes, and the homogeneity or the significance of population variance. In this study chi-square test is utilized to test the significance of association between two attributes. Chi-square is calculated utilizing the formula below:

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Where,

$$E = \frac{RT \mid CT}{N}$$

RT = Row total,

CT = Column total,

- χ^2 = Value of Chi Square
- O = Observed Frequency,
- E = Expected Frequency,
- N = Grand total

ii) Arithmetic Mean

Arithmetic mean is the average return over periods. Arithmetic mean of a given set of observation is their sum divided by the number of observations. To illustrate it, let's suppose that $X_1, X_2, X_3 \dots \dots X_n$ denote return of given 'n' number of respondents and \bar{X} is the arithmetic mean of the given observation. It is calculated by,

$$\bar{X} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{n} \quad \text{Or,} \quad \bar{X} = \frac{\sum X}{n}$$

Where,

- \bar{X} = Arithmetic mean,
- $X_1 + X_2 + X_3 + \dots + X_n$ = Set of observations
- n = Total number of observations
- $\sum X$ = Sum of given observations

iii) Multiple Bar-diagrams

Diagrams and graphs are visual aids which give a bird's eye view of a set of numerical data which show the information in a way that enables us to make comparison between two or more than two sets of data. Diagrams are in different types and out of these various types of diagram one of the most important form of diagrammatic presentation of data is multiple bar diagram which is used in cases where multiple characteristics of the same set of data have to be presented and analyze.

iv) Pie- Diagram

A pie- diagram is a widely use, it is generally used for diagrammatic presentation of the values differing widely in magnitude. In this method all the given data are converted into 360 degree as the angel of a circle is 360 degree.

v) Percentage

Percentage is one of the most useful tools for the comparison of two quantities or variables. Simply, the word percentage means per hundred. In other words, the fraction with 100 as its denominator is known as a percentage and the numerator of this fraction is known as rate of percent.

vi) ANOVA Table

In one way ANOVA, only one factor is considered to be affecting the response variable of interest. For example, investment in commodity market depends upon the income only. This means other factors are not involved in the process of inferences. Moreover, the analysis of variance is applicable to test whether there is significant difference between means or variance. Not only this, but also when the response variable is affected by more than one factor we apply ANOVA technique.

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

This section helps to deal with the analysis and presentation of data collected from primary as well as secondary sources. For primary data analysis and presentation, data are collected from 65 respondents in a questionnaire basis. Moreover, secondary data are collected from official websites, books, journals and economic survey. Data presentation covers data on respondents view on the commodity exchanges.

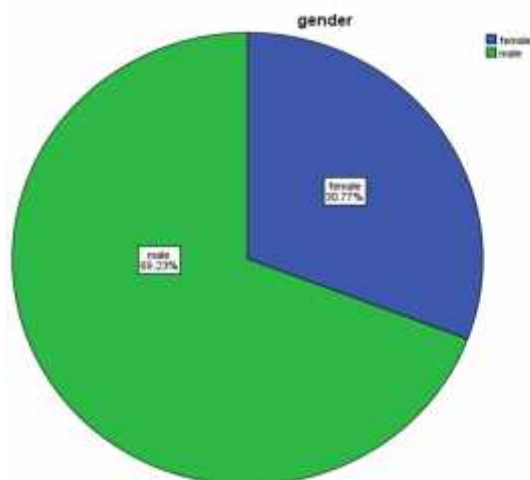
Table 4.1 : Frequency distribution of Demographic Components

Category		Frequency	total
Gender	Male	45	65
	female	20	
occupation	Business	14	65
	Government Services	10	
	Private jobs	28	
	others	13	
Age	Below 25yrs	9	65
	Between 25 and 35 yrs	36	
	Above 35 yrs	20	
Income	Below 250000	6	65
	Between 250000 & 350000	39	
	Above 350000	20	
Education	High School	7	65
	Intermediate level	20	
	Bachelor and above	38	

4.1 Presentation and Analysis of Primary Data

The sources of data, which are collected from secondary sources and are also secondary nature, are called secondary data. Thus, this chapter relates to analysis and interpretation of Secondary data.

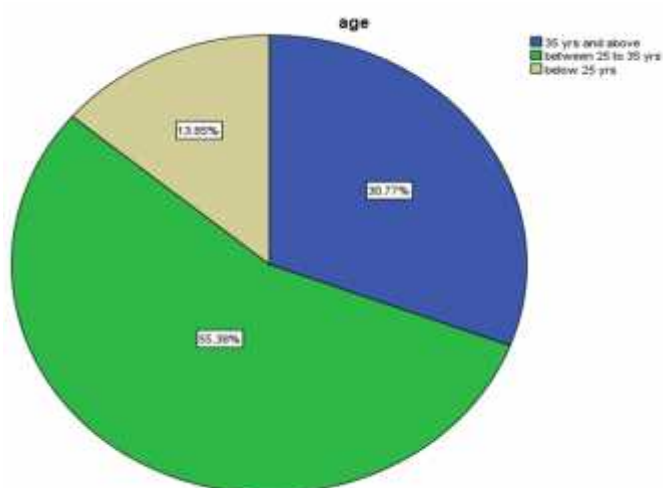
4.1.1 Profile of Respondents



Source: Field Survey, 2018

Figure 4.1 : Gender of Respondents

The above figure 4.1 shows that out of 65 respondents 69.23 percent are male and 30.77 percent are female. This shows that male is highly participated in commodity market. As the number of clients is increasing, there is growing interest towards commodity trading.

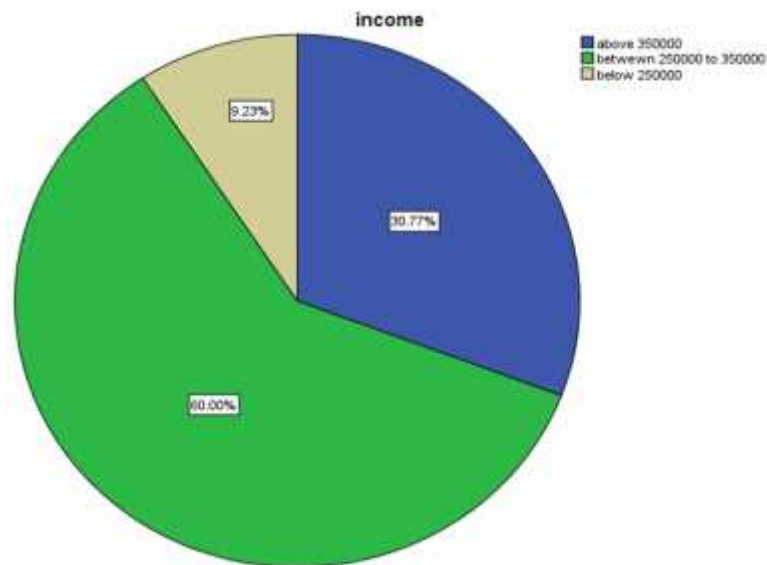


Source: Field Survey, 2018

Figure 4.2 : Age of Respondents

The above figure 4.2 shows that out of total respondents 13.85 percent are below 25 years, 55.38 percent are between 25 to 35 years group and 30.77 percent are 35 years

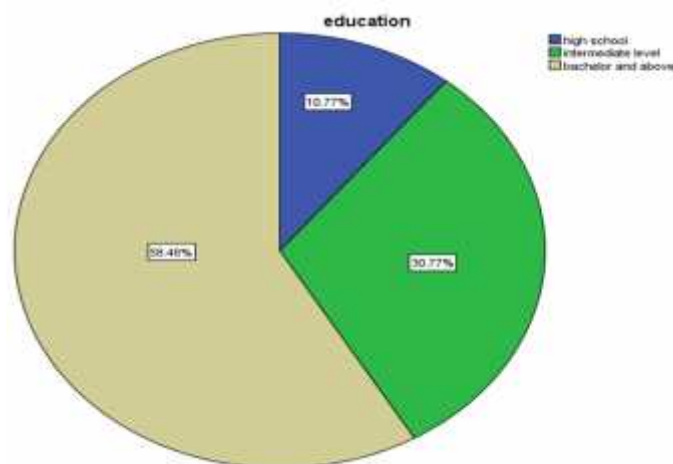
and above. This shows age group between 25 to 35 years is actively involved in commodity exchanges.



Source: Field Survey, 2018

Figure 4.3 : Incomes of Respondents

The above figure 4.3 shows that out of total respondents 60 percent are of annual income group Rs.250000 to 350000, 30.77% are above income Rs.350000 and 9.23 percent are below income Rs.250000.

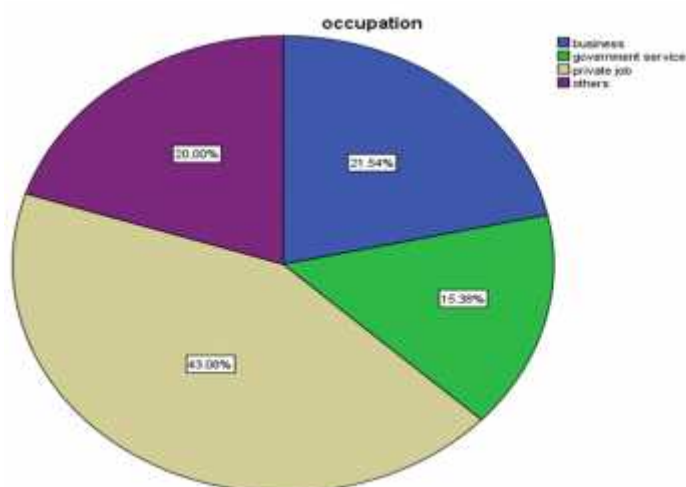


Source: Field Survey, 2018

Figure 4.4 : Education of Respondents

The above figure 4.4 shows that out of total respondent 58.46 percent have completed their bachelor degree and higher level, 30.77 percent completed intermediate level

and 10.77 percent have completed high school level. It shows that maximum of educated and literate people are engaged in commodity exchanges.



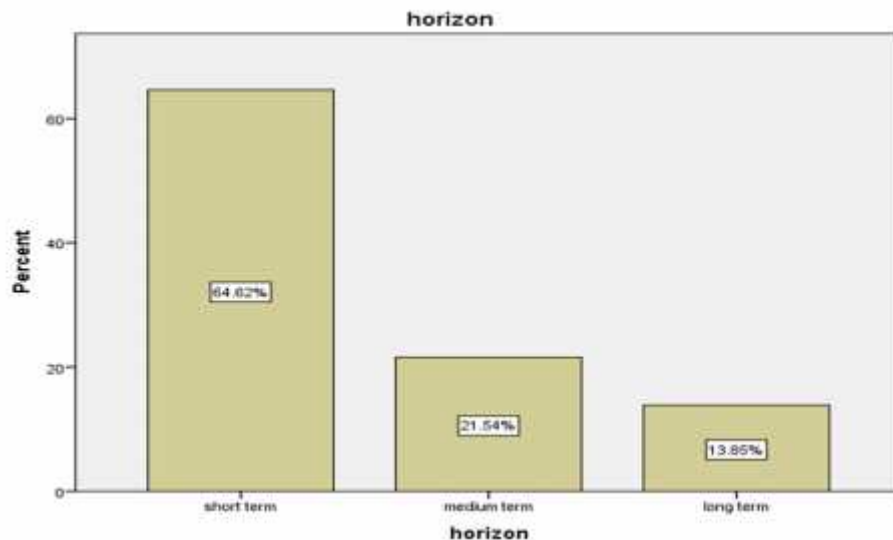
Source: Field Survey, 2018

Figure 4.5 : Occupation of Respondents

The above figure 4.5 shows that out of total respondent 43.08 percent are from private job, 21.54 percent are from business, 15.38 percent are from government job and remaining 20 percent are from job other than business, government and private jobs. Those who are engaged in private job mostly attracted from investment in commodity exchanges.

4.2 Investment Elements

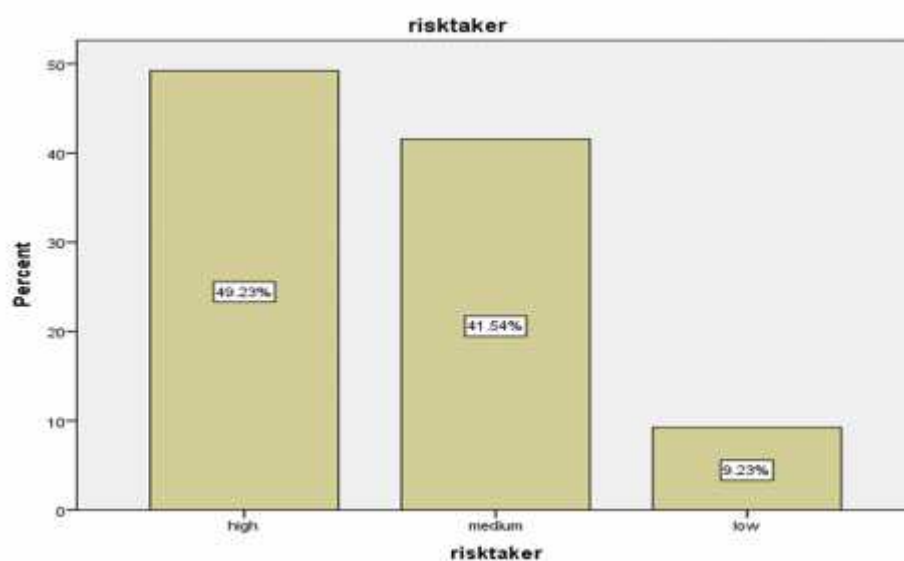
This section clarifies the different components of investment. The elements which are directly and indirectly related with development of commodity markets are given:



Source: Field Survey, 2018

Figure 4.2.1 : Investment horizon and Respondents

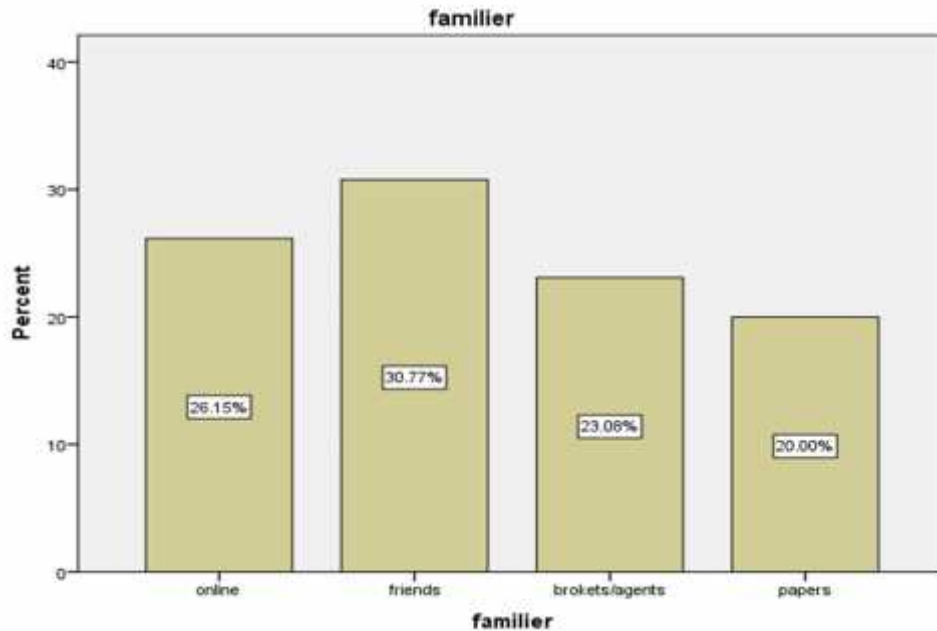
The above bar diagram 4.2.1 reflects that almost all the investors prefer short-term investment and wants to have instant income. The majority of investors i.e. 64.62 percent prefer short-term investment in CM. Those who want to have stable income generally prefer medium term investment and it occupies 21.54 percent of total respondents. And remaining 13.85 percent respondents prefer long term investment for future uncertainties.



Source: Field Survey, 2018

Figure 4.2.2 : Risk taking behavior of respondents

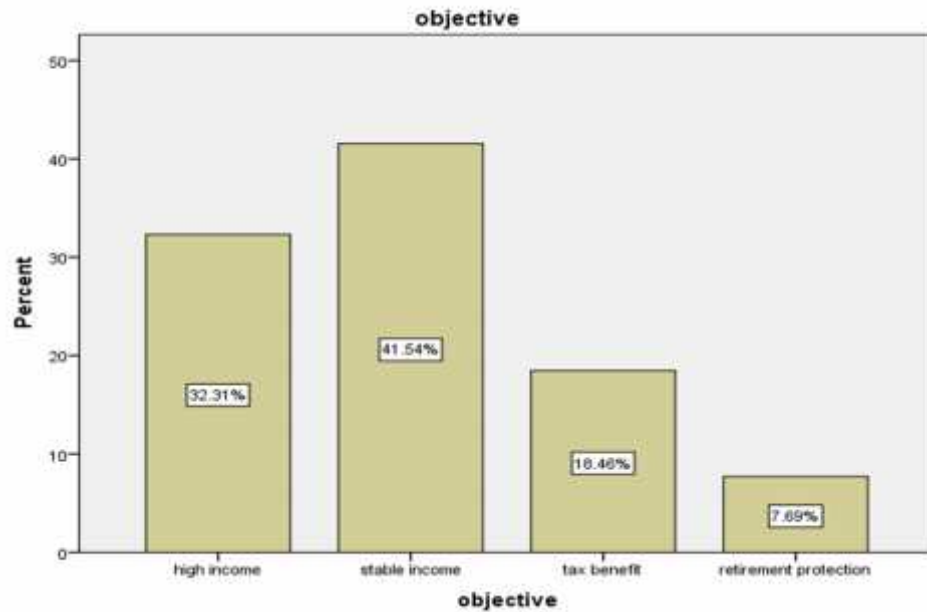
The above figure clearly shows that most of investors are risk taker and accounts 49.23 percent of total respondents. They want short term investment and high margin of profit. Those who prefer little bit of risk occupies 41.54 percent of total respondents. The 9.23 percent of total investor preferred lower risk which is negligible in long term.



Source: Field Survey, 2018

Figure 4.2.3 : Respondents familiar with CM

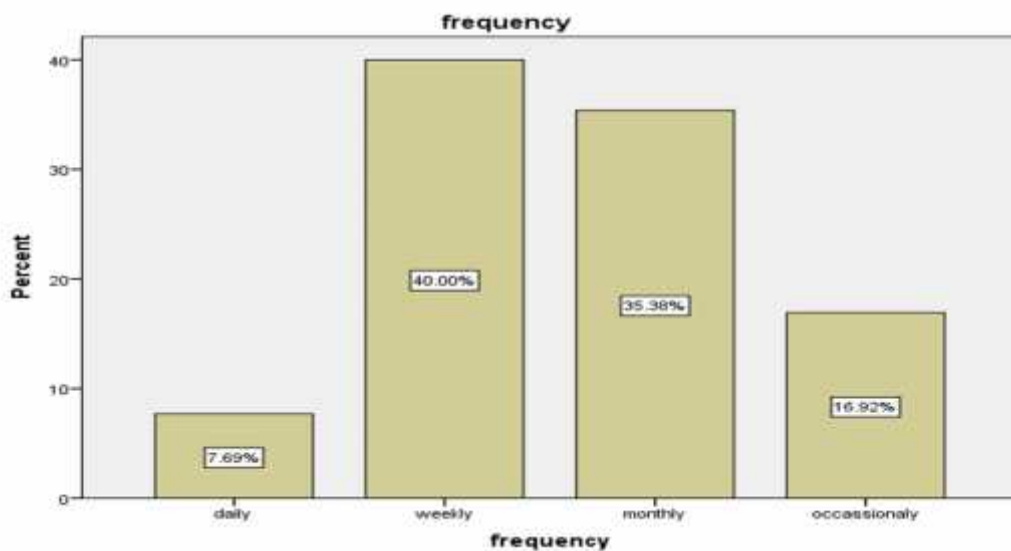
The above figure 4.2.3 tells about how people are familiar with commodity exchanges. Among all respondents 30.77 percent are familiar because of their friends, 26.5 percent are familiar via. Online method, 23.0 percent are through brokers/agents and remaining 20 percent are familiar by reading papers and magazines.



Source: Field Survey, 2018

Figure 4.2.4 : Objective of Investment

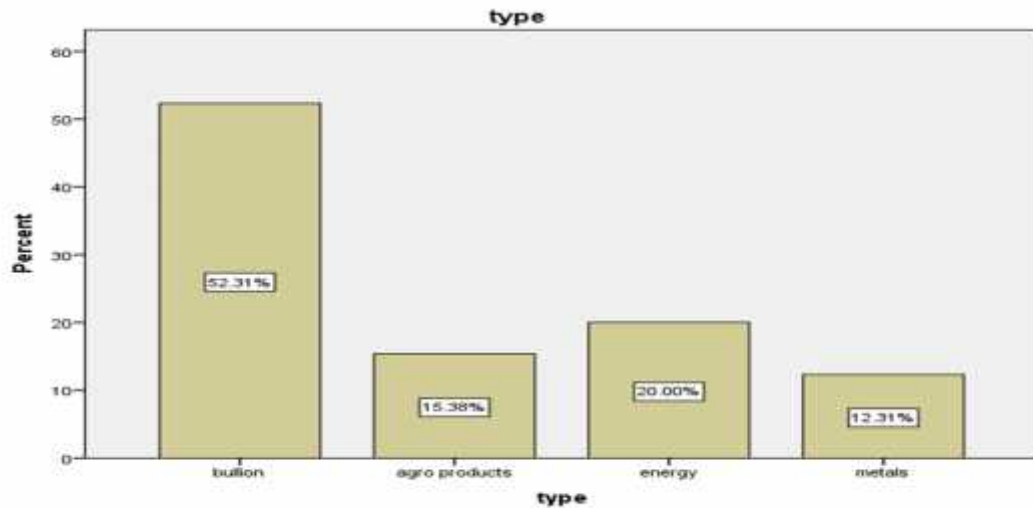
The above figure 4.2.4 describes why people enter in commodity market. Among the respondents majority of investors i.e. 41.54 percent engaged in CM due to stable income, 32.31 percent engaged because of high income, 18.46 percent for tax benefit and remaining 7.69 percent people to have a retirement protection.



Source: Field Survey, 2018

Figure 4.2.5 : Frequency of Trading

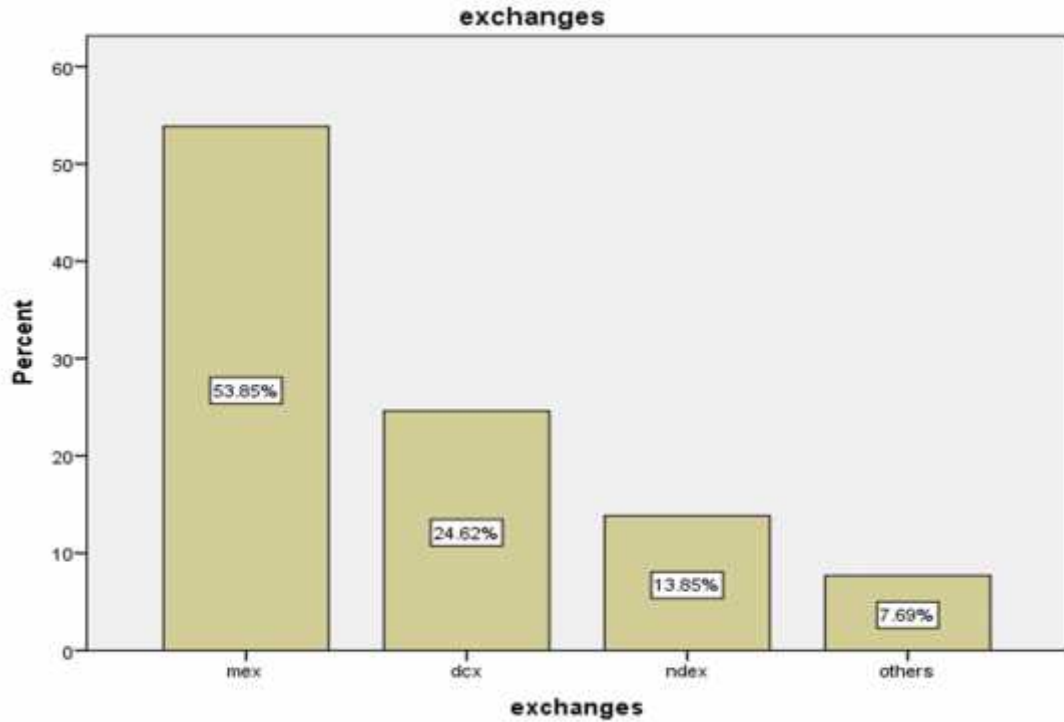
The above figure 4.2.5 indicates how frequently investors involved in trading, majority of investor i.e. 40 percent involved in trading weekly. The 35.38 percent of respondents trades monthly and 16.92 percent involved occasionally. The remaining 7.69% respondents visited and trade on daily basis.



Source: Field Survey, 2018

Figure 4.2.6 : Highly Traded Commodities

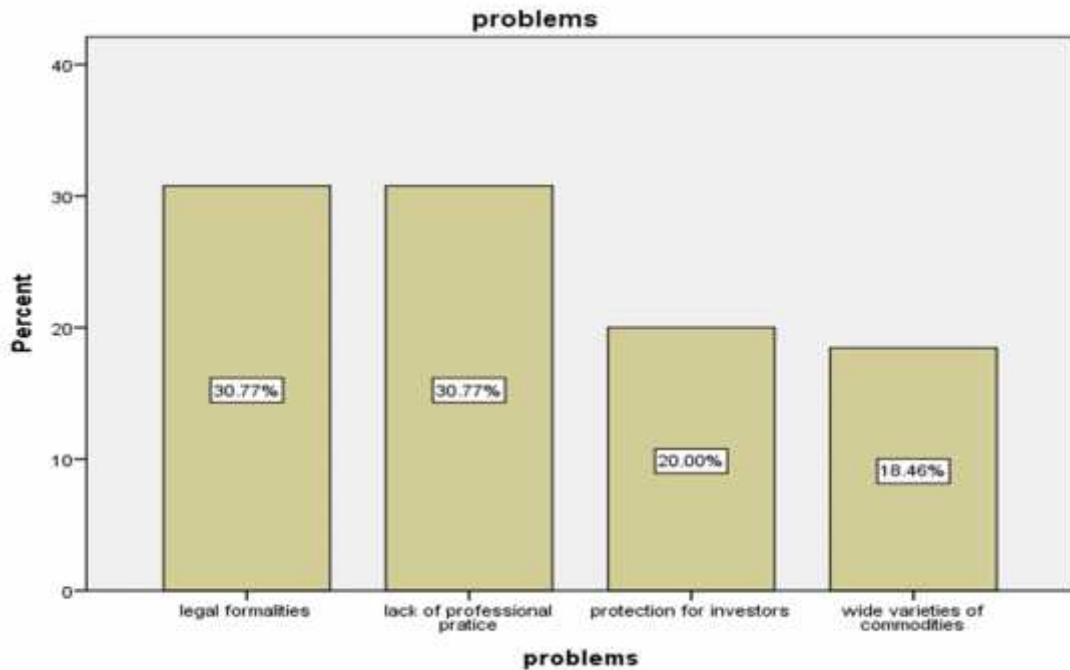
The above figure 4.2.6 clearly tells about the trading of commodity mostly. Bullion is traded most and it occupies more than 50 percent of total trading. Bullion covers 52.31 percent of total trading of commodity. After bullion energy is traded most and occupies 20 percent of total trading. Agro products covers 15.38 percent and remaining 12.31 percent is covered by metals.



Source: Field Survey, 2018

Figure 4.2.7 : Most preferred trading exchanges

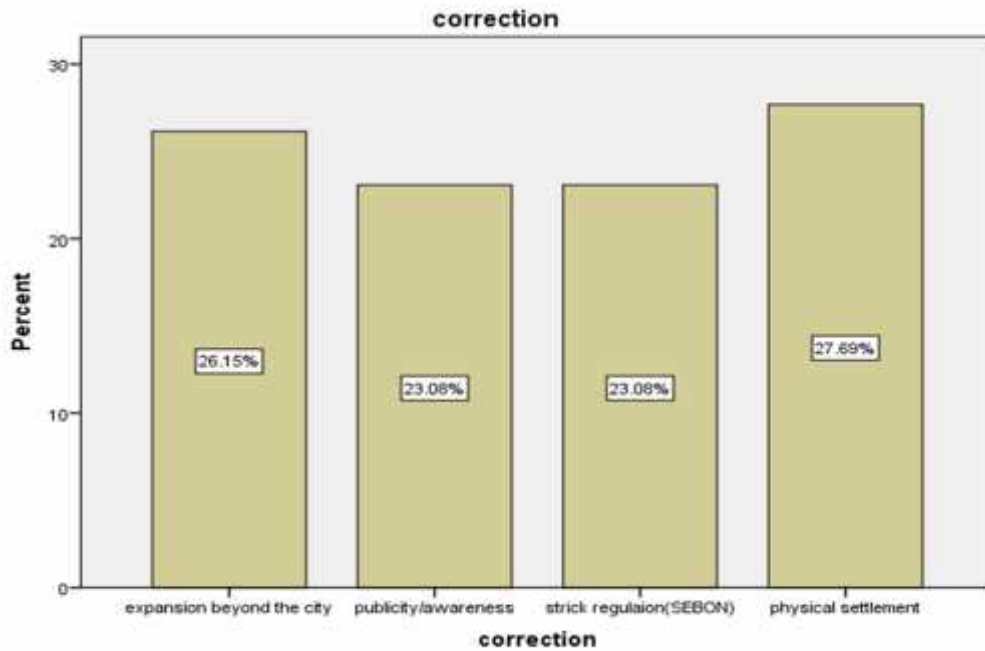
The above bar diagram 4.2.7 is about which commodity exchanges is preferred most. MEX Nepal covers 53.85 percent of total market share. The DCX Nepal covers 24.62 percent and NDEX Nepal covers only 13.85 percent.



Source: Field Survey, 2018

Figure 4.2.8 : Problems associated with CM

The above bar diagram 4.2.8 is about problems associated with commodity exchanges in Nepal. The lack of professional practice and legal formalities cover same 30.77 percent. The protection for investors occupies 20 percent and remaining 18.46 percent is due to lack of wide varieties of commodities.



Source: Field Survey, 2018

Figure 4.2.9 : Corrective Actions for Development

The above figure 4.2.9 is about necessary actions to be taken to grow commodity exchanges in Nepal. The main corrective measure is to have physical settlement of commodity after expiry date. Another way of developing CM is to expand its service beyond the city too. The others main corrective actions are publicity and strict rules and regulation.

4.3 Cross Tabulation Analysis

Table 4.2 : Cross Tabulation between Gender and Investment.

		Investment			Total
		below 10%	between 10 to 20 %	20 % and above	
Gender Male	Count	8	25	12	45
	% within gender	17.8%	55.6%	26.7%	100.0%
	% within investment	38.1%	83.3%	85.7%	69.2%
female	Count	13	5	2	20
	% within gender	65.0%	25.0%	10.0%	100.0%
	% within investment	61.9%	16.7%	14.3%	30.8%
Total	Count	21	30	14	65
	% within gender	32.3%	46.2%	21.5%	100.0%
	% within investment	100.0%	100.0%	100.0%	100.0%
	Value	df	Asymptotic Significance (2-sided)		
Pearson Chi-Square	14.144	2	.001		

Source: Field Survey, 2018

The above table 4.2 shows the relationship between gender and investment in commodity exchanges and trading. Out of total respondents 69.2 percent male are actively engaged in commodity trading whereas female participation is about 30.8 percent. Below 10 percent investment female participation is higher i.e. 61.9 percent are female and 38.1 percent are male. Between 10 to 20 percent investment portions 83.3 percent are male and 16.7 percent are female. In case of 20 percent and above investment 85.7 percent are male and 14.3 percent are female. This shows that male participation is higher in case of higher portions of investment.

The above table 4.1.1 shows indicate P-value is less than 0.01 so we reject null hypothesis. Hence, there is significant relationship between gender and investment.

Table 4.3 : Cross Tabulation of Income and Investment

		Investment			Total
		below 10%	between 10 to 20 %	20 % and above	
Income below 250000	Count	5	1	0	6
	% within income	83.3%	16.7%	0.0%	100.0%
between 250000 to 350000	Count	15	19	5	39
	% within income	38.5%	48.7%	12.8%	100.0%
above 350000	Count	1	10	9	20
	% within income	5.0%	50.0%	45.0%	100.0%
Total	Count	21	30	14	65
	% within income	32.3%	46.2%	21.5%	100.0%
		Value	df	Asymptotic Significance (2-sided)	
Pearson Chi-Square		18.938	4	.001	

Source: Field Survey, 2018

The above table 4.3 shows the income investment relationship. Out of total respondents 9.2 percent respondents having annual income below Rs.250000 are involved in trading of commodity. The respondents having annual income between Rs.250000 and 350000 are 60 percent of total respondents. Similarly, 30.8 percent of total respondents with income above Rs.350000 are engaged in commodity trading. It is noted that commodity exchanges should focus on people with average income people.

The table 4.2.1 shows p-value is less than 0.01 i.e. null hypothesis is rejected. Hence, there is significant relationship between income and investment in CM.

Table 4.4 : Cross Tabulation between Occupation and Investment.

		Investment			Total
		below 10%	between 10 to 20 %	20 % and above	
Occupation Business	Count	2	10	2	14
	% within occupation	14.3%	71.4%	14.3%	100.0%
	% of Total	3.1%	15.4%	3.1%	21.5%
government service	Count	1	5	4	10
	% within occupation	10.0%	50.0%	40.0%	100.0%
	% of Total	1.5%	7.7%	6.2%	15.4%
private job	Count	13	10	5	28
	% within occupation	46.4%	35.7%	17.9%	100.0%
	% of Total	20.0%	15.4%	7.7%	43.1%
Others	Count	5	5	3	13
	% within occupation	38.5%	38.5%	23.1%	100.0%
	% of Total	7.7%	7.7%	4.6%	20.0%
Total	Count	21	30	14	65
	% within occupation	32.3%	46.2%	21.5%	100.0%
	% of Total	32.3%	46.2%	21.5%	100.0%
	Value	df	Asymptotic Significance (2-sided)		
Pearson Chi-Square	9.741	6	.136		

Source: Field Survey, 2018

The above table 4.4 particularly describes the correlation between occupation and investment. Out of total respondents 21.5 percent are from business environment, 15 percent are from government job, 43.1 percent are from private jobs and remaining 20 percent are from other than previously mentioned job category. It seems that mostly private job people are engaged in commodity exchanges for online trading of commodity in derivative market. It should focused on targeting people doing business because their portion is higher among different occupations after private job.

In the above table 4.3.1 the p-value is greater than 0.01, the null hypothesis is accepted. Hence, there is no significant relationship between occupation and investment.

Table 4.5 : Cross tabulation between age and investment

		Investment			Total	
		below 10%	between 10 to 20 %	20 % and above		
Age	below 25 yrs.	Count	3	4	2	9
		% within age	33.3%	44.4%	22.2%	100.0%
		% of Total	4.6%	6.2%	3.1%	13.8%
	between 25 to 35 yrs.	Count	13	15	8	36
		% within age	36.1%	41.7%	22.2%	100.0%
		% of Total	20.0%	23.1%	12.3%	55.4%
	35 yrs. and above	Count	5	11	4	20
		% within age	25.0%	55.0%	20.0%	100.0%
		% of Total	7.7%	16.9%	6.2%	30.8%
Total	Count	21	30	14	65	
	% within age	32.3%	46.2%	21.5%	100.0%	
	% of Total	32.3%	46.2%	21.5%	100.0%	
	Value	df	Asymptotic Significance (2-sided)			
Pearson Chi-Square	1.028	4	.905			

Source: Field Survey, 2018

The above mentioned table 4.5 is focused on analyzing which age groups mostly prefer commodity exchanges. Out of total respondents 13.8 percent are below 25yrs., 55.4 percent are between 25yrs. to 35yrs. and remaining 30.8 percent are from age group 35yrs. and above actively participated in commodity market. The above table clearly shows that the age group between 25 and 35 yrs. are participated in commodity exchanges mostly. It should focus on targeting young people investment in CM.

The table 4.4.1 shows p-value is greater than 0.01 i.e. null hypothesis is accepted. Hence, there is no significant relationship between different age groups and level of investment in CM.

Table 4.6 : Cross Tabulation between Education and Investment

		Investment			Total
		below 10%	between 10 to 20 %	20 % and above	
Education high school	Count	3	4	0	7
	% within education	42.9%	57.1%	0.0%	100.0%
	% of Total	4.6%	6.2%	0.0%	10.8%
intermediate level	Count	2	15	3	20
	% within education	10.0%	75.0%	15.0%	100.0%
	% of Total	3.1%	23.1%	4.6%	30.8%
bachelor and above	Count	16	11	11	38
	% within education	42.1%	28.9%	28.9%	100.0%
	% of Total	24.6%	16.9%	16.9%	58.5%
Total	Count	21	30	14	65
	% within education	32.3%	46.2%	21.5%	100.0%
	% of Total	32.3%	46.2%	21.5%	100.0%
	Value	df	Asymptotic Significance (2-sided)		
Pearson Chi-Square	13.550	4	.009		

Source: Field Survey, 2018

The above table 4.6 indicates people invest in commodity market on the basis of their education too. Education group is categories into three levels. Investors with high school are only 10.8 percent of total respondents, 30.8 percent investors completed intermediate level and 58.5 percent completed bachelor degree and above. It seems that people with higher education actively participated in CM. Among all 42.1 percent people with higher education invest below 10 percent of total income.

The table 4.5.1 shows p-value is less than 0.01 hence, null hypothesis is rejected. There is significant relationship between level of education and investment in CM.

Table 4.7 : ANOVA by Attraction

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.423	3	.474	.881	.456
Total	34.246	64			

Source: Field Survey, 2018

The table 4.7 illustrates that whether investment is followed by attraction elements or not. Here, p-value is 0.456 which is greater than 0.05, the alternative hypothesis is rejected. Hence, there is no significant relationship between investment and attraction elements of investment.

Table 4.8 : ANOVA by Rating

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.615	3	1.538	3.167	.031
Total	34.246	64			

Source: Field Survey, 2018

The table 4.8 illustrates that whether investment is followed by rating elements or not. Here, p-value is 0.031 which is less than 0.05, the null hypothesis is rejected. Hence, there is significant relationship between investment and rating elements of investment.

Table 4.9 : ANOVA for Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.533	3	3.178	7.844	.000 ^b
	Residual	24.713	61	.405		
	Total	34.246	64			

Source: Field Survey, 2018

- a. Dependent Variable: investment
- b. Predictors: (Constant), rating, income, occupation

The above table 4.9 indicates the three constant variables and one dependent variable. In this situation the response variable of interest is affected by more than two factors. Here in this case p-value is less than 0.05, this means null hypothesis is rejected. The alternative hypothesis is accepted i.e. there is significant relationship between independent variable and dependent variable.

4.4 Data Analysis of Secondary Sources

Table 4.10 : Commodity Derivative market

Description	2013/14	2014/15	2015/16	2016/17*
Transacted amount(in Rs.billion)	499.91	255.73	295.32	226.83
No. of brokers	113	209	232	200
NO. Of investors	3010	3617	3880	4470

Source: Economic Survey 2016/17

The above table provides information regarding total no. of brokers, no. of investors and total transacted amount in commodity exchanges. Transactions equivalent to Rs.295.32 billion were carried out in FY 2015/16 while transactions worth Rs.226.83 billion were done in the first eight months of FY 2016/17. During the same period of fiscal year, 200 brokers and 4470 investors have remained active while 232 brokers and 3880 investors were associated with commodities market. This seems to be positive correlated as no. of brokers and no. of investor's increases, the transacted amount also increases.

Table 4.11 : Commodity Wise Trading

In thousands

Sectors	Commodities	2073/74 (first eight months)
Precious metals	Gold, silver, platinum, palladium	227853844
Energy products	Crude oil, Heating Oil, Natural gas, Brent crude	44239416.40
Agricultural products	Corn, Soyabean, Wheat, Cocoa, Coffee, Corn, Cotton, Sugar, Soybean oil etc.	7433687.70
Non-precious metals	Copper	4351748.40

Source: SEBON 2017

The above table represents the sector-wise trading of commodities and volume of transacted amount. The precious metals are transacted more in terms of volume of investment. People have faith towards gold, silver and other precious metals than other commodities. After precious metals, energy products are traded most followed by agricultural products.

Table 4.12 : Turnover of future markets in terms of value of commodities in Nepal.

Exchanges	2071/72	Market share	2072/73	Market share	2073/74(first eight months)	Market share
MEX	255924664.80	90.23%	291507944.0	91.68%	223534438.50	89.10%
NDEX	27678976.20	9.77%	22656101.10	7.13%	24042340.50	9.58%
DCX	-		3805897.50	1.19%	3294667.50	1.32%
Total	283403641.00	100%	317969942.60	100%	250871446.50	100%

Source: MCX, DCX and NDEX

Among 3 commodity exchanges MEX covers 90.23 percent and NDEX covers 9.77 percent of total market share. The total turnover of future market in terms of value of commodities during the fiscal year 2071/72 Rs.283403641 and it increases to Rs.317969942.6 during fiscal year 2072/73. During the same fiscal year MEX covers 91.68 percent, NDEX covers 7.13 percent and DCX covers 1.19 percent of total turnover of future markets. During the first eight months of FY 2073/74, the market share of MEX decreases to 89.10 percent whereas NDEX equivalent to 9.58 percent and DCX covers 1.32 percent.

CHAPTER – V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Major Findings

The finding is based upon the data collected through questionnaire as well as from the secondary data.

Having no doubt, commodity market is considered as potentially growing and diversified market with greater opportunities to Nepalese investors and economy. As it is still in infant stage and most of the people are unaware about the commodity market, it has long way to go to flourish market in national level. The respondents have positive view regarding CM as it provides profit in recent phrase and also helps the country economy highly through higher tax collection. They also shared their opinions on quality service and availability of technical resources being major factor contributing to commodity market.

Majority of respondents agreed that they are encouraged to trade in commodity market by its positive rating elements like online basis, leverage, retirement protection, etc. The respondents came to know about the commodities derivative market from friends, brokers, online media and paper news.

5.1.1 Finding from Primary Data

- Majority of investors preferred high and stable income through short term investment in CM.
- Most of the investors invest in future market rather than forward, option and swap markets.
- Undoubtedly, leverage is the main characteristic of CM which attracts people to invest.
- Major investors of CM are from private jobs and business group those who have surplus money.
- The CM is run through online basis and having instant income are additional benefits for investors to invest.

- Due to lack of proper knowledge about CM most of the investors reduces their portions of investment.
- There are only few respondents who are fully satisfied with legal formalities and protection to investors.
- Most of the investors recommend their colleagues and relatives to enter in CM and they are investing in commodity market for last 3 years and above.
- As it is new for Nepalese context, proposed regulation is compulsory which helps to attract large number of investors.
- The major commodity trading is done through MEX Nepal and investors preferred to trade bullion in large scale.
- Respondents think that CM is also supporting country's economy through tax collection and also helps to expand capital market.

5.1.2 Finding from Secondary Data

- As the time pass, both no. of brokers and clients are increasing as a result transacted amount also increases.
- Majority of investors favor MEX Nepal as it occupies higher market share.
- Among different commodities gold, silver and copper are traded more.

5.2 Conclusion

Nepalese commodity derivative market is in developing stage. The amount of investment and number of brokers and clients are in increasing trend. , There is no doubt that in near future commodity market will become hot spot for farmers rather than spot market. And producers, traders as well as consumers will be benefited from it. But for this to happen one has to take initiative to standardize and popularize the Commodity Market.

So, one can conclude on the basis of the analysis that have been carried out that investors in current scenario i.e. with the burden of fall in rupee, increase inflation and high volatility have changed their objectives to Reasonable income along with safety

for the purpose of future welfare as future looks uncertain. Now a day's investors are willing to bear very minimum risk and that too for short span of period.

Investors are willing to invest only in bullions(gold, silver) as their prices tend to rise over a time horizon and due to lack of knowledge other areas of commodity market as not favored upon as compared to international market where large amount of money is invested in agriculture based products. In order to increase investment in commodity market the regulators have to take initiative to educate and inform mass people about the working of commodity market and ensure strict rules and regulations for investor's safety which is a major concern these days.

5.3 Recommendation

- Developments in technology influence the behavior of investors. Hence, the impact of technology on financial behavior is another potential area for close study.
- The Commodity market operational environment is becoming more competitive. Hence, the impact of emerging competition on investor behavior/behavioral changes needs to be studied further.
- As the commodity market is in developing stage publicity and expansion is necessary for the development of CM
- Only few commodities are trading in Nepal, so additional commodities with physical settlement is required.
- Only few investors from major cities are involved in trading so it should focused on people from different cities with basic knowledge. Most of the brokers firm lack of knowledge and resources so it should be monitored.
- Certain criteria should be made while opening commodity exchanges like education of investors, sufficient paid up capital, etc.
- Nepalese commodity market is facing the challenges like warehouse, physical settlement, irrigation, power cut, etc it should be addressed.

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QUESTIONNAIRE

Respondent No.

1. Gender
 - Male(1)
 - Female(2)

2. Occupation
 - Business (1)
 - Gov. Ser. (2)
 - Private Job (3)
 - Others (4)

3. Age group
 - Below 25 yrs. (1)
 - 25-35(2)
 - 35 & above (3)

4. Annual Income
 - Below 150000(1)
 - 150000-200000(2)
 - 200000 & above (3)

5. Investment portion of income
 - Below 10% (1)
 - 10-20% (2)
 - 20% & above (3)

6. Investment horizon
 - Short term (1)
 - Medium term (2)
 - Long term (3)

7. Risk taking
 - High (1)
 - Medium (2)
 - Low (3)

8. Investment objective
 - High income (1)
 - Stable income (2)
 - Tax benefit (3)
 - Retirement protection (4)

9. How do you come to know CM)
 - Online media (1)
 - Friends (2)
 - Brokers/Agent (3)
 - Papers (4)

10. How long have you been trading in CM?
 - Below 1 yr. (1)
 - 1-4 yrs (2)
 - 4 yrs & above (3)

11. Frequency of trading?
 - Daily (1)
 - Weekly (2)
 - Monthly (3)
 - Occasionally (4)

12. Which commodity do you trade most?
 - Bullion (1)
 - Agro products (2)
 - Energy (3)
 - Metals (4)

13. Which derivative instrument you preferred most?
 - Future contract (1)
 - Forward contract (2)
 - Options (3)
 - Swap (4)

14. How do you rate CM?
 - Safety (1)
 - Liquidity (2)
 - Capital appreciation (3)
 - Leverage (4)

15. Which commodity exchange do you prefer?
 - MEX (1)
 - DCX (2)
 - NDEX (3)
 - Others (4)

16. Why do people don't enter in CM?
 - Lack of knowledge (1)
 - Difficulty in understanding (2)
 - Speculation (3)

17. Problems associated with CM?
- Lack of legal formalities (1)
 - Lack of professional practices (2)
 - Protection for investors (3)
 - Wide varieties of commodities (4)
18. Reasons for entering CM?
- Leverage (1)
 - Online basis (2)
 - Control price risk (3)
 - Instant income (4)
19. Necessary actions to accelerate CM?
- Expansion beyond the city (1)
 - Publicity/awareness (2)
 - Strict regulation (SEBON) (3)
 - Physical settlement (4)
20. Is it good for country's economy?
- Agree (1)
 - Disagree (2)
 - Undecided (3)
21. Would you recommend others to enter into CM?
- Definitely (1)
 - Probably (2)
 - Never (3)
22. Level of Education?
- High School (2)
 - Intermediate level (3)
 - Bachelor and above (4)

Appendix II

Primary Data Entry

S.No.	gender	occupation	age	income	investment	horizon	risktaker	objective	familier	trading	frequency	type	instruments	rating	exchanges	avoid	problems	attraction	correction	healthy	recommend	education	
1	1		2.00	2.00	3.00	2.00	1.00	1.00	1.00	1.00	3.00	3.00	1.00	3.00	1.00	3.00	4.00	4.00	1.00	1.00	1.00	2.00	
2	1		2.00	2.00	3.00	3.00	1.00	2.00	4.00	4.00	2.00	4.00	1.00	1.00	3.00	1.00	1.00	4.00	4.00	1.00	1.00	1.00	3.00
3	1		4.00	3.00	2.00	1.00	1.00	1.00	2.00	4.00	3.00	3.00	1.00	1.00	1.00	1.00	1.00	2.00	4.00	1.00	1.00	2.00	2.00
4	1		2.00	1.00	2.00	2.00	1.00	1.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	3.00	3.00	1.00	1.00	1.00	2.00	1.00
5	2		4.00	2.00	2.00	1.00	2.00	2.00	2.00	2.00	1.00	2.00	3.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	3.00
6	1		1.00	3.00	3.00	3.00	1.00	1.00	1.00	3.00	3.00	4.00	1.00	1.00	3.00	2.00	1.00	3.00	2.00	3.00	1.00	2.00	3.00
7	1		1.00	3.00	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	3.00	2.00	1.00	1.00	3.00	1.00	2.00	2.00
8	2		3.00	2.00	1.00	1.00	1.00	3.00	2.00	2.00	2.00	1.00	4.00	1.00	2.00	4.00	3.00	1.00	4.00	1.00	1.00	1.00	3.00
9	1		1.00	2.00	2.00	2.00	2.00	2.00	1.00	4.00	1.00	1.00	4.00	1.00	2.00	1.00	2.00	4.00	3.00	3.00	3.00	3.00	2.00
10	1		2.00	2.00	2.00	3.00	1.00	2.00	2.00	2.00	3.00	3.00	1.00	3.00	1.00	2.00	4.00	4.00	1.00	3.00	2.00	2.00	2.00
11	1		4.00	3.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	3.00	2.00	4.00	3.00	1.00	1.00	3.00
12	2		2.00	2.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	1.00	3.00	2.00	3.00	1.00	1.00	3.00
13	2		2.00	2.00	2.00	1.00	3.00	3.00	2.00	4.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	3.00	4.00	2.00	3.00	3.00
14	2		4.00	3.00	2.00	1.00	1.00	1.00	3.00	2.00	3.00	3.00	2.00	1.00	4.00	4.00	1.00	2.00	1.00	4.00	1.00	1.00	1.00
15	2		3.00	2.00	2.00	2.00	1.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00	3.00	2.00	1.00	1.00	2.00	4.00	2.00	3.00	1.00
16	1		3.00	1.00	2.00	2.00	3.00	3.00	4.00	1.00	3.00	3.00	3.00	1.00	2.00	2.00	1.00	4.00	3.00	2.00	1.00	1.00	3.00
17	1		3.00	2.00	1.00	1.00	1.00	2.00	1.00	3.00	2.00	2.00	3.00	1.00	1.00	2.00	33.00	2.00	4.00	1.00	1.00	1.00	3.00
18	2		3.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	2.00	3.00	3.00	3.00	4.00	4.00	1.00	1.00	3.00
19	1		3.00	2.00	2.00	1.00	3.00	2.00	3.00	3.00	3.00	3.00	2.00	1.00	3.00	1.00	2.00	1.00	3.00	3.00	1.00	2.00	3.00
20	2		1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	1.00	3.00	1.00	1.00	1.00	3.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00
21	1		3.00	2.00	2.00	2.00	2.00	2.00	3.00	1.00	2.00	2.00	4.00	1.00	1.00	2.00	1.00	4.00	2.00	2.00	1.00	2.00	2.00
22	2		1.00	2.00	1.00	2.00	3.00	2.00	3.00	1.00	2.00	2.00	4.00	1.00	3.00	2.00	2.00	3.00	3.00	2.00	3.00	3.00	3.00
23	1		3.00	1.00	2.00	3.00	1.00	2.00	1.00	3.00	1.00	3.00	3.00	1.00	3.00	1.00	3.00	4.00	3.00	4.00	1.00	2.00	2.00

24	1	4.00	2.00	2.00	1.00	1.00	1.00	2.00	4.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	4.00	4.00	1.00	1.00	2.00	3.00
25	1	4.00	3.00	2.00	1.00	3.00	3.00	3.00	2.00	3.00	4.00	2.00	1.00	2.00	1.00	3.00	3.00	1.00	4.00	3.00	3.00	3.00
26	1	3.00	3.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	1.00	3.00	3.00	4.00	3.00	1.00	1.00
27	1	3.00	2.00	3.00	3.00	2.00	1.00	1.00	3.00	2.00	3.00	1.00	1.00	1.00	3.00	2.00	1.00	1.00	4.00	3.00	2.00	3.00
28	1	3.00	1.00	2.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	4.00	1.00	1.00	2.00	2.00	4.00	3.00	2.00	2.00
29	1	3.00	2.00	1.00	1.00	3.00	2.00	2.00	3.00	3.00	4.00	1.00	1.00	4.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	3.00
30	1	3.00	1.00	2.00	2.00	1.00	2.00	2.00	3.00	2.00	2.00	2.00	1.00	2.00	4.00	3.00	2.00	3.00	2.00	1.00	2.00	2.00
31	2	3.00	1.00	2.00	1.00	1.00	1.00	3.00	3.00	2.00	1.00	2.00	1.00	2.00	2.00	2.00	4.00	4.00	3.00	1.00	1.00	3.00
32	1	1.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	4.00	1.00	3.00	1.00	1.00	4.00	3.00	2.00	2.00
33	1	1.00	2.00	3.00	2.00	1.00	1.00	1.00	4.00	1.00	2.00	4.00	1.00	1.00	1.00	1.00	3.00	4.00	4.00	1.00	1.00	2.00
34	1	4.00	3.00	3.00	2.00	1.00	2.00	2.00	4.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	3.00	1.00	3.00	2.00	2.00
35	2	4.00	3.00	2.00	3.00	1.00	2.00	2.00	2.00	3.00	4.00	1.00	1.00	2.00	1.00	3.00	4.00	1.00	1.00	1.00	1.00	2.00
36	1	2.00	3.00	3.00	3.00	1.00	1.00	1.00	3.00	3.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	3.00	2.00	3.00
37	1	1.00	1.00	3.00	3.00	2.00	1.00	3.00	1.00	2.00	2.00	3.00	1.00	3.00	1.00	3.00	3.00	1.00	2.00	1.00	1.00	3.00
38	2	3.00	3.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00
39	1	3.00	3.00	2.00	1.00	1.00	2.00	2.00	4.00	2.00	2.00	1.00	1.00	1.00	1.00	3.00	2.00	2.00	3.00	1.00	1.00	3.00
40	2	3.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	2.00	3.00	4.00	1.00	2.00	3.00	1.00	4.00	1.00	4.00	1.00	2.00	1.00
41	1	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	1.00	3.00	1.00	1.00	1.00	3.00	2.00	4.00	4.00	2.00	1.00	1.00	3.00
42	1	3.00	2.00	2.00	3.00	3.00	1.00	4.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	2.00	3.00
43	2	1.00	2.00	2.00	2.00	1.00	1.00	2.00	4.00	2.00	3.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00
44	1	2.00	3.00	3.00	2.00	1.00	1.00	2.00	2.00	3.00	4.00	1.00	1.00	1.00	1.00	2.00	1.00	4.00	2.00	1.00	2.00	3.00
45	2	3.00	2.00	2.00	1.00	3.00	3.00	4.00	4.00	1.00	2.00	4.00	1.00	4.00	1.00	1.00	3.00	2.00	3.00	1.00	2.00	3.00
46	1	2.00	3.00	3.00	3.00	1.00	2.00	2.00	2.00	2.00	3.00	1.00	4.00	4.00	1.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00
47	1	3.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	1.00	1.00	1.00	4.00	2.00	4.00	2.00	1.00	3.00	2.00	2.00	3.00	2.00
48	1	3.00	2.00	3.00	3.00	2.00	2.00	1.00	3.00	2.00	2.00	3.00	1.00	1.00	4.00	2.00	1.00	3.00	1.00	3.00	2.00	3.00
49	1	1.00	3.00	3.00	2.00	1.00	1.00	1.00	1.00	3.00	3.00	1.00	1.00	3.00	2.00	2.00	2.00	4.00	3.00	3.00	1.00	3.00
50	1	1.00	3.00	3.00	2.00	2.00	1.00	2.00	4.00	3.00	3.00	1.00	1.00	1.00	3.00	2.00	1.00	2.00	2.00	3.00	2.00	1.00

51	1		2.00	2.00	3.00	2.00	1.00	1.00	1.00	4.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	3.00	1.00	3.00	
52	1		4.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	2.00	4.00	2.00	1.00	1.00	3.00	3.00	2.00	2.00	2.00	3.00	2.00	3.00
53	1		4.00	2.00	3.00	2.00	1.00	2.00	1.00	2.00	2.00	4.00	1.00	1.00	3.00	1.00	2.00	1.00	4.00	3.00	3.00	1.00	2.00
54	2		3.00	1.00	2.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	2.00	1.00	2.00	1.00	3.00	3.00	4.00	3.00	1.00	2.00	3.00
55	1		4.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	2.00	1.00	4.00	3.00	1.00	1.00	2.00	1.00	4.00	1.00	1.00	2.00
56	2		3.00	2.00	3.00	3.00	1.00	1.00	1.00	3.00	3.00	4.00	3.00	4.00	2.00	2.00	2.00	1.00	2.00	1.00	1.00	1.00	3.00
57	2		3.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	4.00	3.00	2.00	2.00	2.00
58	1		4.00	3.00	2.00	2.00	1.00	1.00	2.00	4.00	1.00	2.00	3.00	1.00	1.00	2.00	2.00	2.00	2.00	4.00	1.00	1.00	3.00
59	1		4.00	2.00	3.00	3.00	3.00	3.00	4.00	1.00	1.00	3.00	4.00	4.00	1.00	1.00	1.00	2.00	3.00	1.00	3.00	2.00	3.00
60	1		3.00	2.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	1.00	4.00	1.00	2.00	1.00	2.00	4.00	1.00	1.00	1.00
61	1		3.00	3.00	2.00	2.00	1.00	1.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	4.00	3.00	1.00	3.00	3.00
62	1		3.00	2.00	3.00	2.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	3.00	2.00	4.00	1.00	1.00	1.00	2.00
63	2		1.00	2.00	2.00	1.00	2.00	1.00	3.00	1.00	2.00	3.00	3.00	1.00	2.00	1.00	3.00	1.00	2.00	4.00	1.00	1.00	3.00
64	1		1.00	2.00	3.00	2.00	1.00	2.00	3.00	1.00	2.00	4.00	2.00	1.00	1.00	3.00	2.00	2.00	4.00	2.00	1.00	2.00	2.00
65	2		3.00	3.00	2.00	1.00	1.00	2.00	2.00	2.00	3.00	4.00	1.00	1.00	1.00	2.00	2.00	3.00	4.00	2.00	1.00	1.00	3.00