THE FACTORS AFFECTING COMMODITY FUTURES AND THEIR CORRELATION WITH EACH OTHER

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The Factors Affecting Commodity Futures Contracts and Their Correlation with Each Other

Vadeli Emtia Sözleşmelerini Etkileyen Faktörler ve Birbirleriyle Olan Korelasyonları

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Anahtar Kelimeler (Türkçe)
1) Vadeli Sözleşmeler
2) Emtia
3) Korelasyon
4) Üretim
5) Fiyat Gelişimi

Anahtar Kelimeler (İngilizce)
1) Future Contracts
2) Commodity
3) Correlation
4) Production
5) Price Development

ÖZET

Emtia'lar temel olarak "ticarete konu olan mal" anlamına gelmektedir. Her emtianın belli standartları vardır ve bu standartlar üzerinden işlem görmektedir. Emtia fiyatları arz ve talebe bağlı olarak, borsalarda serbestçe belirlenmektedir. Emtia piyasaları tarihte Vadeli piyasalar, çiftçilerin fiyat değişikliklerinden kaçınmak istemeleri sonucu gelişmeye başlamıştır. Bugünkü anlamda, organize borsalarda işlem gören gelecek sözleşmelerine benzer ilk uygulama, 1697 yılında Japonya'da ortaya çıkmıştır. Global piyasalarda emtia'ların fiyat oluşumunu etkileyen ve bu fiyatların yukarı veya aşağı doğru hareketlenmesini etkileyen çeşitli etkenler bulunmaktadır. Bunlar; Ekonomik Konjonktür, Hükümet Politikaları, Teknolojik Gelişmeler ve Doğa Olayları ana başlıklarının altında, faiz oranları, Enflasyon, döviz kurları, ekonomik büyüme, ithalat-ihracat uygulamaları, dış ticaret vergi ve kotaları, kullanım/üretim değişiklikleri hava koşulları, hastalıklar ve salgınlar alt başlıkları altında incelenebilmektedir

Günümüzde emtia fiyatlarının giderek önem kazanması ve yatırımcıların bu piyasalara olan ilgisinin artması sonucunda Emtia fiyatlarını etkileyen unsurlar daha ön plana çıkmış ve ürün bazında yatırım yapmadan fiyat hareketlerini anlamak önem kazanmıştır. Bu unsurlar emtialara olan Arz ve Talep oranlarını etkilemekte ve bunun sonucunda emtia fiyatları yükselmekte veya düşmektedir.

Yapılan çalışmada uluslararası piyasalarda en aktif olarak işlem görmekte olan emtia'ların genel özellikleri, üretim yerleri, geçmiş yıllardaki fiyat hareketleri ve fiyatlarını etkileyen temel etkenler üzerinde durulmuş, birbirleri arasındaki korelasyon oranları incelenerek yatırım yapılma zamanları belirlenmeye çalışılmıştır.

ABSTRACT

Future Markets recently started to get higher importance in financial markets, both to protect investors from the risks and to allow the investors to take big positions with small amount of collateral by using leverage, transaction volume in future markets greatly increased.

In general terms, futures markets allow products and/or financial instrument which are due to be delivered at a future date, to be bought and sold today. The securities bought and sold in the future markets are called futures contracts. Future contracts are not issued by governments or corporate entities. These contracts possess a standard size, and promise delivery of the securities and products they represent at a predetermined date in the future. The volumes traded in the future markets today exceed the volumes traded of spot markets.

In this essay I focused on the properties of 10 commodities such as gold, copper, wheat, oil and natural gas which are considered significantly important for the global economy and mostly preferred by the investors for both short and long term investments. Afterwards by aiming investors who are planning to invest in international commodity markets several components that affect the prices of these commodities are discussed and valuable information is gathered in order to enlighten investors. The components that affect all the commodity prices are considered, all contract specifications and trading ways are written and how the investors can trade these commodities via exchanges is told by examples and screen shots of trade platforms. Nearby these correlations between commodities are examined and aimed to create a path for the investors for their trades.

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LIST OF ABBREVIATIONS

OECD	: Organization for Economic co-operation and development
CBOT	: Chicago Board of Trade
CME	: Chicago Mercantile Exchange
NYMEX	: New York Mercantile Exchange
LIFFE	: London International Financial Futures Exchange
LME	: London Metal Exchange
NYBOT	: New York Board of Trade
TOCOM	: Tokyo Commodity Exchange
SICOM	: Singapore Commodity Exchange
EU	: European Union
USDA	: United States Department of Agriculture
GC	: Symbol of Gold
HG	: Symbol of Copper
ZW	: Symbol of Wheat
NG	: Symbol of Natural Gas
SI	: Symbol of Silver
KC	: Symbol of Coffee
CC	: Symbol of Cocoa
ZC	: Symbol of Corn
CT	: Symbol of Cotton
CL	: Symbol of Crude Oil
OPEC	: Organization of Petroleum Exporting Countries
WTI	: West Texas Intermediate
IPE	: International Petroleum Exchange
IEA	: International Energy Agency
WTO	: World Trade Organization

1. INTRODUCTION

Future Markets recently started to get higher importance in financial markets, both to protect investors from the risks and to allow the investors to take big positions with small amount of collateral by using leverage, transaction volume in future markets greatly increased. This progress in future markets also leads to the establishment of Turkish Derivatives Exchange. Although transaction volume in future markets in Turkey increases as days passed the scarcity of the product numbers and the nearly zero level transaction volume in the commodity markets force Turkish investors to invest in foreign markets. In commodity markets investors choose to buy / sell commodities that are closely related with the economic indicators like gold, natural gas and petroleum. With this study we try to tell the structure of the future markets and general logic at the first part and the general logic of the commodity markets which constitutes an important part of the future markets at the second part. At the other parts we try to explain the general properties of the commodities that are mostly preferred by the investors, transaction logic in the foreign markets, basic factors that effects the prices with the appropriate examples. The last part of the study we mainly focus on the correlation of the 10 determined commodity products with each other and the correlation between them is tried to be explained with the graphics.

With this study we try to inform the investors that are interested in commodity markets about the general logic of the markets, specific details of the product they are going to invest, to know the factors that affect the prices and the correlation of the product they invested with the other products.

2. FUTURES MARKETS

In general terms, futures markets allow products and/or financial instrument which are due to be delivered at a future date, to be bought and sold today. The securities bought and sold in the future markets are called futures contracts. Future contracts are not issued by governments or corporate entities. These contracts possess a standard size, and promise delivery of the securities and products they represent at a predetermined date in the future. The volumes traded in the future markets today exceed the volumes traded of spot markets.

2.1 Brief History of Future Markets

Although vestiges of futures markets appear in the Japanese rice markets of the 18th century and perhaps even earlier, the mid- 1800s markets the first clear origins of modern futures markets. For example, in the United States in the 1840s, Chicago was becoming a major transportation and distribution center for agricultural commodities. Its central location and access to the Great Lakes gave Chicago a competitive advantage over other U.S. cities. Farmers from the Midwest would harvest their grain and take it to Chicago for sale. Grain production, however, is seasonal. As a result, grain prices would rise sharply just prior to the harvest but then plunge when the grain was bought to the market. Too much grain at one time and too little at another resulted in severe problems. Grain storage facilities in Chicago were inadequate to accommodate the oversupply. Some farmers even dumped their grain in the Chicago River because prices were so low that they could not afford to take their grain to another city to sell.

In 1848 a group of businessmen formed an organization later named the Chicago Board of Trade (CBOT) and created an arrangement called a “to-arrive” contract. These contracts permitted farmers to sell their grain before delivering it. In other words, farmers could harvest the grain and enter into a contract to deliver it at a much later date a price already agreed on. This transaction allowed the farmer to hold the grain in storage at some other location besides Chicago. On the other side of these

contracts were the businessmen who had forms the Chicago Board of Trade. It soon became apparent that trading in these to-arrive contracts was more important and useful than trading in the grain itself. Soon the contracts began trading in a type of secondary market, which allowed buyers and sellers to discharge their obligations by passing them on, for a price, to other parties. With the addition of the clearinghouse in the 1920s, which provided guarantee against default, modern futures markets firmly established their place in the financial world. It was left to other exchanges, such as today's Chicago Mercantile Exchange, the New York Mercantile Exchange, Eurex, and the London International Financial Futures Exchange, to developed and become the global leaders in the futures markets.[1]

Today, the trading volume of futures market is higher than the trading volume of spot markets because of some specific reasons. These are;

- Futures markets, spot market positions taken in the future to provide protection from price movements,
- The deposited with small amounts of collateral, the leverage inherent in futures transactions through the use of large and small investors can take positions in markets that have played a major role in the withdrawal (leverage)
- Making process to allow for short sales, investors in emerging markets and the decline in direction of the market to allow for open positions,
- The position of the profits derived from closing, may withdraw or be used to open new positions,
- Of trading hours is much longer and thus against the market news that may occur, investors or those who want to invest in the spot market have a resource to be accessible without opening,
- Applied in a variety of tax benefits of futures exchanges

[1] Timeline of Achievements. CME Group. http://www.cmegroup.com/company/history/timeline-of-achievements.html

Despite the apparent positive for investors as Derivatives Markets' There was also the leverage effect, be required to complete and cover all of the products of a particular maturity are to be moved at great risk for investors. The situation in the opposite direction of the expectations of investors as a result of all the capital loss can be mentioned, because of certain term positions can be closed as required. Futures Markets are therefore preferred by investors because of three main reasons.

2.1.1. Hedging: The meaning of the hedge is, making an investment to reduce the risk of adverse price movements in a asset. Normally, a hedge consist of taking an offsetting position in a related security, such as a future contracts. Hedging in the futures market is a two step process. Depending upon the hedger's cash market situation, he will either buy or sell futures as his first position. For instance, if he is going to buy a commodity in the cash market at a later time, his first step is to buy future contracts. Or if he is going to sell a cash commodity at a later time, his first step in the hedging process is to sell futures contracts. The second step in the process occurs when the cash market transaction takes place. At this time the future position is no longer needed for price production and should therefore be offset. If the hedger was initially long, he would offset his position by selling contract back. If he was initially short, he would buy back the future contract. Both the opening and closing positions must be for the same commodity, number of contracts, and delivery month.

An Example of Hedging Using Futures;

Assume in June a farmer expects to harvest at least 10,000 bushels of Soybeans during September. By hedging, he can lock in a price for his soybeans in June and protect himself against the possibility of falling price. At the time, the cash price for new crop soybeans is $6 and the price of November bean future is $6.25. The delivery month of November marks the harvest of new crop soybeans.

The farmer short hedges his crop be selling two November 5,000 bushel soybean futures contracts at $6.25. (Typically, farmers do not hedge 100 percent of their expected production, as the exact number of bushels produced

is unknown until harvest. In this scenario, the producer expects to produce more than 10,000 bushels of soybeans)

By the beginning of September, cash and future prices have fallen. When the farmer sells his cash beans to the local elevator for $5.72 a bushel, he lifts his hedge by purchasing November soybean futures at $5.95. The 30 cent gain in the futures market offsets the lower price he receives for his soybeans to the cash market.

2.1.2 Speculation: Speculation is a financial transaction that involves risk but is potentially profitable. Unlike ordinary investment, speculations have more risks the investor has to undertake. Speculation deals with future market transaction wherein a speculator keeps an eye on the market situation, and when he sees market differences, he buys the commodity at a lower price, and sells it at a higher price, and makes profit for himself. A commodity futures transaction is regarded in a particular way as speculation, wherein the investors enter into a contract to buy a fixed amount of commodity, which usually has a fluctuating price, at a fixed price in the future, [ex. 1 or 2 years]. The contract is sold in an open market, or thru a commodity exchange. A speculator undertakes the risk and faces a higher possibility of loss thru fluctuation of exchange rates, reduction of expected income at the time of profit realization. There is also a possibility of nonpayment of contracting overseas party, aside from unexpected political issues, and economic fluctuation. Scrutiny of market possibilities, risk and management is done by a broker who uses various hedging techniques as option trading, short selling, stop loss orders, and future contract transactions to limit losses of investors.

An Example of Speculation Using Futures;

US speculator who in February thinks that the British pound will strengthen relative to the US dollar over the next 2 months and is prepared to back that hunch to the tune of sterling 250,000. One thing the speculator can do is purchase sterling 250,000 in the spot market in the hope that sterling can be sold later at a higher price. Another possibility is to take a long position in four CME April futures contracts on sterling. (Each futures contract is for the purchase of sterling 62,500.) The two alternatives on the assumption that the current exchange rate is 1.6470 dollars per pound and the April future price is 1.6410 dollar per pound. If the exchange rate turns out to be 1.7000 dollars per pound in April, the futures contract alternative enables the speculator to realize a profit of (1.7000 – 1.6410) x 250,000 = $14,750. The spot market alternative leads to 250,000 units of an asset being purchased for $1.6470 in February and sold for $1.7000 in April, so that a profit of (1.7000 – 1.6470) x 250,000 = $13,250 is made. If the exchange rate falls to 1.6000 dollars per pound, the futures contract gives rise to a (1.6410 – 1.6000) x 250,000 = $10,250 loss, whereas the spot market alternative gives rise to a loss of (1.6740 – 1.6000) x 250,000 = $11,750. The alternatives appear to give rise to slightly different profits and losses.

The first alternative of buying sterling requires an up-front investment of $411,750. In contrast, the second alternative requires only a small amount of cash-perhaps $20,000-to be deposited by the speculator in what is termed a "margin account". The futures market allows the speculator to obtain leverage. With a relatively small initial outlay, the investor is able to take a large speculative position.

Table 2-1 February Trade Of Future Contracts

	February trade	
	Buy £250,000 Spot Price = 1.6470	Buy 4 futures contracts Futures price = 1.6410
Investment	$411,750	$20,000
Profit if April spot = 1.7000	$13,250	$14,750
Profit if April spot = 1.6000	-$11,750	-$ 10,250

Speculation using spot and futures contracts. One futures contract is on sterling 62,50

2.1.3 Arbitrage: Arbitrage, within the context of financial markets, refers to the practice of trading on, and profiting from, a current or expected inconsistency in the pricing of an asset or group of assets. For example, consider a dual listed stock selling for $30 on one stock exchange and $40 on another. To make a guaranteed profit one need only buy the security for $30 on one exchange and sell it for $40 on the other. This is an example of an immediate arbitrage opportunity. An arbitrage opportunity is created when an asset has two different expected returns. However, apparent arbitrages must be examined carefully, to make sure that the price differential is an actual mispricing and does not represent a risk premium or compensation for a perceived utility.

Derivative securities are also favorite tools of arbitrageurs. Important relationships among the futures, options, bonds, stocks, and currency markets exist, which if violated signal an arbitrage opportunity. One such relationship, called interest rate parity, links the future and spot (current) markets of a currency to the interest rate differential between the two countries. If the percentage difference between the futures and spot markets' exchange rates is greater or less than the percentage difference in the respective interest rates, the arbitrageur has an opportunity.

3. TYPES OF FUTURE CONTRACTS AND FUTURE EXCHANGES

The different types of future contracts are generally divided into two main groups;

- **Commodity Futures Contracts** include that agricultural products (Corn, Oats, Soybeans, Soybean Meal, Soybean Oil, Wheat, Canola, Cocoa, Coffee, World Sugar, Domestic Sugar, Cotton, Orange Juice and etc.), Metal products (Gold, Copper, Platinum, Palladium, Silver) and Petroleum products (Crude Oil, Heating Oil, Unleaded Gasoline, Natural Gas, Brent Crude Oil, Gas Oil)

- **Financial Future Contracts** include that interest rate and bond futures (Treasury Bonds, Treasury Notes, 10-Year Agency Notes, Federal Funds, Treasury Bills, 3-Month Euribor, 3- Year commonwealth T-Bonds and etc.) stock index futures (Dow Jones Stoxx 50 Index, Xetra Dax, FTSE 200 Index, Nasdaq 100 Index, Nikkei 225, S&P 500 Index and etc.) and currency futures (Japanese Yen, Canadian Dollar, British Pound, Swiss Franc, Australian Dollar, Mexican Peso and etc.)

3.1 World's Major Future Exchanges

- CME group: 1,551,351,832 number of contracts in 2009
- Korea Exchange: 1,172,737,823 number of contracts in 2009
- Eurex: 1,146,109,472 number of contracts in 2009
- LIFFE: 565,757,456 number of contracts in 2009
- International Securities Exchange: 505,272,536 number of contracts in 2009
- Philadelphia Stock Exchange: 261,142,198 number of contracts in 2009
- National Stock Exchange of India: 234,274,847 number of contracts in 2009
- New York Mercantile Exchange: 217,721,257 number of contracts in 2009
- JSE (South Africa): 216,189,701 number of contracts in 2009[2]

[2]Derivatives and Alternative Investments CFA volume 6, (Boston: Pearson Custom Publishing, 2008), pp. 227-28.

That future market investors can access a variety of electronic platforms and the future market has determined that the amount of collateral deposited perform the operation. As the world's most widely used platforms and operations are carried out by the CME Globex platform used.

Fig. 3-1 World's Major Future Exchanges

LIFFE: London International Financial Futures and Options Exchange
LME: London Metal Exchange
NYBOT: New York Board of Trade
NYMEX: New York Mercantile Exchange
CBOT: Chicago Board of Trade
TOCOM: Tokyo Commodity Exchange
SICOM: Singapore Commodity Exchange

3.2 Basic Characteristic of Future Markets and Contracts

- Future contracts are standardized instrument that trade on the future exchanges, have a secondary market, and are guaranteed against default by means of a daily settling of gains and losses.
- Modern futures markets primarily originated in Chicago out of a need for grain farmers and buyers to be able to transact for delivery at future dates for grain that would, in the interim, be placed in storage.
- Futures transactions are standardized and conducted in a public market, are homogeneous, have a secondary market giving them an element of liquidity, and have a clearinghouse, which collects margins and settles gains and losses daily to provide a guarantee against default. Futures markets are also regulated at the federal government level.
- Margin in the securities market is the deposits of money, the margin, and a loan for the reminder of the funds required to purchase a stock or bond. Margin in the futures markets is much smaller and does not involve the loan.
- Futures trading occur on the futures exchange, which involves trading either in a physical location called a pit or via a computer terminal off the floor of the future exchange as part of an electronic trading system.
- A futures trader who has established a position can re-enter the market and close out the position by doing the opposite transaction.
- Initial margin is the amount of money in a margin account on the day of a transaction or when a margin call is made. Maintenance margin is the amount of money in a margin account on any day other than when the initial margin applies. Minimum requirements exist for the initial and maintenance margins, with the initial margin requirement normally being less than 10 percent of the futures price and the maintenance margin requirement being smaller than the initial margin requirement. The settlement price is an average of the last few trades of the day and is used to determine the gains and losses marked to the parties' accounts.
- The futures clearinghouse engages in a practice called marking to market, also known as the daily settlement, in which gains and losses on a futures position

are credited and charged to the trader's margin account on a daily basis. Thus, profits are available for withdrawal and losses must be paid quickly before they build up and pose a risk that the party will be unable to cover large losses.

- The margin balance at the end of the day is determined by taking the previous balance and accounting for any gains or losses from the day's activity, based on the settlement price, as well as any money added or withdrawn.
- Price limits are restrictions on the price of a futures trade and are based on a range relative to the previous day's settlement price. No trade can take place outside of the price limits.
- A futures contract can be terminated by entering into an offsetting position very shortly before the end of the expiration day. If the position is still open when the contract expires, the trader must take delivery (if long) or make delivery (if short), unless the contract requires that an equivalent cash settlement be used in lieu of delivery.

The crisis in financial markets today that are related to the commodity markets has increased steadily; the rapid rise in trading volume of these products began to be seen. For instance; New York Board of Trade (NYBOT), the processed sugar contract trading volume in 2007's first six-month period that 7,959,547 units, while 2008 first six-month period in the %790 percent increase to 70,853,581 units have reached. The process of soybeans during the same period one piece of 415% increase to 51,429,023 levels increased. Developments in financial markets and investors in commodity markets, this market orientation disclosure of factors affecting price movements has became more important.

4. COMMODITY MARKETS

Commodities present an unusual investment alternative. Investing in commodities complements the investment opportunities offered by shares of corporations that extensively use those commodities in their production process. Investing directly in agricultural products and other commodities gives the investor a share in the commodity components of the country's production and consumption. Money managers and average investors, however, usually prefer commodity derivatives rather than commodities themselves. The average investor does not want to store grains, cattle, crude oil, or metals. Future contracts are the easiest and cheapest way to invest in commodities.

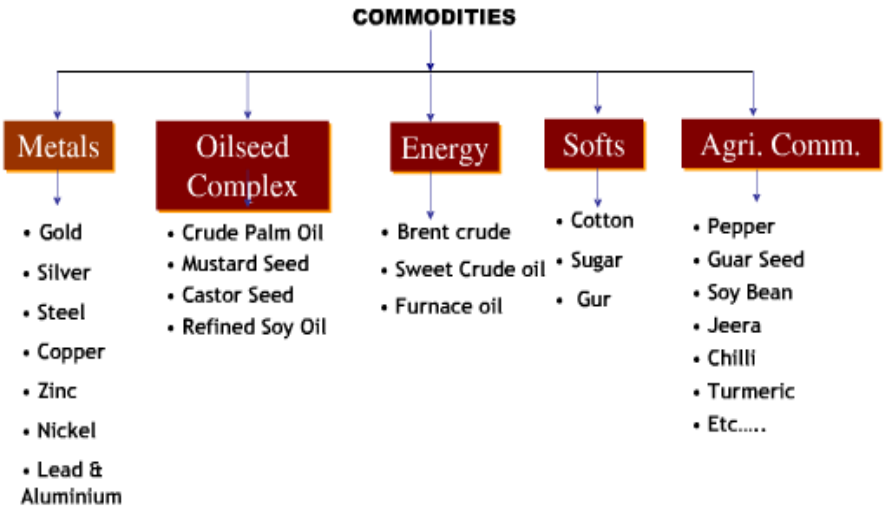
Commodities basically mean "the goods that are subjected to trade". Each commodity has certain standards and is traded by these standards. Commodity prices are determined freely in stock markets depending on demand and supply. Commodity Markets -Future Markets in history- began to develop as a result of farmers' attempts to avoid the price changes. The first practice similar to modern future contracts which are traded in organized stock markets first occurred in Japan in 1697. In global markets there are several factors that affect the formation and fluctuation of the prices of commodities. These factors can be examined under certain titles and subtitles. The main titles are; Economical Conjuncture, Government Policies, Technological Developments, and Natural Events, and the subtitles are; interest rates, inflation, exchange rates, economical growth, import-export enforcements, foreign trade taxes and quotas, utilization/production changes, weather conditions, diseases and epidemics. All these factors cause price changes by affecting the demand and supply on commodities

4.1 Commodity Futures

Commodities can be grouped into five major categories. These are;

- Metals, including gold, silver, steel, cooper, zinc, nickel, lead & aluminum.
- Oilseed Complex, including crude palm oil, mustard seed, castor seed, refined soy oil.
- Energy, including Brent crude, sweet crude oil, furnace oil.
- Softs, including cotton, sugar, gur.
- Agricultural commodities, including pepper, soy bean, jeera and etc.

Table 4-1 Types of Commodities



Source: www.slideshare.net/rix57/commodities-presentation

4.2 Commodity Futures for Investment Vehicles

Commodities are sometimes treated as an asset class because they represent a direct participation in the real economy. The motivation for investing in commodities ranges from the diversification benefits achievable by a passive investor to the speculative profits sought by an active investor.

4.2.1 Passive Investment

A passive investor would buy commodities for their risk-diversification benefits. When inflation accelerates, commodity prices go up, whereas bond and stock prices tend to go down. A passive investor would typically invest through a collateralized position in a future contract. Many banks and money managers offer collateralized futures funds based on one of the investable commodity indexes. A collateralized position in futures is a portfolio in which an investor takes a long position in futures for a given amount of underlying value and simultaneously invests the same amount in government securities, such as treasury bills. The various investable indexes and collateralized futures indexes are published both in excess-return and in total-return form. The indexes reported assume that the total return on the index is continuously reinvested. The excess return is the return above the risk-free rate. The total return is the risk-free rate plus the excess return.[3]

Generally, the volatility of commodity futures is higher than that of domestic or international equity, but commodities have a negative correlation with stock and bond returns and a desirable positive correlation with inflation.

4.2.2 Active Investment

Besides making inflation bets, another motivation for investing in commodities is that they provide good performance in periods of economic growth. In periods of rapid economic growth, commodities are in strong demand to satisfy production needs, and their prices go up. Because of productivity gains, the prices of finished goods are unlikely to rise as fast as those of raw materials. This suggests an active management strategy in which specific commodities are bought and sold at various times. Managed futures are proposed by a large number of institutions.[4]

[3] Derivatives and Alternative Investments CFA volume 6, (Boston: Pearson Custom, 2008), pp. 227-28.

[4] Derivatives and Alternative Investments CFA volume 6, (Boston: Pearson Custom, 2008), p. 228.

4.3 Why Commodities?

- The commodity market are global in nature, hence less risk for manipulation.
- Every commodity have separate market in itself and hence many such market is simulated at one single screen. The trends in one commodity not necessarily have correlation with the trend of other.
- Historically Commodities have outperformed the Stock Market.
- Commodities are easy to understand and have positive correlation with inflation.
- Diversification through a different asset class.
- Low Margins- 4% - 10% only.

The highest trading volume commodities in the financial markets are;

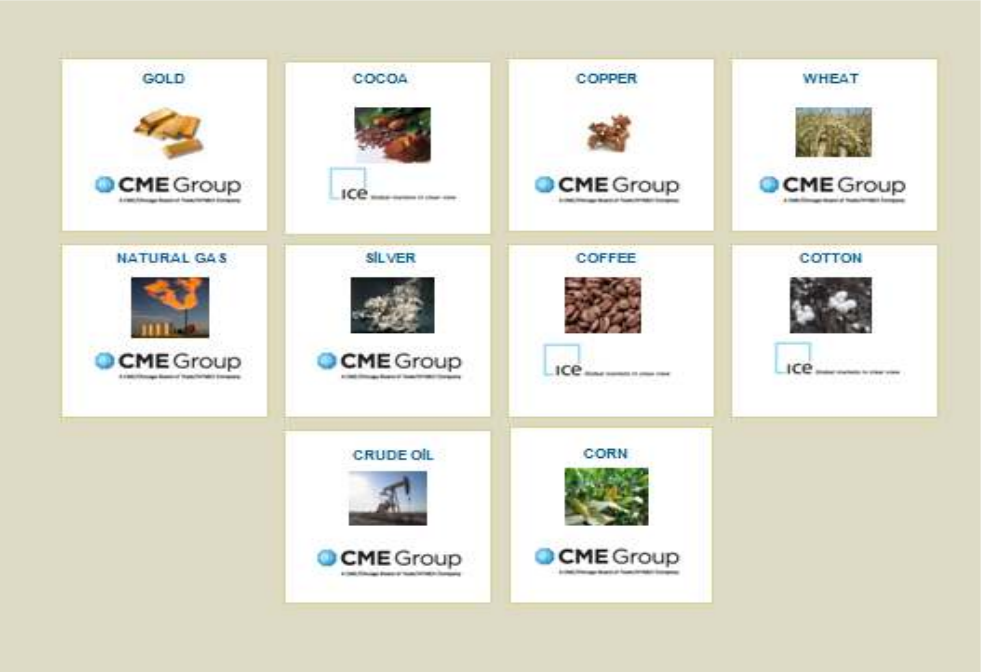


Fig. 4-1 The Highest Trading Volume Commodities in the Financial Markets

Each of the commodity contracts that are traded in foreign markets has different contract codes. With the help of these codes the investors can easily decide the contracts that they will trade and finish their trades with minimum faults. Future contract codes consist of three letters and a number. While the first two letters indicate the type of the commodity, the third letter indicates the month of the future contract, and finally the number in the last section indicates the year of the future contract.

Fig. 4-2 Sample Contract

There are certain months that each future contract is traded. For instance; while the Gold future is traded in February, April, May, August, September, and December, the Copper future is traded actively in every month of the year. For the traders knowing the imminent future will both increase the movement that is in the same direction with the spot market, and give the opportunity of closing the positions that are open because of the high trading volumes.

The stock codes, trading months, contract code samples, and their indications of the commodity contracts that are traded in foreign countries: The code that an investor who wants to trade the contract written for on an oil future in February should be "**CLG0**".

4.4 Characteristics of Future Contract Transaction Code

Table 4-2 Future Contracts

	Exchange Code	Months of Transaction*	Contract Code Example	Explanation
GOLD	GC	G/J/M/Q/V/Z	GCG0	February 2010 Gold Futures Contract
COPPER	HG	F/G/H/J/K/M/N/Q/U/V/X/Z	HGHO	March 2010 Copper Futures Contract
WHEAT	ZW	H/K/N/U/Z	ZWU0	September 2010 Wheat Futures Contract
NATURAL GAS	NG	F/G/H/J/K/M/N/Q/U/V/X/Z	NGJ0	April 2010 Natural Gas Future Contract
SILVER	SI	H/K/N/U/Z	SIK0	May 2010 Silver Future Contract
COFFEE	KC	U/X/F/H/K/N	KCH0	March2010 Coffee Future Contract

*Months of Transaction**

F: January	G: February	H: March	J: April	K: May	M: June	N: July	Q: August	U: September	V: October	X: November	Z: December

Table 4-3 Future Contracts

	Exchange Code	Months of Transaction*	Contract Code Example	Explanation
COCOA	CC	U/Z/H/K/N/	CCHO	March 2010 Cocoa Futures Contract
CORN	ZC	H/K/N/U/Z	ZCZ0	December 2010 Wheat Futures Contract
COTTON	CT	V/Z/H/K/N	CTH0	March 2010 Cotton Futures Contract
CRUDE OİL	CL	F/G/H/J/K/M/N/Q/U/V/X/Z	CLGO	February 2010 Crude Oil Futures Contract
SOYBEAN	ZS	F/H/K/N/Q/X	ZSQO	August 2010 Soybean Futures Contract
SUGAR	SB	V/X/H/K/Q	SBH1	March 2011 Sugar Futures Contract

*Months of Transaction**

F: January	G: February	H: March	J: April	K: May	M: June	N: July	Q: August	U: September	V: October	X: November	Z: December

4.5 The Main Factors that Affect the Commodity Prices

As a result of the increasing importance of the commodity prices and the growing demand of the investors for this market, the factors that affect the commodity prices have become significant, and also understanding the price movements before investing on products has gained great importance. These factors are affecting the rates of the Demand and Supply on commodities and as a result of this the prices of the commodities rise or drop.

We can basically divide the factors that affect the Commodity prices into four main titles;

Economical Conjuncture

- Interest Rates
- Inflation
- Exchange Rates

Government Policies

- Import- Export enforcements
- Foreign Trade taxes and quotas

Technological Developments

- Production / Utilization changes

Natural Events

- Weather Conditions
- Diseases – Epidemics

Each of these factors has effects on different commodity prices, and these effects generates the drop or rise of the prices

5. GOLD CONTRACTS

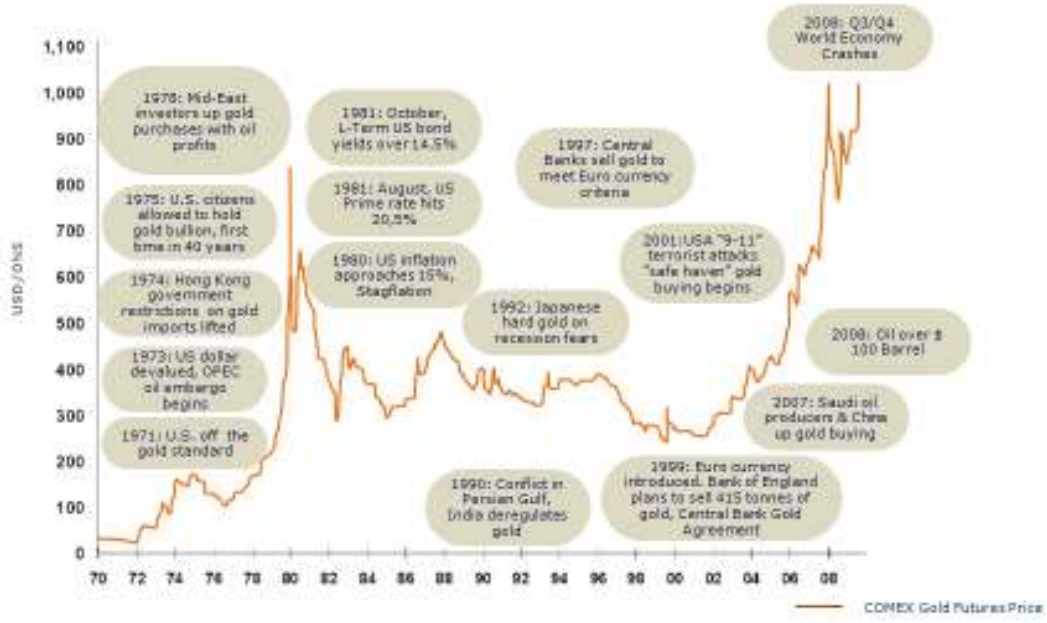
Gold, a chemical element with the symbol “Au” (from Latin: Aurum), has attracted human-beings since ancient times with its shiny yellow color, durability, tractability, and being easily found in nature. As gold is not easily affected by air and water for it is a very solid element which does not easily react and because gold can keep its value without getting rusty, tarnished or dark and for this reason the importance of gold has increased on protecting the value and wealth. As a result of this, more than the half of 161,000 tons of gold that have been unearthed throughout the ages, is being kept by the governments and central banks. Gold, being the most popular metal, is still being used as a means of investment and saving for it is both the assurance of banknote emission, and an international means of payment.

5.1 Features Of The Gold

- It is widely used as a means of investment and saving.
- It has got an inflexible supply form.
- In international markets its measurement unit is “Troy Ons”. (1 Troy Ons=31,1035 gram 1 Kg=32,15 Troy Ons).
- The pureness of gold is called as “karat” and it is determined by the quantity of gold in 1 gram of compound.
- Gold is in the foreground as a means of investment for it keeps its value in inflationary climates.
- An increase of demand is seen in the summer season when Christmas, Valentine's Day and Marriage Ceremonies take place.
- In a year the worst period of the gold prices is on November, December, January and February when the jewelry stores stockpile the gold.

5.2 Price Development of the Gold

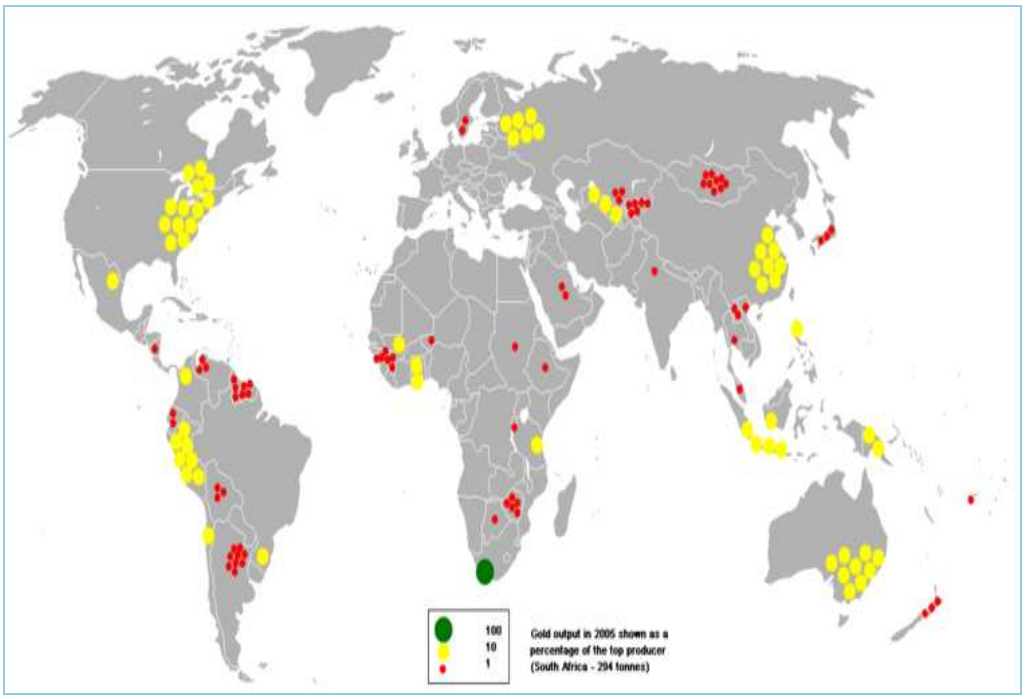
Table 5-1 Historical Development of Gold



When we examine the main aspects of the activities in gold prices we see that economical conjuncture and government policies, which are also the main factors that affect the commodity markets, are very effective. For instance; While the limitation of gold import issued by government of Hong Kong in 1974, the Middle Eastern investors who tended to invest in gold with the profit came from oil in 1974, the recent economic crisis and September 11 attacks resulted in an increase in gold prices, the decrease of credit interests to %20,5s in the USA in 1981, the inflation rate that got close to %15 again in the USA, the gold sales offered by the Japanese government in 1992 with the fear of recession, the gold contracts made by Central Banks in 1999, and the plan of 415 tons of gold sale made by English Central Bank resulted in a decrease in gold prices.[5]

[5]David Lehman, "Fundamental Factors Affecting Agricultural and Other Commodities" 30 June 2008. http://accordent.powerstream.net/008/00102/080707lehmanaga/msh.html

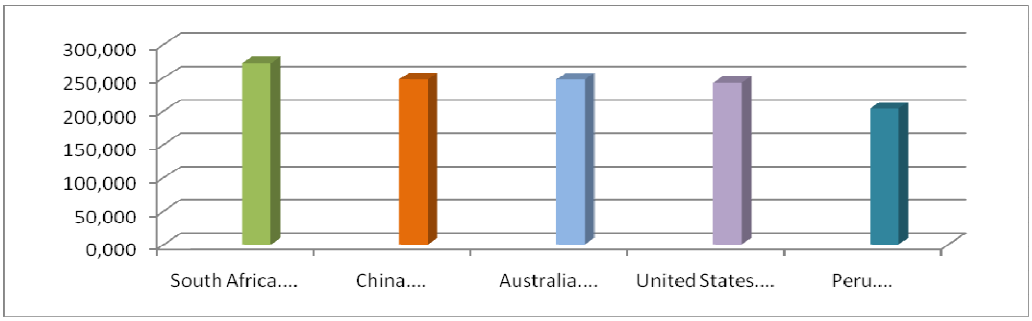
5.3 Gold Production



Source: http://en.wikipedia.org/wiki/Gold

Fig. 5-1 Gold Mine Allocation

Table 5-2 Production of Gold



Source: http://www.bloomberg.com

Gold extraction is most economical in large, easily mined deposits. Ore grades as little as 0.5 mg/kg (0.5 parts per million, ppm) can be economical. Typical ore grades in open-pit mines are 1–5 mg/kg (1–5 ppm); ore grades in underground or hard rock mines are usually at least 3 mg/kg (3 ppm). Because

ore grades of 30 mg/kg (30 ppm) are usually needed before gold is visible to the naked eye, in most gold mines the gold is invisible. Since the 1880s, South Africa has been the source for a large proportion of the world's gold supply, with about 50% of all gold ever produced having come from South Africa. Production in 1970 accounted for 79% of the world supply, producing about 1,000 tonnes. However by 2007 production was just 272 tonnes. This sharp decline was due to the increasing difficulty of extraction, changing economic factors affecting the industry, and tightened safety auditing.

In 2007 China (with 276 tonnes) overtook South Africa as the world's largest gold producer, the first time since 1905 that South Africa has not been the largest. The city of Johannesburg located in South Africa was founded as a result of the Witwatersrand Gold Rush which resulted in the discovery of some of the largest gold deposits the world has ever seen. Gold fields located within the basin in the Free State and Gauteng provinces are extensive in strike and dip requiring some of the world's deepest mines, with the Savuka and TauTona mines being currently the world's deepest gold mine at 3,777 m. The Second Boer War of 1899–1901 between the British Empire and the Afrikaner Boers was at least partly over the rights of miners and possession of the gold wealth in South Africa.Other major producers are the United States, Australia, Russia and Peru. Mines in South Dakota and Nevada supply two-thirds of gold used in the United States. In South America, the controversial project Pascua Lama aims at exploitation of rich fields in the high mountains of Atacama Desert, at the border between Chile and Argentina. Today about one-quarter of the world gold output is estimated to originate from artisanal or small scale mining.[6]

[6] Gold Futures. CME Group. http://www.cmegroup.com/trading/metals/precious/gold.html

5.4 Gold Future Contracts Features

The size of the Gold Future Contracts, which is traded in is Chicago Mercantile Exchange (CME) stock, is 100 Troy oz and its product code is GC. 100 Troy ounces is equal to 3,11 kilograms. As in all of the future contracts, there is a level of initial and maintenance margin in gold future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the gold prices. While in June the amount of money to buy one gold future contract is 5.739 USD, the level of maintenance margin of the same contract is 4.251 USD. There are five open periods of CME Gold 100 oz in one year. The minimum price increment in gold contract is 10 USD because the size of the contract is 100 oz. For example, when an investor purchases a gold future at the level of 1.116,5 (long position) and if the level rises to 1.116,6 the investor will make a 10 USD profit but if the level drops to 1.116,4 the investor will lose 10 USD. Like all of the other commodity contracts, also in the gold contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 5-3 Characteristic of Gold Future Contracts

Gold Contract	
Exchange	CME/GLOBEX
Lot Size	100 Troy oz (2)
Initial Margin	5.739 USD(1)
Maintanence Margin	4.251 USD(1)
Delivery Months	Feb/Apr/Jun/Sep/Dec
Commission (only for one contract)	10,47 USD
Point Value	10 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	GC

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 100 Troy oz = 3,11 kg

5.5 Transaction In The Future Market

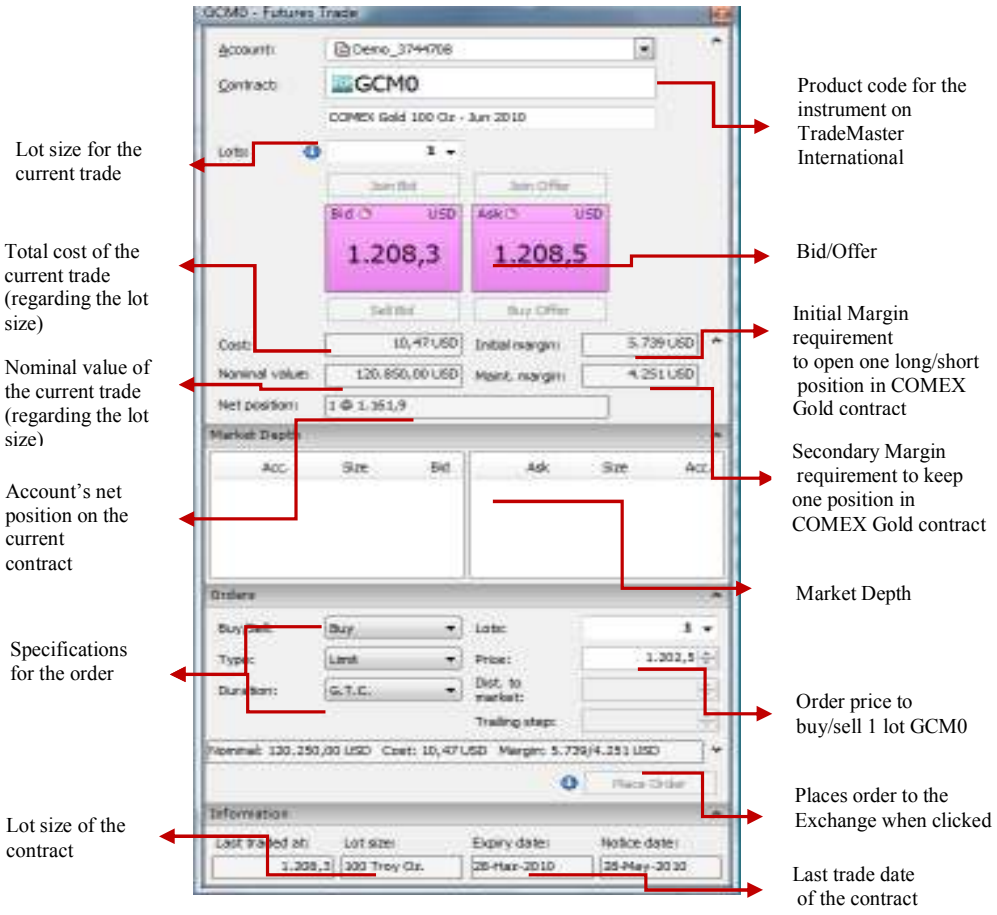


Fig. 5-2 : International Buy Sell Screen For Gold

Table 5-4 Explanation of Buy Sell Screen

Commodity	GCM0	June 2010 Gold Futures Contract
Bid/Offer Price	1.208,30	1.208,50
Initial Margin	5.739	USD
Maintanence Margin	4.251	USD
Nominal Value	120.850,00	USD
Leverage	21,05	120.850/5.739
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	100 Troy oz	
Cost	Total cost of the current trade (regarding the lot size)	

Product code for the instrument on TradeMaster International

6. COPPER CONTRACTS

Copper, a chemical element with the symbol "Cu" (from Latin: Cuprum), was first discovered in Cyprus and named as "Cyprus Metal". Copper, which has been used for almost 10,000 years and gave its name to an age (Copper Age), can be produced widely for it is found in almost every part of the world. The usage of copper in industry is increasing for it is an important component of many minerals, and it is the best conductive metal after silver, and also compounds such as bronze and bell metal can easily be produced with copper. 80% of the produced copper is used in electric industries, and the rest 20% is used as bronze and bell metal compounds in construction, machine and furniture industries. The production and consumption value of copper is one of the chief indicators that reflect the general economic activity for copper has a wide are of production and utilization.[7]

6.1 Features of the Copper

- It is being produced widely because it can be found in almost every part of the world.
- It is found dispersedly in many places in nature as a metal.
- It is a compound of many minerals that are important for the industries.
- It can be alloyed in different ways in order to serve different purposes. .
- The production and consumption amounts of copper are one of the chief indicators that reflect the general economic activity.

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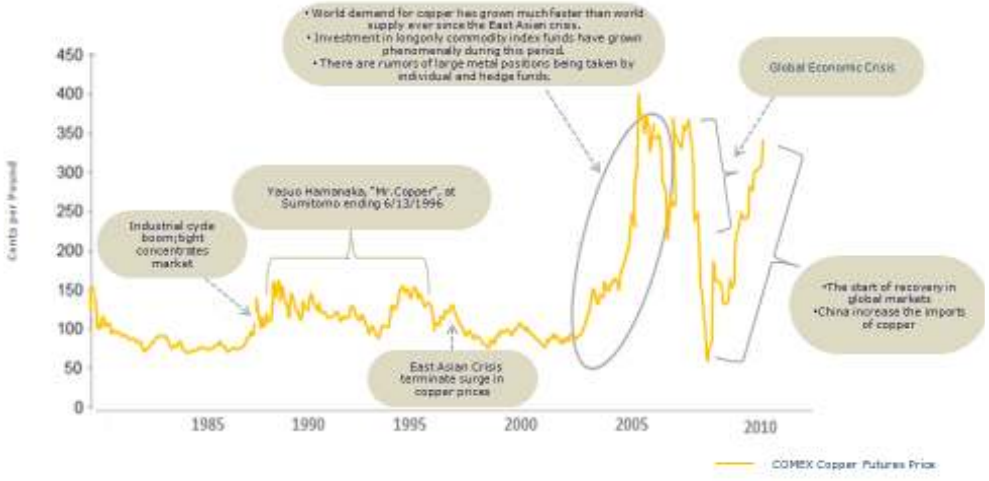
[7] Copper. Wikipedia. 15 September 2010. http://en.wikipedia.org/wiki/Copper

6.2 Price Development Of The Copper

Table 6-1 Historical Development of Copper



When we look at the reasons of the drops and rises in the copper prices that happened in the past we see that the economical conjuncture, natural events, and government policies, which are also the main factors that affect the commodity markets, are very dominant. We can state that one of the main aspects that makes copper commodity different from other commodities is that most of the copper trade is made in London Metal Exchange stock market (LME) and the prices that are determined here also determine the general copper prices in the world. Thus the speculative transactions which happen in this market greet the eye as a basic factor that affects the commodity prices. For example, As a result of the speculative transactions of Yasuo Hamanaka, who traded as a broker in LME stock market, the copper prices had begun to rise between the years 1983-1995, and in 1996 Hamanaka was proven to be guilty and he was discharged then the copper prices had begun to drop. The sharpest rises in copper prices happened in 2003 and 2009.[8]

[8]Commodity Investing Max. returns through Fundamental Analysis, (New Jersey: Wiley & Sons, 2008), pp.161-62.

The basic factors that the prices got so high in 2003 are:

- The fact that after the Asian crisis the demand that occurred in the world for the copper was higher than the supply.
- The sharp rise of the long positions in the commodity indexes.
- The spreading rumors in markets that the Hedge funds and individual funds were buying the big metal positions.

The reason of the sharp rise in 2009 is completely different from the factors that affected the rise of 2003. The increasing copper demand of China, who is constantly growing to be the economic superpower of the world, was the main actor of the sharp rise in 2009. The beginning of the recovery of the global markets in 2009 and the rise of the copper import made by China caused the sharp rise of the prices. In 2009 after China began to stockpile copper, the price of copper rose %28 in the international markets. After China had headed towards import all the global markets had been affected by that and especially in London Metal Exchange stock market, which conducted the copper prices, the copper prices had risen to historic levels. The refined copper import of China that rose %50 was 270.948 tons in February 2009. Also another effective factor was the stockpile enhancement program started by the Beijing Government Stock (SRB) which conducted the strategic stockpiles that improve the import. The reason that China has constantly increased the copper import can be explained by the constant growth of the industrial consumption in this country. The continual development of the construction industry in China and the role of the copper in this industry are increasing the possible demands and this causes the rise of the prices.

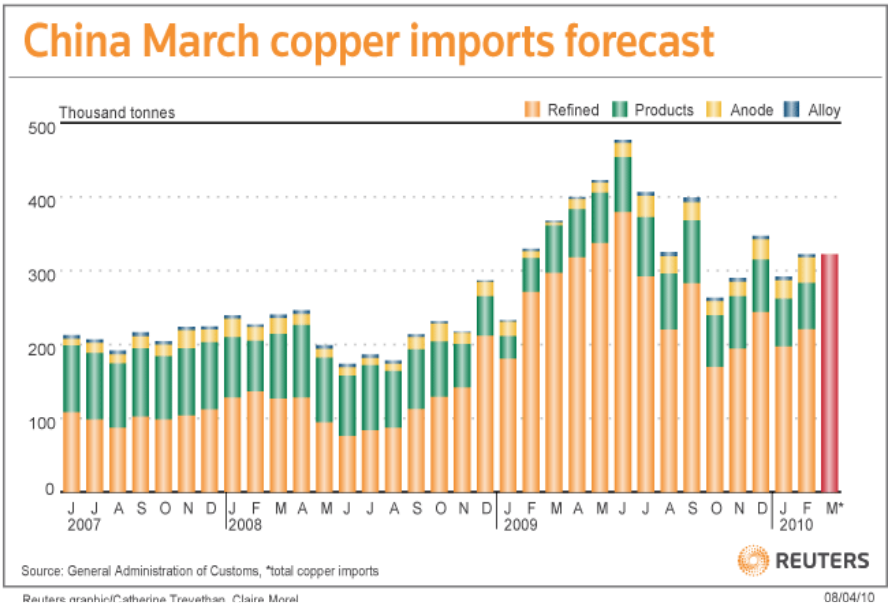


Fig. 6-1 China March Copper Imports Forecast

Apart from China, Chili is another country that has to be taken into consideration while examining the copper prices. 15.1 million tons of copper were produced in the world in 2008 and 5.3 million tons of this production were supplied from Chili. The United States of America is the biggest producer after Chili and copper production level of the USA was around 1.2 million tons. The economical and natural events that happen in Chili is important in determining the copper prices of the world for the production volume of Chili is five times bigger than the closest producer. The magnitude of 8.8 earthquake that occurred in 2010 in Chili, the biggest copper exporter of the world, caused to stop the production of the four major copper mines that affects %20 capacity of the country, suspended the copper production for a while and this resulted in the historic peak of the copper prices.

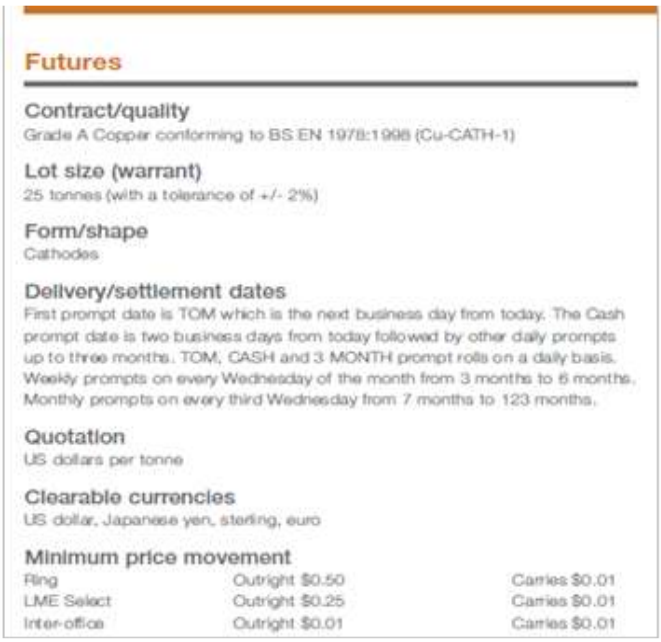
Although after the blackouts the two biggest mining companies of the country Codelco and Anglo American halted the operations, Codelco stated that they will meet the subscribed deliveries and this relieved the markets a little bit. Chili's important role in copper market, and its production level which is close to the level of a monopoly is causing the investors, who trade on this commodity, to take the risk of the country. Especially the investors who plan to invest on copper should absolutely consider this situation before investing.

6.3 London Metal Exchange (LME)

The London metal Exchange (LME) is the world's premier non-ferrous metals market, offering trading in futures, options and TAPOs (traded average price option) for price risk management. Today, the Exchange has an international membership and more than 95% of its business comes from outside the United Kingdom.[9]

The Exchange has three core services which underpin all activity; price transparency, price risk management and physical delivery. The market itself can be accessed via three different trading platforms, the Ring (open-outcry), LME select (electronic trading) and through inter-office (telephone trading). The LME is member owned and has a well established membership structure comprised of the world's leading banks, trading companies, financial institutions and industrial players. It is a 'principal-to-principal' market, therefore a new account needs to be opened with an LME member firm to allow market participant to trade and access the LME's delivery mechanism.

[9] About the LME. London Metal Exchange. http://www.lme.com/who.asp



Futures

Contract/quality
Grade A Copper conforming to BS EN 1978:1998 (Cu-CATH-1)

Lot size (warrant)
25 tonnes (with a tolerance of +/- 2%)

Form/shape
Cathodes

Delivery/settlement dates
First prompt date is TOM which is the next business day from today. The Cash prompt date is two business days from today followed by other daily prompts up to three months. TOM, CASH and 3 MONTH prompt rolls on a daily basis. Weekly prompts on every Wednesday of the month from 3 months to 6 months. Monthly prompts on every third Wednesday from 7 months to 123 months.

Quotation
US dollars per tonne

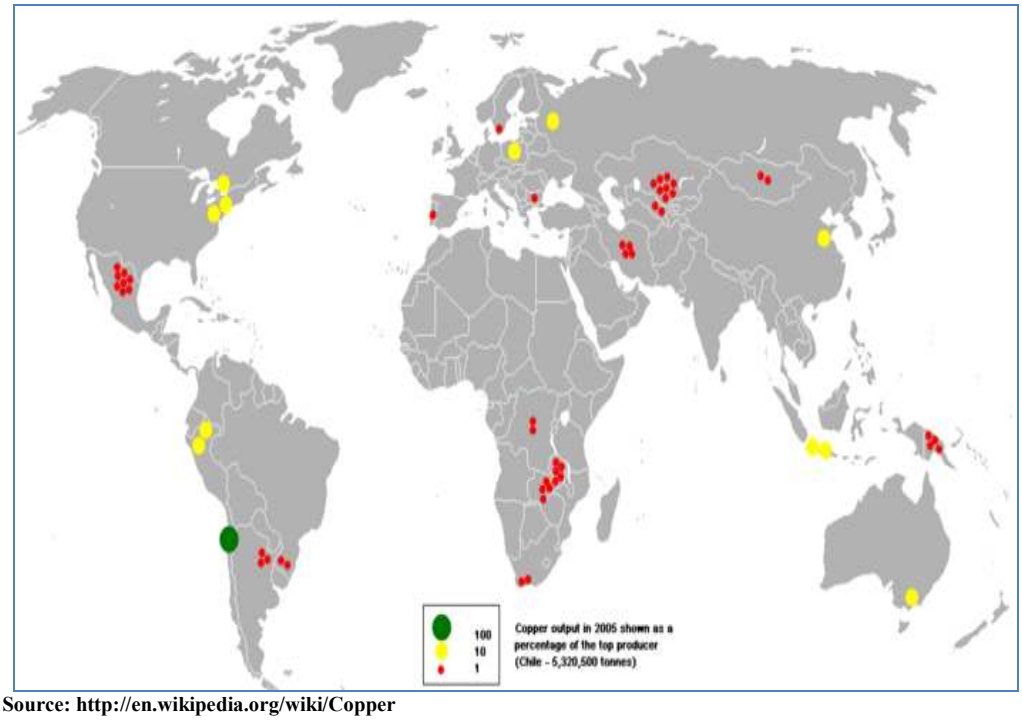
Clearable currencies
US dollar, Japanese yen, sterling, euro

Minimum price movement

Ring	Outright $0.50	Carries $0.01
LME Select	Outright $0.25	Carries $0.01
Inter-office	Outright $0.01	Carries $0.01

Fig. 6-2 London Metal Exchange (LME) Copper

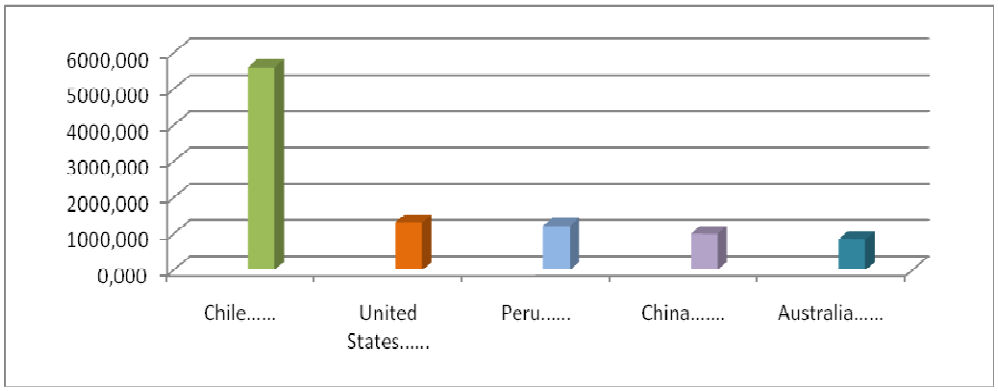
6.4 Copper Production



Source: http://en.wikipedia.org/wiki/Copper

Fig. 6-3 Allocation of Copper

Table 6-2 Production of Copper



Source: http://www.bloomberg.com

The biggest part of world copper production in Chile is done. The country's copper production, respectively, the other America, Peru, China and Australia is.

6.5 Copper Future Contract Features

The size of the Copper Future Contracts, which is traded in is Chicago Mercantile Exchange (CME) stock, is 25.000 LBS and its product code is HG. 25.000 LBS is equal to 11.3 kilograms. (1 LBS: 0,4534 kg) As in all of the future contracts, there is a level of initial and maintenance margin in copper future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the gold prices. While in June the amount of money to be kept in the future market for one copper future contract is 5.738 USD, the level of maintenance margin of the same contract is 4.250 USD. CME copper contract is traded actively twelve months a year. The minimum price increment in copper contract is 12.5 USD. For example, when an investor purchases a copper future at the level of 351.10 (long position) and if the level rises to 351.15 the investor will make a 12.5 USD profit but if the level drops to 351.05the investor will lose 12.5 USD.

London Metal Exchange stock market is another important market that the investors who want to trade on copper market should particularly follow. In this market the total size of a contract is 25 tons and the initial margin required to buy and sell a contract was determined as 13,750 USD by the respective market. Unlike other future markets in London Metal Exchange (LME) the same ratio of the initial margin and maintenance margin is enforced and the if the investors have a loss in their initial margins that they have invested they are asked to complete their margins. Another Feature of the London Metal Exchange stock market is that it gives the investors the opportunity to determine the date of the futures by themselves. If the investors want they can decide the close positions like the daily closing, or weighted average by talking to each other, and thus they are not stuck in specific future months. Although the rates of leverage coefficients that are in practice in LME are under the rates that are applied in CME the trading volume is much higher.

In our country and in the world the investors who trade copper generally carry out transactions in London Metal Exchange market for the “hedge” transactions. There are big companies among the investors like Erbakır that trade copper. These companies prefer warranty letters in their transactions thus they use credit lines for themselves.

Like all of the other commodity contracts, also in the copper contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective future market.

Table 6-3 Characteristic of Gold Future Contracts

.

Copper Contract	
Exchange	CME/GLOBEX
Lot Size	25.000 LBS(2)
Initial Margin	5.783 USD(1)
Maintanence Margin	4.250 USD(1)
Delivery Months	All Months
Commission (only for one contract)	10,47 USD
Point Value	10,50 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	HG

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 1 LBS = 0.4535 kg

6.6 Transaction In The Future Market

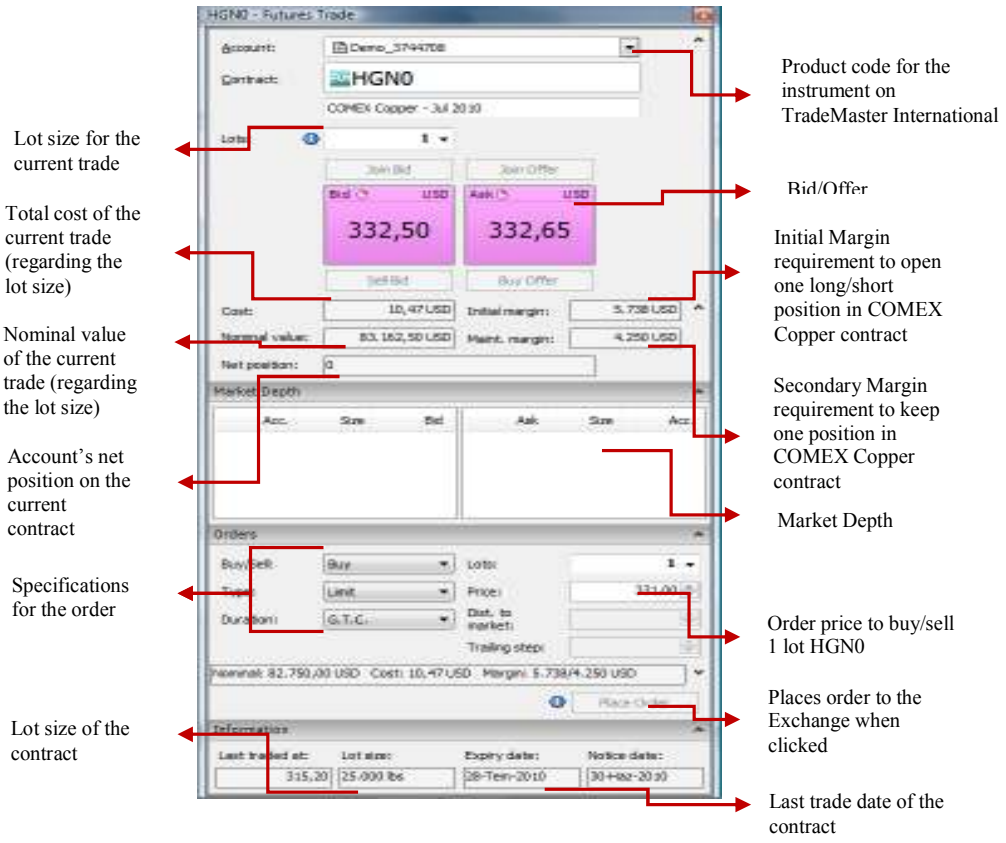


Fig. 6-4 International Buy Sell Screen For Copper

Table 6-4 Explanation of Buy Sell Screen

Commodity	HGN0	July 2010 Copper Futures Contract
Bid/Offer Price	332,50	332,65
Initial Margin	5.738	USD
Maintanence Margin	4.250	USD
Nominal Value	83.162,50	USD
Leverage	14,49	83.162,50/5.738
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	25.000 LBS	
Cost	Total cost of the current trade (regarding the lot size)	

7. WHEAT CONTRACTS

It is assumed that wheat, the common name of the Triticum plants that belong to the Gramineae (Poaceae) family of plants, has been cultivated 9.000 years B. C. around Göbekli Tepe which is near to Urfa. The different types of wheat, preferring continental and hot climates, created a wide range of cultivation area. Wheat, the most cultivated crop worldwide after corn, is the basic element in flour and feed production. Wheat, containing a proper ratio (1/6) of the essential amylum and protein based substances required for nourishment, has been the most important staple food in all ages. The extension of its usage in industries like the bio fuel production causes to maintain the importance of the wheat constantly in general economy.[10]

7.1 Features Of The Wheat

- It is a highly productive and easily cultivated crop.
- Wheat, preferring continental climates, is the most cultivated crop worldwide after corn.
- Wheat, the basic element of the foods like flour, bread, biscuits, pasta, is used in the production of bio-fuel and alcoholic drinks such as beer and vodka.
- Turkey is among the first 10 wheat producer countries.
- The price of the wheat is most affected in the period of time that is called as “the February Break”. In this period beginning at the end of January and lasting until the beginning of February, the damaging winter events can harm the crops.

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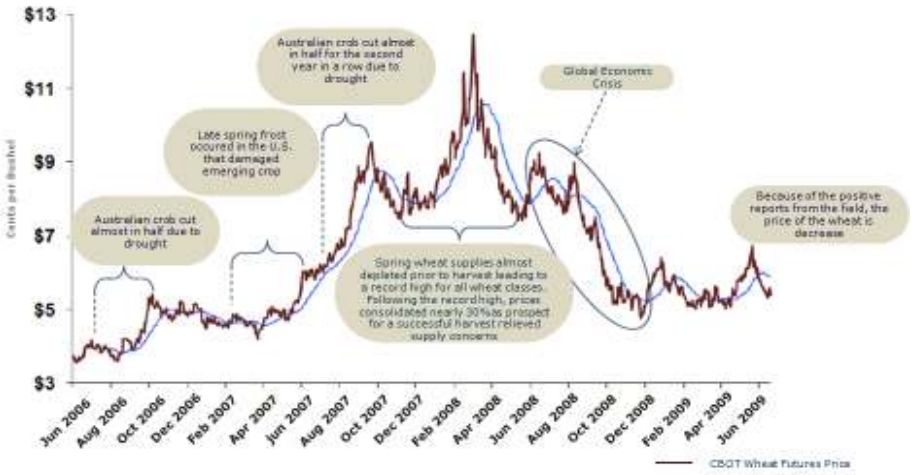
[10] Wheat. Wikipedia. 14 September 2010. http://en.wikipedia.org/wiki/Wheat

7.2 Price Development Of The Wheat

Table 7-1 Historical Development of Wheat



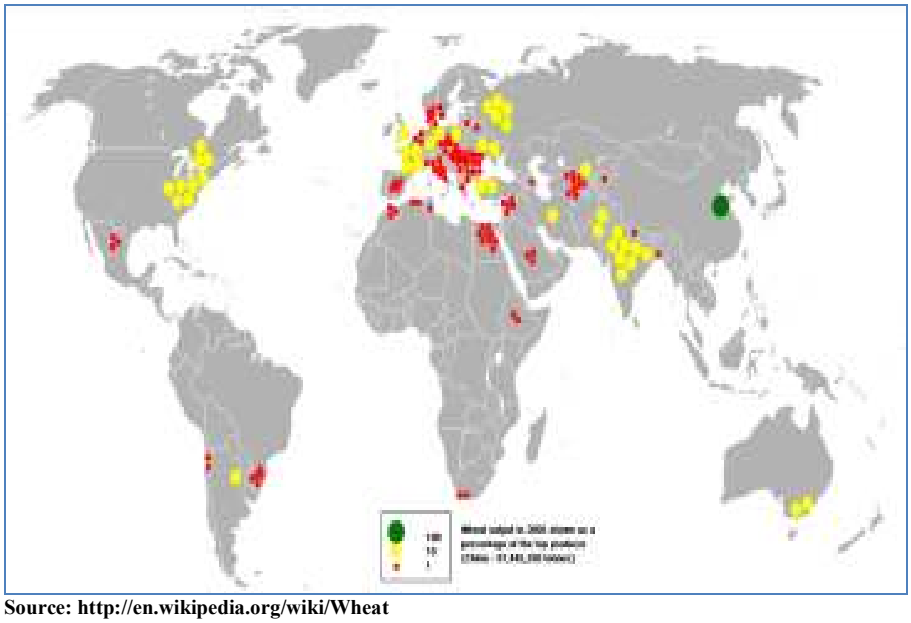
When we look at the reasons of the drops and rises in the wheat prices that happened in the past we see that the natural events, and technological developments, which are also the main factors that affect the commodity markets, are much more effective than the other factors. The drought and frost events that occurred in Australia and America appear to be the main reasons of the fluctuation in Wheat prices that happened between the years 2006-2009. As a result of the droughts the crops were less than expected, however the continuous demand for the wheat went on thus the prices fluctuated and rose.[11]

Another important reason of the increase in wheat prices is the studies which are started to increase the bio energy or renewable energy resources. By means of bio energy it is aimed to reduce the expensive oil import and create an eco-friendly transportation. The European Commission decided on compulsory aims after their studies. As stated in these aims by 2020 Europe should get the %20 of their energy from renewable energy sources. The data concerning 2007 states that in EU bio fuel supplies %2,6 of land transportation.

[11] Commodity Investing Max. returns through Fundamental Analysis, (New Jersey: Wiley & Sons, 2008), pp.114-15

The demand for bio fuel in the world -together with the droughts in key producer countries, the increasing meat consumption, and the rise in oil prices, etc. - is one of the many factors that contribute to the recent rise of the food prices. The Organization for Economic Co-operation and Development (OECD) estimates that the suggested precautions for bio fuel in EU and USA have increased the average wheat, corn and vegetable prices respectively %8, %10, and %33 in medium term.

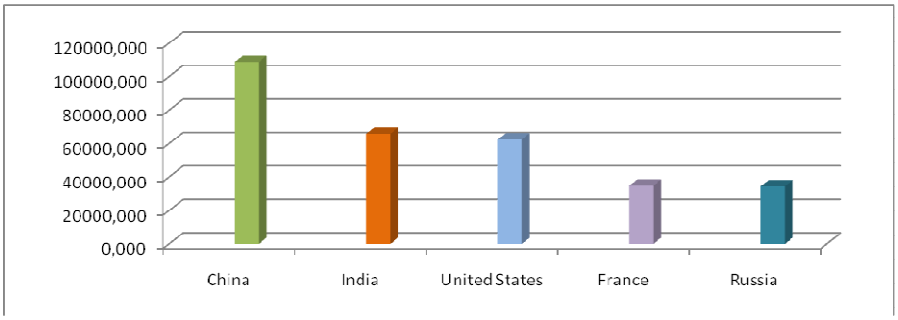
7.3 Wheat Production



Source: http://en.wikipedia.org/wiki/Wheat

Fig. 7-1 Allocation of Wheat

Table 7-2 Production of Wheat



Source: http://www.bloomberg.com

7.4 Wheat Future Contract Features

The size of the Wheat Future Contracts, which is traded in is Chicago Mercantile Exchange (CME) stock, is 5000 Bushels and its product code is ZW. 5.000 Bushels is equal to 2.267 kilograms. (1 Bushels: 0,4535 kg) As in all of the future contracts, there is a level of initial and maintenance margin in wheat future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the wheat prices. While in July the amount of money to be kept in the future market for one wheat future contract is 1.620 USD, the level of maintenance margin of the same contract is 1.200 USD. CME wheat contract has five open periods in a year. The minimum price increment in wheat contract is 12,50 USD. One of the main differences that differentiate the wheat contract from other future contracts is the way of writing the price digits that are seen in the system. In the international system the wheat prices are written in three number digits. While the first digit shows the value of the wheat in dollars, the second and third digits show the cents. The wheat contracts, that are displayed in buy and sell screens in July, is displayed as 504,75 USD; however this indicates 5 dollars 0475 cents. The investors who want to trade wheat should be careful about this.

When an investor purchases a copper future at the level of 467,00 (long position) and if the level rises to 467,25 the investor will make a 12.50 USD profit but if the level drops to 457,75 the investor will lose 12.5 USD. Like all of the other commodity contracts, also in the wheat contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective future market. Although there is wheat contract in “Futures and Options Exchange and Market”, established as the second official market of our country in 2005, it is not actively traded. There are two reasons for that; firstly it is not advertised

enough and secondly the conditions of the physical delivery facilities such as storage could not be established.

Table 7-3 Characteristic of Wheat Future Contracts

Wheat Contract	
Exchange	CME/GLOBEX
Lot Size	5.000 BUSHELS(2)
Initial Margin	1.620 USD(1)
Maintanence Margin	1.200 USD(1)
Delivery Months	Mar/May/Jul/Sep/Dec
Commission (only for one contract)	10,83 USD
Point Value	12,50 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	ZW

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 1 Bushel = 27,216 kg

7.5 Transaction In The Future Market

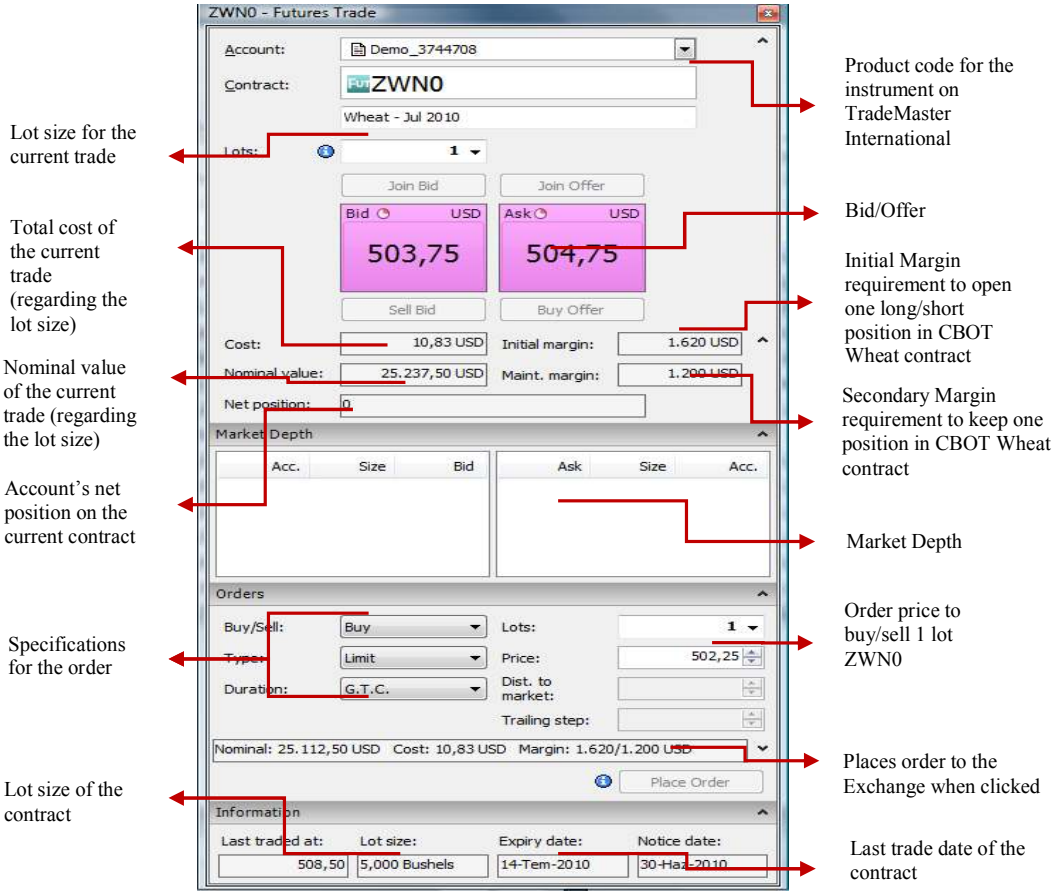


Fig. 7-2 International Buy Sell Screen For Wheat

Table 0-1 Explanation Of Buy Sell Screen

Commodity	ZWN0	July 2010 Wheat Futures Contract
Bid/Offer Price	503,75	504,75
Initial Margin	1.620	USD
Maintanence Margin	1.200	USD
Nominal Value	25.237,50	USD
Leverage	15,57	25.237,50/1.620
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	5.000 BUSHELS	
Cost	Total cost of the current trade (regarding the lot size)	

8. NATURAL GAS CONTRACTS

Natural gas which is basically a derivation of oil is a mixture of gases that arise from the fossils in the earth's crust. It is the second most important fuel after petroleum. The majority of natural gas (%70-90), consists primarily of hydrocarbon compound called as methane. Other important compounds are the ethane, propane, and butane gases. The hydrocarbon compounds that form the natural gas are at the same time the compounds that form the oil.[12]

In the past, natural gas was considered as a useless gas that formed in the process of oil production and was burned in the petroleum production facilities. But, today it is used in houses and industry as a very valuable and strategic source of energy. Recently its usage is increasing for it pollutes and harms the environment less than other fuels.

8.1 Features of the Natural Gas

- It is a fossil based fuel that is found in oil areas.
- It is a colorless, odorless, and lighter-than-air gas that is formed by mainly light molecule hydrocarbons like methane, ethane, and propane.
- Because it is a gaseous natural gas burns easily by creating better mixture of fuel and air, and it forms a blue flame in full combustion.
- The amount of air to burn the natural gas is little and its combustion ratio is high. Thus it is cheaper than other fuels.
- There are no storage and transportation costs for natural gas.
- In winter the demand for natural gas is increasing because its usage for heating in houses has increased.

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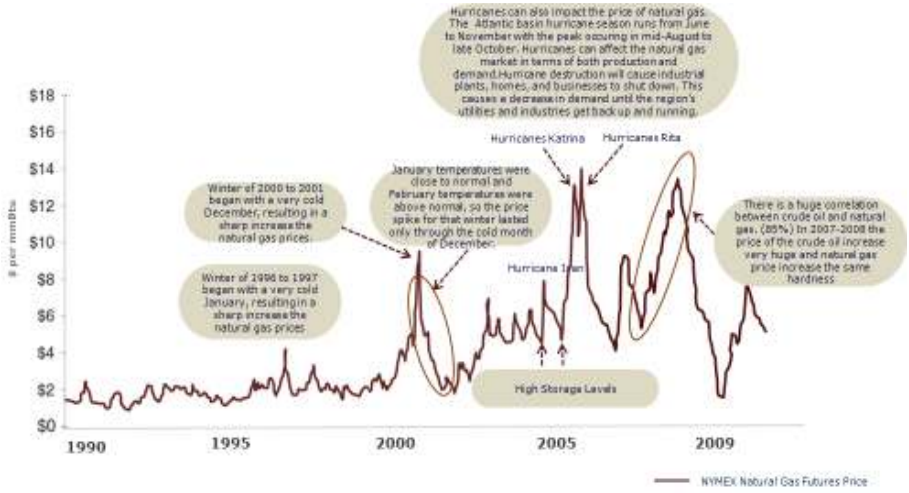
[12] http://en.wikipedia.org/wiki/Natural_gas.

8.2 Price Development of the Natural Gas

Table 8-1 Historical Development of Natural Gas



When we look at the main reasons of the fluctuation in the natural gas prices we see that the technological developments, natural events, government policies, and the high co-relation between natural gas and oil which are also the main factors that affect the commodity markets, are very effective. For example; extremely harsh winters of 2000 – 2001, the tornadoes occurred between 2006 and 2007 (like Katrina and Rita) caused the rise of the natural gas prices. The industry became dependent on natural gas as a result of the technological developments, and this increased the price of the natural gas; however, it will not be right to separate these two main actors. The damage in industry that occurred after the tornadoes and the increase in production ratio which was made to recover this damage can be pointed out as the main reasons of the increase in the natural gas prices especially after the tornadoes that occurred in the Atlantic area in June and December.[13]

[13] Commodity Investing Max. returns through Fundamental Analysis, (New Jersey: Wiley & Sons, 2008), pp.90-92.

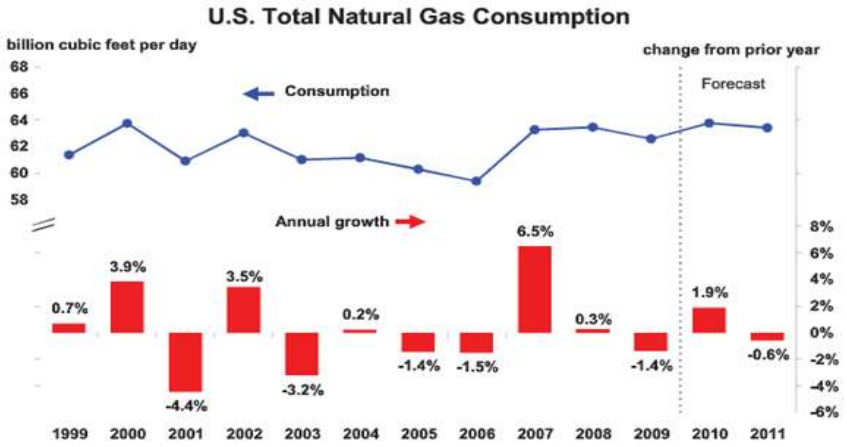
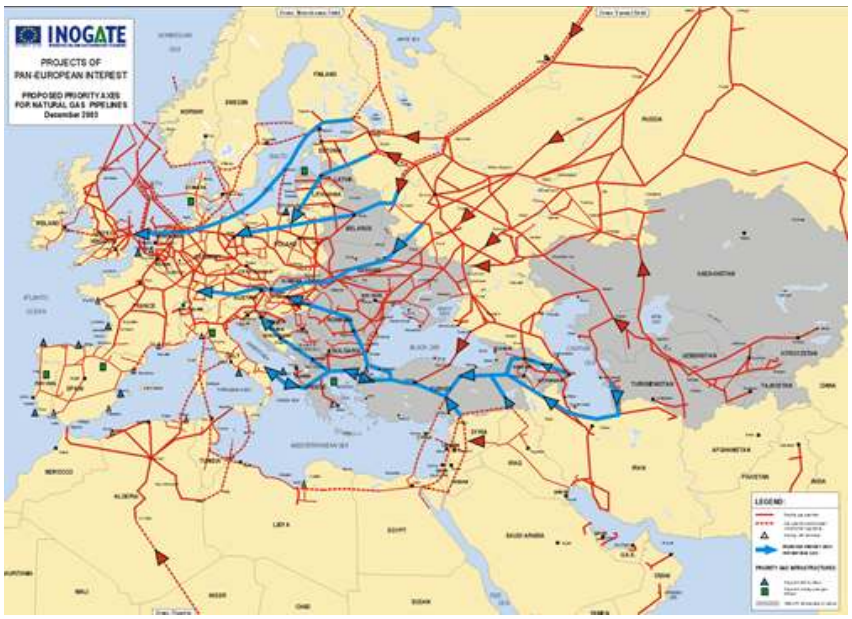


Fig. 8-1 Natural Gas Consumption

The graphic above shows a parallelism between the annual growth of America and its natural gas consumption. In 1999 when the annual growth ratio was %0,7 the amount of the daily gas usage was 61 billion cubic feet; however, in 2007 when the annual growth ratio rose to %6,5 the amount of the daily gas usage had increased to 62 billion cubic feet. The industrial growth of the countries increases the demand for natural gas, and this is reflected in the gas usage ratio, as a result the prices rise.

One of the most important reasons of the rise in natural gas prices in 2008-2009 is the enormous increase in oil prices. The price of the natural gas is %85 indexed to the oil prices thus when the oil prices rise the price of the natural gas rise as well.

After 2000 the countries which have natural gas sources has begun to use this as a weapon, and an element of political and economical oppression after the importance of natural gas has increased as it has become to be used in houses and factories. It has been tried to transfer the Middle Asian gas sources to Europe, which has limited sources of gas but a very high level of dependency, by various alternative ways in order to clean up this oppressive atmosphere.



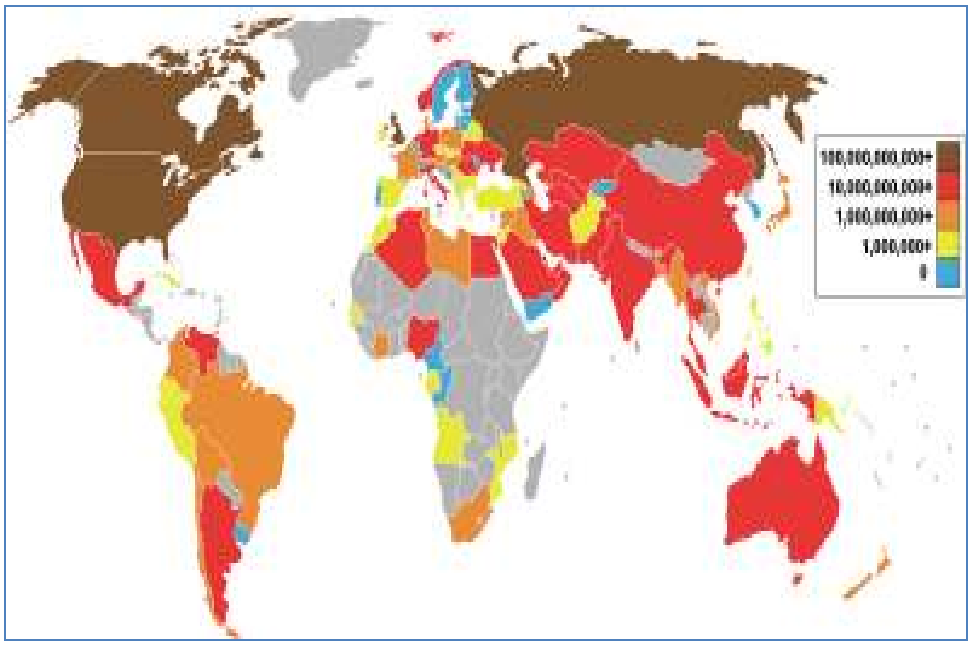
Source: http://www.innogate.org/

Fig. 8-2 Allocation of Natural Gas Pipeline

Today most of the gas that is transferred to Europe is supplied by Russia. Turkey also has a place in this transfer area. Blue Stream is a major trans-Black Sea gas pipeline that carries natural gas from Russia into Turkey. The pipeline has been constructed by the Blue Stream Pipeline B.V. The Netherlands based joint venture of Russian Gazprom and Italian Eni. The Blue Stream Pipeline B.V. is an owner of the subsea section of pipeline, including Beregovaya compressor station, while Gazprom owns and operates the Russian land section of the pipeline and the Turkish land section is owned and operated by the Turkish energy company BOTAŞ. According to Gazprom the pipeline was built with the intent of diversifying Russian gas delivery routes to Turkey and avoiding third countries.[14]

[14] Blue Stream. Wikipedia. http://en.wikipedia.org/wiki/Blue_Stream

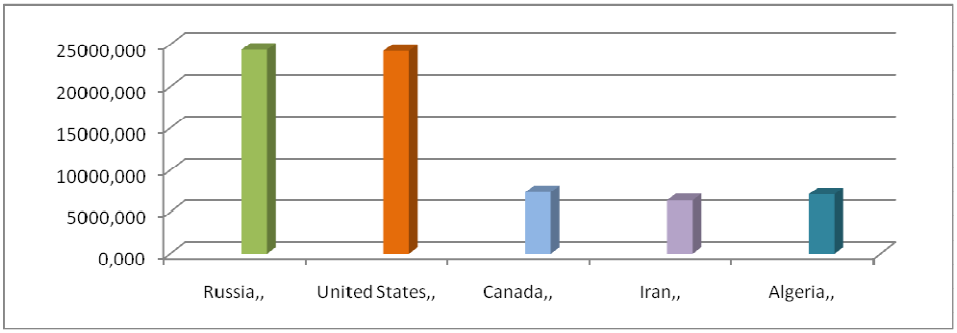
8.3 Natural Gas Production



Source: http://en.wikipedia.org/wiki/Natural Gas

Fig. 8-3 Allocation of Natural Gas

Table 8-2 Production of Natural Gas



Source: http://www.bloomberg.com

8.4 Natural Gas Future Contract Features

The size of the Natural Gas Future Contracts, which is traded in is New York Mercantile Exchange (NYMEX), is 10.000 MMbtu and its product code is NG. As in all of the future contracts, there is a level of initial and maintenance margin in natural gas future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the natural gas prices. While in June the amount of money to buy one natural gas future contract is 6.075 USD, the level of maintenance margin of the same contract is 4.500 USD. NYMEX natural gas contract is traded actively twelve months a year. The minimum price increment in natural gas contract is 10,00 USD. When an investor purchases a natural gas future at the level of 3,909 (long position) and if the level rises to 3,910 the investor will make a 10,00 USD profit but if the level drops to 3,908 the investor will lose 10,00 USD. Like all of the other commodity contracts, also in the gold contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 8-3 Characteristic of Natural Gas Future Contracts

Natural Gas Contract	
Exchange	NYMEX
Lot Size	10.000 MMBtu
Initial Margin	6.075 USD(1)
Maintanence Margin	4.500 USD(1)
Delivery Months	All Months
Commission (only for one contract)	10,47 USD
Point Value	10 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	NG

(1) Initial and Maintanence Margin can be changed by Exchange authority

8.5 Transaction In The Future Market

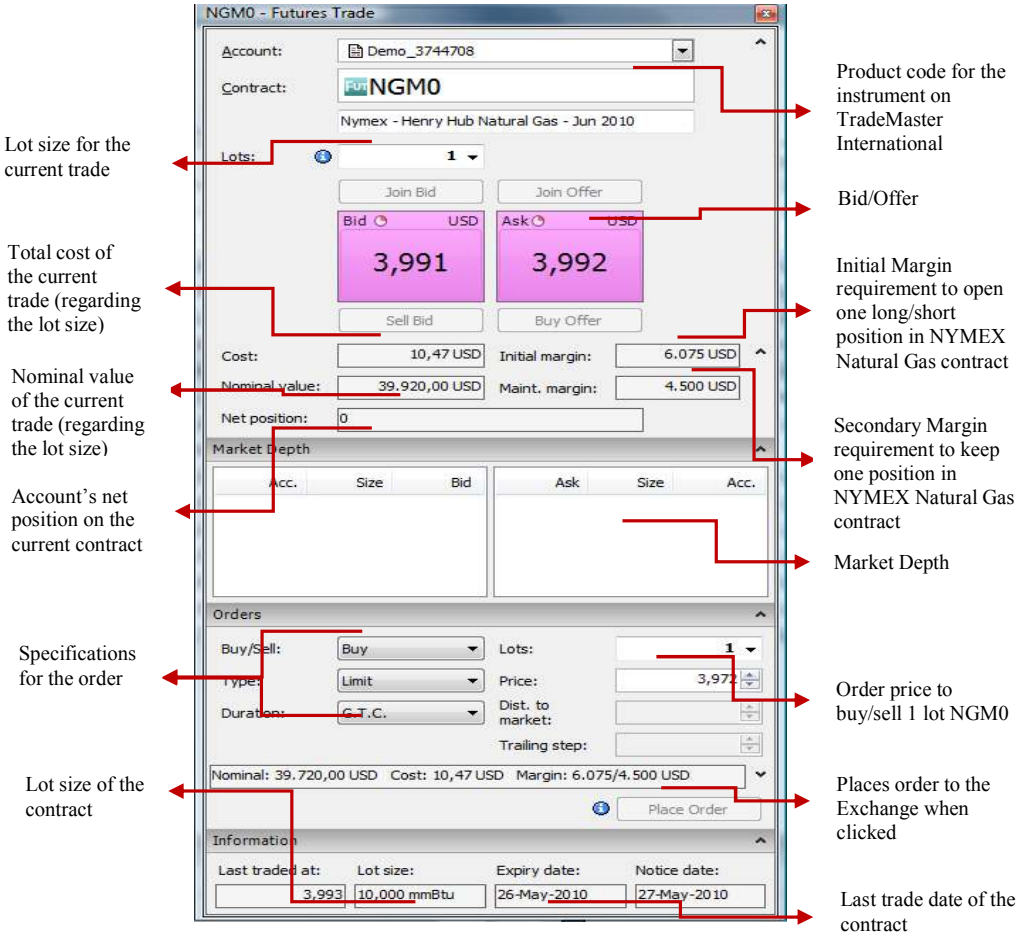


Fig. 8-4 International Buy Sell Screen For Natural Gas

Table 8-4 Explanation of Buy Sell Screen

Commodity	NGM0	June 2010 Natural Gas Futures Contract
Bid/Offer Price	3,991	3,992
Initial Margin	6.075	USD
Maintanence Margin	4.500	USD
Nominal Value	39.920,00	USD
Leverage	6,57	39.920/6.075
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	10.000 mmBtu	
Cost	Total cost of the current trade (regarding the lot size)	

9. SILVER CONTRACTS

Silver, an element with the symbol of "Ag" (Latin: *argentu*), has been known for ages but it was discoveres after the discovery of gold and copper. It was detected that silver was used by Egyptians, Chinese, and Persians between 3100 and 2500 B. C. It is the best heat and electric conductive metal besides it has been used in ornaments as it perfectly reflects the light, and can be easiyly forged. Pure silver is soft and has got a low resistance to the mechanical force. For this reasons it is used as compounds with other metals.[15]

Like the gold standart, there is also a standard currency system named as "silver standard" in which the basic currency is silver. In this standard if needed other currencies might be exchanged into silver without any restriction. Also it is possible to coin silver and import or export it freely. However, there is no country using the silver standard.

9.1 Features of the Silver

- It is the best heat and electric conductive but copper is preferred in electric lines for it is cheaper.
- It is the most flexible and easy-to-flatten metal after gold.
- It has been used in ornaments, kitchen utensils, and coins for its brightness and workability.
- Pure silver is soft and has got a low resistance to the mechanical force. For this reasons it is used as compounds with other metals.
- The silver prices generally rise in February and March with the increase of industrial production.
- The silver prices generally drop at the end of the spring and summer with the decrease of industrial production.

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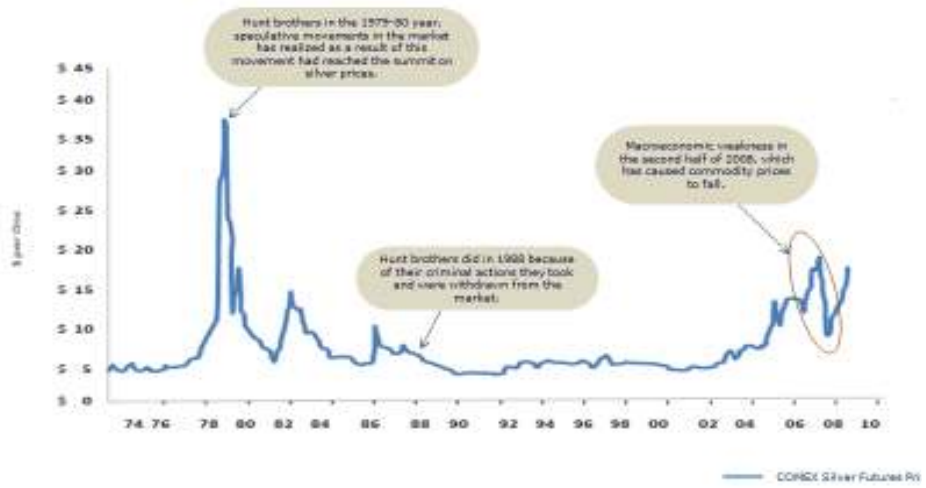
[15] Silver. Wikipedia. 15 September 2010. http://en.wikipedia.org/wiki/Silver.

9.2 Price Development of the Silver

Table 9-1 Historical Development of Silver



When we look at the reasons of the drops and rises in the silver prices that happened in the past the activities that Hunt brothers made on the markets seems to be the most obvious one. Especially the speculative activities that Hunt brothers conducted between 1978 -80 had risen the silver prices to the historic level of 37 dollars. After their speculative activities came to light Hunt brothers were punished and taken out of the markets, then the silver price dropped to 5 dollars and maintained in that level for a long time. The upward price movement that began in 2004 dropped down after the breakdown of general economical conjuncture in 2008; however, at the end of 2008 after the gradual relief of the global economies the prices has begun to rise again.[16]

[16] Silver Price History. Silver Price. http://silverprice.org/silver-price-history.html

We can say that the silver prices will continue to increase in the future periods for some reasons. These reasons can be explained as follows; the industrial development of the world will swiftly continue after the crisis, during this development the demand for silver will gradually rise, and the limited silver sources will contribute to this rise as well.

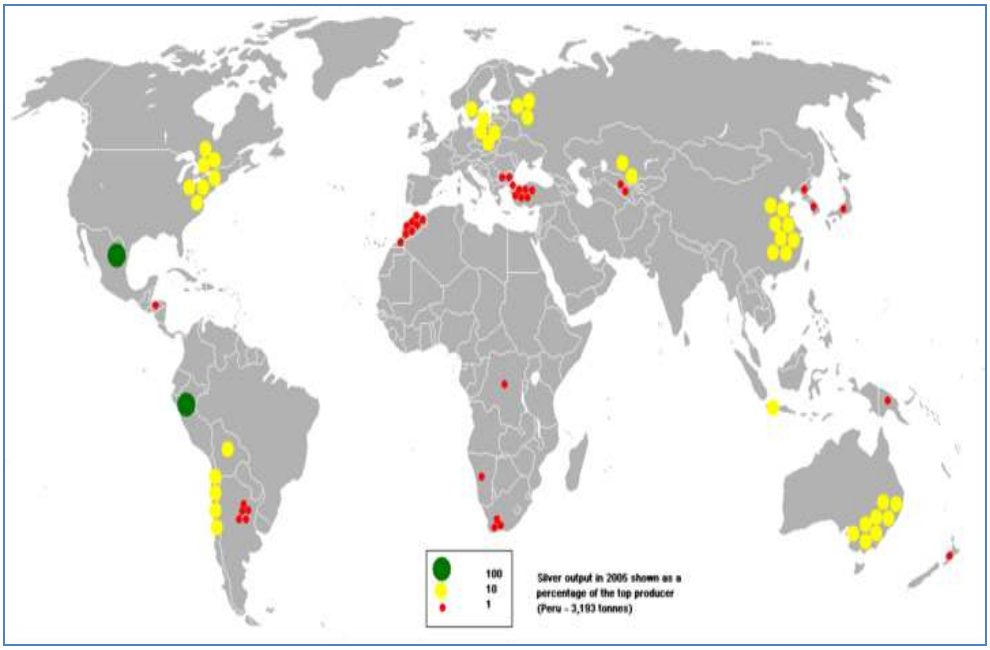
Global Silver Supply:*	***2000***	***2001***	***2002***	**2003**	**2004**	**2005**	**2006**	**2007**
Mine Production	582.2	589.2	585.9	595.6	634.4	641.6	646.1	670.6
Global Government Sales*	78.1	87.2	71.3	82.6	61.7	68.0	77.7	42.3
Old Silver Scrap	179.2	182.7	184.9	191.6	181.1	187.3	188.0	181.6
Total Supply	839.5	859.1	842.1	869.8	877.2	896.9	911.8	894.5
	=	=	=	=	=	=	=	=
Global Silver Demand:*	***2000***	***2001***	***2002***	**2003**	**2004**	**2005**	**2006**	**2007**
Industrial Applications	377.1	338.1	342.4	351.2	367.1	409.3	430.0	455.3
Photography	219.5	213.9	205.3	196.1	181.0	164.8	145.8	128.3
Jewelry & Silverware	281.4	286.0	259.2	276.7	247.5	249.6	224.9	222.2
Coins & Medals	29.8	30.5	31.3	35.3	41.1	40.6	39.8	37.8
Total Demand	907.8	868.5	838.2	859.3	836.7	864.4	840.5	843.7

Source: http://www.technicalindicators.com/silver.htm

Fig. 9-1 Global Silver Supply

As the table above shows one the main reasons why silver prices could not make sharp rises between 2000-2007 was that the demand and supply levels were almost equal. While in 2007 894.5 metric tons of silver were produced, the demand for silver was 843.7 metric tons. Nevertheless if we look with a wider perspective we see that between 2007 – 2009 silver production has increased but the demand has decreased.

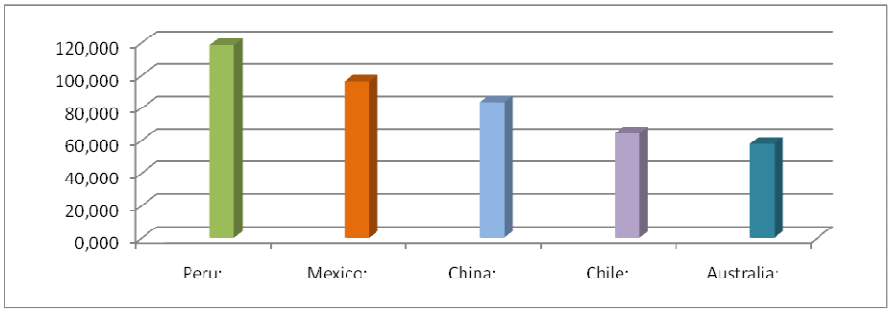
9.3 Silver Production



Source: http://en.wikipedia.org/wiki/Silver

Fig. 9-2 Allocation of Silver

Table 9-2 Production of Silver



Source: http://www.bloomberg.com

9.4 Silver Future Contract Features

The size of the Silver Future Contracts, which is traded in is Chicago Mercantile Exchange (CME), is 5000 Troy oz and its product code is SI. 5000 Troy ounces is equal to 155,5 kilograms. (100 Troy oz: 3,11 kg) As in all of the future contracts, there is a level of initial and maintenance margin in silver future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the gold prices. While in July the amount of money to buy one silver future contract is 5.738 USD, the level of maintenance margin of the same contract is 4.250 USD. The silver contract is traded in March, May, July, September, and December. The minimum price increment in future contract is 25 USD. When an investor purchases a silver contract at the level of 1.738,5 (long position) and if the level rises to 1.739 the investor will make a 25 USD profit but if the level drops to 1.1738 the investor will lose 25 USD. Like all of the other commodity contracts, also in the silver contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 9-3 Characteristic of Silver Future Contracts

Silver Contract	
Exchange	CME/GLOBEX
Lot Size	5.000 Troy Oz(2)
Initial Margin	5.738 USD(1)
Maintanence Margin	4.250 USD(1)
Delivery Months	Mar/May/Jul/Sep/Dec
Commission (only for one contract)	10,47 USD
Point Value	25,00 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	SI

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 100 Troy Oz = 3,11 kg

9.5 Transaction In The Future Market

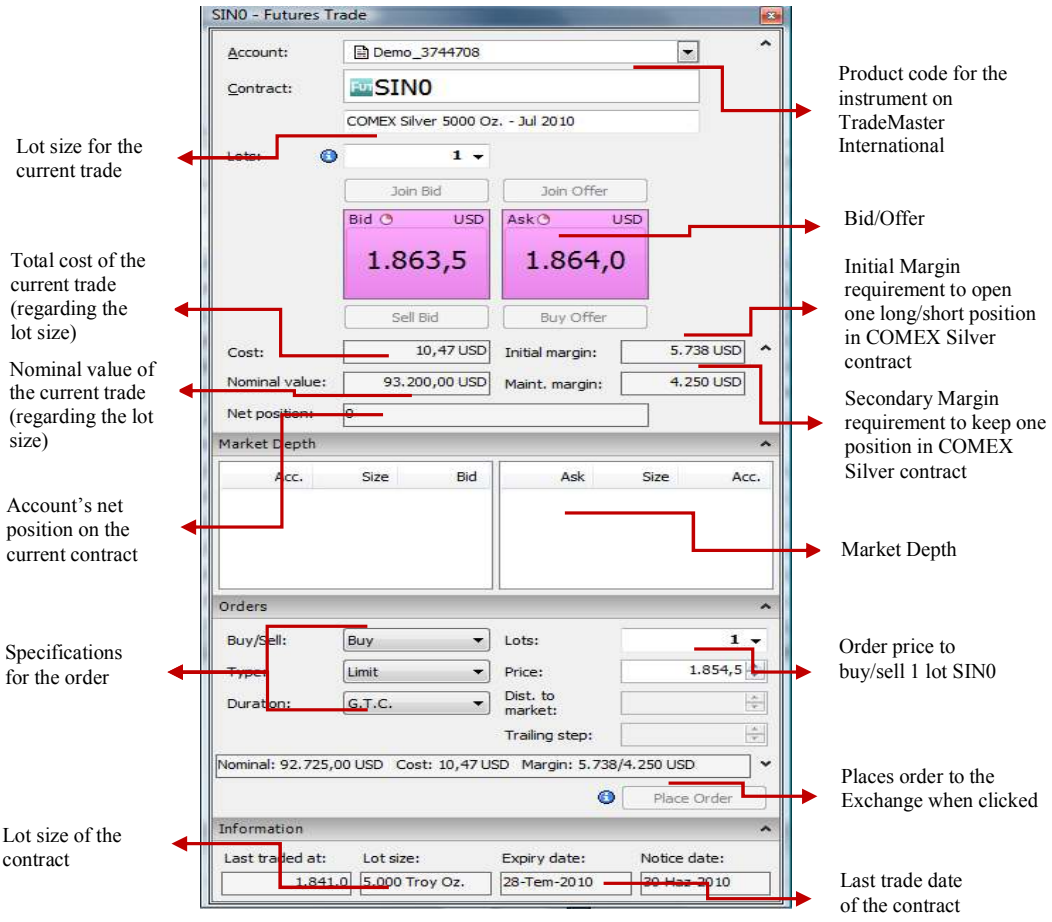


Fig. 0-3 International Buy Sell Screen For Silver

Table 9-4 Explanation of Buy Sell Screen

Commodity	SIN0	July 2010 Silver Futures Contract
Bid/Offer Price	1.863,5	1.864
Initial Margin	5.738	USD
Maintanence Margin	4.250	USD
Nominal Value	93.200,00	USD
Leverage	16,24	93.200,00/5.738
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	5.000 Troy oz.	
Cost	Total cost of the current trade (regarding the lot size)	

10.COFFEE CONTRACTS

Coffee is obtained from the milled and roasted seeds of a Coffee tree which belongs to the madder (Rubiaceae) family. Coffee, the homeland of which is Ethiopia, was first used as a medicine and named as "magical fruit". Coffee plant grows in Ecuador area where there is a lot of rain, no frost events, and the average temperatures are between 18-24°C. Despite the fact that there are many different coffee plant types in nature only "Coffee Arabica" and "Coffee Robusta" are cultivated. Coffee, which was introduced to Europe by Turks, is most widely produced in South America.[17]

10.1 Features of the Coffee

- Coffee is a tropical product that grows in the zone between 25th north and 30th south parallels.
- Coffee plant is a type of plants that constantly grows fruits for 30 – 40 years 3 years after it is planted.
- Its homeland is Ethiopia.
- Although there are many different coffee plant types in nature, only "Coffee Arabica" and "Coffee Robusta" are cultivated.
- The harsh weather conditions in South America, where coffee is most widely produced causes the rise of the coffee prices for it is negatively affected by cold weather.
- Recent studies point out that coffee offers some protection for the cancer, diabetics, and Parkinson disease.

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[17] Coffee. Wikipedia. 15 September 2010. http://en.wikipedia.org/wiki/Coffee.

10.2 Price Development Of The Coffee

Table 10-1 Historical Development of Coffee

When we look at the reasons of the drops and rises in the coffee prices that happened in the past we see that the natural events, which is also one of the main factors that affect the commodity markets, is very effective. The natural events that occur in Brazil has become more important for it is the biggest coffee producer and in a position of monopoly. The reasons of the sharp drops that happened between 1976, 1987 and 1995 were the drought and frost occurred in this country. Two different types of coffee plant is cultivated in the world. These are; the "Coffee Arabica" and "Coffee Robusta". Although they are not exactly in equivalence the sharp drops and rises of one of them affects the price of the other. [18]

[18] Commodity Investing Max. returns through Fundamental Analysis, (New Jersey: Wiley & Sons, 2008), pp.194-95.

Most of the coffee production is obtained from the Coffee Arabica which is also named as high quality coffee. The biggest producer is Brazil. The other coffee type named as Coffee Robusta which has a high level of caffeine is bitterer and less preferred. The biggest producer of Coffee Robusta is Vietnam.[19]

The allocation of the cultivated areas of Brazil – both being the biggest producer and having the most proper weather conditions for coffee plant- for different commodity products has resulted in a gradual drop in coffee supply and this caused the rise of the prices. Although there has been an expectation of drop in coffee prices because of the assumption that people will go to café less frequently and consume less coffee, the coffee prices, contrary to what is believed, rose for the coffee supply gradually decreased.

---

[19] The Story Of Coffee . International Coffee Organization. http://www.ico.org/

The graphic below demonstrates the amount of total production of the coffee producer countries between the years 2004-2009. Despite the fact that Brazil's coffee production was 45.992.000 bags, in 2009 this number decreased to 39.470.000 bags. Similarly in Vietnam the amount of production between the same years decreased from 18.500.000 bags to 18.000.000.

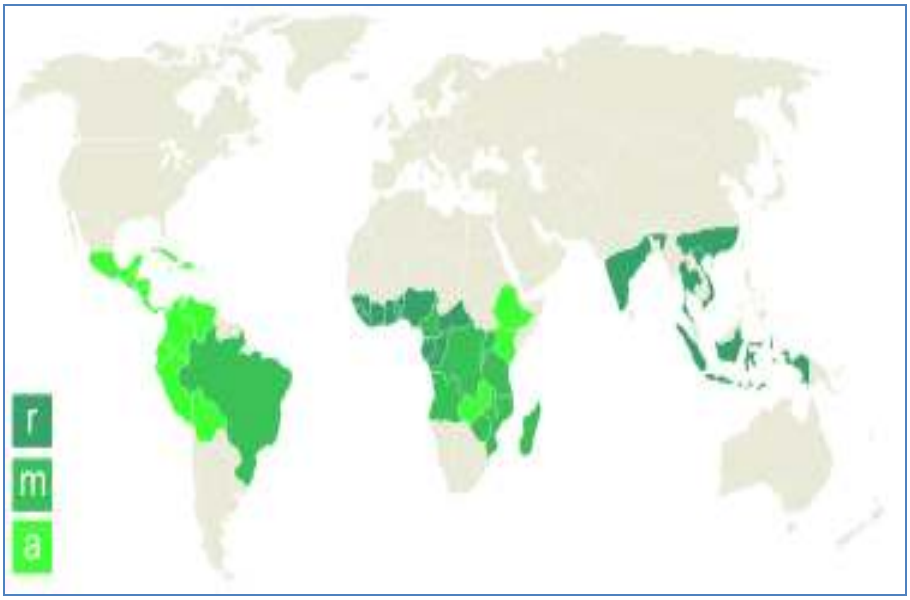
TOTAL PRODUCTION OF EXPORTING COUNTRIES
CROP YEARS COMMENCING: 2004 TO 2009

(000 bags)

		2004	2005	2006	2007	2008
WORLD PRODUCTION		116 062	111 463	129 138	119 396	128 183
TOTAL		115 454	110 950	128 487	118 769	127 495
Angola	(R)	15	25	35	36	38
Benin	(R)	0	0	0	0	0
Bolivia	(A)	165	135	157	139	136
Brazil	(A/R)	39 272	32 944	42 512	36 070	45 992
Burundi	(A)	437	285	387	209	388
Cameroon	(R/A)	727	849	836	795	750
Central African Republic	(R)	45	39	87	70	80
Colombia	(A)	11 573	12 564	12 541	12 504	8 664
Congo, Dem. Rep. of	(R/A)	360	336	378	416	400
Congo, Rep. of	(R)	3	3	3	3	3
Costa Rica	(A)	1 887	1 778	1 580	1 791	1 320
Côte d'Ivoire	(R)	2 301	1 962	2 847	2 598	2 353

Fig. 10-1 Total Production of Exporting Countries

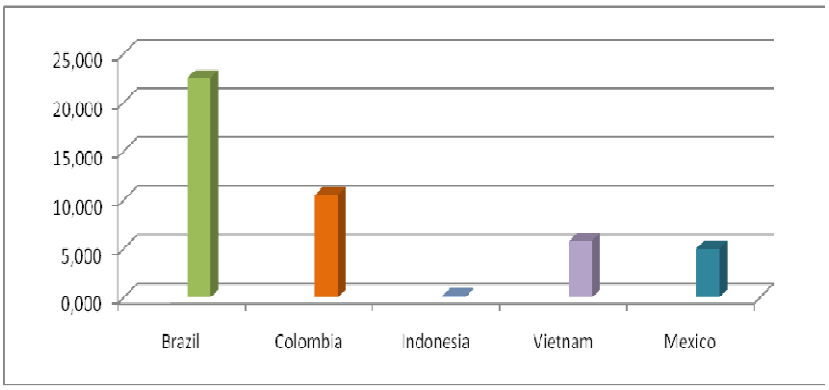
10.3 Coffee Production



Source: http://en.wikipedia.org/wiki/Coffee

Fig. 10-2 Allocation of Coffee

Table 10-2 Production of Coffee



Source: http://www.bloomberg.com

10.4 Coffee Future Contract Features

The size of the Silver Future Contracts, which is traded in is New York Board of Trade (NYBOT), is 37.500 LBS and its product code is KC. 37.500 LBS is equal to 17.006 kilograms. (1 LBS: 0, 4535 kg) As in all of the future contracts, there is a level of initial and maintenance margin in coffee future contracts. This margin is determined by the respective future market and changes in different periods of time depending on activities of the coffee prices. While in July the amount of money to buy one coffee future contract is 2.520 USD, the level of maintenance margin of the same contract is 1.800 USD. The coffee contract is traded in January, March, May, July, September, and December. The minimum price increment in coffee future contract is 18,75 USD. When an investor purchases a coffee contract at the level of 134.25 (long position) and if the level rises to 134.30 the investor will make a 18,75 USD profit but if the level drops to 134 the investor will lose 18,75 USD. Like all of the other commodity contracts, also in the coffee contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 10-3 Characteristic of Coffee Future Contracts

Coffee Contract	
Exchange	ICE_NYBOT
Lot Size	37.500 LBS(2)
Initial Margin	2.520 USD(1)
Maintanence Margin	1.800 USD(1)
Delivery Months	Jan/Mar/May/Jul/Sep/Nov
Commission (only for one contract)	10,52 USD
Point Value	18,75 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	KC

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 1 LBS = 0.4535 kg

10.5 Transaction In The Future Market

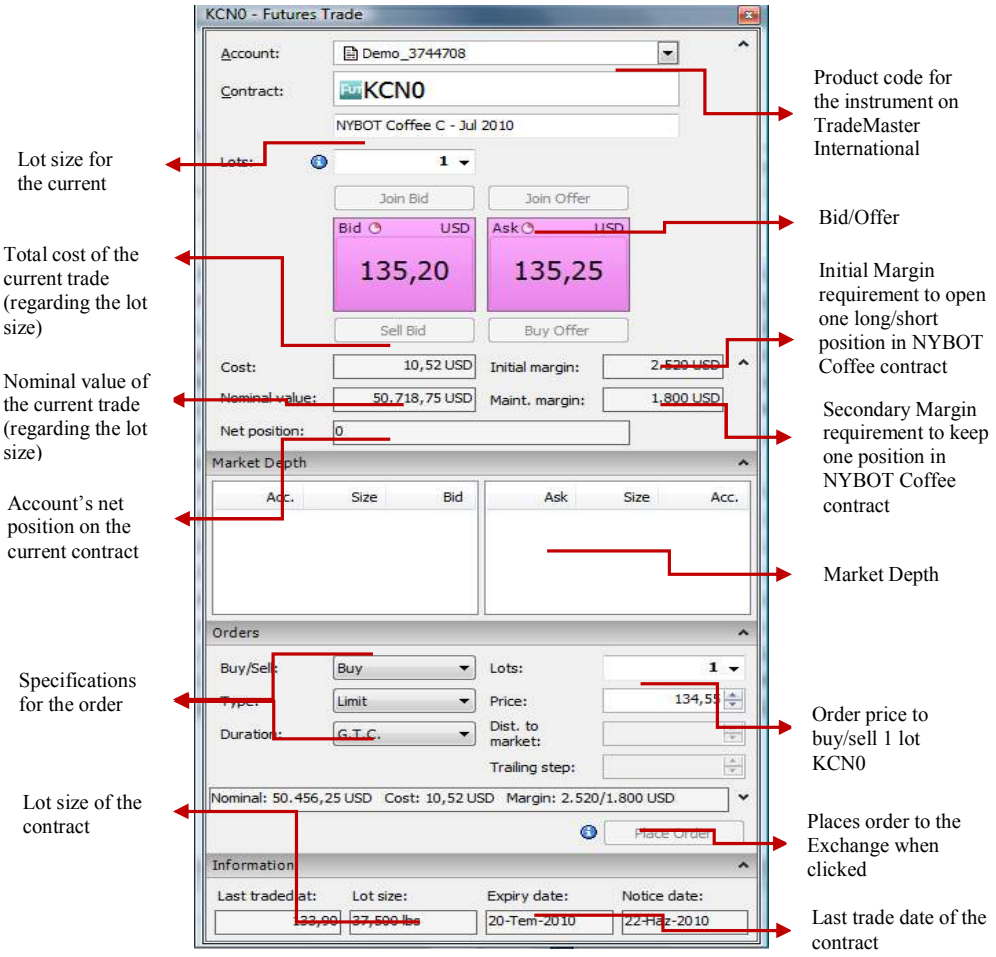


Fig.10-3 International Buy Sell Screen for Coffee

Table 10-4 Explanation of Buy Sell Screen

Commodity	KCN0	July 2010 Coffe Futures Contract
Bid/Offer Price	135,20	135,25
Initial Margin	2.520	USD
Maintanence Margin	1.800	USD
Nominal Value	50.718,75	USD
Leverage	20,12	50.718,75/2.520
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	37,500 LBS	
Cost	Total cost of the current trade (regarding the lot size)	

11.COCOA CONTRACTS

It is known that Cocoa, which is a 4–8 m tall plant in the family of Sterculiaceae (Malvaceae), was first cultivated by Mayans. Cocoa -first introduced to Europe in 17th century by the Spanish and spread to the world from there- has an important role in Mayan mythology and is used in various festivals.

Although cocoa is native to South America, generally it can also be cultivated in tropical climates. Cocoa has got a cultivation area of 70 thousand kilometer-square, and it likes the fertile soils which have mild climates, and get regular rains.

Basically it is used in the chocolate production, and the alternative consumption areas of cocoa are drinks, cosmetics, and soap production. [20]

11.1 Features of the Cocoa

- It is cultivated in most of the tropical areas that have mild climates, and get regular rains
- Harsh weather conditions affect the cocoa production negatively.
- Although is primarily used in chocolate production it is also used in cosmetics industry and pharmacy.
- A cocoa tree can bear for maximum ten years.
- A tree begins to bear when it is four or five years old. Every pod has 20 to 50 seeds of cocoa.
- The harvest is in September and October. This period concerning the possible harvest expectations is generally the period in which the prices are lowest.
- The prices might rise in November and December due to the fear of late harvests and possible blights.

[20] Cocoa. Wikipedia. 5 June 2010. http://en.wikipedia.org/wiki/Cocoa.

11.2 Price Development Of The Cocoa

Table 11-1 Historical Development of Cocoa

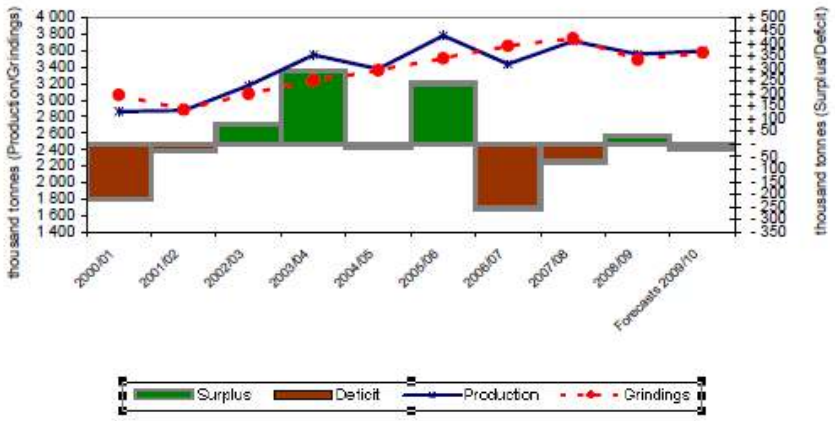
When we look at the reasons of the drops and rises in the cocoa prices that happened in the past we see that the economical conjuncture, natural events, and government policies, which are also the main factors that affect the commodity markets, are very dominant. The fact that the majority of the cocoa production is supplied by Ivory Coast and Ghana makes the natural events and political disturbances that occur in these countries, more important. Because of the blight that occurred in 1977 in Ghana, the biggest cocoa producer, cocoa prices rose to historic levels. After this date Ivory Coast became the biggest producer. When we examine the development of the cocoa prices after 1999 we see that the military coup and the riots that took place during the presidential elections had effects on the prices. When the rebellion, that a sect in the army started, put the country in a deep political crises clashes had occurred and the cocoa shipping in export ports was stopped thus the prices began to increase.

The rise in food demand that happened in 2009 after the global crisis was overcome, the negative weather conditions (the dry and sandy winds coming

from Sahara, the fear of the effects of El Nino), the decrease in stockpiles of the chocolate producers, and the rising demand had caused the huge rises in cocoa prices. [21]

World cocoa bean production, grindings and stocks

Crop Year (Oct-Sep)	Gross crop		Grindings		Surplus/ deficit	Total end-of-season stocks	Stocks to grindings ratio
	in thousand tonnes						
		(Year on year change)		(Year on year change)			(Percent)
2000/01	2 865	-6.9%	3 065	3.5%	- 220	1 344	43.9
2001/02	2 877	0.4%	2 886	-5.8%	- 29	1 315	45.6
2002/03	3 179	10.5%	3 078	6.7%	+ 79	1 394	45.3
2003/04	3 551	11.7%	3 238	5.2%	+ 288	1 682	51.9
2004/05	3 381	-4.8%	3 363	3.9%	- 16	1 666	49.5
2005/06	3 786	12.0%	3 508	4.3%	+ 240	1 906	54.3
2006/07	3 439	-9.2%	3 661	4.4%	- 256	1 650	45.1
2007/08	3 718	8.1%	3 752	2.5%	- 71	1 579	42.1
2008/09	3 560	-4.2%	3 492	-6.9%	+ 32	1 611	46.1
Forecasts							
2009/10	3 597	1.0%	3 579	2.5%	- 18	1 593	44.5



Source: ICCO Quarterly Bulletin of Cocoa Statistics, Vol. XXXVI, No.1, Cocoa year 2009/2010

Published: 03-03-2010

Fig. 11-1 World Cocoa Bean Production

[21] Commodity Investing Max. returns through Fundamental Analysis, (New Jersey: Wiley & Sons, 2008), pp.210-12.

The graphic above shows the cocoa production, and the necessity and surplus of cocoa between the years 2000 – 2009. Despite the fact that there had been a necessity in 2000-2001 because of the low production, a cocoa surplus occurred especially after the increase in production between the years 2002-2005.

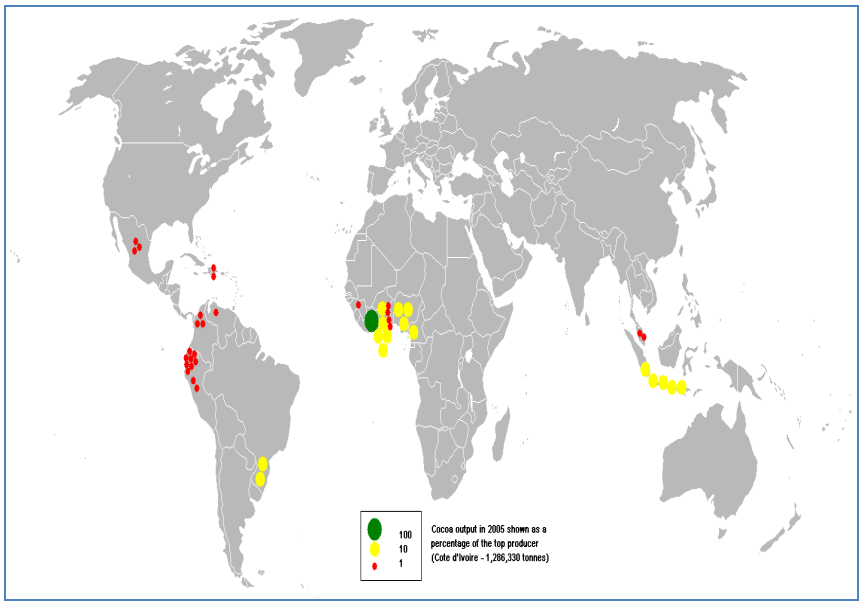
ESTIMATES OF EUROPEAN WAREHOUSE STOCKS OF COCOA BEANS

Location	30 September 2006 a/	30 September 2007 a/	Year-on-year change	
	(tonnes)			
Belgium	373,703	308,451	-65,252	-17.5%
Estonia	66,724	54,553	-12,171	-18.2%
France	41,038	37,387	-3,651	-8.9%
Germany	114,118	105,992	-8,126	-7.1%
Italy	21,882	20,545	-1,337	-6.1%
Netherlands	564,293	565,940	1,647	0.3%
United Kingdom	92,345	76,085	-16,260	-17.6%
Others (Ireland – Latvia – Poland - Spain)	8,980	7,477	-1,503	-16.7%
Total European port-warehouse stocks b/	**1,283,083**	**1,176,430**	**-106,653**	**-8.3%**

Fig. 11-2 Estimates of European Warehouse Stocks of Cocoa Beans

The graphic above shows the development of cocoa seed stockpiles of European Union countries between the years 2006-2007. While the amount of cocoa stockpile in Belgium in 2007 was 373.000 tones, it decreased to 308.451 in 2007. When we examine the countries' total stockpiles we see that the amount in 2006 was 1,283,083; however, in 2007 it decreased %8,3 and dropped to the level of 1,176,430. When we compare this graphic to the previous one we can state that the production between the years 2006-2007 decreased %9, 2 and this caused the decrease in stockpiles. The majority of the cocoa production is supplied by Ivory Coast and Ghana. These countries are followed by Indonesia, Cameroon, and Nigeria.

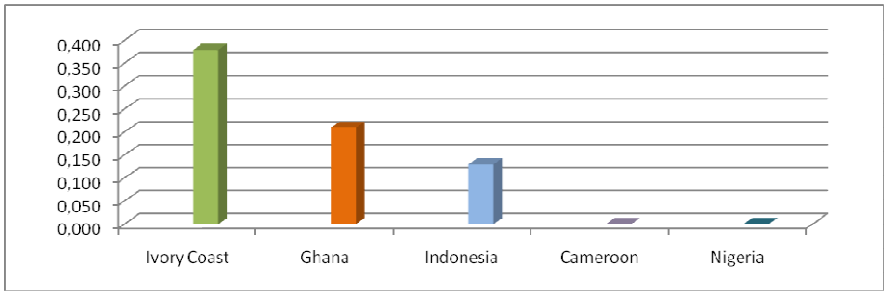
11.3 Cocoa Production



Source: http://en.wikipedia.org/wiki/Cocoa

Fig. 11-3 Allocation of Cocoa

Table 11-2 Production of Cocoa



Source: http://www.bloomberg.com

11.4 Cocoa Future Contract Features

The size of the Cocoa Future Contracts, which is traded New York Board of Trade (NYBOT) future market, is 10 Metric tones and its product code is CC. 10 Metric tones is equal to 10 kilograms. (1 Metric Ton: 1000 kg) As in all of the future contracts, there is a level of initial and maintenance margin in cocoa future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the cocoa prices. While in May the amount of money to buy one cocoa future contract is 1.960 USD, the level of maintenance margin of the same contract is 1.400 USD. The NYBOT cocoa contract is traded in March, May, July, September, and December. Like all of the other commodity contracts, also in the cocoa contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 11-3 Characteristic of Cocoa Future Contracts

Cocoa Contract	
Exchange	ICE_NYBOT
Lot Size	10 METRIC TON(2)
Initial Margin	1.960 USD(1)
Maintanence Margin	1.400 USD(1)
Delivery Months	Mar/May/Jul/Sep/Dec
Commission (only for one contract)	10,52 USD
Point Value	10 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	CC

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 1 Metric Ton = 1000 kg

11.5 Transaction In The Future Market

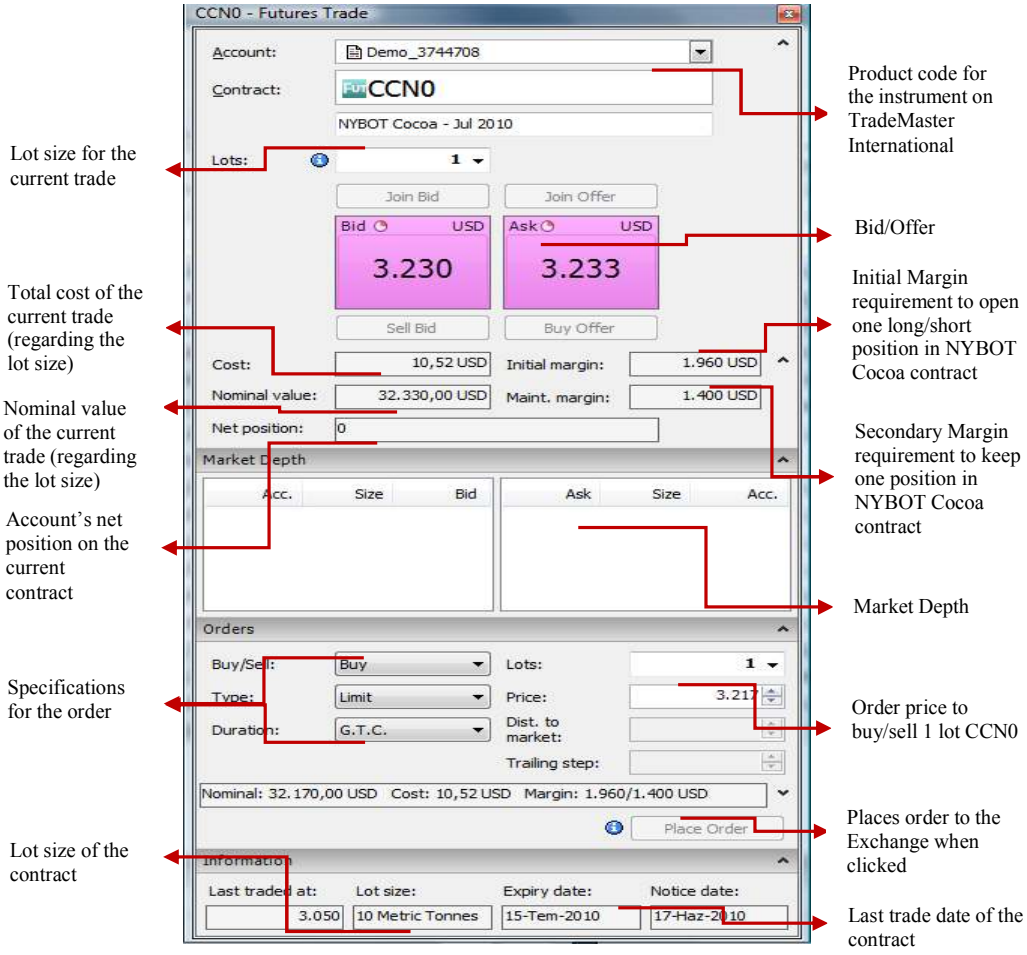


Fig. 11-4 International Buy Sell Screen For Cocoa

Table 11-4 Explanation of Buy Sell Screen

Commodity	CCN0	July 2010 Cocoa Futures Contract
Bid/Offer Price	3.230	3.233
Initial Margin	1.960	USD
Maintanence Margin	1.400	USD
Nominal Value	32.330,00	USD
Leverage	16,49	32.330/1.960
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	10 Metric Tonnes	
Cost	Total cost of the current trade (regarding the lot size)	

12.CORN CONTRACTS

Corn (Latin: Zea mays) is a plant that can generally be cultivated in humid climates. Although it has the third biggest cultivation area after wheat and rice, it is the most produced crop in the world. The hybrid production of corn native to Mesoamerica, was first domesticated in after the soil improvement studies in America and was introduced to Europe, South America, Africa, and Australia in the 19th century. Corn, mostly used as animal feed, and is also used directly as food and raw material in industrial production. Corn is most commonly used as raw material in sugar, syrup, amyl, beer, oil, industrial alcohol, and whiskey production. In our country the most proper climate for corn production is in Black Sea Region; however, it is not common for the profit rate of corn is low. [22]

12.1 Features of the Corn

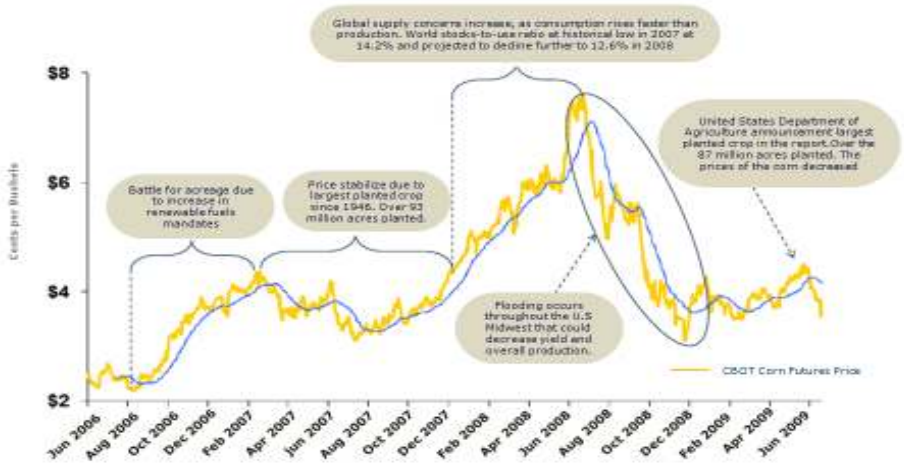
Corn, a humid climate plant, prefers warm weathers in growing period.

- Corn, having no soil preference, can be cultivated successfully in all types of soil if the soil is worked in time, and supplied with necessary nutrients
- Corn is generally planted in June and harvested in September.
- Corn is used as animal feed, food and raw material in industrial production and its silk is used in medical industry.
- The corn that will be stored should be dried before storing for it is very important in terms of health.

[22] Corn. Wikipedia. 15 September 2010. http://en.wikipedia.org/wiki/Corn

12.2 Price Development of the Corn

Table 12-1 Historical Development of Corn



When we look at the main reasons of the fluctuation in the corn prices we see that the technological developments, and government policies which are also the main factors that affect the commodity markets, are more effective. For example; the basic reason of the rise in corn prices between the years 2006-2007 is regarded to be the studies that try to produce ethanol, a renewable energy source, from corn. Renewable energy is also called as green energy as it is eco-friendly. Green energy is a term used to describe the renewable energy sources such as; sun, wind, and geothermal. These eco-friendly sources are very good alternatives for the classical electric producer sources such as, coal, nuclear energy, natural gas, and oil. Today electricity is mostly obtained from coal. Although it is a very cheap energy source it pollutes the environment a lot. The waste gases that contain sulfur dioxide and nitrous-oxide combine with air and causes acid rains and global warming. [23]

[23] Corn Futures. CME Group. http://www.cmegroup.com/trading/agricultural/grain-and-oilseed/corn.html

In 2006 Soros companies announced that they will begin to construct a facility that will produce ethanol from corn. It is planned to get 2.000.000 m3 ethanol from 50 million

tones corn produced in 50.000 hectares. Similar enterprises are planned to be established in Argentina. According to Soros, Brazil can increase its ethanol production ten times. However further production should base on demand for the Brazilian market is surplussed by ethanol. This depends on the reduction in customs debts that the USA, Japan, and European countries enforce on ethanol. Today the USA collects 54 cents and Europe collects 19 cents per gallons of ethanol imported from Brazil. Also, according to Soros the interest rates and its overrated currency prevent the investors and their export opportunities. Brazil has the biggest interest rate (%12,5) in Latin America countries. In the last three years Brazil Real has gained %65 value. On the other hand the fact that the price of sugar -with the increasing demand- has dropped %44 in the last 12 months, hinders the investments in this area. Despite all these negative aspects why do Soros invest 900 million to ethanol business?

Brazil is the second biggest ethanol producer in the world after the USA. While in the USA ethanol is obtained from corn, in Brazil it is obtained from sugarcane. It is also known that the ethanol obtained from sugarcane has a better quality. The USA has decided to support an energy policy based on ethanol which is obtained from corn in order to reduce its dependency on oil (%60 of the need). Although the corn producers and ethanol refinery owners greets this solution with enthusiasm, there are rising voices that this method is an expensive and dangerous attempt.

United States senate is about to enact a law predicting to increase the existing ethanol production rate to 7.5 billion gallons by 2012 that will meet %5 of the fuel demand. In addition to that the inland production is protected by collecting 54 cents tax for per gallon of imported ethanol. In the OAS meeting that was held in June 3rd 2007 there have been some arguments about the alternative fuel choices. The USA and Brazil, the two big ethanol producers of

the world, faced the oppositions of Venezuela and Cuba, the sixth largest oil reserve owners of the world. In this meeting, the USA Ministry of Foreign Affairs claimed that ethanol both protects the environment and is an energy source that supports the economical growth. That the world corn prices rose because America obtained the ethanol from corn, has forced President of Mexico, a conservative politician, to be in the same front with leftist Chavez and Castro. Because the increasing corn prices made tortilla, which is the staple food of Mexican villagers, more and more expensive.

In March Bush, the president of the USA, and Luna, the president of Brazil, agreed on the encouragement of ethanol production. Inter-American Development Bank and OAS played an important role in this agreement. On the other hand the number of people, who claimed that the encouragement of bio fuel without considering how the next generations' food needs will be supplied, was increasing. President Bush aims at supplying %15 of the fuel need with bio fuel in the next ten years. This requires that the bio fuel consumption will approximately increase to 35 billion gallons. Because there is not a more proper method for the production of bio fuel, the projected fuel amount should be obtained from corn. However it is obvious that the agriculture of US will not be able to supply this demand, therefore a rise in corn and food prices and the import of ethanol is inevitable.[24]

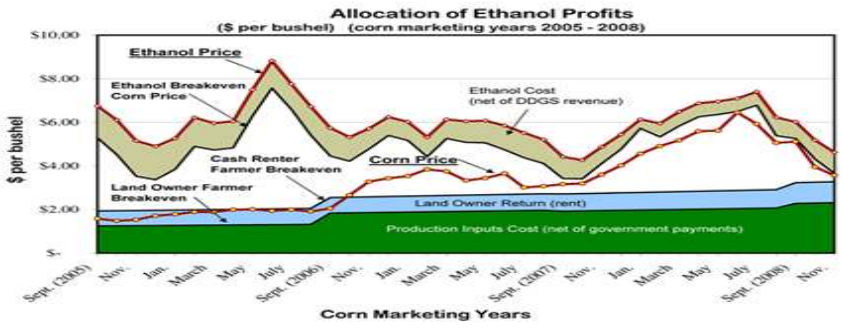


Fig. 12-1 Allocation of Ethanol Profits

[24] Avery, Denis. Competitive Enterprise Institute Biofuels, Food, or Wildlife? The Massive Land Costs of U.S. Ethanol. 21 September 2006. http://cei.org/pdf/5532.pdf.

The emergence of the ethanol industry has generated substantial profits for individuals involved in ethanol and corn production. However, different sectors of the industry benefit at different times. Outlined below are the beneficiaries and when they benefit. To understand how returns are allocated, it is important to understand the role of prices. The ethanol price is the major factor determining the total amount of revenue to be divided among the participants in the corn-ethanol industry. The corn price determines how this revenue is allocated between the ethanol producer and the corn farmer. The price of seed, fertilizer, etc. and the cropland cash rental rate (essentially a price) determine how the revenue received by the corn farmer is divided among the farm operator, the input supplier and the land owner. Another important concept is that, over time, profits (losses) accrue to the limiting resource in the production chain. This can be seen when we trace how the profits of the ethanol industry have been allocated so far and how the profits are expected to be allocated in the future.

Ethanol Price -- Ethanol revenue is the ethanol price received by the ethanol producer. It is shown as dollars per bushel of corn ($ per gal. times 2.8 gal. per bu. equals $ per bu. of corn).

Ethanol Production Costs (net of DDGS revenue) – This amount includes all ethanol production costs except corn. Because an ethanol facility also produces DDGS (distillers dried grains with soluble), the sale value of the co-product is deduced from the cost to create a net cost. This net cost is subtracted from the Ethanol Price (above) to compute the Ethanol Breakeven Corn Purchase Price (below).

Ethanol Breakeven Corn Purchase Price – The breakeven purchase price is the maximum price that the ethanol producer can pay for corn and still breakeven. Paying less (more) for corn will generate profits (losses) for the ethanol producer (farmer).

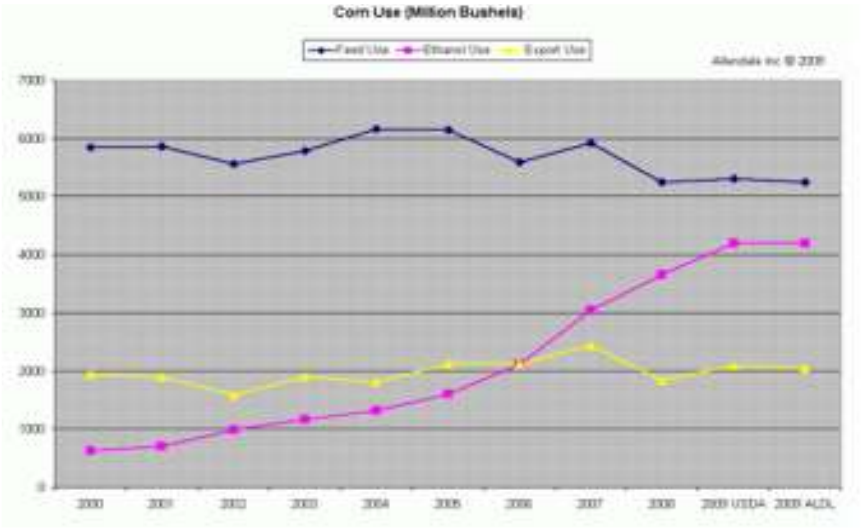
Corn Price – This is the price ethanol producers pay for corn and farmers receive for corn.

Landowner Farmer Corn Price Breakeven – This is the breakeven corn selling price for farmers who own their land (debt free). Selling for a higher (lower) price than the breakeven generates profits (losses) for the farmer.

Corn Production Input Costs (net of government payments) -- This amount is computed by adding the cost of production inputs, machinery and labor paid by farmers and subtracting the government payments received by farmers.

Renter Farmer Corn Price Breakeven – This is the breakeven corn price (minimum selling price) for farmers who cash rent their land. Selling for a higher (lower) price than the breakeven generates profits (losses) for the farmer. The breakeven is computed by adding the cost of cash rent to the breakeven for the landowner farmer.

Landowner Return – This is the cash rent landowners receive for renting their land to tenant farmers.



Source: http://www.commoditynewscenter.com/articles/Insight/Ethanol_Mandate_vs._Corn_Pricing

Fig. 12-2 Corn Use

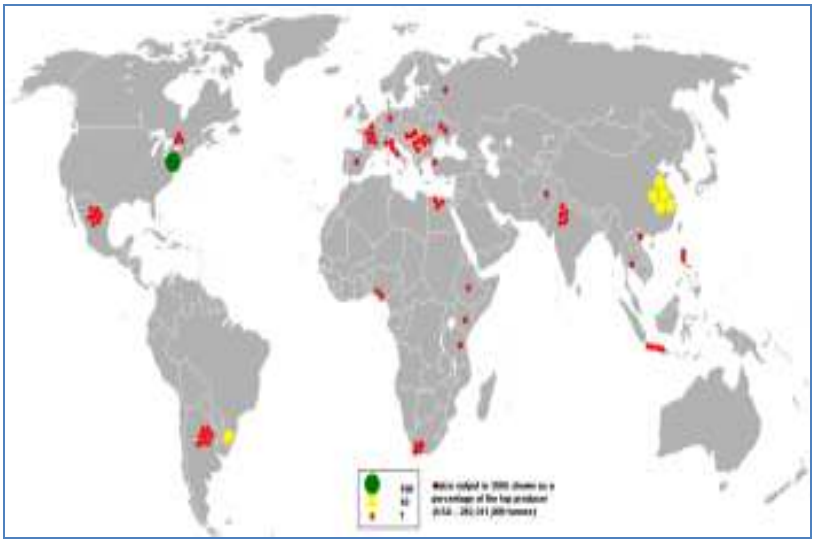
At a time when the trade is questioning USDA's 2009/10 prospective demand for US corn, especially in the feed use column, it is refreshing to note the continued upward demand for corn for ethanol. According to the Energy Independence and Security Act of 2007, the United States is expected to manufacture 12 billion gallons of ethanol for calendar year 2010, or 14.3% more than a year earlier requirement of 10.5 billion gallons in calendar year 2009.

As you are able to view the trend increase for corn use for ethanol continues to be impressive vs. feed use and equally important the US export campaign. USDA is calculating corn used for ethanol for the 2009/10 marketing year at 4.2 billion bushels vs Allendale Inc's estimated use of 4.17 billion bushels, well above 2008/09's corn use for ethanol of 3.65 billion bushels. This increased potential use for corn based ethanol continues to create greater distance from the corn used for exports since 2006 when demand for both fuel and exports were very near parity.

Two points to consider as to relevance of corn use for ethanol is number one, how the market share has grown from 6.3% of annual production in the year 2000 to a projected 2009/10 level of 41.7%. Secondly the projected use of corn for ethanol is expected to peak by the year 2015 by consuming 5.3 billion bushels, and may potentially draw closer to corn for feed use. It may be interesting to note within the June 2006 USDA "Amber Waves" publication, USDA was alluding to the prospects of as demand for US corn was anticipated to increase for ethanol and the US was emphatic it would also make sure US domestic demand was paramount by making certain there were sufficient supplies for feed use, those which may come up on the short end would be our less than loyal foreign demand customers. An interesting comment by USDA, but in 2007 when a number of North American wheat producing power house

countries and Australia had weather related disasters, the world market placed increased demand on corn to make up for the wheat short fall despite a reasonably healthy US dollar. The increased year on year corn demand in 2007 for fuel, feed and exports was a precursor to some very exciting times

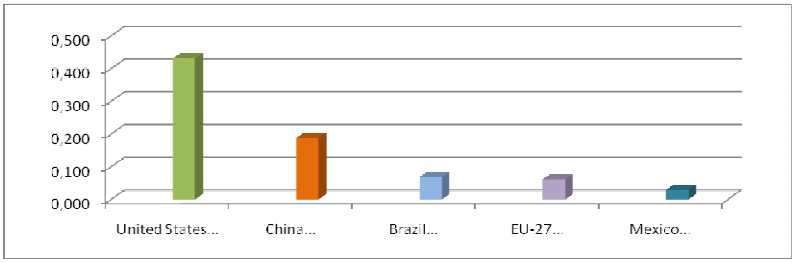
12.3 Corn Production



Source: http://en.wikipedia.org/wiki/Corn

Fig. 12-3 Allocation of Corn

Table 12-2 Production of Corn



Source: http://www.bloomberg.com

12.4 Corn Future Contract Features

The size of the Corn Future Contracts, which is traded in is Chicago Mercantile Exchange (CME) future market, is 5000 Bushels and its product code is ZC. 5.000 Bushels is equal to 2.267 kilograms. (1 Bushels: 0, 4535 kg) As in all of the future contracts, there is a level of initial and maintenance margin in corn future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the corn prices. While in July the amount of money to be kept in the future market for one corn future contract is 1.350 USD, the level of maintenance margin of the same contract is 1.000 USD. CME corn contract is traded in Match, May, July, September, and December. The minimum price increment in corn contract is 12,50 USD. Like all of the other commodity contracts, also in the corn contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 12-3 Characteristic of Corn Future Contracts

Corn Contract	
Exchange	CME/GLOBEX
Lot Size	5.000 BUSHELS(2)
Initial Margin	1.350 USD(1)
Maintanence Margin	1.000 USD(1)
Delivery Months	Mar/May/Jul/Sep/Dec
Commission (only for one contract)	10,83 USD
Point Value	12,50 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	ZC

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 1 BUSHEL = 27,216 kg

12.5 Transaction In The Future Market

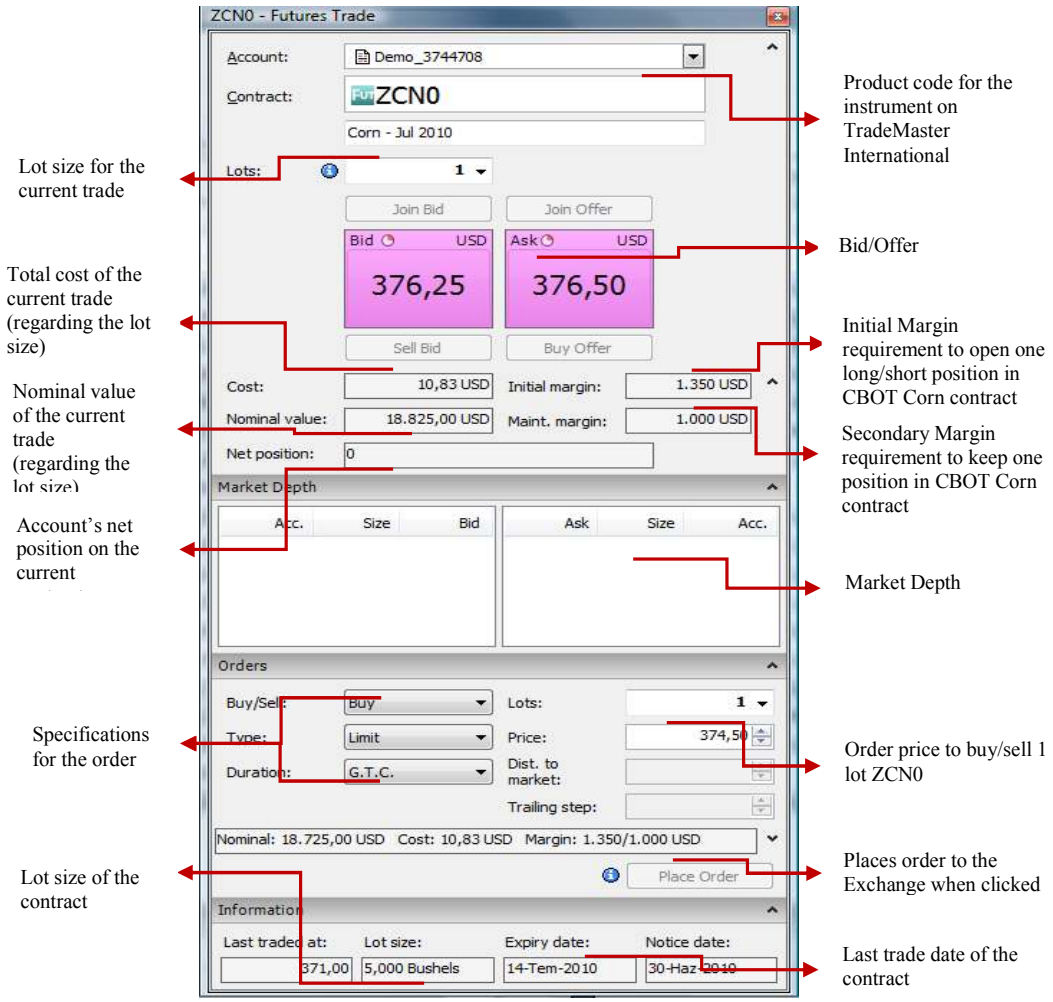


Fig. 12-4 International Buy Sell Screen For Corn

Table 12-4 Explanation of Buy Sell Screen

Commodity	ZCN0	July 2010 Corn Futures Contract
Bid/Offer Price	376,25	375,50
Initial Margin	1.350	USD
Maintanence Margin	1.000	USD
Nominal Value	18.825,00	USD
Leverage	13,94	18.825/1.350
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	5,000 BUSHELS	
Cost	Total cost of the current trade (regarding the lot size)	

13.COTTON CONTRACTS

Cotton (Latin: Gossypium hirsitum) is a cultivar plant in the family of Sterculiaceae. It is native to India; however, archeological evidences prove that 6000 - 7000 years ago in India and South America different types of cotton was cultivated and used in clothing. Cotton, which prefers alluvial and strong soils, should be planted in well dressed and deep ploughed lands. The planting of cotton should be made in February in hot regions, and in Mart, April in cold regions. Cotton is harvested in August and September. The biggest danger for cotton is rain. Rains cause low yields and low quality rates. Cotton, which is an important source for the agriculture, is used in textiles with its fiber, in oil production with its seed, and in animal breeding with its pulp.[25]

13.1 Features of the Cotton

- Cotton consisting of root, steam, leaf and seed, is basically cultivated for its fiber.
- The most important climate factors in cotton cultivation are heat, sun light, rain and humid rate. The mean annual temperature should be 19 C, and the average summer temperature should be 25 C.
- The biggest danger for cotton is rain. Rains cause low yields and low quality rates.

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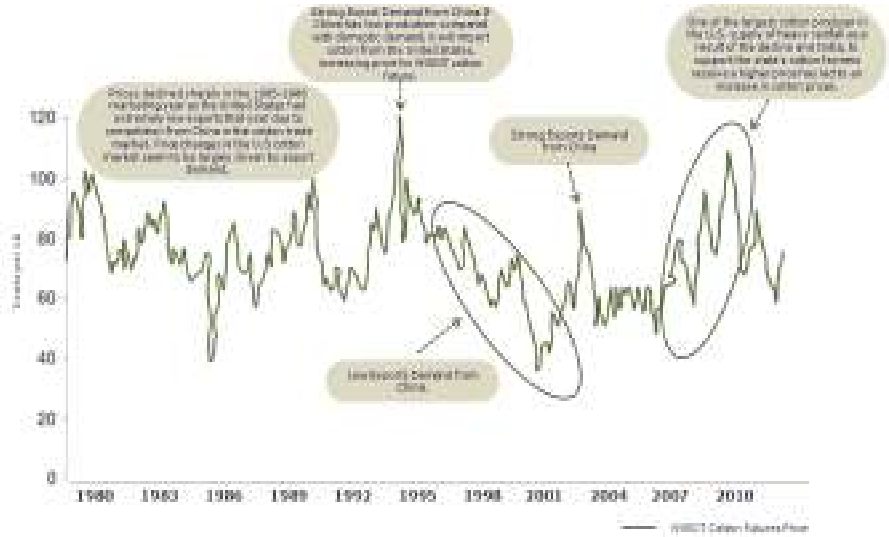
[25] Cotton. Wikipedia. 15 September. 2010 http://en.wikipedia.org/wiki/Cotton.

- Cotton prices generally rise between the periods that begin with plantation at the end of February and end when the cotton yields blossoms.
- The period when cotton crops yield blossoms is between the middle of June and end of the same month.
- The prices generally begin to drop by the end of June when the harvest begins and continue to drop until the beginning of November.
- In November and December cotton prices are generally stable.

13.2 Price Development Of The Cotton

Table 13-1 Historical Development of Cotton



When we look at the main reasons of the fluctuation in the cotton prices we see that the natural events, and government policies, which are also the main factors that affect the commodity markets, are very effective. For example; the cotton prices decreased sharply as a result of the fact that China produced % 35 more cotton than the previous year after that it began to compete with the USA by entering the export market. Ultimately the heavy demand of China to American cotton between the years 1994-95 the cotton prices rose to historic levels. The main reason of the drop in cotton prices between the years 1995 – 2001 is that American cotton producers increased their production after the heavy demand of China; however, they had to drop the prices because the expected demand didn't occur. The graphic below shows the amount of the cotton consumption of Chinese textile industry in 1997-2006. While in 1997 – 2006 the amount of the cotton consumption was between 20 and 30 million bales, after 2002 this rate began to increase swiftly and in 2006 the cotton consumption of textile industry rose to the level 60 million bales. [26]

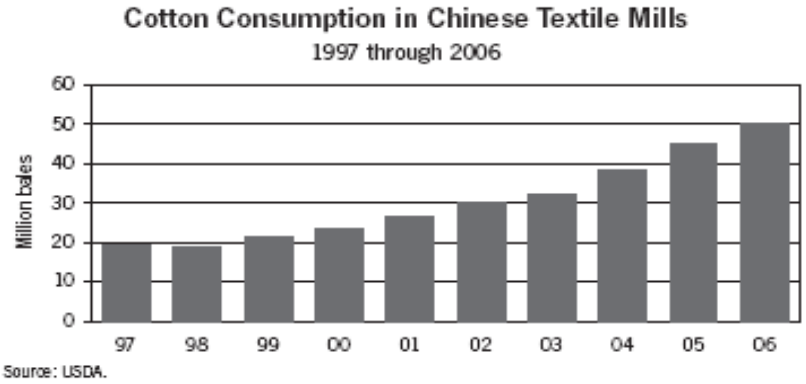


Fig. 13-1 Cotton Consumption in Chinese

[26] Commodity Investing Max. returns through Fundamental Analysis, (New Jersey: Wiley & Sons, 2008), pp.217-19.

The increase in cotton prices between the years 2007 – 2009 is the result of several factors like the natural events, and government policies. The decrease of demand as a result of the heavy rains in America, the biggest cotton producers, and the high priced purchase of cotton by Indian government to support the farmers resulted in an increase in cotton prices. Although in 2008, after the global economic crisis, the decreasing cotton demand of textile created an expectation of a decrease in cotton prices, the prices are going up as a result of the fact that the producers considered to plant in more productive areas and decrease the cotton demand. US Ministry of Agriculture (USDA) stated that the cotton demand will drop %10, 5 compared to the previous period. This is the biggest annual drop that has been recorded since the 1920. The ministry declared that they did not expect a recovery in cotton consumption because of the low demand of textile industry and the weak picture of the global economic. In the declaration it was stated that the lowest level of cotton prices since 1983 was expected to occur because of the amount of the cotton plantation areas in the USA, the biggest exporter of the world, and the low price of cotton compared to other products.

Below is the graphic, prepared by US Ministry of Agriculture (USDA) that shows the cotton consumption and demand of the world that extends to 2013. Although the cotton demand of the world is increasing annually, the demand of America is gradually decreasing. This decrease in demand will result in fewer plantations in America, so the cotton prices will reach much higher levels.

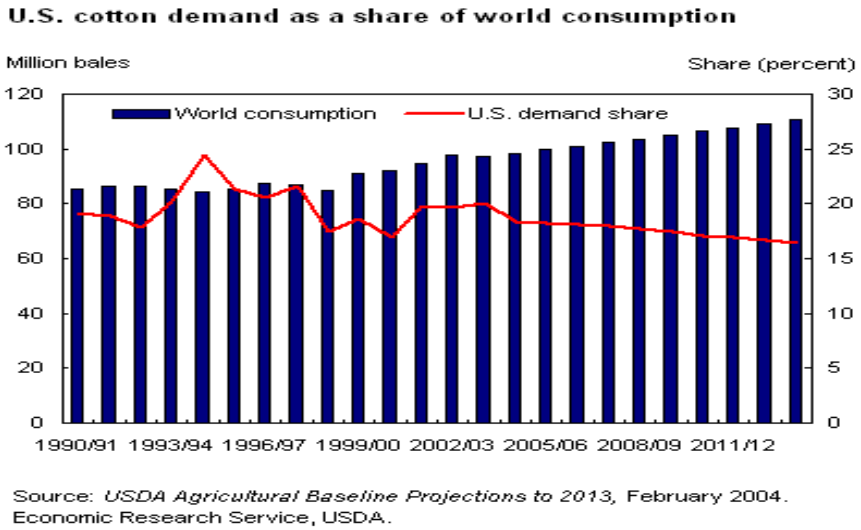


Fig. 13-2 U.S. Cotton Demand

The weak demand in textile decreases the cotton production in the world. For example; it is expected that the cotton production will drop &17 by 2011 as a result of the tendency of the farmers to invest on corn and rice which are more profitable. According to USDA'S estimations the cotton production of Egypt will decrease to 400.000 bales in the new season that will begin in August, and with the decrease of demand in textile industry the export will drop to 100.000 bales with a %84 decrease compared to 2010.

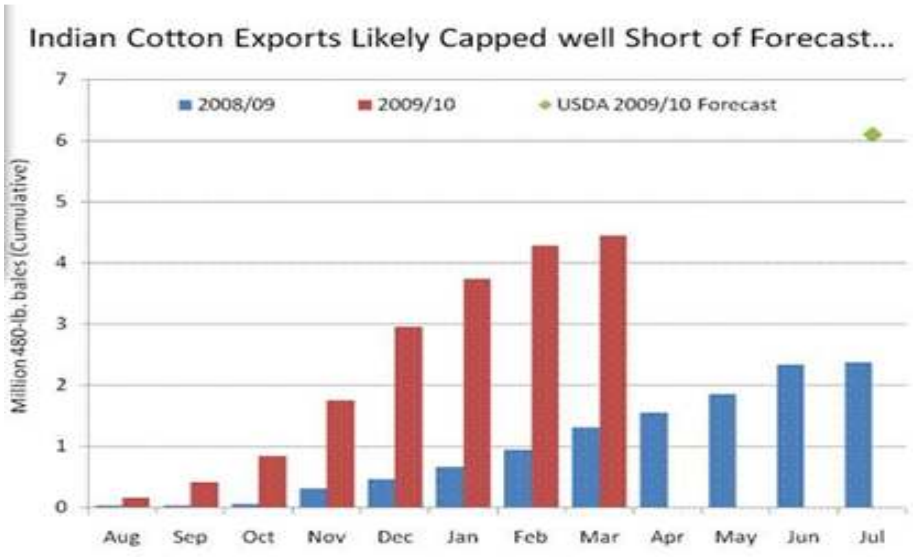
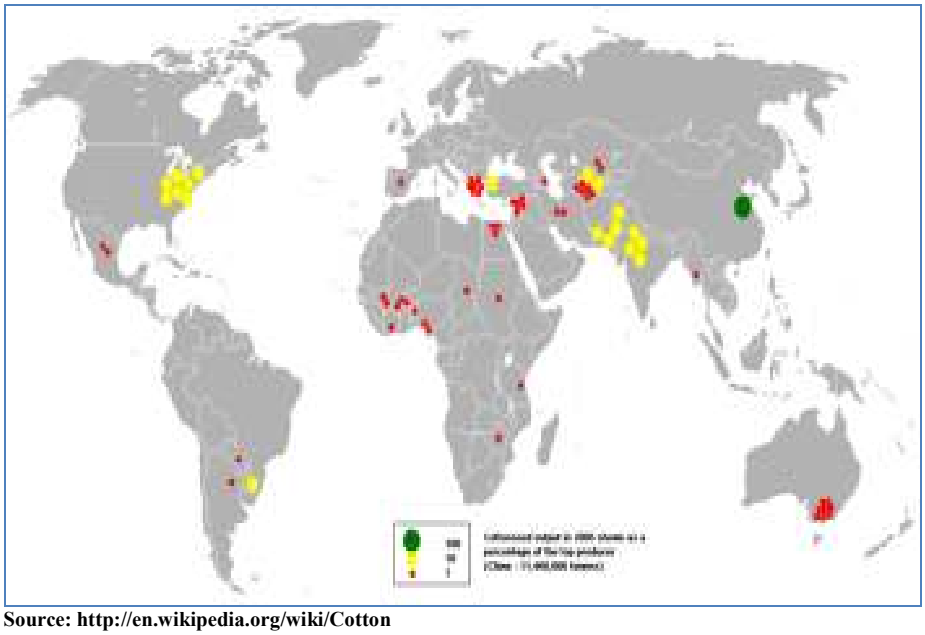


Fig. 13-3 Indian Cotton Exports

India should not be ignored while following and estimating the developments in cotton prices. India, with the help of its developing agriculture areas and production, is becoming to be one of the pioneer countries in cotton industry and everyday it increases the amount of the exported cotton. As seen in the graphic above the amount of exported cotton in India is increasing everyday. One of the most important factors of this increase is the works of Indian government that support cotton production.

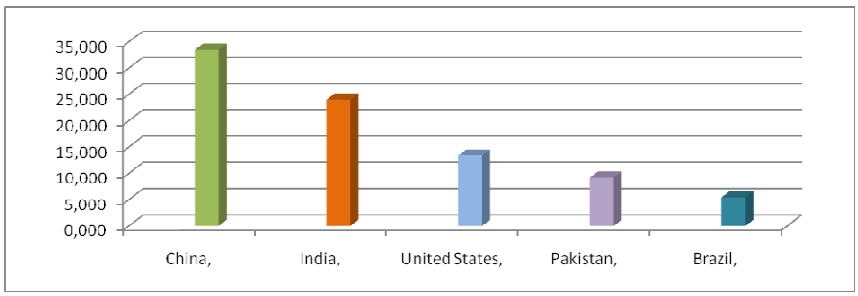
13.3 Cotton Production



Source: http://en.wikipedia.org/wiki/Cotton

Fig. 13-4 Allocation of Cotton

Table 13-2 Production of Cotton



Source: http://www.bloomberg.com

13.4 Cotton Future Contract Features

The size of the cotton future contracts, which is traded in is New York Board of Trade (NYBOT) future market is 50.000 Libra (LBS) and its product code is CT. 50.000 Libre (LBS) is equal to 22.675 kilograms. (1 LBS: 0,4535) As in all of the future contracts, there is a level of initial and maintenance margin in cotton future contracts. This margin is determined by the respective stock market and changes in different periods of time depending on activities of the cotton prices. While in July the amount of money to be kept in the future market for one cotton future contract is 2.100 USD, the level of maintenance margin of the same contract is 1.500 USD. New York Board of Trade (NYBOT) cotton contract is traded in March, May, July, September, and December. The minimum price increment in cotton contract is 5, USD. Like all of the other commodity contracts, also in the cotton contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective stock market.

Table 13-3 Characteristic of Cotton Future Contracts

Cotton Contract	
Exchange	ICE_NYBOT
Lot Size	50.000 LBS(2)
Initial Margin	2.100 USD(1)
Maintanence Margin	1.500 USD(1)
Delivery Months	Mar/May/Jul/Oct/Dec
Commission (only for one contract)	10,52 USD
Point Value	5,00 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	CT

(1) Initial and Maintanence Margin can be changed by Exchange authority
(2) 1 LBS = 0.4535 kg

13.5 Transaction In The Future Market

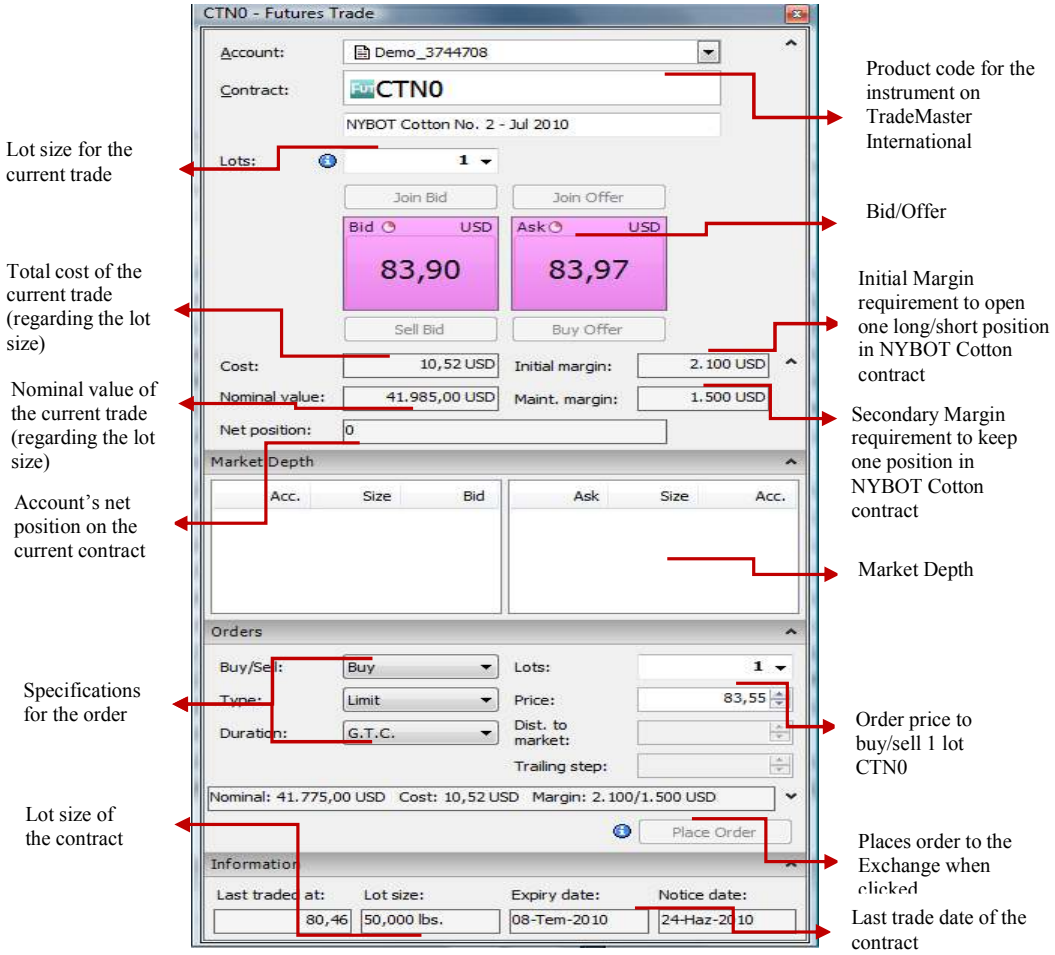


Fig. 13-5 International Buy Sell Screen For Cotton

Table 13-4 Explanation of Buy Sell Screen

Commodity	CTN0	July 2010 Cotton Futures Contract
Bid/Offer Price	83,90	83,97
Initial Margin	2.100	USD
Maintanence Margin	1.500	USD
Nominal Value	41.985,00	USD
Leverage	19,99	41.985/2.100
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	50,000 LBS	
Cost	Total cost of the current trade (regarding the lot size)	

14.CRUDE OIL CONTRACTS

Petroleum, basically consisted of hydrocarbon chains, is a mineral oil which is denser than water, and has a natural burning behavior. The word Petroleum is the combination of Latin words "petra" meaning stone, and "oleum" meaning oil. The term was first used in the article of German mineralogist Georg Bauer titled as “Da Natura Fossilium” in 1546. Petroleum, which is formed by the plant and animal fossils after millions of years of decay in seas, is classified by its production area, weight (API), and sulfur rate. These classifications is significant because, the production area affects the transportation costs, more gasoline can be produced from light petroleum, and low sulfured (sweet) petroleum is less harmful for the environment. Petroleum is not a stable chemical compound, and every area has different crude oil. In fact this differentiation can even be seen in the same area. Petroleum is an important factor in the economy, geopolitics, and geostrategy of the countries for it is the main source of energy. [27]

14.1 Features of the Petroleum

- Petroleum is a mineral oil which is denser than water, dark colored, unearthed, has a natural burning behavior and a distinctive odor.
- The refined liquid petroleum is called crude oil, and gaseous petroleum is called as natural gas.
- There are three types of petroleum: West Texas Intermediate, Brent Petroleum and OPEC.
- The price of the Brent petroleum is determined by International Petroleum Exchange (IPE) in London, and the price of the WTI petroleum is determined by New York stock market.

[27] Petroleum. Wikipedia. 14 September 2010. http://en.wikipedia.org/wiki/Petroleum.

- The price of the petroleum types in the market is generally based on the price of Brent petroleum.
- The economical and political crisis in petroleum producer countries (1973 Yom Kippur War and Arabic embargo 1979 Iran Revolution, 1991 and 2003 Iraq Wars) affect the petroleum prices.
- The official reports that show the changes in petroleum stocks and demands (Energy Information Administration's Weekly Petroleum Status report, International Energy Agency's Oil Market Report, etc) are very effective in the petroleum price changes.

14.2 Price Development Of The Crude Oil

Table 14-1 Historical Development of Crude Oil

When we look at the main reasons of the fluctuation in the petroleum prices we see that the natural events, and government policies, which are also the main factors that affect the commodity markets, are very effective. In general the wars and internal disorders that began after 1983 in the petroleum producer countries caused the rise of the petroleum prices. For example Iran-Iraq war, the invasion of Kuwait by Iraq caused the rise of the petroleum prices. The decisions of the big petroleum producer countries are as significant as the wars. They also have a great role concerning the fluctuations of the international petroleum prices. There are many different factors and institutions that affect the formation of the supply and demand in petroleum market. The most important factors are;

OPEC (Organization of Petroleum Exporting Countries)

OPEC is used to describe the organization of the petroleum exporter countries of the world. The main target of OPEC is to manage a stable petroleum price. There are eleven countries in OPEC: Algeria, Kuwait, Saudi Arabia, Indonesia, Libya, United Arab Emirates, Iran, Nigeria, Iraq, and Qatar. These countries have the biggest petroleum reserves in the world.

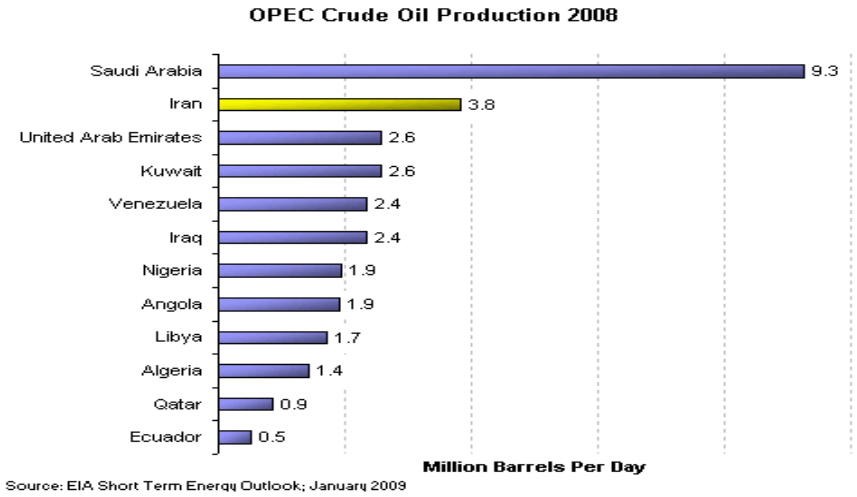


Fig. 14-1 OPEC Crude Oil Production 2008

The graphic below shows the OPEC countries' daily petroleum production amounts in 2008. Saudi Arabia is in the first place.

The producer countries excluding OPEC (Russian Federation, Mexico, Norway)

Nation	Net exports	Production
Saudi Arabia	9.0	10.9
Russia	7.0	9.7
Norway	2.8	3.1
Iran	2.721	4.259
Nigeria	2.15	2.45
United Arab Emirates	2.4	2.8
Kuwait	2.3	2.6
Venezuela	2.1	2.855
Algeria	1.84	2.13
Mexico	1.756	3.791
Libya	1.5	1.7
Iraq	1.367	1.942
Iraq	1.367	1.942

Fig. 14-2 Crude Oil Producer Countries

- International Energy Agency (IEA)
- USA (Although the USA is a member of OECD it can take its own decisions)
- Big Petroleum Companies (Exxon Mobil, BP, Shell, Aramco, Lukoil, ENİ)
- International Stock Markets (New York Mercantile Exchange etc.)
- The international institutions and publishing, schools related to energy.

In addition to the institutions above concerning their politics the conditions of the countries (especially the increasing demand in winter) also have effects on the petroleum prices.

The most important factor concerning the supply and demand factors is the economical development. Certain disorders in regional, economical, and political activities also affect the prices like the events that happened in Asia in 1998.

Events and wars like the disastrous terrorist attacks to the World Trade Organization (WTO) in September 11th 2001 affect the expectations about the security of the energy supply and cause sharp price rises. In addition to that the need of transportation industry for more refined petroleum also affect the petroleum prices. As a result all of the elements of the markets should be carefully examined while determining the petroleum prices.

The crude petroleum is put in market in different qualities and prices concerning the country of the producer. In addition to that each petroleum type has a different price for they are for different products. There are mainly three types of petroleum:

- WTI (West Texas Intermediate) Petroleum, the petroleum extracted in Texas, and Oklahoma in the USA.
- Brent petroleum, a blend of different types of petroleum extracted from the Northern Sea.
- OPEC petroleum, the price of this type of petroleum is determined by the 11 OPEC (Organization of Petroleum Exporting Countries) member countries (Algeria, Lebanon, Nigeria, Indonesia, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, United Arabic Emirates, and Venezuela).

The price of the Brent petroleum is determined in International Petroleum Exchange (IPE), whereas the price of WTI petroleum is set in the New York Stock Exchange. The prices of the petroleum types on the market are generally determined based on the Brent petroleum, and the price of the WTI

petroleum is usually 2 USD over that of the Brent petroleum, while the price of the OPEC petroleum is usually at one level below the Brent petroleum.

14.3 Effects of Petroleum Prices on the Economy

Petroleum price is an important indicator of global and national economic performance. Naturally, the bigger and the longer the extent and the duration of a rise in petroleum prices is, the greater is its effects on macroeconomics. The extent of the effect of the rise in prices on the economy generally depends on the proportion of petroleum-related expenditures in the national income, saving and effective use skills of end-users, as well as the use of alternative energy sources. The commercial inbalance arising due to increases in the petroleum prices causes a transfer of income from petroleum importing countries towards petroleum exporting countries. For petroleum exporting countries, trade income gained through increases in the prises directly increases real national income, whereas in petroleum importing countries, increase in prices causes inflation and rise in expenses. Petroleum price increases also affect international trade balance and foreign exchange rates. Following the increases in prices, in petroleum importing countries, imported goods become more expensive and exported goods lose value, in other words, real national income is decreased.

14.4 Analysis of Current Events

That lately the petroleum prices are over 60 USD per barrel, and the expectation that it is going to be even higher in the following months lead to serious global concerns. Below are the major factors leading to the increase in petroleum prices.

- Unforeseen petroleum demand from industrialized countries, the growth of USA, Chinese, and Indian economies, as well as the war and terror events in Iraq and Saudi Arabia have led to significant increase in the demand for petroleum.
- Continuous disruption of Iraqi petroleum export through events of violence such as sabotages against petroleum pipelines cause anxiety in petroleum markets.
- Iran's persistence in continuing with its nuclear program in spite of all pressures.
- One reason for the increase in demand in the United States, which is the biggest petroleum importer, is that the increasing need for crude petroleum which can be converted to gasoline for high fuel consuming sports cars popular among the drivers. Strong demand in the USA and production mishaps in American refineries also eases price increases.
- The death of the king in Saudi Arabia, which is the biggest petroleum exporting country, has led to political instability.
- Anxiety over reduced petroleum supplies, decline in US petroleum reserves, and worries about a new terrorist attack in the Middle-East has led to all-time highest petroleum prices
- Increasing strategic reserves due to geopolitical risks hinder a fall in prices. It has been reported that the total strategic reserves

of the OECD countries will deplete approximately in 270 days and that they cannot instantly be delivered into use. The largeness of the strategic reserves influences both the supply and demand for petroleum.

The effects of petrol on Turkey

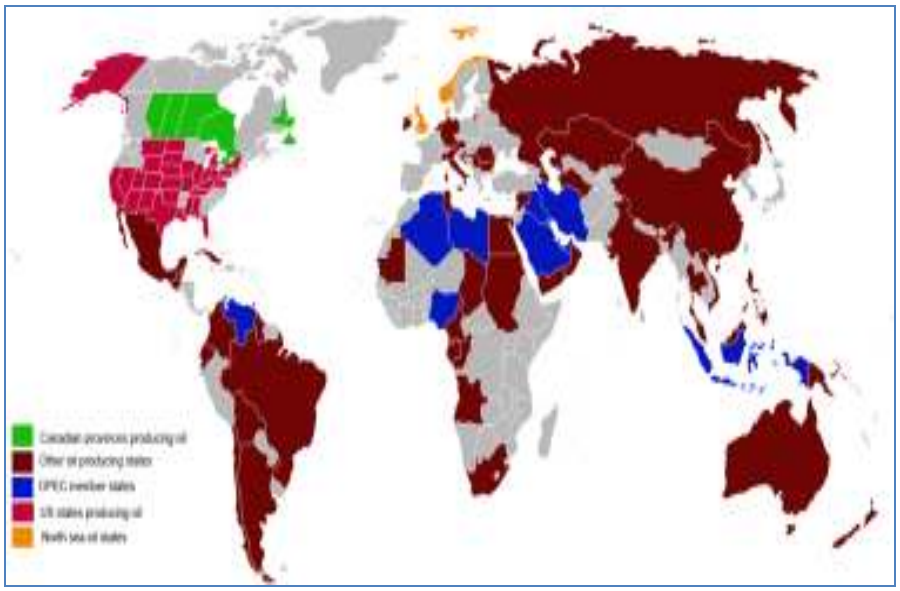
Although Turkey is a rich country in terms of raw material of energy sources, the studies so far have proven that it does not have enough petrol reserves. The rugged, uneven, and complex geological structure of Anatolia makes the petrol explorations quite difficult and expensive. More than %70 of the petrol explorations are operated by TPAO. The global petrol prices, exchange rates, and government interventions are important for the petrol prices of Turkey. Turkish governments demand ÖTV and KDV taxes for the petrol sale prices. Today governments take %70 – 75 of the petrol sale price, almost %22 is the price of refinery, and the %8 is left to the main marketing companies and to their dealers. However the amount of the taxes is weekly revised by the cabinet with respect to the progressions in the petrol prices. The rise in the petrol prices not only affect the petrol expenses but also cause a rise in the prices of all other industries that use petrol. The %55 rise in the petrol prices that began in the beginning of 2005 have increased the energy expenses of Turkey, a petrol exporter country, to 4 billion dollars. It is stated that petrol prices, around 60 dollars for a barrel, will decrease Turkey's grow rate %2 although it recently has an increasing growing rate.

In order to have a sustainable economic up rise there must be a continuous energy source. The fact that most of the countries in the world want to have or control the petrol, a continuous energy source, proves us that petrol is a

politically essential source. The main factors that affect the petrol demand and price are; the strategic reserves of the countries, the stock that the petrol producer countries hold, the transportation expenses, and seasonal conditions. In addition to these factors the strategies and investment policies of IEA, US, and big petrol corporations also have effects on the petrol demand. The factors that have effects on the petrol demand are; economical growth, the disturbances in regional- economical-political-military activities, the expectations about the security of energy supplies, and the increasing need of the transportation industry for finer petrol. Petrol prices are affecting the economic performance of the world and countries. The size of the direct effects of petrol prices on economy is generally dependent on; the portion of petrol expenses in national income, the ultimate users' abilities of consumption savings and efficient use of petrol, and the use of alternative energy sources.

It is expected that the rise of the petrol prices, still 60 dollars per barrel in the global economy, will continue. There are various political and economical reasons for the rises in petrol prices that are seen in recent months. The global petrol prices, exchange rates, and government interventions are important for the petrol prices in Turkey. The energy expenses of Turkey, a petrol exporter country, have risen to 4 billion dollars. It is stated that petrol prices, around 60 dollars for a barrel, will decrease Turkey's grow rate %2 although it recently has an increasing growing rate. When we examine the energy usage structure of Turkey we see that it is similar to the rest of the world. Turkey is not a rich country in terms of petrol reserves. The main target of our strategy of petrol exploration should be to supply the petrol from our own sources. In order to reach this aim it is necessary to; increase the petrol exploration and production investments, share risk, have know-how technologies. Also the transfer of foreign capitals should be aimed, explorations should be held in deeper areas, and unexplored areas and our seas that surround the country should also be explored.

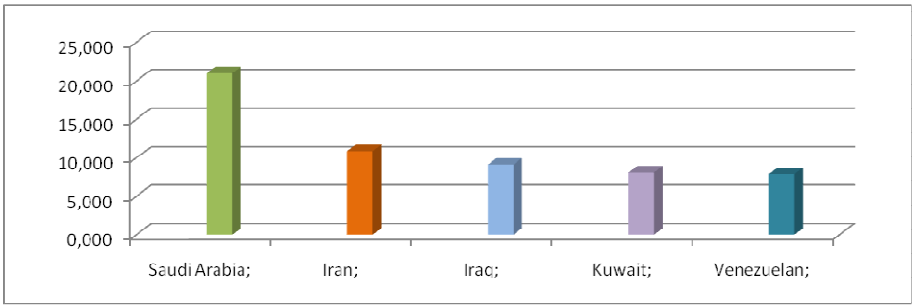
14.5 Crude Oil Production



Source: http://en.wikipedia.org/wiki/Crude Oil

Fig. 14-3 Allocation of Crude Oil

Table 14-2 Production o Crude Oil



Source: http://www.bloomberg.com

14.6 Crude Oil Future Contract Features

The size of the cotton future contracts, which is traded in is New York Mercantile Exchange (NYMEX) future market is 1.000 barrels and its product code is CL. As in all of the future contracts, there is a level of initial and maintenance margin in crude oil future contracts. This margin is determined by the respective future market and changes in different periods of time depending on activities of the crude oil prices. While in June the amount of money to be kept in the future market for one crude oil future contract is 5.063 USD, the level of maintenance margin of the same contract is 3.750 USD. New York Mercantile Exchange (NYMEX) crude oil contract is traded in twelve months. The minimum price increment in crude oil contract is 10 USD. Like all of the other commodity contracts, also in the cotton contract physical delivery is enforced, the investors who want to carry out a physical delivery have to wait until the end of the future. The investors who are in Long position and do not think of physical delivery have to close their positions until the warning date, and if they do not close them and think of purchasing the commodity size that the contract contains they have to relate that to the respective future market.

Table 14-3 Characteristic of Crude Oil Future Contracts

Crude Oil Contract	
Exchange	NYMEX/GLOBEX
Lot Size	1.000 BARRELS
Initial Margin	5.063 USD(1)
Maintanence Margin	3.750 USD(1)
Delivery Months	All Months
Commission (only for one contract)	10,47 USD
Point Value	10,00 USD
Notice Date	Physical Delivery Beginning
Expiry Date	Last Trading Day
Symbol	CL

(1) Initial and Maintanence Margin can be changed by Exchange authority

14.7 Transaction In The Future Market

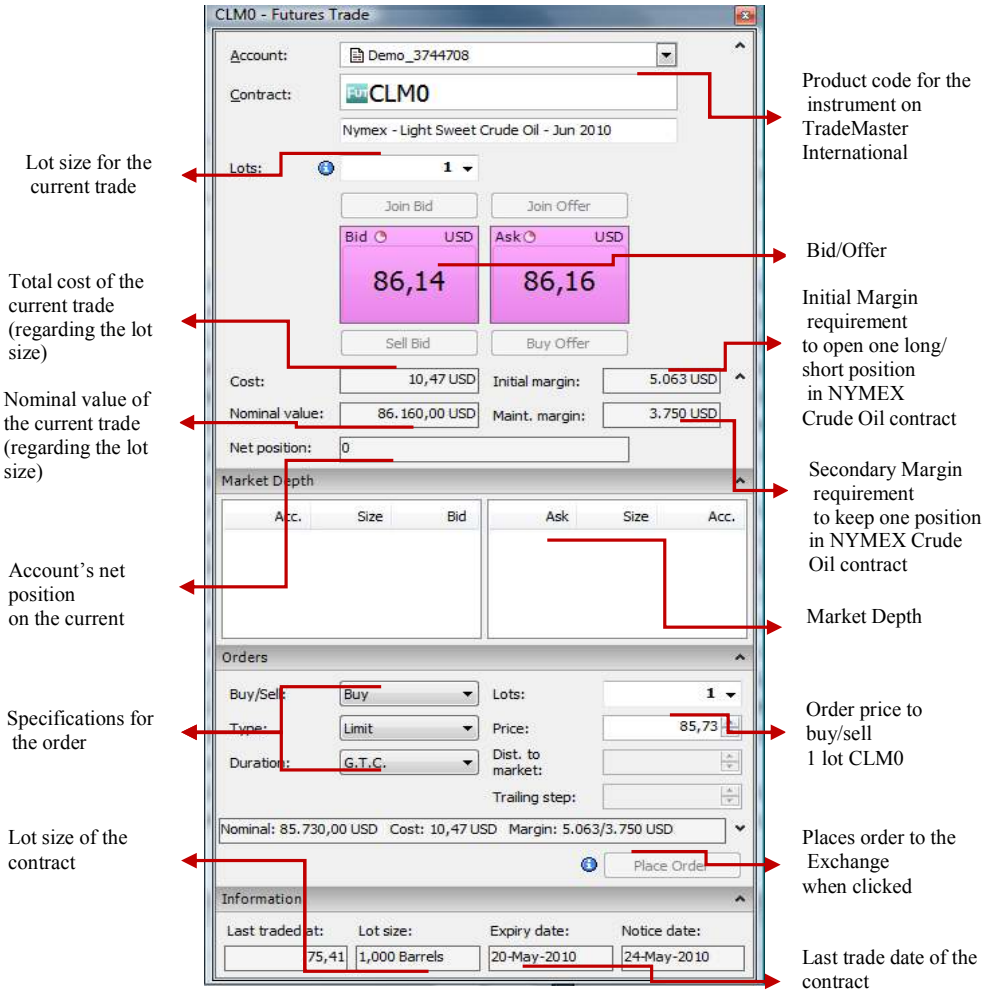
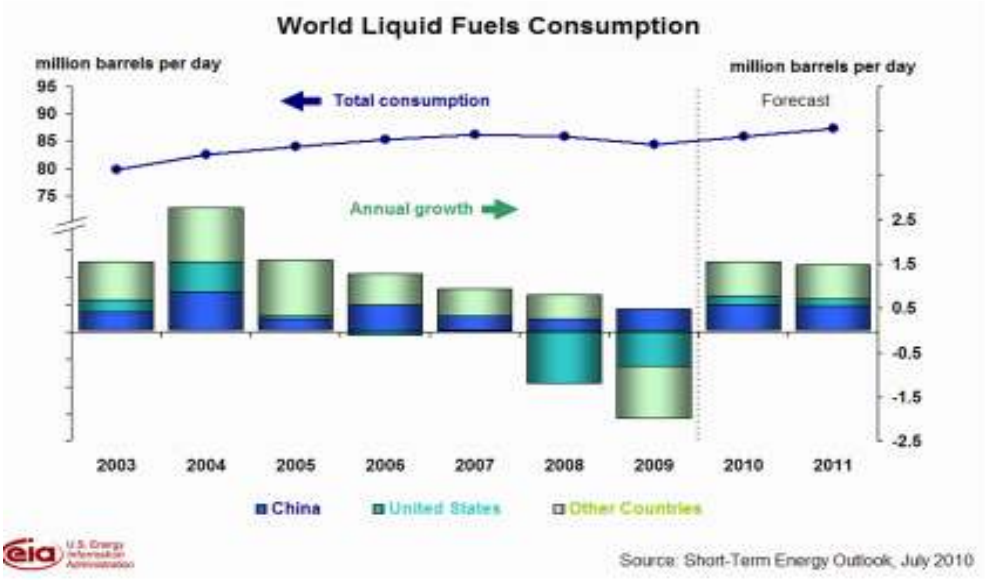


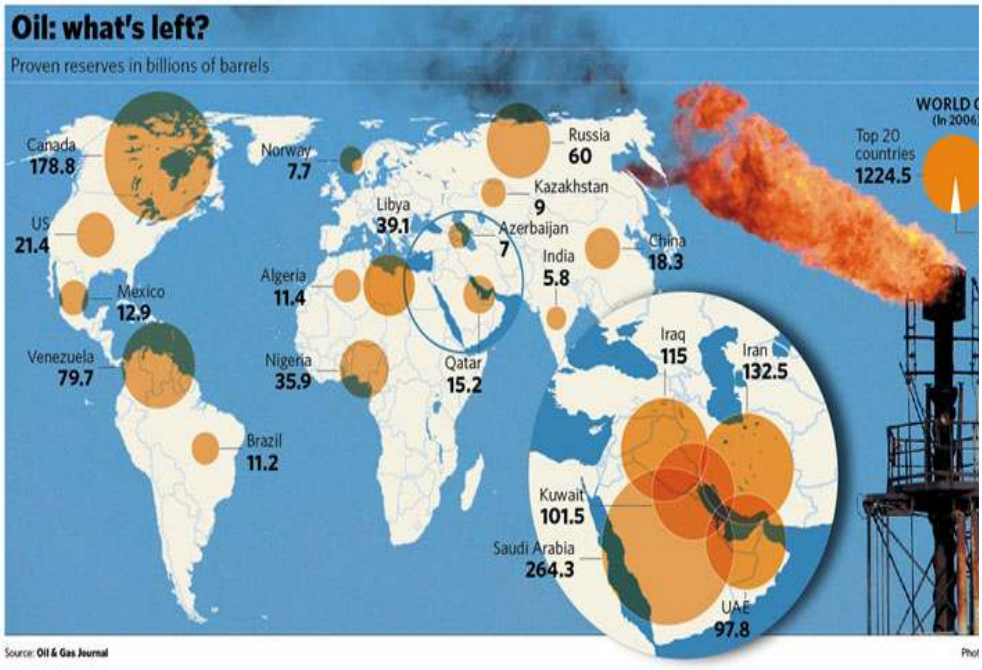
Fig. 14-4 International Buy Sell Screen for Crude Oil

Table 14-4 Explanation of Buy Sell Screen

Commodity	CLM0	June 2010 Crude Oil Futures Contract
Bid/Offer Price	86,14	86,16
Initial Margin	5.063	USD
Maintanence Margin	3.750	USD
Nominal Value	86.160,00	USD
Leverage	17,01	86.160/5.063
Net Position	Account's net position on the current contract	
Expiry Date	Last trade date of the contract	
Lot Size	1,000 Barrels	
Cost	Total cost of the current trade (regarding the lot size)	

14.8 World Liquid Fuels Consumption





15.CORRELATION BETWEEN COMMODITIES

A correlation coefficient measures the strength and direction of a linear association between two variables. It ranges from -1 to +1. The closer the absolute value is to 1, the stronger the relationship. A correlation of zero indicates that there is no linear relationship between the variables. The coefficient can be either negative or positive.

15.1 Calculation of Correlation Coefficient

$$\text{Correlation Coefficient} = \frac{\Sigma(x - \bar{x}) \cdot (y - \bar{y})}{\sqrt{\Sigma(x - \bar{x})^2 \cdot (y - \bar{y})^2}}$$

We can say that there are seven step in the Coefficient Correlation. These are;

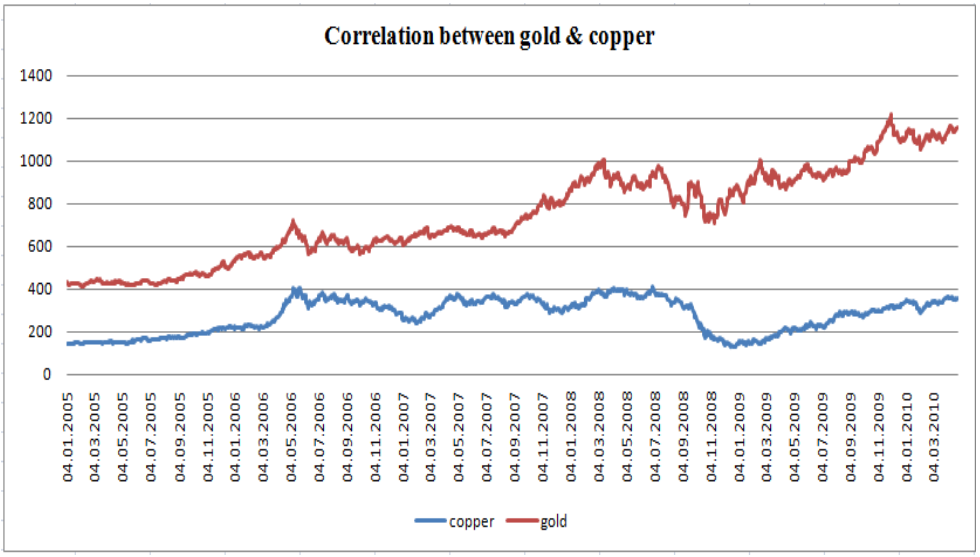
1. Start with a set of data, x and y points. Each data point is kept in separate row.
2. Find x, the mean of x; and y, the mean of y. To do this add the values of x and divide by the number of points; then do the same for y.
3. Subtract x from each value of x, subtract y from each value of y to get a new table of rows.
4. Take the products of each row in step 3and sum them up.
5. Take each x value in step 3, square it and sum all the points; then do the same for y.
6. Take the square root of the product of the sums of the squares in step 5.

7. Divide the sum in step 4 by the value in step 6 to calculate the Correlation Coefficient.

Table 15-1 Coefficient Correlation of Gold Future

	Silver	Copper	Crude Oil	Natural Gas	Cocoa	Coffee	Corn	Sugar	Wheat
GOLD	0.756	0.329	0.274	0.213	0.325	0.397	0.303	0.233	0.429

Source: http://www.bloomberg.com



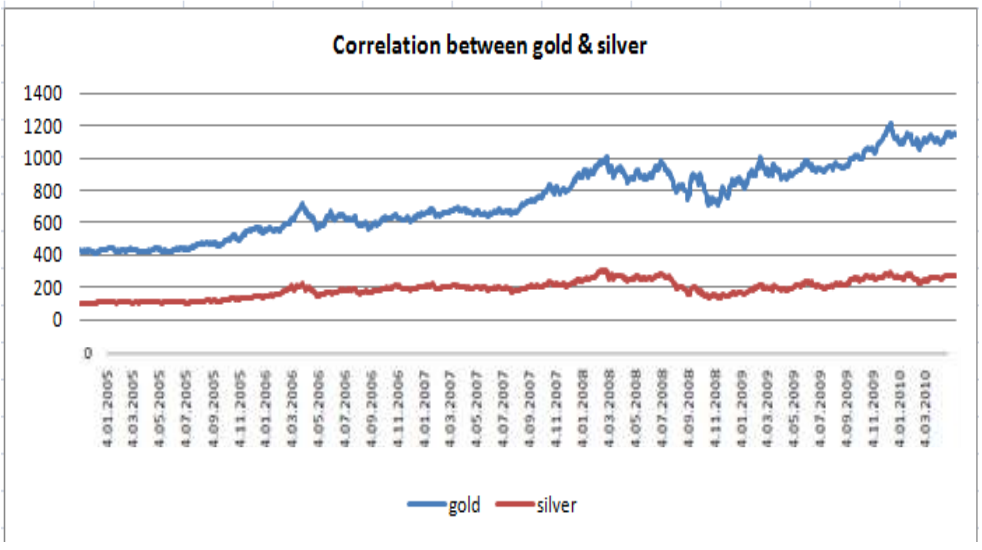
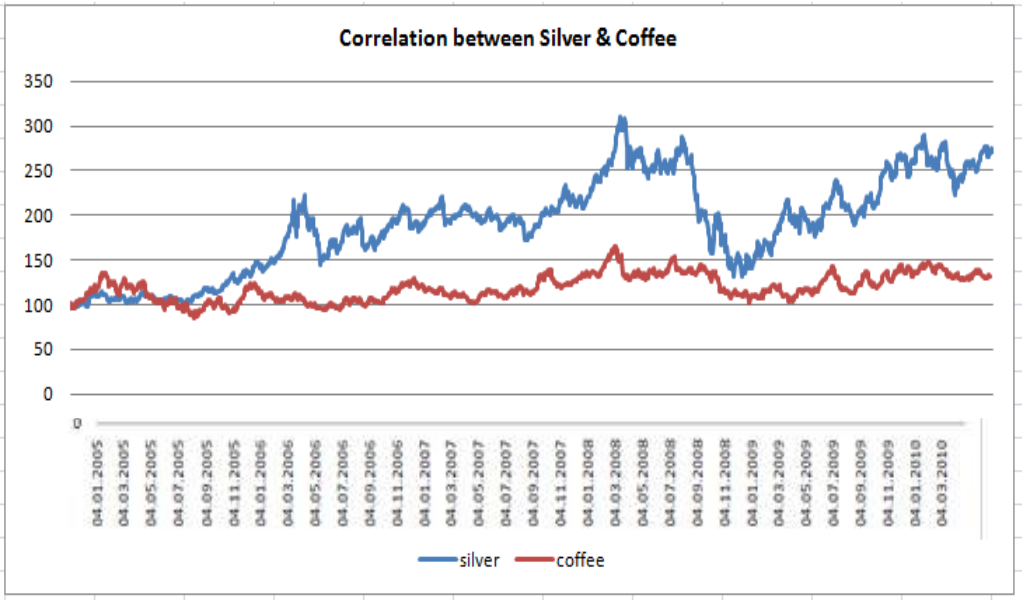


Table 15-2 Coefficient Correlation of Silver Future

	Gold	Copper	Crude Oil	Natural Gas	Cocoa	Coffee	Corn	Sugar	Wheat
SILVER	0.756	0.417	0.345	0.203	0.311	0.507	0.429	0.365	0.395

Source: http://www.bloomberg.com



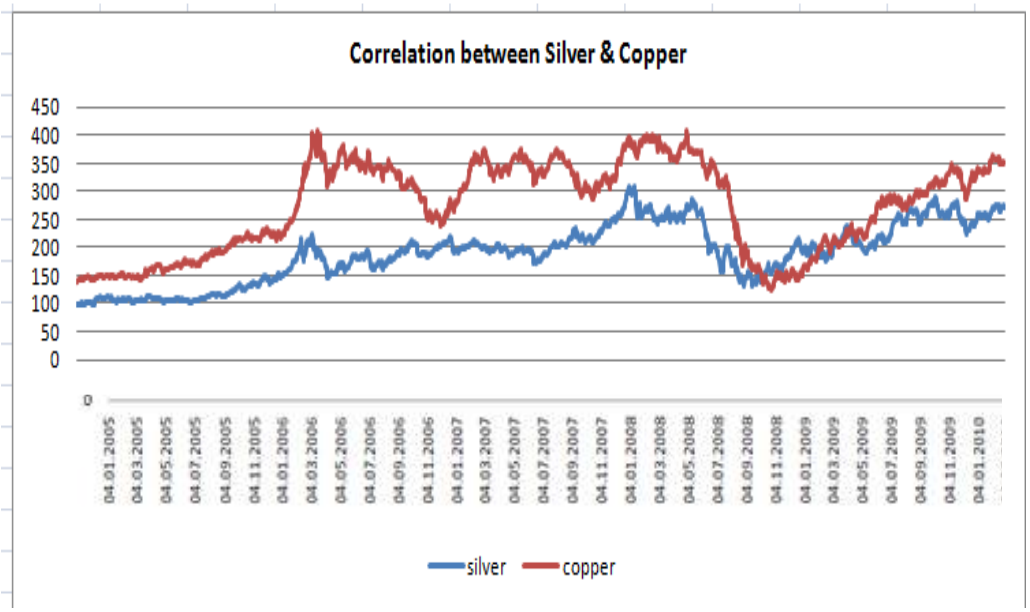
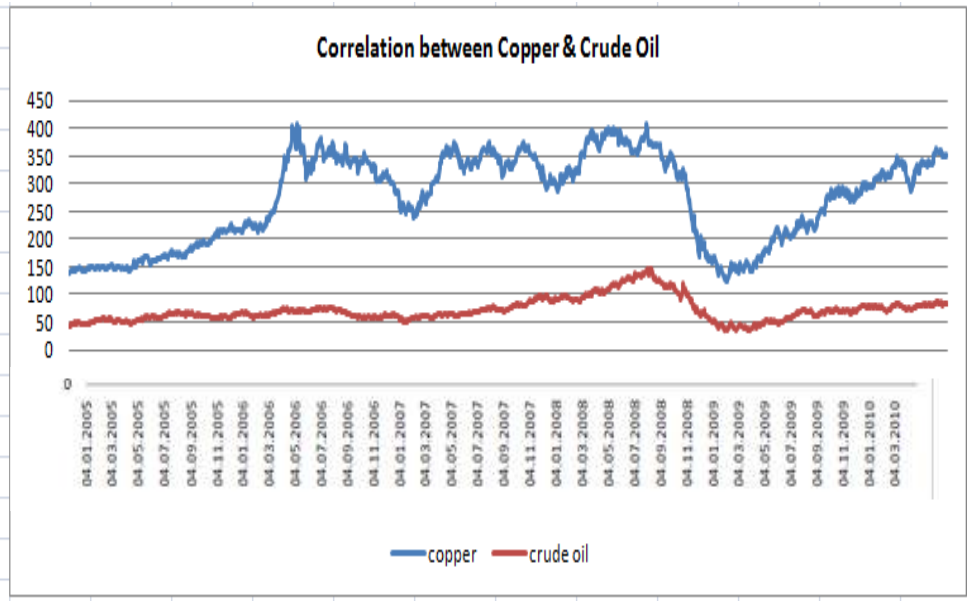


Table 15-3 Coefficient Correlation of Copper Future

	Gold	Silver	Crude Oil	Natural Gas	Cocoa	Coffee	Corn	Sugar	Wheat
COPPER	0.329	0.417	0.569	0.093	0.262	0.222	0.212	0.245	0.248

Source: http://www.bloomberg.com



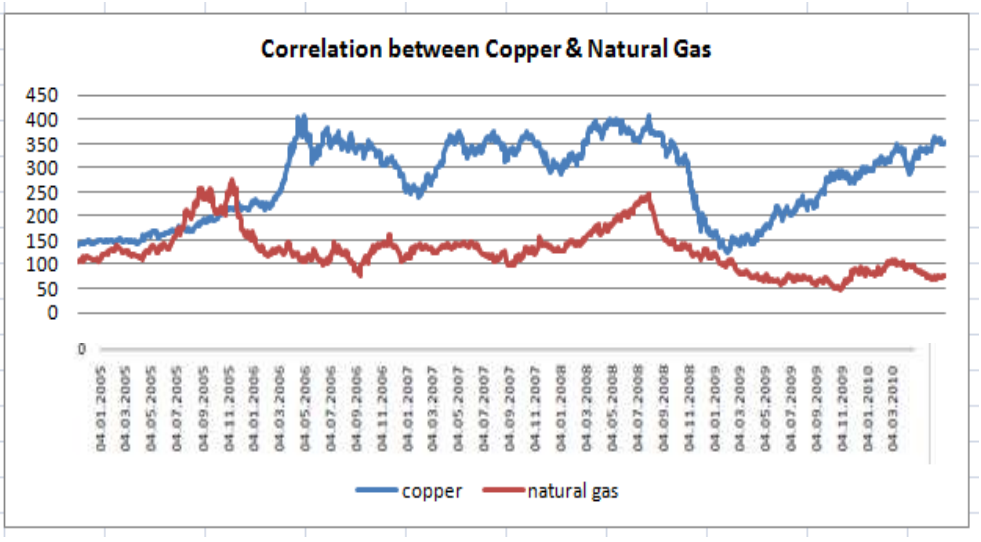
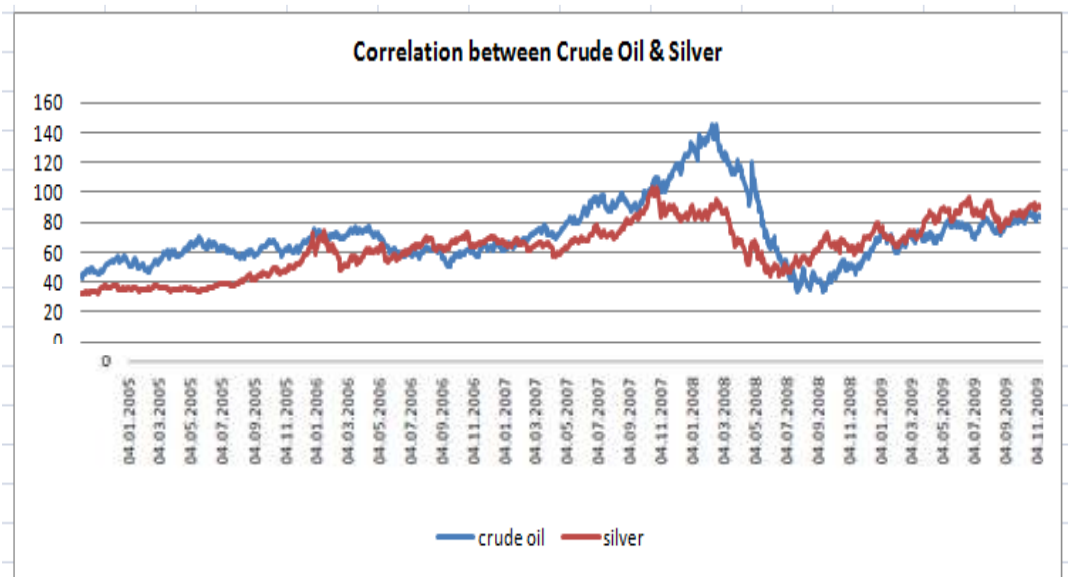


Table 15-4 Coefficient Correlation of Crude Oil Future

	Gold	Silver	Copper	Natural Gas	Cocoa	Coffee	Corn	Sugar	Wheat
CRUDE OİL	0.274	0.345	0.569	0.341	0.246	0.361	0.278	0.374	0.201

Source: http://www.bloomberg.com



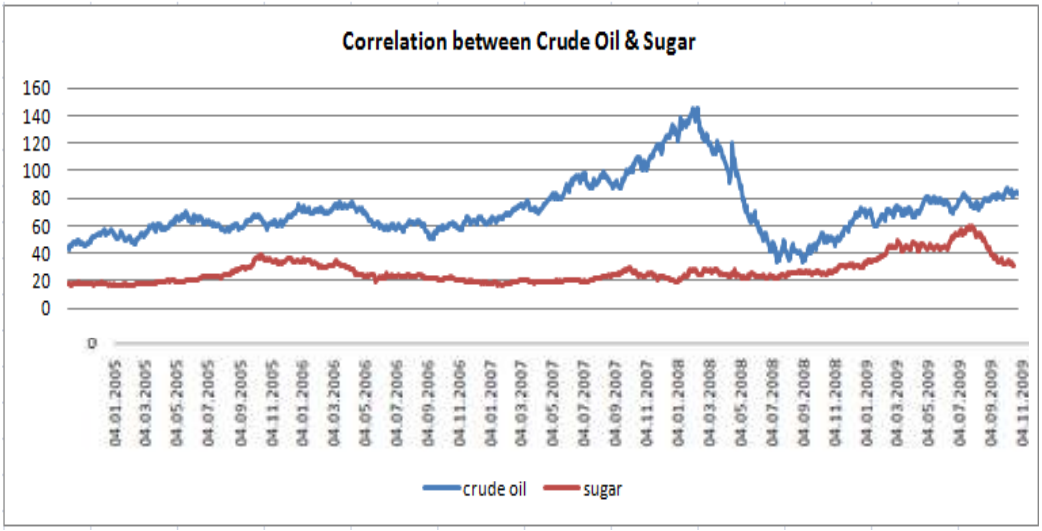
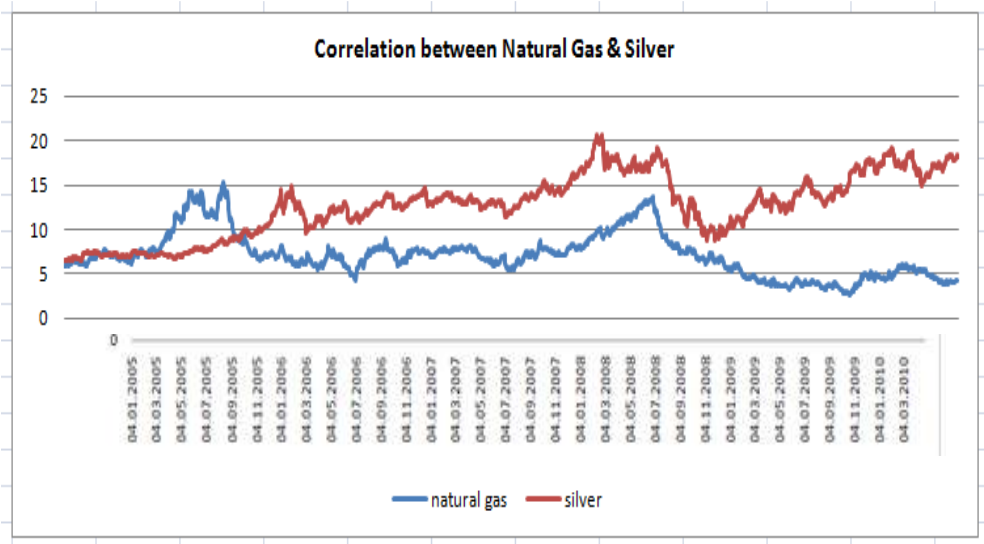


Table 15-5 Coefficient Correlation of Natural Gas Future

	Gold	Silver	Copper	Crude Oil	Cocoa	Coffee	Corn	Sugar	Wheat
NATURAL GAS	0.213	0.203	0.093	0.341	0.168	0.063	0.282	0.077	0.080

Source: http://www.bloomberg.com



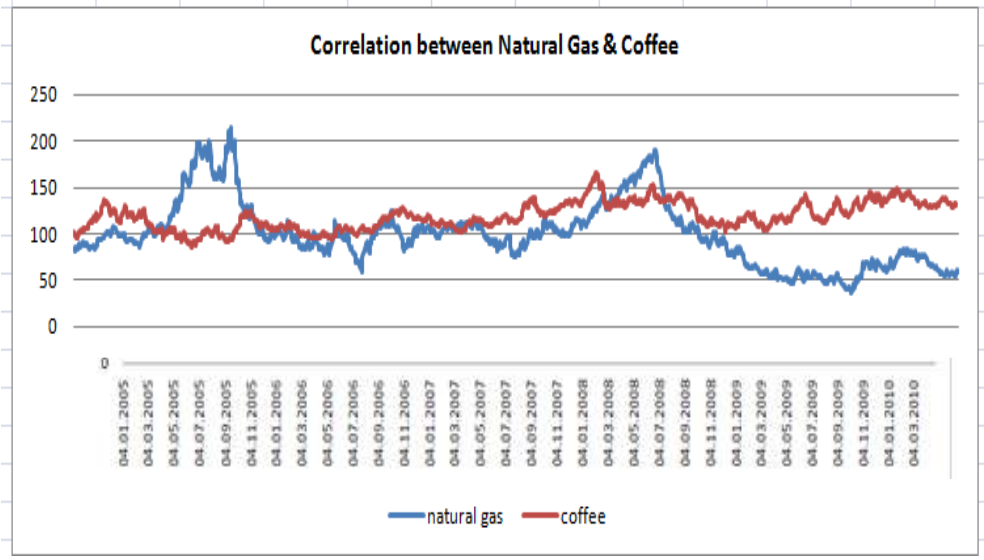
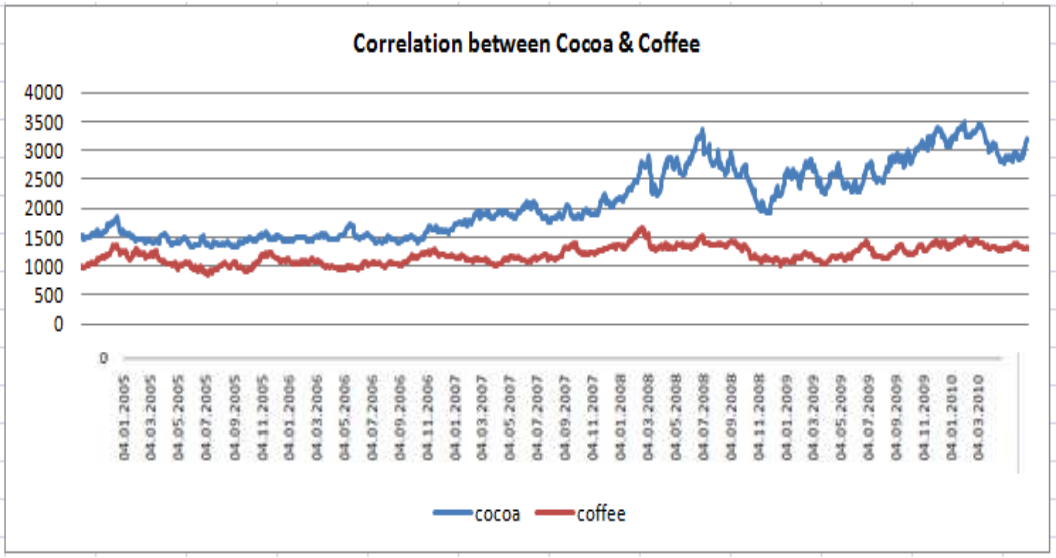


Table 15-6 Coefficient Correlation of Cocoa Future

	Gold	Silver	Copper	Crude Oil	Natural Gas	Coffee	Corn	Sugar	Wheat
COCOA	0.325	0.311	0.262	0.246	0.168	0.584	0.383	0.490	0.350

Source: http://www.bloomberg.com



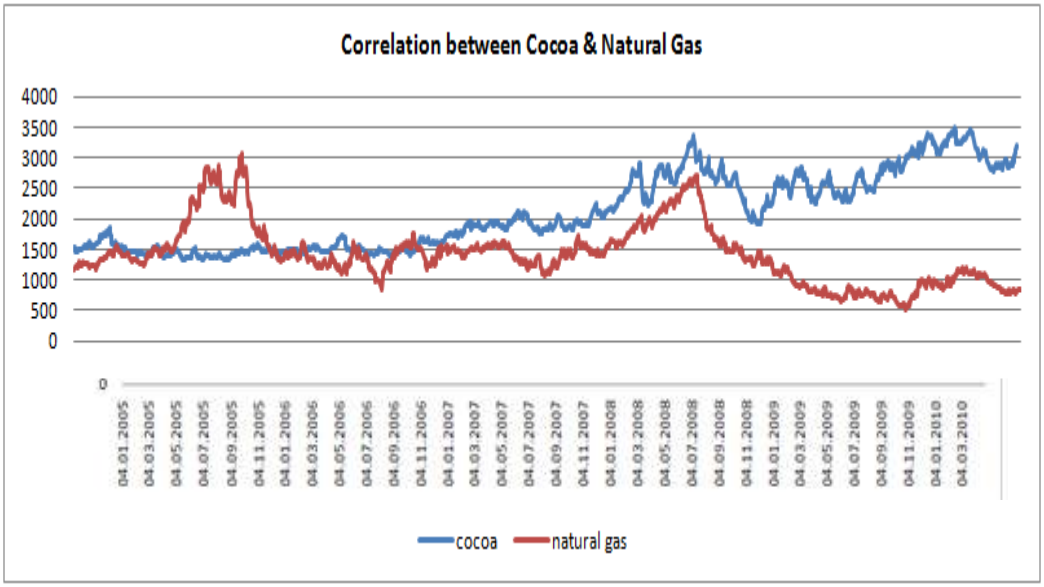
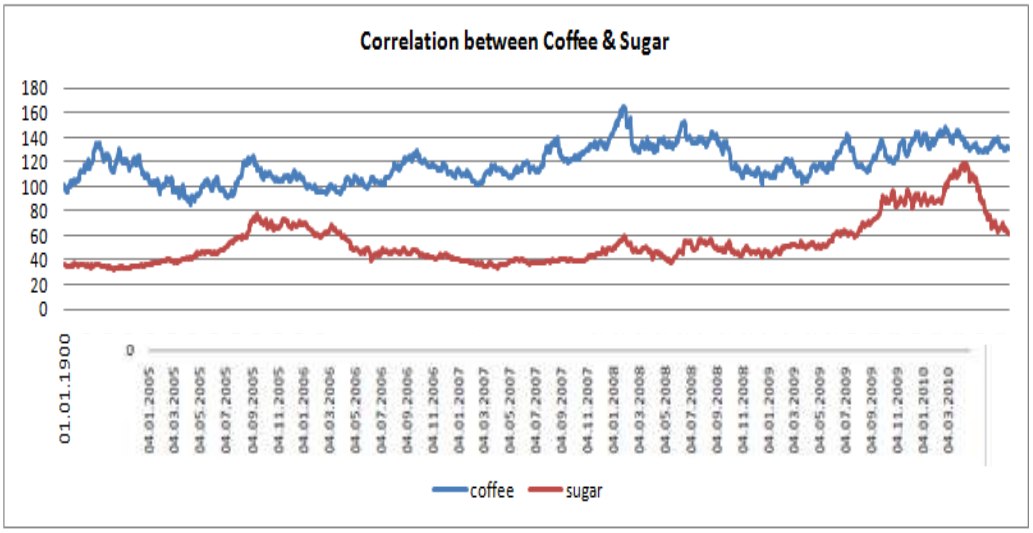


Table 15-7 Coefficient Correlation of Coffee Future

	Gold	Silver	Copper	Crude Oil	Natural Gas	Cocoa	Corn	Sugar	Wheat
COFFEE	0.397	0.507	0.222	0.361	0.063	0.584	0.524	0.603	0.559

Source: http://www.bloomberg.com



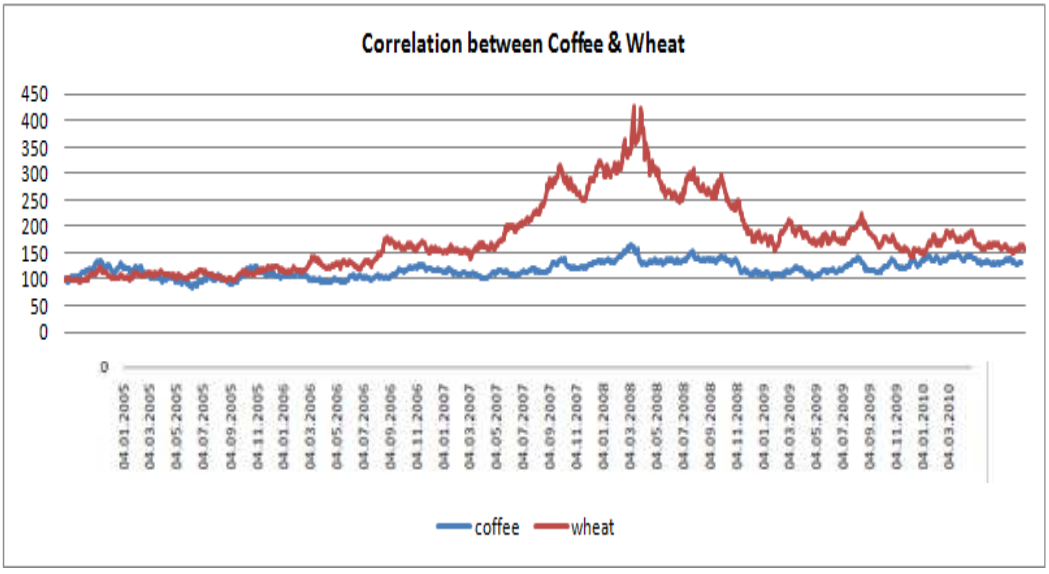
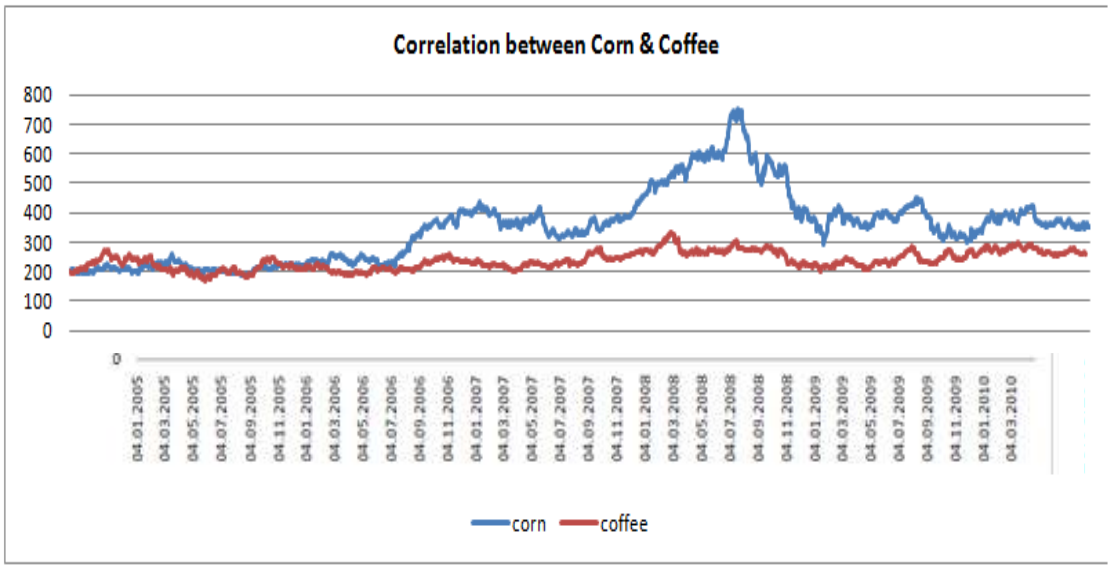


Table 15-8 Coefficient Correlation of Corn Future

	Gold	Silver	Copper	Crude Oil	Natural Gas	Cocoa	Coffee	Sugar	Wheat
CORN	0.303	0.429	0.212	0.278	0.282	0.383	0.524	0.647	0.595

Source: http://www.bloomberg.com



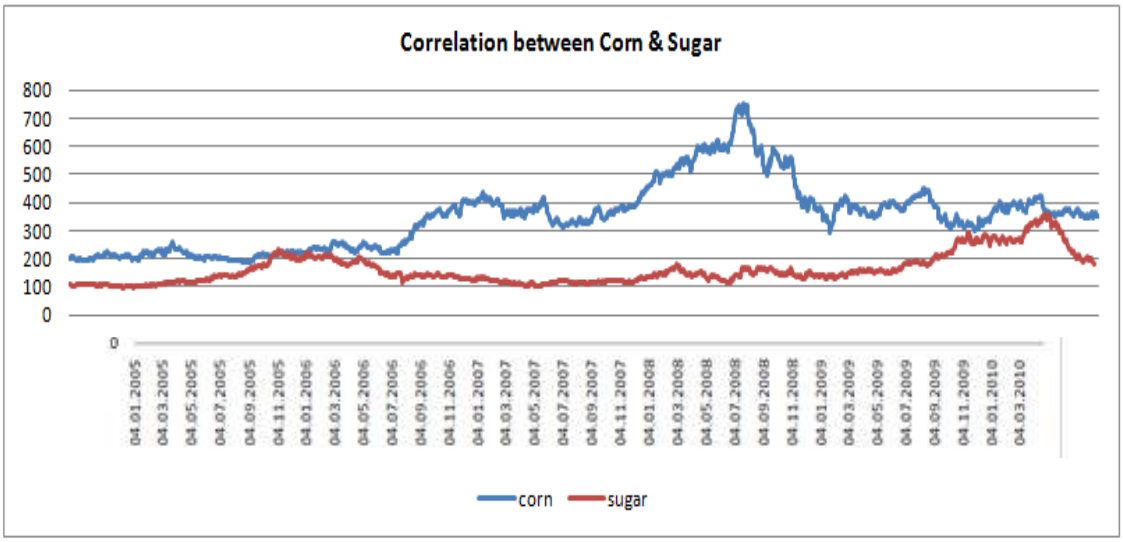
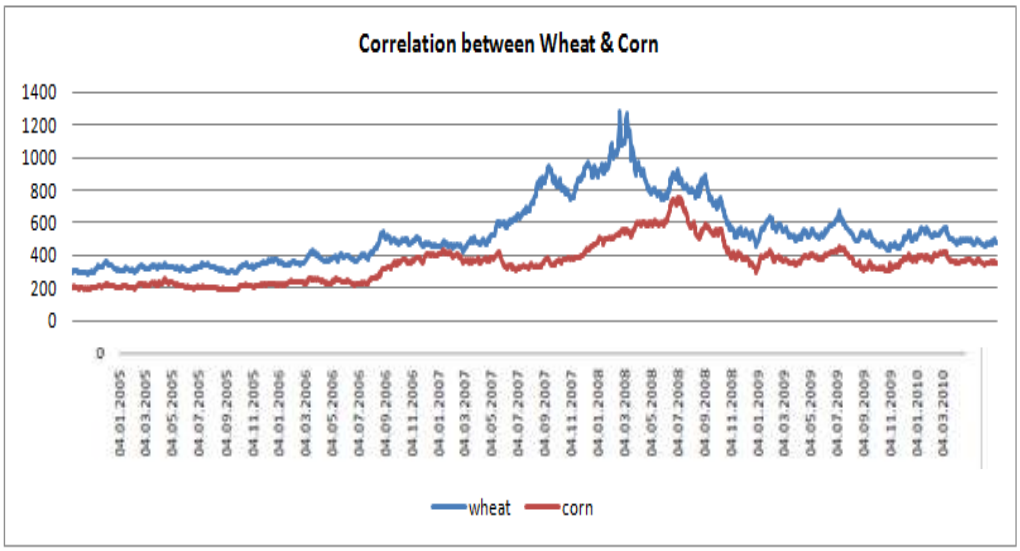


Table 15-9 Coefficient Correlation of Wheat Future

	Gold	Silver	Copper	Crude Oil	Natural Gas	Cocoa	Coffee	Corn	Sugar
WHEAT	0.429	0.395	0.248	0.201	0.080	0.350	0.559	0.595	0.565

Source: http://www.bloomberg.com



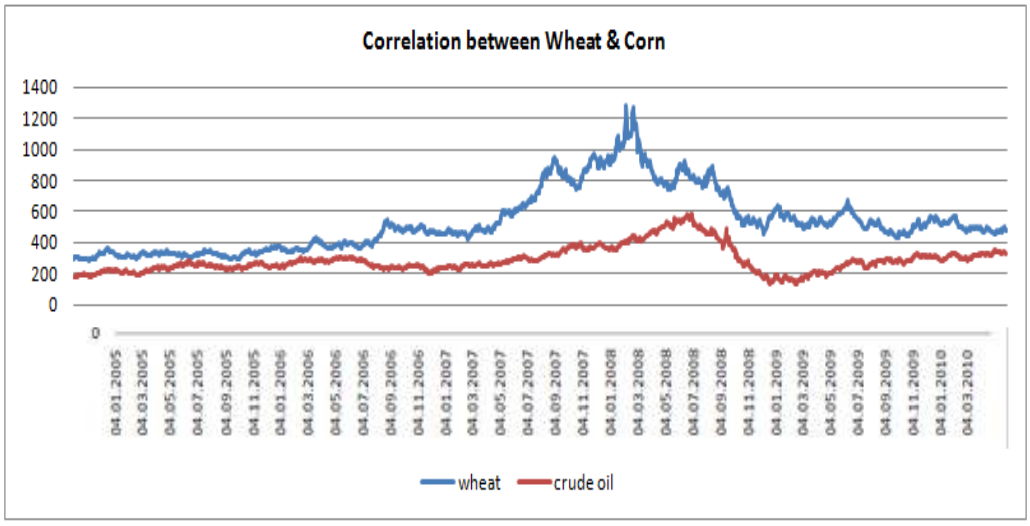


Table 15-10 Correlation Strategy Example Between Gold and Silver

Source: http://www.bloomberg.com

When we look that the weekly correlation between the gold and silver, we can say that there are very huge correlation between these two commodities. The average correlation between these two commodities is 0.75 between 2008-2009. Because of this correlation an investor can use some strategies for gain an advantages in the international future markets.

Based on silver's historical correlation r-square with gold of approximately 90 - 95% silver's daily trading action almost always mirrors, and usually amplifies, underlying moves in gold. With significant increases in the price of gold expected over the next few years even greater increases are anticipated in silver's price movement in the months and years to come because silver is currently seriously undervalued relative to gold as the following historical relationships attests.

I advise to my clients, who want to get involved into the rally happening in precious metals but find it expensive to take a long position because of the high levels of spot gold, an alternative strategy of silver-gold spread trade. Spread trade is less riskier than directional trade, is done by buying one instrument and selling the other and takes the movement of the price differential between these two into consideration. Since the beginning of the year, silver is following gold prices, but could not perform as good as it. Because of the reasons we analyzed below, in the case of the continuation of the rally in precious metals market,we think that a strategy of silver closing the gap in percentage terms can be used.

Gold reached three new highs since 3Q 2009, but silver reached its high last time in February 2008.

Source: http://www.bloomberg.com

-The fair level of Gold/Silver was believed to be 50 between 2006-08, but today it reached 65.80. In order to drag this level down, silver must outperform gold.

Source: http://www.bloomberg.com

-When nominals equalized, we came to the conclusion that Gold/Silver spread has its low on -120 support level (20,000 per contract) and changed its movement to upward levels. Same movement happened in July 2009 and February 2010, which made the spread go upward until its resistance levels.

Source: http://www.bloomberg.com

In order to exercise the narrowing of the spread:

Buy: 4 contacts December 2010 Comex Silver (nominal:383,400 USD)

Sell: 3 contacts December 2010 Comex Gold (nominal:378,660)

Current Spread: 4740 USD

Stop: Depending on risk appetite: -5300,-8500 or -18,500 USD

Example;

Gold drops 10% to 1136,silver drops 15% to 16,30, our loss will be 19,000 USD

Gold goes up by 10% to 1388,silver goes up by 15% to 22,04, our profit will be 20,000 USD.

You can call us or your advisor for details and current prices.

Conclusion the Strategy in 19 July 2010

Buy Comex Silver Dec 2010 00 (4 contracts 356,800) (383,400-356,800 = -26,600)

Sell Comex Gold Dec 2010 (3 contracts 358,980) (378,660-358,980=19680)

Loss :6920 USD

CONCLUSION

In this essay I focused on the properties of 10 commodities such as gold, copper, wheat, oil and natural gas which are considered significantly important for the global economy and mostly preferred by the investors for both short and long term investments. Afterwards by aiming investors who are planning to invest in international commodity markets several components that affect the prices of these commodities are discussed and valuable information is gathered in order to enlighten investors. For instance an investor who is planning to trade gold contracts have to choose in which exchange he is going to trade and when making this choice he should focus on the most active exchange in terms of gold contracts. The purpose is to be able to find the buyer or seller with the appropriate price when the investor wants to close his position. Second important component that has to be checked is if the contract value in the exchange and the contract value that the investor needs is matching or not. For example an investor who wants to hedge or speculate on 6 kg. of gold should buy or sell two contracts of gold. As another important factor an investor has to determine to what date he wants to hold his position. Again, as an example on gold, contracts actively traded gold contracts on CME changes every two months and an investor who is not aware of this can face liquidity or physical delivery problems. Finally the investor should take into account from what the price of the commodity is affected. E.g. gold is safe haven when the global economy is not that confident and volatile.

In this essay all the components that affect all the commodity prices are considered, all contract specifications and trading ways are written and how the investors can trade these commodities via exchanges is told by examples and screen shots of trade platforms. Nearby these correlations between commodities are examined and aimed to create a path for the investors for their trades.

REFERENCES

Chambers, Marcus J. and Bailey, Roy, "A Theory of Commodity Price Fluctuations" The University of Chicago Press, 1996

Schwartz, Eduardo and Smith, James "Short-Term Variations and Long-Term Dynamics in Commodity Prices" Informs, 2000

Bordo, Michael David, "The Effects of Monetary Change on Relative Commodity Prices and the Role of Long-Term Contracts" The University of Chicago Press, 1980

Miranda, Mario, "The Effects of Commodity Price Stabilization Programs" American Economic Association, 1988

Reinhart, Carmen and Borensztein. Eduardo, "The Macroeconomic Determinants of Commodity Prices" International Monetary Fund, 1994

Hull, John C. Options*, Futures, And Other Derivatives*, New Jersey, Prentice Hall, 2006

Schwartz, Eduardo and Smith, James "Short-Term Variations and Long-Term

Dynamics in Commodity Prices" Informs, 2000

Wikipedia. http://en.wikipedia.org/wiki/Gold

Wikipedia. http://en.wikipedia.org/wiki/Copper

Wikipedia. http://en.wikipedia.org/wiki/Wheat

Wikipedia. http://en.wikipedia.org/wiki/Natural Gas

Wikipedia. http://en.wikipedia.org/wiki/Silver

Wikipedia. http://en.wikipedia.org/wiki/Coffee

Wikipedia. http://en.wikipedia.org/wiki/Cocoa

Bloomberg. http://www.bloomberg.com

CME Group. http://www.cmegroup.com

London Metal Exchange. http://www.lme.com

Silver Price. http://silverprice.org/silver-price-history.html

International Coffee Organization. http://www.ico.org/.

Competitive Enterprise Institute. http://cei.org/pdf/5532.pdf.