The ConBack Gimmick: A Strategy for Speculation

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Abstract *This paper is directed to empirically explore the applicability of Keynes's assumptions on Indian Commodity Derivative market and to have an insight about the randomness of Contango and Normal Backwardation of Contract Months and Near Months in the select commodities. The data for the select commodities have been triangulated from MCX and NCDEX over a period of three years i.e. from 2013 to 2015. Runs test is employed to check the randomness of the Contango and Normal Backwardation in the select commodities market. The paper also attempted to draw an exclusive pattern for both Contango and normal backwardation by which the hedgers would be able to hedge their price risk and also would be beneficial to the speculators to earn a handsome premium.*

Keywords *Contango, Backwardation, Anchor's Heuristic Effect, Risk Premium, Shadownomics*

JEL *G11, G13, G14, G41, P34*

INTRODUCTION

The commodity Derivative Segment provides a wide platform for both price risk management and market uniformity. The price risk has only be hedged through proper risk premium analysis and assumptions. The producers or farmers, who maintain their livelihood by producing crops, food grains, serials etc. are the most practical and phenomenal individuals. The mere fluctuation in the crop price will give a dimension to their financial obligation. The farmers who are involve in farming do not have any self-financial assistance for their crop harvesting, the all drastically depend upon the financial intermediary for financial assistance. The producer again has the obligation to pay back the loaned amount with a specified interest rate. So the fluctuation in the price gives a flaw to the farmer's inflows.

It is very much important to understand the symptoms before judging the disease. So if we are confident about the decrease or increasing trend of the price of the products, we can hedge our price risk in engaging in various instruments in the derivatives market. So, knowledge of the pattern in the market is very significant in order to hedge the price risk by the hedgers and to earn a good premium by the speculators. John Maynard Keynes had developed Keynesian Economics, where he partially focused on the Speculation activities in Commodity Segment. The contract, which gives a safeguard to the price fluctuation in the commodity market and allow the farmer to sell in the product with a better price.

KEYNES'S ASSUMPTIONS

The theory of Speculation was propounded by Keynes in 1948. Keynes put an effort to explore the reason for Normal Backwardation. Backwardation is normally observed when Commodity is in Short supply in the market. It gives a lead about "Seasonal" and "Off Seasonal" Product". If a producer producing an off-seasonal product, he expects a better value for his products as the demand is higher than the supply of the commodity and he will always try to strike the best price for the product. However, due to uncertainty in the market and price variations, the producers will hedge sort. And due to the hedging pressure and risk adverse nature of the producers, he has to set the futures price below the future expected spot price. Therefore, in the normal backwardation market condition, the futures price is always lower than the future expected spot price of the commodities. Whereas, the market condition is said to be in *Contango,* when the futures price is higher than the future expected spot price, and as opposite to backwardation, this situation arises when the supply is enough and the convenience yield is less than the cost of storage.

Suppose, a producer is producing commodity X for commercial selling and the demand for the commodity X is higher than supply, then the convenience yield of the commodity will be higher than the cost of storage and thereby there is a greater chance of increasing price trend as the producers will demand more prices due to short supply. However, the producers are always risk averse as they bears more risk than consumers because of the possession of the commodities with them. This leads to congenital weakness on the demand side of many commodities futures contracts (*Feldmen & Till, 2006*). This leads a lower price of the contract than the future expected spot price. In such case the market is said to be backwardation.

However, if the case is the opposite one and the supply of the commodity in the market is more than the demand, the

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producers will try to store the produce to sell it at later period. According to the traditional storage theory, therefore the current spot price will be higher than the future expected spot price which implies a decreasing trend in the price. Again, in such case the speculators will take short position and try to sell the produce predicting a declining price market. Thus the pressure from the speculators side leads the futures price higher compared to the future expected spot price. And this situation is termed as *contango* in commodities derivatives market.

MARKET MICROSTRUCTURE

The market micro structure completely based on the current Demand and Supply of the commodity with optimum information transformation. The commodity market is much un-organized than stock market as there are an ample amount of chances of leakage of market information. Normally the spot market is regulated by various "Shadownomics". Sometime the Efficient Market Hypothesis (EMH) does not work out properly due to involvement of such "Shadownomics". This is the biggest reason behind the Normal Backwardation.

If a producer or farmer produces certain commodities and wish to sell it up in the market, normally he finds price risk due to easy availability of both producer and product. So in order to hedge his price risk, he enters in to futures contract for a better price in the future date. But such practice is very miserably seen in Indian context. So indirectly it gives a rise of "Backwardation" situation.

SHADOWNOMICS

Shadownomics is a kind of black economy, where *Cartel Risk* is seen, and producers are not allowed to sell their product in derivative segment. Improper information about price of saleable commodities, sometimes leads to "Backwardation" in the market. The economy is considered as shadow or darkens due to manipulation of price mechanism for the farmer. The economy is pumped in with a wrong information about price and restricts the producers to sell their products in futures Market. The market agents forces the producers to sell in spot market even if it is a distress sell. The Shadownomics invokes abnormal price fluctuation and inflation in an economy. The market agent acts as bookie to undergone malpractice by reselling the distressed sold commodities.

CARTEL RISK

The cartel risk is created or initiated by the market agents or bookies who fixes the price of which are sold by the farmer with a lower price. In such case the farmer is unable to get a proper price for his produced commodities. The Market agents restrict them to sell in futures market and force them to deliver in Spot Market with a cheaper price. As we know, it is very difficult to get a proper price for the seasonal product as competitors are more in such scenario and this is the only reason behind the initiation of Derivative Segment. In such platform, the producers can hedge their price risk by entering into Future contracts. But such practice is rarely seen in Indian Derivative Market. Most of the Mandies are operated by the illegal Market Agents and they decides upon their net gains i.e. whether the farmer will enter into futures segment or still continue with spot market. The illiterate, poor farmers render their produces with no option, neither they know how to trade online nor wishes to fight with local "Gundas".

As we know "Backwardation" is not seen in security market and here is the biggest reason behind such drastic issue. Security Market is more organized and ruled up by high net worth intellectuals but due to such Cartel Risk, "Backwardation" has eaten away the real aroma of trading for the poor farmers. The Cartel Risk can be diversified by superimposing regulation on local Mundies and eradicating the illegal market agent, but still we are so far form moon.

ANCHOR HEURISTIC EFFECT

The *Anchor Heuristic Effect* normally calculates the Ups and Downs from the original value at the time of prediction. In such situation, we are intended to predict the happening of "Contango" and "Normal Backwardation" by capturing the movement of "Spot Price Trend" of past three years. We assumed that, *if the current future price of the select commodities is "Above" the moving average of last three years Spot Price, we can get a "Backwardation" trend and if "Bellow" there will be a "Contango" Pattern*. We assumed that if the futures price of the select commodities is below the spot price. The reason for calculating *Spot Price Trend* is that, we assumed that there is an *Influence* of past year Spot Price on the current year spot price for the *Contango* and *Normal Backwardation* situation. Suppose the current Spot price of Channa is "Above" than last three-year spot price, which means that the commodity has gone through lower supply and higher demand. The non-availability influences the Spot Price of the commodity hence resulted Backwardation. In such situation, a speculator can store the commodity for a *premium* in future date. This situation

is purely adverse in case of Contango. The *return* of such holding of commodities is called *Convenience Yield*.

SPECULATION THEORY

Normal Backwardation seems to be more peculiar with the aspect of *Hedgers* and *Speculators Prospective*, but it's more specific on *Producers prospective*.

The producers are those who harvest, grow and try to settle the produced crops with a minimal profit margin, however, hedgers are those, who tries to mitigate the price risk by entering in Derivative market with a *Long Hedge* or *Sort Hedge*. The Speculators are of dynamic forecasting ability where they can earn a premium for it.

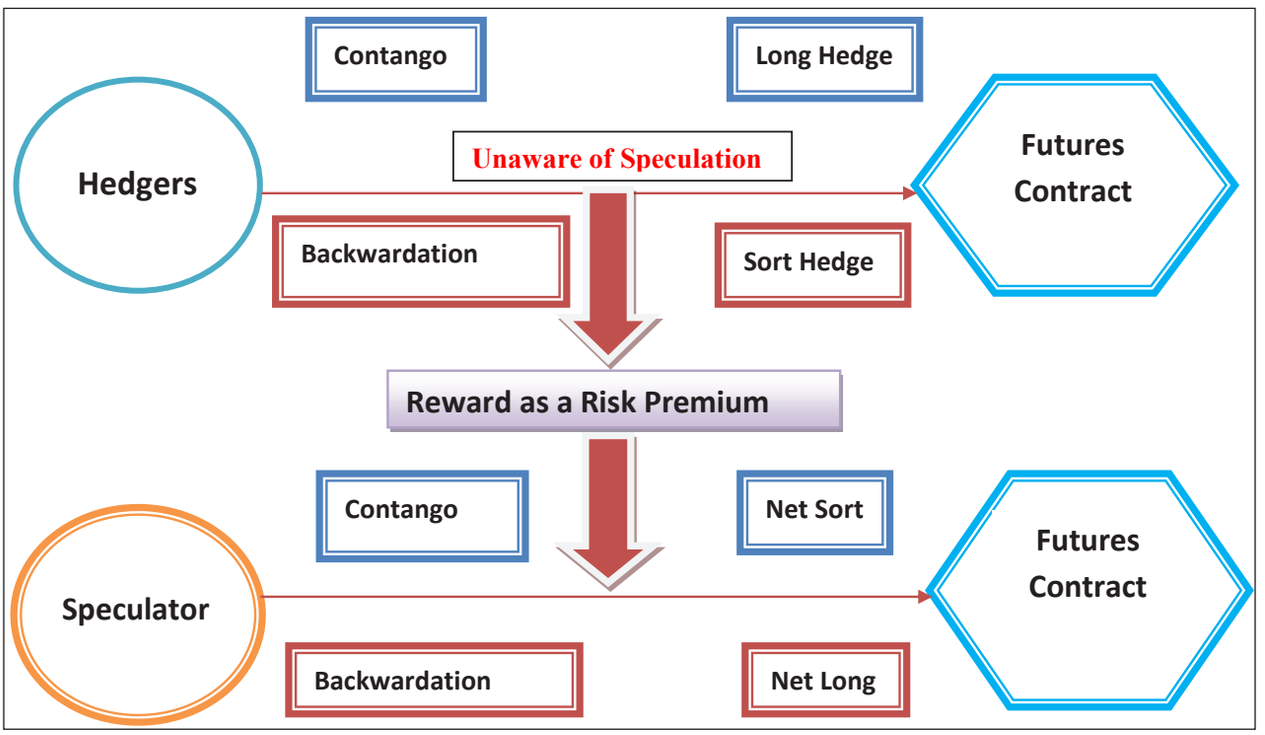
If we focus the "*Market Microstructure*", the situation of "Normal Backwardation" and "Contango" has a dynamic spillover effect to each other and provides an enormous support to Speculating activities. Again, if we address the Hedgers, the situation of both "Contango" and "Normal Backwardation," it provides a platform for risk management, where a hedger can get an Insurance Premium along with the benefit of risk management, if he depicts if they recognize the exclusive pattern on ConBack. It is obvious that, when a Hedger is going to mitigate the price risk of his possession, he has to "Hedge Long" and it is purely opposite in the case of "Speculator," i.e. Net Sort, hence the situation is expected to be "Contango" and again, in "Normal Backwardation", the "Speculator" has a net pay off by taking "Net Long" position where as "Hedgers" to be reverse.

Therefore, all of the "Speculators" profits would be a reward for risk bearing and none is a reward for "Forecasting Skill" (Lee and Zhang, 2008).

MECHANISM

The below mentioned chart has given a pictorial mechanism of the net position of both Speculator and Hedger as well. The moment a Hedger enters into Derivative segment, immediately he thinks up the *futures prices* of his possession will continuously decrease, hence in order to shield his price risk, he *Hedge Long*. In the same scenario the Speculator, who make his position by *Net Sort* with a prediction that they can repurchase in a minimum rate. in such moment, we drastically predict a "Contango" situation and reverse is "Normal Backwardation".

In such situation, the *Net Premium,* the Speculator gain is a reward for *taking of risk* and hence it is paid by the hedger. Again, if we understand the Keynes assumption on storing of inventory, we could understand, the more secure our inventory storage, the more we face "Backwardation" situation, this is due to the convenience yield is greater than the cost of storage and thus the producers expects a better price for their products i.e. expects the price to be upward trending to justify his argument, Keynes developed a theory by saying, "Normal Backwardation occurs, when the Commodity is in short supply". It is purely based on the demand and supply theory, less the supply, chances of immediate disbursement is quite high due to high demand.



LITERATURE REVIEW

Lee and Nancy (2005), the authors investigate on "Future Markets: Speculator Participation and Risk Premium". The study aims at to explore whether changes in Futures Price are determined by the shifting of price risk and the presence of risk premiums in the transaction between Hedgers and Speculators. The author explained the two theories i.e. "Theory of Normal Backwardation" and "Forecasting Theory", which gives return to speculative traders and significant price volatility in futures marker, he also pointed out the Theory of Convenience yield, and how speculators will benefit, when product is in short supply.

Garton and Ronnembor (2006) have conducted a study entitled "Facts and Fantasies about Commodity Futures". The Study observes that commodity futures have historically offered the same return and Sharpe-ratio as equities. While risk premium on commodity futures is essentially same as equities, the study on commodity Futures with a sample of 32 commodities traded in London Metal Exchange during 1959-2004 observes that the returns of commodity markets are negatively correlated with equity returns and bond returns. The negative correlation between commodity futures and other asset classes in commodity futures are truly correlated with inflation and unexpected inflation, changes in expected inflation.

Feldman & Till (2006) examined the role of backwardation in the performance of positive long positions in soybean, corn and wheat futures over the period 1950 to 2004. They found high level of explanatory power for backwardation and roll return in describing the performance of three commodity futures.

Bose (2008) has explored a study on "Commodity futures market in India: Study of trends in the National Multi Commodity Indices**.** The characteristics of Indian commodity futures market has been studied through price efficiency functioning of market. The result based on Multi Commodity Indices shown at higher exposure to material and energy product with clear and efficient price dissemination in national and International Market. She has expected the nature of Contango and Normal Backwardation in her observation. The suggestion made on the base of trend of Spot and Future Index for 2005-2007.

Fantacci et. al. (2010), the author makes an attempt to study on "Speculation in Commodities, Keynes practical acquaintance with future market". Information like un-published letter, broker's statement and speculation theory of Keynes have been used to analyze the speculative behavior in wheat future market, the observation shows that, Normal Backwardation applied only to well specified circumstances. It also observes that, Keynes actual behavior as a speculator is different from the theory suggested by him (Speculative Theory).

Varadi (2012), the author explores in the topic of "An Evidence of Speculation in Indian Commodity Market". He explains the price volatility is influenced by several factors like traditional supply and demand, excess global liquidity and financialization attitude of speculators and investors. The study has attempt to find the impact of the above said factors in Indian Commodity Futures Market. The result shows that, speculation played an important role in price volatility especially in the global crisis. He has pointed out how the Theory of Normal Backwardation helpful in such regards. Data collected from FMC fortnightly from 2006-2010.

Gorton et. al. (2012) empirically verified how price based signals are related to inventory levels and risk premium using a comprehensive data set of 31 commodity futures and physical inventories between 1971 and 2010. They observed that increase in hedging (decrease in long position) by commercials is associated with higher futures return. Commercials increase their short positions as prices go up, while non- commercial increase their long position in a rising market.

Das and Chakroborty (2015), the author studied on "Hedging performances of Commodity Futures in India: An empirical Study on Some Agri Commodities". This paper aims to measure optimal hedging ratio and hedging effectiveness for reducing the price risk. A positive base implies that, a Future Price lag behind or backward to Spot Price (Future Market is in Backwardation, whereas aa negative basis is termed as Contango). Potato price shows a mixed Pattern, with a greater incidence of Contango and Backwardation.

Kumar (2016) has conducted a study entitled "Financialisation of Commodity Market in India: A closer look at the evidence". The impact of financialisation of price risk and price volatility of Indian commodities market has been studied by using time series techniques. The commodity price index is related to stock index price and causality test indicated that commodity prices are Granger causes the stock prices in India.

Botterud et. al. (2016) studied the relationship between long term and short term prices in the Scandinavian electricity market. The analysis is based on historical spot

and futures prices covering the period from 1995 to 2001. They established that on an average futures price seems to overestimate the actual spot price and average risk premium is negative.

OBJECTIVE

In the current study we are focusing on to examine the applicability of Keynes's assumptions on Indian Commodity Derivative market. On the other hand, we have also intended to calculate the randomness of Contango and Normal Backwardation of Contract Months and Near Months in the select commodities. We are expected to draw a suitable pattern of ConBack for betterment of risk management practices by the producers as well as Hedgers and Forecasting skill adopted by Speculator to earn Risk Premium.

DATA CRUNCHING

We have grabbed the *time series closing price* of select commodities i.e. Channa, Chilli, Jeera, Soya Bean and Turmeric from MCX and NCDEX over three years i.e. from 2013 to 2015. We both have collected *Contract Month* and *Near Month* data for our research. We have taken *one hundred forty two* contracts to focus Contract Month.

METHODOLOGY

Test of Randomness: The test of randomness is very much important to understand the wavering movement of values. In order to capture such wavering movements, we tried "Runs Test", runs are defined as a series of Decreasing or Increasing Series. The length is determined by the number of runs in that series. In a random data series, the probabilistic occurrence that the (I+1) th value is smaller or larger than I th value follows a Binomial Distribution, which is the basis of Runs Test.

$$Z = \frac{R - \overline{R}}{SR} \quad (1)$$

R = Observed no. of Runs

$\overline{R}$ **= Expected no. of Runs**

SR = Standard Deviation of runs.

$$\overline{R} = \frac{2n1n2}{n1 + n2} + 1 \quad (2)$$

$$SR = \frac{2n1n2(2nin2 - ni - n2)}{(n1 + n2)(n1 + n2 - 1)} \quad (3)$$

n1 and n2 = the positive and negative number in the series

We have collected near month contract cycles for the select commodities of our study. We have analyzed *Spread (Expected Spot Price-Future Price)* to explore the Existence of Contango and Backwardation. The *negative Spread* gives Contango whereas Backwardation for *Positive Spread*.

INTERPRETATION OF RESULT

Runs Test

Commodities	Contract Months		Near Months	
	Total Runs	Significance	Total Runs	Significance
Channa	11	0.113	197	0.000
Chilli	15	0.262	061	0.000
Jeera	15	0.000	164	0.000
Soya bean	08	0.119	224	0.000
Turmeric	10	0.000	125	0.000

Runs Test: 01

We have attempted to measure the randomness of *Contango* and *Normal Backwardation* for both *Near Months* and *Contract months* for select agricultural commodities i.e. Channa, Chilli, Jeera, Soya Bean and Turmeric over the three years. We have tried *Runs Test* to capture the Randomness of sample. If we observe keenly, we could able to observe, the *Total Runs* of Commodities in Near Months are relatively high in *Contract Months*, and the commodities are completely significant in Near Month contracts where as it is partially significant in Contract Months (Runs Test: 01).

The commodities like, Jeera and Soya Bean are significant whereas rest of the commodities i.e. Channa, Chilli and Soya Bean are insignificant in Contract Months , that depicts, the Commodities, those who shows a significant in *Runs Test*, have rejected the *Null Hypothesis* and provide a *randomness* of Contango and Normal Backwardation. In the other hand, the commodities that are i*nsignificant* in *Runs Test* provide a *non-randomness* of happenings of Contango and Normal Backwardation. Again, the randomness of Contango and Normal Backwardation in *Near Month* contracts gives a significant result, hence we can conclude that, there is a Randomness of Contango and Normal Backwardation persists in Near Month contract in all select commodities.

As it is clearly seen, the Total Runs of Contango and Normal backwardation in Near Months contract are relatively high in compare to Contract Months and it is due to the impact of *Maturity Month* and *convergence* effect. The prices fluctuations are mostly observe in *Near Month* period due to

delivery and settlement of commodities. But this scenario is completely absent in *Contract Months*. The non-randomness of Contango and Normal Backwardation provides a drastic pattern; it is due to the systemic trends of happening of ConBack, and also disproves both Anchor Heuristic Effect and Keynes assumptions.

Results

Select Commodities	Existence of ConBack	Keynes's Assumption	Anchor Heuristic effect	Significance Level (Runs Test)
Channa	Yes	Proved	Proved	0.113
Chilli	Yes	Proved	Proved	0.262
Jeera	Yes	Disproved	Disproved	0.000
Soya bean	Yes	Proved	Proved	0.119
Turmeric	Yes	Disproved	Disproved	0.000

Results: 01

KEYNES'S ASSUMPTION

We have made an attempt to empirically document Keynes assumption regarding Backwardation (Contango). In Backwardation, the supply of commodities is very less, hence expecting a positive price movement, so the *Future Price* is quite above the *Expected Spot Price*. The commodities like Jeera and Turmeric disproved the Keynes assumption of Contango (Backwardation), whereas the commodities like Channa, Chilli, and Soyabean has proved the assumption. The sowing and harvesting periods, seems to be Backwardation, because that time normally market faces a short supply of commodities, whereas it is reverse in Contango. (Results: 01). The availability of commodities is depends upon their arrival months. Hence, the Futures Price is higher than the Expected Spot Price, resulting Contango.

ANCHOR HEURISTIC EFFECT

The assumption of Anchor Heuristic Effect is to calculate the Ups and Downs from the original value in the time of prediction. In such situation, we are intended to predict the happening of "Contango" and "Normal Backwardation" by capturing the movement of "Spot Price Trend" of past three years. The result provided a clear idea about the happening of Contango and Normal Backwardation with the aspect of Anchor Heuristic Effect. The commodities like Channa, Chilli and Soya Bean has *proved* the assumption of Anchor Heuristic Effect with a *non-random* pattern of Contango and Backwardation. It conveys, the non-randomness of Contango and Backwardation has a specific *Spot Price Trend* which will again lead a situation for Contango (Backwardation). Similarly, the commodities like, Jeera and Turmeric *Disproved* the Anchor Heuristic Effect assumption with a *random* pattern of Contango and Normal Backwardation.

CONBACK PATTERN

The pattern for *Contango* and Normal *Backwardation* is keenly observed in the select agricultural commodities. The pattern may very much helpful to producers, hedgers and Speculatorsas well. It is necessary to adopt proper strategy in order to optimize profit and mitigate risk as well. The *net position* of both Hedgers and Speculators can be more authentic and specific, if the aware of certain pattern of market behavior. Channa has a systematic pattern of Contango in January, February, April, May, June and July but a Backwardation pattern in March. In order to gain premium in Contango situation, the Speculator tries to position *Net Sort* and Hedgers may take *Long Hedge* to protect their price risk in January, February, April, May, June and July for Channa contract and reverse in Backwardation in March contract (*Appendix: A*). Again, if we observe rest of the agricultural commodities, we can also suggest the optimum strategies for both Hedgers and Speculators to minimize the risk and earn premium (Speculator. as well. In Chilli contract, the Hedgers will position at *Hedge Sort* and Speculator will be at *Net Long* over January to September except March, hence in March, they have to take Long Hedge (Hedger) and *Net Sort* (Speculator). Jeera contract has a definite position of *Sort Hedge* (Hedgers) and *Net Long* (Speculator) in March to July but Soya Bean from April to November the Speculators can position themselves by taking *Net Long* and *Sort Hedge* for Hedgers, but it is reverse in January and December. The Turmeric contract has drastic pattern of *Contango*, hence,

the Speculator will position at *Net Sort* whereas the Hedgers will take *Long Hedge* from April to August and reverse in case of February and March.

CONCLUSION

A clear pattern of Contango and Backwardation is clearly observed in this paper. The pattern will help the Hedgers as well as Speculator to make appropriate strategies to hedge the price risk and earn risk premium as well. The randomness of Contango and Normal Backwardation in some commodities failed to provide a definite pattern throughout the year, but the structured pattern are much obvious and authentic to make optimum strategy both Hedgers and Speculators as well. They can play in a definite pay off up to the equilibrium, once it touch the threshold, the strategies has to be changed in order to perform in the derivative market. Again, we have discovered the existence of Contango and Normal Backwardation in select agricultural commodities and also we have identified the commodities which have followed the Keynes Assumptions and assumptions of Anchor Heuristic Effect.

APPENDIX: A

ConBack Pattern

Net Position of Hedgers and Speculators in ConBack Situation										
	Channa		Chilli		Jeera		Soya Bean		Turmeric	
	Hedger	Speculator	Hedger	Speculator	Hedger	Speculator	Hedger	Speculator	Hedger	Speculator
January	Long Hedge	Net Sort	Sort Hedge	Net Long	No Pattern		Long Hedge	Net Sort	No Pattern	
February	Long Hedge	Net Sort	Sort Hedge	Net Long			No Pattern		Sort Hedge	Net Long
March	Sort Hedge	Net Long	Long Hedge	Net Sort	Sort Hedge	Net Long			Sort Hedge	Net Long
April	Long Hedge	Net Sort	Sort Hedge	Net Long	Sort Hedge	Net Long	Sort Hedge	Net Long	Long Hedge	Net Sort
May	Long Hedge	Net Sort	Sort Hedge	Net Long	Sort Hedge	Net Long	Sort Hedge	Net Long	Long Hedge	Net Sort
June	Long Hedge	Net Sort	Long Hedge	Net Sort	Sort Hedge	Net Long	Sort Hedge	Net Long	Long Hedge	Net Sort
July	Long Hedge	Net Sort	Sort Hedge	Net Long	Sort Hedge	Net Long	Sort Hedge	Net Long	Long Hedge	Net Sort
August	No Pattern		Sort Hedge	Net Long	No Pattern		Sort Hedge	Net Long	Long Hedge	Net Sort
September			Sort Hedge	Net Long			Sort Hedge	Net Long	No Pattern	
October			No Pattern				Sort Hedge	Net Long		
November							Sort Hedge	Net Long		
December							Long Hedge	Net Sort	Long Hedge	Net Sort

Contango Pattern					
	Channa	Chilli	Jeera	Soyabean	Turmeric
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

Backwardation Pattern					
	Channa	Chilli	Jeera	Soyabean	Turmeric
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

APPENDIX: B

Existence of Contango and Normal Backwardation in Select Commodities

CHANNA			
	2013	2014	2015
JANUARY	B	C	C
FEBRUARY	NT	C	C
MARCH	NT	NT	NT
APRIL	B	C	C
MAY	B	C	C
JUNE	C	C	C
JULY	B	C	C
AUGUST	C	C	B
SEPTEMBER	B	C	B
OCTOBER	B	C	B
NOVEMBER	B	C	B
DECEMBER	C	C	B

Table-I

CHILI			
	2013	2014	2015
JANUARY	NT	NT	NT
FEBRUARY	NT	NT	NT
MARCH	C	NT	C
APRIL	C	NT	C
MAY	NT	NT	NT
JUNE	C	C	C
JULY	B	C	B
AUGUST	B	C	B
SEPTEMBER	B	C	B
OCTOBER	B	C	C
NOVEMBER	C	C	B
DECEMBER	C	C	B

Table-II

JEERA			
	2013	2014	2015
JANUARY	NT	NT	C
FEBRUARY	NT	NT	C
MARCH	B	B	B
APRIL	B	B	B
MAY	B	B	B
JUNE	B	B	B
JULY	B	C	B
AUGUST	B	C	B
SEPTEMBER	B	B	B
OCTOBER	B	C	B
NOVEMBER	B	C	B
DECEMBER	B	C	B

Table-III

C - Contango

B - Backwardation

NT – Not Traded

Table-IV

Table-V

SOYABEAN			
	2013	2014	2015
JANUARY	B	B	C
FEBRUARY	B	B	C
MARCH	NT	B	NT
APRIL	B	NT	B
MAY	B	B	NT
JUNE	B	B	C
JULY	B	NT	NT
AUGUST	NT	B	B
SEPTEMBER	NT	NT	NT
OCTOBER	B	B	B
NOVEMBER	B	B	B
DECEMBER	C	C	C

TURMERIC			
	2013	2014	2015
JANUARY	NT	NT	NT
FEBRUARY	NT	NT	NT
MARCH	NT	NT	NT
APRIL	C	C	C
MAY	C	C	C
JUNE	C	C	C
JULY	C	C	C
AUGUST	C	C	B
SEPTEMBER	B	C	C
OCTOBER	B	C	C
NOVEMBER	C	C	C
DECEMBER	B	C	C

APPENDIX: C

The Anchor Heuristic Effect

CHANNA			
	2013	2014	2015
JANUARY	A	B	A
FEBRUARY	NT	B	A
MARCH	NT	NT	NT
APRIL	A	B	A
MAY	A	B	A
JUNE	A	B	A
JULY	B	B	A
AUGUST	B	B	A
SEPTEMBER	B	B	A
OCTOBER	B	B	A
NOVEMBER	B	B	A
DECEMBER	B	B	A

Table-I

CHILI			
	2013	2014	2015
JANUARY	NT	NT	NT
FEBRUARY	NT	NT	NT
MARCH	B	NT	A
APRIL	B	NT	A
MAY	NT	NT	NT
JUNE	B	A	A
JULY	B	A	A
AUGUST	B	A	A
SEPTEMBER	B	A	A
OCTOBER	B	A	A
NOVEMBER	B	A	A
DECEMBER	B	A	A

Table-II

JEERA			
	2013	2014	2015
JANUARY	NT	NT	A
FEBRUARY	NT	NT	A
MARCH	B	B	A
APRIL	B	B	A
MAY	B	B	A
JUNE	B	B	A
JULY	B	B	A
AUGUST	B	B	A
SEPTEMBER	B	B	A
OCTOBER	B	B	A
NOVEMBER	B	B	A
DECEMBER	B	B	B

A - Above

B - Bellow

NT – Not Traded

Table-III

SOYABEAN			
	2013	2014	2015
JANUARY	A	A	B
FEBRUARY	A	A	B
MARCH	NT	A	NT
APRIL	A	A	B
MAY	A	A	NT
JUNE	A	A	B
JULY	A	A	NT
AUGUST	NT	NT	A
SEPTEMBER	NT	NT	NT

TERMERIC			
	2013	2014	2015
JANUARY	NT	NT	NT
FEBRUARY	NT	NT	NT
MARCH	NT	NT	NT
APRIL	B	A	A
MAY	B	A	A
JUNE	B	A	A
JULY	B	A	A
AUGUST	B	A	A
SEPTEMBER	B	A	A

OCTOBER	A	B	B
NOVEMBER	A	B	B
DECEMBER	A	B	A

Table-IV

OCTOBER	B	A	A
NOVEMBER	B	A	A
DECEMBER	B	A	A

Table-V

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