Relationship between Commodity Future Trading with Spot Prices Variation and Inflation with special reference to Indian Agriculture Market

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ABSTRACT
Commodity market of India is the backbone of Indian economy. As the country boarded on economic liberalization policies in the early nineties and signed the World Trade Organization agreements, the government recognized the requirement for futures trading in commodity derivatives to offer the economic agents with a risk management platform. Indian economy is on the broader side a fairy tale of successful journey over the centuries. Its performance in terms of the output growth has been remarkably and exceptionally outstanding. India stands the very first under the Sun in the production of jute, jute-like fibers, pulses and milk and is on second position in groundnut, vegetables, fruits, cotton, rice, and wheat and sugarcane production and is a leading producer of fisheries, poultry, livestock, spices and plantation crops. Crop growing is the mainstay for over 58% of India’s population. This paper examines the relationship between Commodity Future Trading with Spot Prices Variation and Inflation with reference to Indian Agriculture Market.

1. INTRODUCTION
Commodity futures markets mark a fractional presence in developing countries. In the times gone by the respective governments in many of these countries had disheartened futures markets. If they were not barred, their operations were tapered by regulations. Of late countries began to lax the restrictions on commodity markets. Moreover in a turnaround of earlier trends the expansion of commodity futures markets is being pursued aggressively and assiduously with support of government. Government expects collective benefits in terms of better allocation of resources, risk management and price discovery. The Indian commodity futures landscape has been evolving and the national commodity exchanges have made a big headway since inception thereof with volumes scaling newer altitudes with each passing year. According to the Forward Markets Commission the commodities market regulator the turnover on the Indian commodity has augmented by 120 times following the introduction of electronic trading in 2003 (Commission, 2014).

Indian commodity future market was fairly popular until early 80’s. However its development was almost bordering on being sluggish showing to a number of limiting and binding factors and regulations introduced by the Government of India. In 2003, these limitations were relaxed leading to the impulsive and almost meteoric growth of commodity market in the country. With significant and apt policy changes and liberalization of world markets, Indian commodity derivative market has attained extraordinary growth in terms of number of product on offer transparency and volume of trade. Commodity future trading is organized in such commodities as are allowed by the Government. The body that arranges the future trading in commodities through futures contract is known as commodity exchange. A futures contract is an agreement to buy or sell a particular commodity at a pre-determined price in the future. These are standardized contracts containing detail about the quality and quantity of the underlying asset.

1.1 Overview of Indian Commodity Market
Commodity markets play an essential role in the economies like India where the contribution of agricultural production to GDP is mammoth. India is one of the largest producers of agricultural products wherein farmers have to face yield risk as also the price risk. Farmers need security against the price risk for their crops. Farmers face imminent threat right from the time of sowing to the time of harvest. They can shift their price risk with the employ of simple derivative product by freezing in the asset prices. There were simple
contracts developed to reduce the risk and to meet the needs of farmers. Commodity futures market performs two significant economic functions such as price risk management and price discovery (Commission, 2014). A futures trading in commodities is beneficial across the entire cross section and to the deepest layer of the fabric of the economy inclusive of farmers and consumers. The commodity derivative market in India has achieved significant development in term of transparency, technology and trading activities.

Soft commodities are grown in farms. Corn, wheat, soybean, soybean oil, sugar are examples of soft commodities. Many soft commodities are subject to spoilage which can cause colossal precariousness in the short term. Environmental Conditions plays a major role in the soft market which makes predicting supply rather a daunting task. Interestingly the obvert side of the coin reveals that commodities are typically mined from the soil or are derived from other natural resources such as gold, oil, aluminium. In most cases, initial products are refined into further commodities as oil is refined in to gasoline because hard commodities are easier to handle than the soft ones and they are more integrated into the industrial process, but obviously most investors tend to be tempted to be inclined these products. Although India has to cover a long distance to be able to harness the potential in many commodities, it has substantial opportunities to develop consumer demand and uncover latent consumption. Despite having significant benefits commodities trading has been mostly limited to large corporates, trading houses and high net worth individuals (HNIs). The key reason that discourages retail investors from actively participating in commodities trading is lack of familiarity.

1.2 Types of Commodity Market
Market refers to an arrangement whereby buyers and sellers come in contact with each other directly or indirectly to buy or sell goods. There are mainly two kinds of market:

1.2.1 Spot Market
Spot transaction results in immediate delivery of a commodity for a particular consideration between buyer and seller. A marketplace that facilitates Spot transaction is referred the Spot market and transaction price is usually referred the Spot price. Here the buyer and sellers meet face to face and deals are struck. These are traditional markets. Example of a spot market is a Grain Markets in India where food grains are sold in bulk. Farmers would bring their products to this market and merchants/traders would immediately purchase the products and they settle the deal in Spot and take or give delivery immediately.

1.2.2 Forwards and Futures Market
In forwards and futures markets the agreements are normally made to receive the commodities at a later date in future for a predetermined consideration based on agreed upon terms and conditions. The main difference between these two contracts is the way in which they are negotiated. Forward contracts all terms like quantity, quality, delivery date and price are discussed in person between the buyer and the seller. Each contract is thus unique and not standardized since it takes into account the needs of a particular seller and a particular buyer only. On the other hand, future contracts are standardized. Futures contracts are often referred as an improved variant of forward contracts.

1.3 Regulatory Framework
The Forward Markets Commission (FMC) is the chief regulator of forwards and futures commodity markets in India. It is a statutory body set up in 1953 under the Forward Contracts (Regulation) Act, 1952. It is headquartered in Mumbai and this financial regulatory agency is overseen by the Ministry of Finance (Commission, 2014). As per report of commission the current tax system is not encouraging the investors. The institutional and policy-level issues linked with commodity exchanges have to be sorted by the government with the help of Forward Markets Commission. This will help take essential actions to pave the way for a considerable expansion and further growth of the commodity futures markets.

The FMC has initiated a number of measures to motivate active trading awareness in futures trading markets. Urgent decisions such as eliminating the restriction on futures trading in commodities, appreciating new commodity exchanges which can present modern trading platform and systems, and decreasing legal limitations to be a focus for more participants have amplified the extent of commodity derivatives trading in India. This has promoted both the spot market and the futures market in the country. The trading volumes are rising sharply despite the fact that the list of commodities traded on the national commodity exchanges also enlarging.

The FMC has persistent its hard work to broad base the market by undertaking various regulatory procedures to help hedgers involvement and encourage delivery in agricultural commodities. These include opening of Exchange of Futures for Physicals (EFP), Futures Settlement Mechanism and proceed of an early delivery system in selected commodities.
1.4 Evaluation of Commodity Exchanges

A commodity exchange is an exchange where various commodities and derivatives products are traded. The advent of economic liberalization helped the cause of laying emphasis on the importance of commodity trading. By the beginning of 2002, there were about 20 commodity exchanges in India, trading in 42 commodities, with a few commodities being traded internationally.

The year 2003 is a turning point in the history of commodity futures market when a large group of prohibited commodities was opened up for forward trading and new national commodity exchanges viz. Multi Commodity Exchange, National Commodity & Derivative Exchange and National Multi Commodity Exchange of India were established. Commodity trading is now available in agro products, metals, oil and oilseeds, food grains, pulses, vegetables, fibres, spices, energy products, polymers, petrochemicals, carbon credits. Commodities futures contracts and the exchanges they trade in are governed by the Forward Contracts (Regulation) Act, 1952. The regulator is the Forward Markets Commission (FMC), a division of the Ministry of Consumer Affairs, Food and Public Distribution.

In 2002 the Government of India allowed the re-introduction of commodity futures in India. Together with this three screens based nation-wide multi-commodity exchanges were also permitted to be set up with the approval of the Forward Markets Commission. These are:

1.4.1 National Commodity & Derivative Exchange

This exchange was originally promoted by ICICI Bank, National Stock Exchange (NSE), National Bank for Agriculture and Rural Development (NABARD) and Life Insurance Corporation of India (LIC). Subsequently other institutional shareholders have been added on. NCDEX is popular for trading in agricultural commodities (NCDEX, 2014).

1.4.2 Multi commodity Exchange

This exchange was originally promoted by Financial Technologies Limited, a software company in the capital markets space. Subsequently other institutional shareholders have been added on. MCX is popular for trading in metals and energy contracts. The MCX is the world’s largest exchange in silver, the second largest in gold, copper and natural gas and the third largest in crude oil futures. However, as a whole, exchange-traded commodities account for only a fifth of the total volume of commodities traded in India. Globally, the futures market in commodities is 30-40 times the size of the underlying physical commodity trade. The higher the multiplier, the more thinly the commodity price risks can spread across the market (MCX, 2014). So, it is evident that there is a large scope of increase in the volume of commodity futures trading in India. In terms of market share, MCX is today the largest commodity futures exchange in India, with a market share of close to 70%. NCDEX follows with a market share of around 25%, leaving the balance 5% for NMCE.

1.4.3 National Multi Commodity Exchange of India

This exchange was originally promoted by Kailash Gupta, an Ahmedabad based trader, and Central Warehousing Corporation (CWC). Subsequently other institutional shareholders have been added on. NMCE is popular for trading in spices and plantation crops, especially from Kerala, a southern state of India (NMCE, 2014).

To widen and deepen our commodities market for the future, policymakers need to strengthen the institutional infrastructure through market-friendly policies on taxation, enabling of institutions, such as banks and mutual funds, to participate in the commodity futures market, and the provision to initiate trading in options and intangible commodities. These would fructify as and when the Forward Contracts (Regulation) Act, 1952 (Commission, 2014), under which the commodity futures market operates, is amended.
by the Parliament. Besides, innovative application of ICT, increased awareness programmes and outreach initiatives, best-in-class technological advancements by bringing solutions that address our customers’ top trading needs, product innovation in line with the changing market dynamics and emerging challenges, and domain knowledge would ensure that the Indian commodity futures market scales global heights.

1.5 Market Participants
An efficient market for commodity futures requires a large number of market participants with diverse risk profiles. Ownership of the underlying commodity is not required for trading in commodity futures. The market participants simply need to deposit sufficient money with brokerage firms to cover the margin requirements. Market participants can be broadly divided into hedgers, speculators and arbitrageurs.

1.5.1 Hedgers
Hedgers are generally the commercial producers and consumers of the traded commodities. They take part in the market to manage their spot market price risk. Commodity prices are volatile and their participation in the futures market allows them to hedge or protect themselves against the risk of losses from fluctuating prices, such as copper smelter will hedge by selling copper futures, since it is exposed to the risk of falling copper prices.

1.5.2 Speculators
Speculators are traders who speculate on the direction of the futures prices with the intention of making money. Thus, for the speculators, trading in commodity futures is an investment option. Most Speculators do not prefer to make or accept deliveries of the actual commodities rather they liquidate their positions before the expiry date of the contract.

1.5.3 Arbitrageurs
Arbitrageurs are traders who trade between different markets to make money on price differentials. Arbitrage involves real-time sale and purchase of the same commodities in different markets. Arbitrage keeps the prices in different markets in line with each other. Usually such transactions are risk free.

The instability in commodity prices represents both, a risk and a potential for profit. The hedgers can shift this risk by foregoing the associated profit potential. The speculators guess this risk in the hope of realizing profits by predicting price movements. The arbitrageurs make the process of price discovery well-organized.

1.6 Functioning of Commodity exchanges:
An investor can freeze a trade order with the broker on phone/online portal/broker software. After getting confirmation from investor the dealer puts the order in exchange trading platform. At the beginning of the trade, a price is fixed and initial margin money from investor is deposited in the account. At the end of the trading session, a settlement price is determined by the Exchange.

If the markets have moved in support or in opposition to the investors’ price the funds are either being drained from or added to the client’s account. The sum is the difference in the traded price and the settlement price. On next trading session the settlement price is used as the base price. As the spot market prices changes every day, a new settlement price is determined at the end of every day. On daily basis before trading session the account will be adjusted by the difference in the new settlement price and the previous session’s price according to selected method.

India is one of the top producers of a large number of commodities, and also has a long history of trading in commodities and related derivatives. The commodities derivatives market has seen ups and downs, but seems to have finally arrived now. The market has made enormous progress in terms of technology, transparency and the trading activity. Interestingly this has happened only after the Government protection was removed from a number of commodities, and market forces were allowed to play their role (Market, 2014).

2. LITERATURE REVIEW
This section discusses the previous studies pertaining to commodity spot and futures and assists to develop a theoretical background of study.

Dewbre (1981) anticipated an econometric model by recognizing the function of rational expectation formation in joint determination of commodity cash and futures prices to find out the implications of such an approach by addressing the issues like the direction and magnitude of changes in the cash and futures prices occurring in response to changes in the economic information. From the analysis they observed the persistence of rational expectation and working of equally redundant efficient market hypothesis. Garbade and Sibler (1983) examined the distinctiveness of price movement in cash and futures market for storable commodities. They employed the simultaneous price dynamics model and found that over short intervals of time the correlation of price changes become a function of elasticity of arbitrage between the physical commodity and its counterpart futures contract. Basically the two price
series exhibits stochastic behaviour while pricing identical assets and exhibit a deterministic linear relationship between them. Ollerman and Farris (1985) investigated the lead-lag relationship between live cattle futures contract prices and cash prices and observed that futures prices tend to lead live cattle cash prices; they also found that cash prices tend to respond to changes in futures prices within one business day. Brorsen, Ollerman and Farris (1989) employed regression techniques to measure the effects of futures trading on the variability and volatility of cash cattle prices and found the futures trading impacting cash markets. Moreover futures trading increases cash market pricing efficiency also increases short run spot price risk.

Garcia, Leuthold, Fortenbery and Sarassoro (1988) evaluated the pricing efficiency of the live cattle futures and cash market by employing ARIMA model and composite forecasting procedures, in terms of the mean-squared error criterion a necessary condition for market efficiency and found the most accurate forecast with generation of large risk-return ratio. Thus, these results do not show strong evidence of inefficiency and call into question the use of only mean squared errors to examine a market’s pricing efficiency. Koontz, Garcia and Hudson (1990) researched the dominant satellite relationship between live cattle cash and futures market. They employed Granger Causality test to identify the lead/lag relationship and casual flows between series and observed that the results are consistent with the ideal that the futures market is interacting much closely with the more dominant cash market.

Bessler and Covey (1991) employed co integration methods on daily data and shows the evidence of co integration between nearby futures and cash prices, but no evidence of co integration when more distant futures contracts were considered. Further this result was simplified by Fortenbery and Zapata (1993) and suggested a possible reason for inconsistent result of Bessler and Covey might be the lack of explicit storage relationship between cash and futures market for livestock. Bessembinder and Seguin (1992) also examined contemporaneous relationship through augmented GARCH model. They also decomposed futures trading volume and open interest series into expected and unexpected component. The lead-lag relationship between spot price volatility and futures trading volume and open interest is investigated through VAR model. Granger causality test forecast error variance decompositions and impulse response function confirm that the lagged unexpected volatility causes spot price volatility for all commodities. Baharumshah and Habibullah (1994), Sinharoy and Nair (1994) and Chopra and Bessler (2005) analysed the existence of long run relationship among pepper prices. They employed co integration and prices of pepper tended to move uniformly across spatial markets by indicating competitive price behaviour. They analysed only long term relationship and applied co integration model. Zapata, Fortenbery and Armstrong (2005) examined the relationship between selected sugar futures prices traded in New York and the world cash prices for export sugar and found the unidirectional relationship from futures to cash. The finding of co integration between futures and cash prices suggests that the sugar futures contract is a useful vehicle for reducing overall market price risk faced by cash market.


Fig 1.4: Functioning of Commodity Exchanges
participants selling at the world price. Brajesh (2009) investigated the relationship between futures trading activity and spot market volatility for agricultural, metal, precious metals and energy commodities in Indian commodity derivatives market.

Vashist and Ashutosh (2002) attempted to find out the determination of equilibrium price of future contract of an agricultural commodity along with relationship of future contract with the expected spot market at maturity of the contract. They identified three determinations of the equilibrium price i.e. risk aversion of hedgers, demand and supply conditions expected by hedgers in the spot market and expectations and responsiveness of speculators about current spot market. In case of relationship between future contract and spot market, existence of excess demand was observed. Speculator's expectation of increase in spot prices resulted in high demand for future and in opposite situation of low prices the speculators by doing reverse trade creates off setting positions. Basab (2004) described the monopolistically competitive nature of the Indian Commodity Derivative market which stabilizes the spot price. Outcome showed the co movement among future prices, production decision and inventory decisions. Shahi, Singh, Raizada and Gaurav (2006) observed the dependence of commodity future market on spot market for price determination along with increasing inflation due to trade volume of commodity futures. They concluded that futures market is not performing the function of price discovery and futures market as a weak market in short run. Ramaswami, Bharat, Singh and Bir (2007) suggested that growth of commodity spot market depends upon the growth of commodity futures market in developing countries and certified warehouses, centralized spot prices and effective margin system were found as the important institutional factors for successful commodity futures market. Nath, Golkia, Lingareddy and Tulsi (2008) emphasized that trading in commodity futures contributed to an increase in inflation as result showed that during the time period of future trading the spot price of selected commodities and their volatilities had posted remarkable increase. Mukherjee (2008) discussed the significance of price discovery and risk management by commodity futures for the development of commodity spot market in India. The result of interdependence between commodity future and spot market in agricultural commodities also supported the relevance of commodity future trading in Indian commodity market. Kaur and Rao (2009) mentioned the commodity spot and future prices had closely tracked each other in selected agro commodities and no significant volatility has been found in the prices of future and spot contracts of those agricultural commodities.

Chakrabarty and Sarkar (2010) studied the efficiency of Indian commodity market in terms of price formation of agricultural commodities traded on commodity exchanges. By applying co integration analysis and GARCH model on agricultural commodities they confirmed the co integration between commodity futures and commodity spot market indices. They emphasised that with the information of any one index hedging can be done on other commodity indices. New information was found as an important factor to predict the future value of commodities. Kaur and Rao (2010) found that both spot and future prices for selected agricultural commodities are efficient in weak form. Future prices are independent and past prices have no role in the contribution of future price prediction. Nath and Tulsi (2008) found that in India future trading in the select commodities had apparently led to increase in price of commodity. Mishra (2008) observed that during the period 2003-08 the Indian stocks as well as commodity markets have grown considerably. The studies have explored the advantages of adding commodities to a portfolio of equities in Indian context.

Bose (2007) found that Indian stock markets are more volatile as compared to developed markets and Indian commodity future markets are going through many ups and downs and allegations of speculative activity have been made. Indian researches have not only studied the efficiency of commodity future markets of India but also analysed its effects on social welfare and inflation on Indian economy. The results showed that commodity future markets are not efficient in the short run. There are very few empirical investigations of the stock futures and hedge ratios in the context of emerging and especially in the context of Indian stock futures. Roy and Kumar (2007) studied hedging effectiveness of wheat futures in India using least square method and found that hedging effectiveness provided by futures markets was low.

3. DESCRIPTION OF THE TOPIC

Commodity market is the backbone of Indian economy but future markets are in their nascent stage of development. The topic of Indian spot and futures markets is the subject of interest for farmers, traders, financial economist and analysts. Since 2002 the commodities future market in India has experienced an unprecedented boom in terms of the number of exchanges, number of commodities allowed for derivatives trading as well as the levels of futures trading in commodities. Investment in commodity markets has been very popular and rewarding for investors in all over world.

On the basis of forward market commission in Indian markets are bifurcated into two segments mainly on spot
markets and futures commodity markets. As evident from records of multiple government bodies a farmer who is looking for avoiding risk and an investor who wants to diversify his portfolio, commodity future market present alternate. The present study would glance into some uniqueness of future trading platform in futures market in order to review whether prices indicate efficient functioning of the market or otherwise and through light on inter-relationship between spot and futures commodity markets in India. This study also assess whether spot market participants can successfully use future positions to minimize spot market price risk and analyse the scope of hedging using future contracts for commodities in India.

4. RESEARCH METHODOLOGY

The basic objective of the study is to analyses the effect of future trading of agricultural goods on spot prices of the agricultural commodity. Along with this the study also tries to find out the impact of volume of future trading on the GDP growth rate with special reference to agricultural sector.

\[
Y = \alpha + \beta_1 X_1 + e
\]

Where;
\[
Y = \text{Spot prices of the commodity}
\]
\[
X_1 = \text{Future prices of the commodity}
\]
\[
e = \text{Error term}
\]
\[
\beta_1 = \text{Regression Coefficients}
\]

Research Design

The present study is casual in nature, in this study the researcher attempted to study the impact of future trading on spot prices of the commodity.

Data Collection Method

Secondary Data

To address the research question, in the study, we explored the contextual nexus between daily spot and future prices for the three agricultural commodities, namely, Dhaniya, Jeera, Turmeric, and Chilli (all belongs to spices category). The data is collected from the website of NCDEX, World Bank. Sources of data:

Period of the Study

In the present study literature review has been considered for the past 5 years for the period of May 2013 to March 2018.

Objectives

1. To study the status of Commodity future trading in India.
2. To study the impact of future trading on spot prices
3. To find out the impact of volume of future agricultural Commodity on agricultural GDP growth rate.
4. To study the impact of volume of future agricultural Commodity trading on inflation rate.

Hypothesis of the study

On the basis of objective of the study, following hypothesis has been formed:

Ho1: There is no significant impact of commodity future trading on the spot prices of the agricultural commodities.
H1A: There is significant impact of commodity future trading on the spot prices of the agricultural commodities.
Ho2: There is no significant impact of volume of future trading on the growth rate of GDP with special reference to agricultural sector.
H2A: There is significant impact of volume of future trading on the growth rate of GDP with special reference to agricultural sector.
Ho3: There is no significant impact of volume of future trading on the inflation rate.
H3A: There is significant impact of volume of future trading on the inflation rate.

5. DATA ANALYSIS AND INTERPRETATION

Figures 1-3 plot the daily spot and future price movement of three Agricultural commodities i.e., Dhaniya, Jeera and Turmeric.

Graphs of the spot and future prices are almost moving in the same direction, thereby one can come to the conclusion that both influence each other. In the coming part of the paper, we analyse whether there is any association between the two or not. To verify Whether Future prices are contributing in the price variation of spot prices or not, of the agricultural commodities regression analysis is being performed.

Table Number 2 shows the result of Regression Analysis where the Dependent Variable is the spot prices of the Dhaniya, Jeera and Turmeric respectively and future trading prices of the same are the independent variable. R-square of the analysis is coming out to be .108623816 which shows that only 10.86% variation in the spot prices of Dhaniya is being explained by the future trading prices.
whereas in case of Jeera R-square of the analysis is coming out to be 0.11169581 which shows that only 11.16% variation in the spot prices are being explained by the future trading prices. This clearly shows that future prices do not impact the spot price level of the commodity.

For finding out the impact of trading volume on the Gdp growth rate yearly data of 10 years have been taken from 2008 to 2018. The above regression results show that only 28% variation in the Agricultural GDP Growth rate is because of the future trading. This clearly shows future trading has no significant role in influencing the growth rate of GDP. The model is also coming out to be insignificant as the f-values is less than 4 and p value is insignificant.

The above regression results show that only 36% variation in the Inflation is because of the volume of future trading. This clearly shows future trading has no significant role in influencing the inflation rate. The model is also coming out to be insignificant as the f-values is less than 4 and p value is insignificant.

6. CONCLUSION
This study used the regression analyses to find out the impact
Relationship between Commodity Future Trading with Spot Prices Variation and Inflation

The study finds no significant relationship between spot and future prices. The study also finds no significant impact of future trading volume on GDP growth rate

LIMITATIONS OF THE STUDY

The following are the limitations of the study:

(a) Existence of limited resources of information in India because Commodity exchanges are in their nascent stage of development.

(b) This study is purely based on secondary data and therefore the quality of the study depends purely upon the accuracy, reliability and quality of secondary data provided by exchanges and grain markets of India.

(c) It has not been measured in study that the arbitrage opportunities available such as unbiasedness of the futures market wherein futures price is an impartial interpreter of the succeeding spot price.

(d) The study shall be limited to spot and future markets else the possibility of study shall have been extremely broad.

BIBLIOGRAPHY


Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Spot Average</th>
<th>Future Price Average</th>
<th>Spot Standard Deviation</th>
<th>Future Standard Deviation</th>
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<tbody>
<tr>
<td>Dhaniya</td>
<td>2989.027469</td>
<td>7,423.04</td>
<td>170.8664987</td>
<td>2216.841697</td>
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<tr>
<td>Jeera</td>
<td>7,549.79</td>
<td>17,263.86</td>
<td>974.5765</td>
<td>1922.773</td>
</tr>
</tbody>
</table>

Source: Researcher’s Output

Table 2: Regression Results (Spot and Future Prices)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>R Value</th>
<th>R² Value</th>
<th>Adjusted R²</th>
<th>F-value</th>
<th>Significance Value</th>
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</thead>
<tbody>
<tr>
<td>Dhaniya</td>
<td>0.329581274</td>
<td>0.108623816</td>
<td>0.107394332</td>
<td>88.3490</td>
<td>.000</td>
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<tr>
<td>Jeera</td>
<td>0.334209308</td>
<td>0.111695861</td>
<td>0.094935406</td>
<td>6.6642498</td>
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Source: Researcher’s Output

Table 3: Results (GDP Growth Rate and Future trading Volume)

<table>
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<tr>
<th>Commodity</th>
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<th>R² Value</th>
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<th>F statistics</th>
<th>P value</th>
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<tr>
<td>GDP and future volume</td>
<td>0.5354764</td>
<td>0.28673506</td>
<td>0.18484007</td>
<td>2.81402</td>
<td>0.137343</td>
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Table 4: Results (Inflation rate as DV and Future Volume as IDV)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>R Value</th>
<th>R² Value</th>
<th>Adjusted R²</th>
<th>F statistics</th>
<th>P value</th>
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</thead>
<tbody>
<tr>
<td>Inflation Rate and future volume</td>
<td>0.606442671</td>
<td>0.367772713</td>
<td>0.262401499</td>
<td>3.490258</td>
<td>0.11095177</td>
</tr>
</tbody>
</table>

of future prices on the spot prices of the agricultural commodities and impact of future trading volume on GDP growth rate. The study finds no significant relationship between spot and future prices. The study also finds no significant impact of future trading volume on GDP growth rate