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Futures Trading in Soy Complex in India: A Primer for Novice Traders

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Abstract:

This paper gives an overview of the futures trading in Soybean, soy oil and soy meal, together called soy complex. Soy complex is a major constituent of the top three global exchanges, namely, Chicago Board of Trade and Chicago Mercantile Exchange in the U.S. and Dalian Commodity Exchange in China. Soy complex also accounts for one third of the daily trading volume on National Commodity and Derivatives Exchange in India. The growing financialization of commodity markets has given caused increase in prices and volatilities of all major commodities. Novice traders can benefit from the speculative trading by following two basic strategies- buy and hold and watch and trade. Buy and hold utilizes the seasonal fluctuations of prices with the crop cycle and watch and trade relies on price signals generated by overnight price spikes in the US market.

Keywords: Futures trading, speculation, soy complex, strategy, exchange, commodity trading

1. Introduction

Soybean is the only agricultural commodity which is available for trading on the futures exchanges in India in all three forms, viz., soybean seeds, soybean oil (soy oil), and soymeal. These three forms of soybean are collectively known as soy complex. Trade volume of rapeseeds/mustard and castor seeds, which are traded as seeds, and cottonseeds, which are traded as de-oiled cake, is much smaller than the trade volume of soy complex on the exchanges. Soy complex is also an important group of commodity from international perspective as all its constituents are simultaneously traded on the largest global commodity exchanges, viz., Chicago Mercantile Exchange (CME) and Chicago Board of Trade (CBOT) in the U.S. and Dalian Commodity Exchange (DCE) in China, exhibiting cointegration with overseas markets and offering better price discovery and market efficiency.

Effective from 1st April 2014, the Forward Markets Commission (FMC) extended the trade timings, for ten agricultural commodities with international linkages, from Monday to Friday from 10 A.M.-5.00 P.M. to 10.00 A.M.-11.30 P.M. to facilitate a trading time overlap with the CME and CBOT [1]. The extension of trading time safeguards the traders from adverse price movements in the international markets once the Indian markets are closed. Two constituents of soy complex, viz., soy oil and soy meal have been included in the list of commodities with international linkages.

This article provides background information on different facets of soy complex and its spot and futures trading in India, which can be of use to the novice traders.

2. Soy Complex Value Chain

Soybean is a short duration crop sown in Kharif. It is grown mainly in the states of Madhya Pradesh, Maharashtra and Rajasthan which account for 94% of the annual production [2]. Soy oil and soy meal are derived from soybean seeds mainly through mechanical crushing or through solvent extraction process. Mechanical crushing of 60 kilos of soybean seeds normally yields 11 kilos of soy oil, 48 kilos of meal, and the remainder goes as waste. But such crushing is not efficient and leaves upto 4% oil in the meal. Solvent extraction process recovers this oil leaving only one percent oil in the meal, which is known as de-oiled cake (DOC).

The crushing of soybean seeds depends on the crush margin, which is given by the difference between the value of soybean seed and the value of oil and meal, i.e., the value addition. A positive crush margin implies profitability of soybean crushing and results in value realisation. Higher crush margin encourages oil extraction on a larger scale. Soybeans and its value added products, namely soy oil and soy meal are used both for food items and industrial purposes as detailed below:

Soybeans: Soybeans are cooked or processed to make a variety of food items, such as tofu, bean curd, soy milk, etc. Soybeans flour is used for making multi-grain bread. Soybean seeds are used for the next year crops, especially in countries where non-genetically modified (GM) seeds are used.

Soy Oil: The soy oil is largely used for cooking and frying. It is also used as salad oil as it is cholesterol free. Margarine and food shortening are made with soy oil. Plant sterols, chemicals, derived from soy oil are used to lower cholesterol levels and specially processed soybean oil can be used for treating osteoarthritis. Soy oil has wide ranging industrial applications such as manufacture of biodiesel and environment friendly printing inks. Soy oil is also used for paint additives, resins, and automotive plastic parts.

Soy Meal: The soy meal, in the form of flour and high protein chunks, is used for human consumption. It is an important source of protein for the vegetarians. Concentrated powdered form is used as protein supplement and protein isolates. The largest use of soy meal is found in animal feed. With its high content of protein (48%) and low fibre, it is ideally suited for fattening of poultry, hogs, and cattle. It is cheaper than the bone meal or fishmeal for the given protein content. Soy meal also has the highest protein content (48%) among oilseeds. Industrially, soy meal is used for making resins, personal care items, decorative coatings, etc.

3. Soybean Production and Trade in India

India imported 46 tons of soy oil in 1964 which had increased ten times to 438 tons in 1976 (U.S. Department of Agriculture). Through the Technology Mission on Oilseeds (TMO) and Oilseed Production Thrust Project (OPTP), launched in 1986 and 1987 respectively, the government gave a boost to increase production of oilseeds. As a result, between 1980-81 to 1990-91, the total oilseed production in India increased from 9.4 million tonnes to 17.94 million tones while soybean production increased from 0.44 million tonnes to 2.6 million tonnes. From a minor oilseed in 1980, soybean has emerged as the single largest oilseed in India accounting for 71% of oil from all the oilseeds, and 32% of total domestic oil output from all sources [2].

More than half of soy oil consumption in India is imported, mainly from Argentina. The soy oil import has continued despite increasing domestic production. Imported oil commands a very small premium as Indian edible oil market is highly price sensitive in nature and also because the government has imposed heavy import duties of 45% and 50% on crude and refined soy oil respectively to protect the local producers.

The soymeal is a high protein meal preferred for feed for the cattle and poultry. Soymeal is a major foreign exchange earner for India. Lately, however, the higher prices of the Indian soymeal as compared to the international prices have forced large buyers like Iran and Japan switching to Brazil and Argentina.

4. Price Determinants of Soy Complex

The price of soybean, soy oil, and soymeal depends on a variety of factors such as the opening stock, area planted and yield besides the exogenous factors such as weather, government policy, global production, international prices, and price of substitute oils, such as palm oil.

Opening stock of soybean along with the current period production determines the total supply in the market, and given the demand, affects the market price. Current period production depends on area under cultivation and farm yield. Farm yields vary widely across countries. Poor rainfall and delays in sowing causes the yields to drop by 5% or more. Indian yields, at roughly over 1025 kg./hectare, are much lower than the 2850 kg./hectare for Brazil and 2750 kg/hectare for US. A reason for the low yield crops is smaller land holdings and use of non-genetically modified (GMO) seeds, which traditionally have lower yields. Given low yield and comparatively lower acreage, the Indian soybean prices are generally on the higher side (Figure 1).

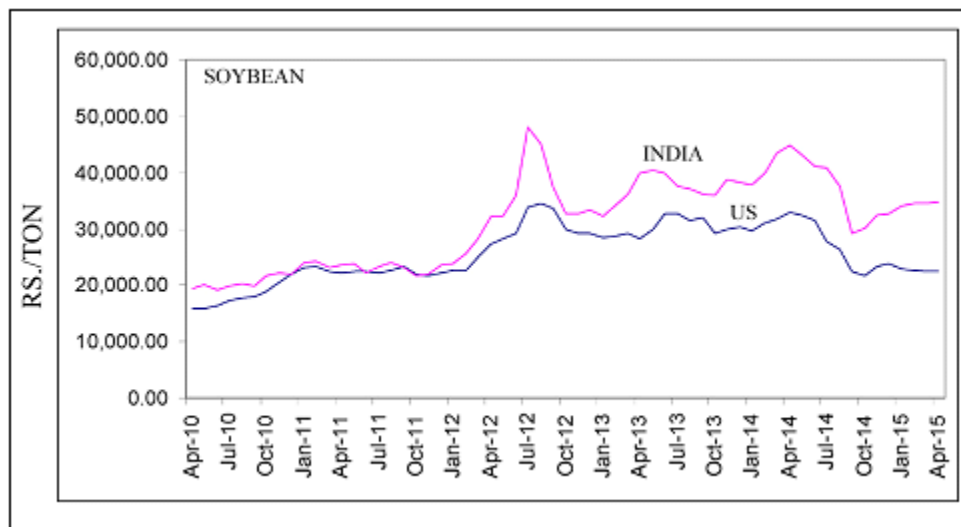


Figure 1: Monthly closing prices of Soybean

Source: Author's own construct. Data from Indexmundi (www.indexmundi.com) and NCDEX

Soybean base prices, known as the minimum support prices (MSP), are fixed by the government. MSP of soybean have risen steeply in recent years but the rise in the market price has been even steeper. The last four years have seen domestic soybean prices more than doubling from 2000/quintal (MSP 1450/quintal) in 2010 to over 5000/quintal (MSP 2560/quintal) in 2014. Soybean prices also depend

on the global production and availability. Increased soybean production in the U.S. in 2014 caused a sharp reduction in price in the international market and subsequently in India.

Soy oil prices are determined by various factors. The domestic and international availability of oil is one important factor. Brazil and Argentina are the two largest suppliers of soy oil. Excess production and weaker currencies make their exports much more attractive than Indian soy oil (Figure 2). Another important factor is the price of alternative oils such as palm oil. An increase in the supply of palm oil, for example, reduces the price of soy oil.

Soy oil has many alternative uses; it is used in paints, dyes, and also in biodiesel. These alternative uses of soy oil also affect its price. For example, when the crude prices are high more of soy oil is used to produce biodiesel, which increases its price.

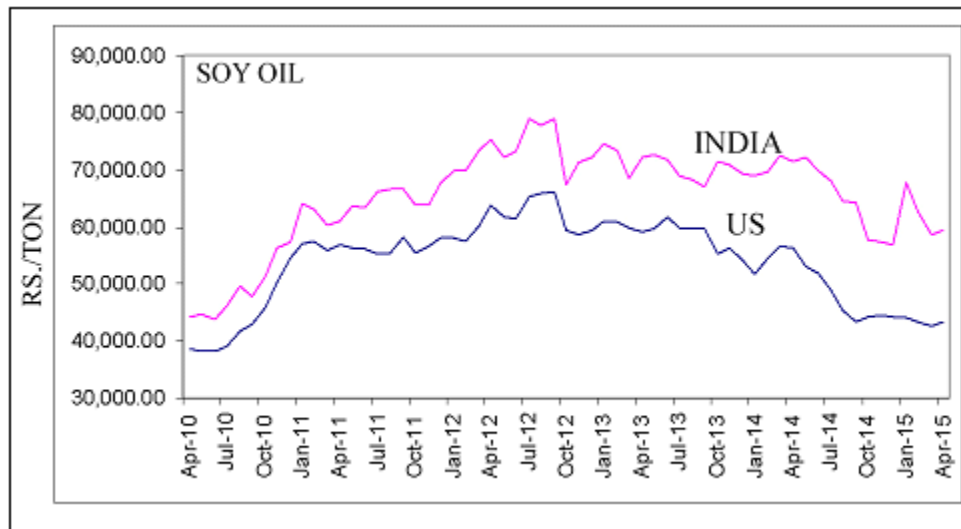


Figure 2: Monthly closing prices of soy oil

Source: Author's own construct. Based on data from Indexmundi (www.indexmundi.com) and NCDEX

Soy meal has the highest protein content among the oilseeds and is favoured as animal feed worldwide. Indian soy meal is exported and it commands a premium in the international market as it is non-genetically modified. The price of soy meal is a determining factor in the quantity of soybean crushed.

5. Spot and Futures Trading in Soy Complex

There are numerous spot markets for soy bean, soy oil and soy meal in Madhya Pradesh, Maharashtra, and Rajasthan. Spot markets, which are unorganized trading places, deal mostly with soybean and the crude soybean oil extracted by the mechanical presses. The three regional markets at Indore in Madhya Pradesh, Nagpur in Maharashtra, and Kota in Rajasthan are nodal markets. Along with the spot, these markets also provide platform for forward trading. Prices in these markets set the standard for the smaller mandis in the adjoining areas.

Futures trading is available in all the three constituents of soy complex on the National Commodity and Derivatives Exchange (NCDEX), ACE Commodity Exchange, Indian Commodity Exchange (ICEX), Universal Commodity Exchange (UCX), National Multi Commodity Exchange (NMCE) and the National Board of Trade (NBOT). The NBOT is a specialized exchange dealing only in soybean and soy oil. Of these exchanges, ICEX and UCX, as of now, are non functional. The largest volume of trade in soybean, soy oil and soy meal takes place on the NCDEX under the symbols SYBEANIDR, SYOREFIDR, and SBMEALIDR respectively [3].

On the NCDEX (and also on other exchanges where soybean and the related commodities are traded presently), five to six contracts, expiring in different months, run simultaneously. Each contract has a life of approximately 6 months from the launch to expiry. For example, on the first of December every year, five contracts expiring in December, January, February, March, and April respectively run simultaneously. On every 10th December, a new contract expiring in May is added. The December contract expires on 20th December. Similarly on the first of January every year, five contracts expiring in January, February, March, April and May run simultaneously; and June contract gets added on 10th of January and January contract expires on 20th January, and so on. The exchange launches the futures contracts in soybean, soy oil and soy meal depending upon its contract calendar with approval from the Forward Markets Commission (FMC). The FMC may drop or suspend certain contracts to contain excess volatility in the market [3].

The futures can be traded on the NCDEX through an account with a brokerage firm. The brokerage firm maintains its client database and also the trade records of its clients. The buyers and sellers of futures contracts are required to keep a minimum balance, which depends upon the size of the trade position. The futures trades can be opened by keeping a fraction of the trade value known as margin. Lower margins are applicable for less volatile and far month contracts, whereas higher margins are applicable for volatile and near month contracts. Additional margins are required if additional positions are opened or an open position runs into loss. Usually, all brokers provide customized computer trading software, which takes care of the deposits and margin requirements for executing or maintaining a trade.

The exchange imposes a daily price limit (DPL) $\pm 4\%$ for all the futures trades. If price hits upper or lower limit, trading is halted for 15 minutes and the trading is permitted within the 4% band. If next day the trade hits 4% DPL again the daily price limit is relaxed by an additional 2%. No trades are permitted beyond $\pm 6\%$ [4].

The trade timings on the NCDEX for soybean are from 10 AM to 5 PM on weekdays. The unit of trading and delivery for soybean (SYBEANIDR) trade are 10 metric tons (MT, 1MT=1000 kilograms) and the maximum permissible order size is 500MT. The quotations are given in Rs. per quintal. The delivery centers are Indore, Itarsi, Sagar, Vidhisha, Mandasaur in Madhya Pradesh, Akola, Nagpur, and Latur in Maharashtra, and Kota in Rajasthan. The exchange imposes client level limits of 60,000 MT and member level limits of 600,000 MT. The minimum initial margin for soybean contract is 5% of the trade value. Additional margins might be applicable depending upon the expiry schedule and volatility of contract [4].

The trade timings for soy oil on NCDEX are from 10.00 AM to 11.30 on weekdays. The unit of trading and delivery for soy oil (SYOREFIDR) trade are 5 MT and the maximum permissible order size is 500MT. The quotations are given in Rs. per ten kilo and the delivery center is Indore. Client level limits of 35,000 MT and member level limits of 350,000 MT are maintained. The initial margin requirement for soy oil contract is 5% of the trade value. Additional margins are applied in case of unidirectional movement in prices [5].

The trade timings for soy meal on the NCDEX are from 10.00 AM to 11.30 on weekdays. The unit of trading and delivery for soy meal (SBMEALIDR) trade are 10 MT and the maximum permissible order size is 500 MT. The quotations are given in Rs. per ton and the delivery center is Indore. Client level limits of 20,000 MT and member level limits of 80,000 MT are maintained. These limits do not apply to bonafide hedgers identified by the exchanges. The limits for these hedgers are decided on a case by case basis. A 5% margin is required as initial margin for soymeal futures. No fresh positions are allowed in the last five days prior to the expiry of the contract. During this period only the outstanding positions are settled.

All the outstanding futures positions, not resulting in physical delivery, are netted at the final settlement price (FSP). The FSP is decided by the average of spot prices polled on the last three days of the contract.

The futures prices of soybean, soy oil and soy meal have shown wide fluctuations over the past few years. Between 2010 and 2011 soybean prices remained below Rs.2500. In 2012 suddenly the prices became very volatile and soybean crossed Rs. 5000 mark, which was twice the high price prevailing just a year ago. The prices remained range bound between Rs. 3000 and Rs.4000 before breaking out to Rs. 4800 again in 2013-14. In 2014 there was a bumper crop of soybean in the US, resulting in a fall in the soybean price to a three year low of Rs.3000 [4].

Similarly, the soy prices varied from Rs. 560 to Rs. 650 in 2010-11 and rose to Rs. 820 in 2012. It oscillated between Rs. 650 and Rs. 750 for two years between 2012 and 2014. Due to the bumper crop in the US, it fell from a high of Rs. 750 in May 2014 to Rs. 560 in October 2014 [5].

6. Financialization and speculation in Soy Complex

In India there is a growing evidence of financialization, i.e, heavy flow of funds due to participation of financial entities, of soy complex markets. The total volume of soybean oil and soybean traded on commodity exchanges in 2012-2013 was 76.5 million tonnes (MT) and 62 MT respectively as against the domestic physical availability inclusive of imports of 2.5 MT and 12 MT respectively [2]. But, the deliverable to traded percentage is only 3.2 % for soy oil and 19.3 % for soybean. This clearly shows the speculative trading and the financialization in the soy complex.

Speculative activity can be captured by the increased volumes and increased open interest. Open interest refers to the number of contracts lying open at the end of day. The ratio of change in open interest to the traded volumes can be taken as a good indicator of speculative activity. Our analysis of soy oil futures market reveals that if this ratio is around 0.1 then there is excessive speculative activity in the market. The traders should be cautious while taking positions in such a situation.

7. Hedging of Positions Using Futures

Financialization of soy complex and increased speculative activity has led to increased volatility. The increased volatility in the constituents of soy complex can be countered by the stakeholders, namely, the producers and the users, by hedging their positions by an equal and opposite trade. Hedging is based on the principle that cash market prices move together with the futures market prices. The movement is not identical, but it is usually close enough such that it is possible to offset the risk of loss in one market by taking an opposite position in the other market. For example, a farmer having a crop in the field in July or a trader holding physical quantity of soybean for selling in October may suffer losses if the prices fall in October. If the price goes up by October the holders of commodity gain, but if the price goes down they lose. To counter this uncertainty, the farmer and the trader can sell (short) an equivalent number of futures contracts. If the cash price declines by harvest time, any loss incurred will be offset by the gain in the hedge in the futures market. This particular type of hedge is known as the short hedge because of the initial short position. Soy oil crushers and soybean buyers need protection against rising prices and can go for a long hedge involving an initial long futures position. For example, a crushing mill is planning its purchase requirements of soybean in July for the months of January and February next year and there is a possibility that the prices will rise in January and February. The oil mill can offset the expected losses, due to the increase in price, by buying the equivalent number of futures contracts that to be delivered in January. As the futures trades require only a fraction of the trade value, known as margin, the capital blocked is much smaller in comparison to what it would cost to buy physical commodity today and hold it till January.

8. Speculative Trading Strategies

While producers and end users participate in the futures to minimise the risks by hedging, the novice traders can take advantage of the futures to speculate on the prices of soy complex using the following two simple strategies.

Buy and Hold Strategy: The prices of the constituents of soy complex exhibit seasonality. Every year the prices go down to the lowest around the harvest time, i.e., October. They start rising from October and reach the peak in April or May just before the sowing season. The novice traders can benefit from a simple strategy of buying futures expiring in the month of May. The May expiry futures start trading in November; it gives a good chance of price appreciation to the traders. If the price of soybean May expiry is Rs. 3400 in November, the margin required for the contract at 5% would be Rs. 17000 per lot of 10 MT. Allowing for a maximum drawdown of 500 points in the intervening months between November and May, the trader is exposed to a risk of Rs.67000 (Rs.17000 plus the drawdown of Rs.50000). In other words, a minimum capital of Rs. 70,000 is required to buy and hold one lot of soybean. If the price goes up to Rs. 4300 in May, the trader reaps a profit of Rs. 90,000 on his trade. Ignoring the brokerage and taxes, five month return on capital is 128%. Active traders can watch the trade during the life of the contract and close it accordingly for a suitable profit.

Watch and Trade: Another simple strategy followed by both retail and wholesale traders is to look for major overnight movement in soybean and soy oil prices on the CBOT exchange in the U.S. The price movements on the NCDEX follow the price movement of the CBOT, provided the price change is larger than 0.25%.

9. Conclusion

The soy complex futures can be traded using a simple account with a broker. All the three constituents of soy complex are very liquid and trades can be opened at a small margin of 5% of the lot value. While the futures are used largely by the end users for price risk hedging, they can also be used in a simple buy and hold strategy by the novice traders. The buy and hold strategy is likely to give better results when combined with additional information on fundamental indicators of crop such as monsoon, annual production, global production, and import duty structure on imported soy oil. Besides, good trades can be identified from the overnight movements in soybean and soy oil on the CBOT exchange in the U.S. The novice traders should take a cautious approach while adopting these strategies because the trading strategies in commodities involve financial risks due to lower margins. To safeguard their investment, the novice traders should execute these strategies with proper risk management tools.

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