Hedging Weather and Catastrophe Risks using Commodity Futures as Weather Derivatives in India

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Abstract

Indian Businesses are exposed to various kinds of risks such as interest rates, exchange rates, unexpected changes in the domestic economic conditions, international economic conditions and various intervening risks. Unexpected changes and business risks arising out of those have capabilities to threaten the very survival of businesses in India. Often these risks are related to the financial markets and to hedge against these risks, financial markets have developed new instruments called financial derivatives. For more than a decade, these financial derivatives have been helping the corporate world in India to hedge against various unexpected changes in the business environment but does not offer solutions to risks caused due to changes in the climatic conditions and other natural calamities. Identifying the need to protect themselves against these adverse weather conditions, developed nations like United States and United Kingdom developed weather derivative contracts to hedge against these risks. However, India has not developed such instruments to hedge against weather risks and commodity futures are being used to hedge against these losses or often these risks are covered by insurance policies. This research paper analyses predictability of some select future commodity prices on the basis of volumes and values of contracts. This will enable us to know how derivative markets can be used to hedge against losses due to adverse weather conditions.

Keywords: *Adverse Climatic Conditions, Commodity Futures, Financial Derivatives, Financial Risks, Weather Derivatives.*

Introduction

While agriculture is considered as backbone of the Indian economy, the sector is prone to high weather risks and other risk calamities. For more than a century, these risks are covered by crop insurance schemes provided by the central and state governments and by private insurance companies. These schemes are now becoming less significant and less effective as the compensation provided by these schemes are not able to cover the losses and time taken to provide compensation is also too long. Developed markets found a solution for these problems through derivatives market. The instruments in derivatives market that serve this purpose are called weather derivatives and catastrophe derivatives. However, these are in developing stage or at basic level in India.

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Catastrophe Derivatives

Catastrophe derivatives are often futures contracts traded on the derivatives exchange markets. These contracts are normally issued by insurance companies for protecting businesses from catastrophe risks. The value of a catastrophe contracts increase as chances of catastrophe losses increase and vice-versa. During disaster time, the contract value goes up and vice-versa.

Need for Catastrophe Derivatives

The catastrophe derivatives are required on account of the following reasons:

- Huge losses faced by the insurance companies due to natural disaster often more than the covered or expected losses.

- Failing crop insurance schemes and their inability to cover entire loss borne by the farmers.
- Reinsurance is costly for insurance companies compared to catastrophe derivatives.

Weather Derivatives

Dischel and Barren (2002) define that a weather contract can be defined as a "weather contingent contract whose payoff will be in an amount of cash determined by future weather events". The settlement value of the weather contracts are based on weather index. Weather index are based on weather conditions at a particular location. Weather derivative contracts will have the same characteristics like other derivatives. In addition, in order to restrict the maximum gain or loss, weather derivatives contracts usually have a specified upper limit. The working of weather derivatives purely depends on climatic conditions in the particular locality. A weather index is to be developed for this purpose. Majority of the developed nations use temperature index as weather derivative index.

Weather Derivatives in India

India also felt the need for weather derivatives to hedge against the losses due to unfavorable and unpredictable weather conditions. This need was felt in 2007 and officially steps were taken in 2011 to bring weather derivatives in India. Weather Risk Management Services Limited in association with ICICI Lombard, Reliance power and few other firms developed weather derivatives trading platforms. While basic infrastructure is available to carry out weather trades, due to lack of traders, this weather trading remains stagnant.

Factors influencing pricing of weather derivatives

a. Nature of contract

The nature of weather derivative contract influences the pricing of weather derivatives. The weather derivatives, in developed nations are offered in different forms. One, the farmer can directly involve in trading and hedge against losses due to adverse climatic conditions and the other, crop insurance companies can use weather derivatives instead of reinsurance. Thus depending upon the contract, the price is be charged.

b. Form of offering

In India, weather derivatives contracts are designed on the basis of options. However, across the world, the weather derivatives are also offered in other form of derivatives like futures, swaps etc. Therefore, pricing followed for an option contract cannot be done for futures and vice-versa. Therefore, the price of weather derivatives depends on the form of derivatives in which it is traded in the exchange.

c. Pricing method

There are different pricing methods for valuing weather derivatives. The price of weather derivatives contracts depends on the method followed by the exchange to value the contracts.

d. Economic considerations

The purchasing power of the citizens of a country depends on the economic conditions of the country. It should be noted that weather derivatives contract should be priced in such a way that it is affordable for the players in the exchange. It will be meaningless to develop weather derivatives, if the players in the derivatives markets are not able to afford to buy and sell weather derivatives at the exchange market.

Review of Literature

Ramkumar (2018) in his study found that there were three challenges in achieving weather derivatives namely infrastructural challenges, implementation challenges and pricing challenges and recommended that a standardized data management system should be developed so that weather risks could be hedged successful in India.

Shivkumar and Kotreshwar, (2013), observed that the downfall index based on mostly RTPs areas unit is important for the development of insurance and risk markets to form hedging opportunities for insurers and different players off uture market whose money prospects are closely interconnected to monsoon outcome. The analysis of constant of variation indicates existence of variations within the MOX (Monsoon Outcome Index) values for downfall amongst the subdivisions and reverting of MOX back to the very long time average downfall at the tip of monsoon amount. But they found that few subdivisions have important correlation and for majority of subdivisions the correlations are incredibly weak and insignificant. Geographically, nearer sub-divisions have moderate correlations where as distant subdivisions have weak to terribly weak (negative) correlations.

Anjali, (2012) found that weather derivatives influence would be a blessing particularly for the agricultural sector. Alike all alternative derivative listed on exchange markets weather derivatives would serve its purpose with additional volume and demand.Most of the future contracts markets in developed countries as observed from empirical evidences are successful. Since Asian countries have a larger proportion of rural economy, looks to possess the potential for weather spinoff contract as derivative markets are underdeveloped. The currency derivatives, rate of interest derivatives, derivatives on global Indices area units are very small. It is the time that the Government respective Asian counties including India should speed up process of supporting weather derivatives markets.

Some research (Moreno, 2002) considers temperature index and water management index along with rain downfall index to calculate weather risk as it is noticed that the use of electricity and availability of water from elsewhere to prepare for all eventualities are important factors for risk management in the rural economies. Weather risks may be outlined as an uncertainty within the prevalence of traditional weather impacting each and every commercial enterprise either favourably or adversely (Bhaskaran, 2004).

Yang et al. (2009) have examined the potency of a regular basis risk of weather derivative taking into consideration of temperature indexed derivatives whereas Golden et al.(2007) have examined the trade-off between basis risk and credit risk within the context of weather by-product and assesses the effectiveness of a basis by-product which is developed and supported the premise risk of a weather contract.

Research Gap

Overall in India, very few research studies have been conducted on weather derivatives. Moreover, these research papers also focused on suggesting the need for weather derivatives, how it can be priced and how it will benefit the business. Indian Commodity markets are too far from the developed derivatives markets. In recent years, India is also experiencing consequences of adverse climate change, thereby creating the need for weather derivatives. A literature review done in this research has focused on conceptual side of the weather derivatives but does not provide solutions for hedging weather risks in India except crop insurance schemes. There is research gap to explain the predictability of derivative markets in commodity prices. This paper investigates whether volume and value of commodity derivatives traded can be used for hedging the future commodity prices.

Research Methodology

Research Objective: The main objective of this study is to explain how weather derivatives can be used to hedge risks caused to business (agriculture); due to changes in the climatic conditions., analyze the functional relationship of the factors influencing prices of commodity futures and also suggesting how they can be used to hedge losses for businesses(agriculture) arising due to changing weather conditions.

Research Design: This research study is based on quantitative research. This type of research is conclusive and uses various analytical tools to get meaningful insights from the research study undertaken.

Sampling Unit: A Sampling unit represents some predetermined unit of a population under the study. The sampling unit of this study is commodity futures. In the absence of weather derivatives and weather trading platform, this study tries to explain how commodity futures can be used to hedge climatic risks.

Sample Size: The term sample size represents the number of samples in the population. This study considers castor seed futures, cotton futures, turmeric futures, guar gum futures and guar seed futures. Therefore, the sample size for this study is five out of all commodity futures in India.

Source of Data: This study uses secondary data. Data are collected from National Commodity and Derivatives Exchange Market Data as well as Multi commodity exchange volume data.

Statistical Technique: This study uses regression analysis and trend analysis. Regression analysis is used to study the functional relationship between the variables in the study. The dependent variables is the prices of the commodity futures and volume and value of commodity futures are the independent variables. Trend analysis helps in analyzing the movement of commodity future prices in the commodity exchange.

Hypotheses of the study

H1–The volume and value of castor futures contracts do not significantly predict the prices of castor oil future.

Table 1: Model Summary in Appendix

Interpretation

The table 1 shows the results of the regression analysis to study the predictability impacts of number of castor seed contracts and value of these contracts traded in castor future price. The Castor seed price is considered as the dependent variable and the number of contracts traded and its value are considered as independent variable. From the above table, it is clear that volume and value of contracts traded significantly determines the price of castor seeds in the derivatives market. This is indicated by p-value of 0.000 indicating higher level of significance acceptable at 1% level. It is also supported by the R square change which is 0.797, indicating that 79.7% of the variation in the castor seed prices are explained by the volume and value of castor seed contracts traded in the derivatives exchange. Similarly, Durbin-Watson value is 1.507, which is more than 1 and not greater than 3, also supports this regression model. Factor R of multiple cross correlation of 89% show high cross correlation which is greater than acceptable significance level.

Table 2 : ANOVA in Appendix

Interpretation

The table 2 shows the results of ANOVA. The hypothesis is further tested by ANOVA table. Since the computed p-value 0.000 is less than the acceptable significance value of 0.01, it is concluded that castor contracts and value of contracts have a significant influence in determining the castor seed prices being traded at derivatives market. Thus the null hypothesis is rejected and alternate hypothesis is accepted. During monsoon seasons, the businessmen can buy commodity futures contract and sell them at times of disaster. As indicated by Shivkumar and Kotreshwar, (2013), these contracts can be used even by insurance companies to hedge risk due to climatic conditions.

Table 3 : Coefficients Appendix

Interpretation

The table-3 shows the co-efficient table of the regression analysis. From the above table, regression equation can be derived as

$Y = 4250.976 + 0.010X_1 - 0.044X_2$

Y is the castor seed prices and X1 indicates the value of contracts and X2 indicates the volume of contracts traded in the derivatives exchange market. Thus, based on the beta scores, it is clear that value of contracts have positive relationship with castor prices while volume of contracts have a negative relationship with castor prices with both independent variables being highly significant in influencing the price of the castor seed futures the derivatives exchange market.

H2: The volume and value of cotton futures contracts do not significantly the predict the prices of cotton future.

Table 4: Model Summary in Appendix

Interpretation

The table 4 shows the results of the regression analysis for predictability of number of cotton futures contracts and value of these contracts traded in the derivatives market on cotton future price. The Cotton futures price is considered as the dependent variable and the number of contracts traded and its value are considered as independent variable. From the table, it is clear that volume and value of contracts traded significantly determine the price of cotton futures in the derivatives market. The cotton futures contracts can be used to hedge weather risks. Businessmen as indicated by Skees, et al, (2001) can analyze relationship between rains and yields to determine the volume of contracts to be purchased and traded.

This is indicated by p-value of 0.017 which is less than the acceptable level of 5%. It is also supported by the R square change which is 0.560, indicating that 56% of the variation in the cotton futures prices are explained by the volume and value of cotton futures contracts traded in the derivatives exchange. Similarly, Durbin-Watson value is 2.647, which is more than 1 and not greater than 3, also supports this regression model. Factor R of multiple cross correlation of 75% show high cross correlation which is greater than acceptable significance level.

Table 5: ANOVA in Appendix

Interpretation

The table 5 shows the results of ANOVA. The hypothesis is further tested by ANOVA table. Since the computed p-value 0.017 is less than the acceptable significance value of 0.05, it is concluded that volume of cotton futures contracts and value of contracts has a significant influence in determining the cotton futures prices being traded at derivatives market. Thus the null hypothesis is rejected and alternate hypothesis is accepted.

Table 6: Coefficients in Appendix

Interpretation

The table 6 shows the co-efficient table of the regression analysis. From the above table, regression equation can be derived as:

$Y = 4250.976 + 0.040X_1 - 0.202X_2$

Y is the cotton futures prices and X1 indicates the value of contracts and X2 indicates the volume of contracts traded in the derivatives exchange.

It is clear that value of contracts have positive relationship with cotton futures prices while volume of contracts have a negative relationship with cotton futures prices with value of futures contract being highly significant in influencing the price of the castor seed futures in the derivatives exchange.

H3- The volume and value of turmeric futures contracts do not significantly the predict the prices of turmeric future

Table 7: Model Summary in Appendix

Interpretation

The table 7 shows the results of the regression analysis to study the predictable power of turmeric futures contracts and value of these contracts traded in the derivatives market on prices of turmeric futures. The turmeric futures price is considered as the dependent variable and the number of contracts traded and its value are considered as independent variables. From the above table, it is clear that volume and value of contracts traded significantly determines the price of cotton futures in the derivatives market. This is indicated by p-value of 0.01 which is higher level of significance acceptable at 1% level. It is also supported by the R square change which is 0.765, indicating that 76.5% of the variation in the turmeric futures prices are explained by the volume and value of cotton futures contracts traded in the derivatives exchange market. Similarly, Durbin-Watson value is 1.098, which is more than 1 and not greater than 3, also supports this regression model. Factor R of multiple cross correlation of 88% show high cross correlation which is greater than acceptable significance level. As Golden, Wang and Ke (2005) stated, the businessmen can find a tradeoff between risk, price and volume of contract traded so that trading in commodity futures become profitable.

Table 8: ANOVA in Appendix

Interpretation

The table 8 shows the results of ANOVA. Since the computed p-value 0.001 is less than the acceptable significance value of 0.01, it is concluded that volume of turmeric futures contracts and value of contracts has a significant influence in determining the castor seed prices being traded at derivatives market. Thus the null hypothesis is rejected and alternate hypothesis is accepted.

Table 9: Coefficients in Appendix

Interpretation

The table 9 shows the co-efficients of the regression analysis. From there regression equation can be derived as:

$Y = 6995.823 + 0.063X_1 – 0.217X_2$

Y is the turmeric futures prices and X1 indicates the value of contracts and X2 indicates the volume of contracts traded in the derivatives exchange. Thus based on the beta scores, it is clear that value of contracts have positive relationship with turmeric futures prices while volume of contracts have a negative relationship with castor prices with both independent variables being highly significant in influencing the price of the castor seed futures in the derivatives exchange.

H4: The volume and value of guar gum futures contracts do not significantly predict the price of the product futures.

Table 10: Model Summary in Appendix

Interpretation

The table 10 shows the results of the regression analysis to how far number of guar gum futures contracts and value of these contracts traded in the derivatives market predict prices of guar gum futures. The gaur gum futures price is considered as the dependent variable and the number of contracts traded and its value are considered as independent variable. From table 9, it is clear that volume and value of contracts traded significantly determines the price of guar gum futures in the derivatives market.

This is indicated by p-value of 0.000 which is higher level of significance acceptable at 1% level. It is also supported by the R square change which is 0.834, indicating that 83.4% of the variation in the cotton futures prices are explained by the volume and value of cotton futures contracts traded in the derivatives exchange. Similarly, Durbin-Watson value is 2.598, which is more than 1 and not greater than 3, also supports this regression model. Factor R of multiple cross correlation of 83% show high cross correlation which is greater than acceptable significance level.

Table 11: ANOVA in Appendix

Interpretation

The table 11 shows the results of ANOVA. Since the computed p-value 0.000 is less than the acceptable significance value of 0.01, it is concluded that volume of guar gum contracts and value of contracts has a significant influence in determining the guar gum futures prices being traded at derivatives market. Thus the null hypothesis is rejected and alternate hypothesis is accepted.

Table 12: Coefficients Appendix

Interpretation

The table 12 shows the co-efficients of the regression analysis. Thus, regression equation can be derived

$$Y = 6845.064 + 0.010X_1 – 0.032X_2$$

Y is the guar gum futures prices and X1 indicates the value of contracts and X2 indicates the volume of contracts traded in the derivatives exchange. Thus based on the beta scores, it is clear that value of contracts have positive relationship with guar gum futures prices while volume of contracts have a negative relationship with castor prices with value of guar futures contract being highly significant in influencing the price of the guar gum futures in the derivatives exchange.

H5: The volume and value of castor futures contracts do not significantly predict the futures price of the product

Table 13: Model Summary in Appendix

Interpretation

The table 13 shows the results of the regression analysis to calculates the predictable power of number of guar seed futures contracts and value of these contracts traded in the derivatives market on the guar seed futures price which is dependent variable and the number of contracts traded and its value are considered as independent variable. From the above table, it is clear that volume and value of contracts traded significantly determines the price of cotton futures in the derivatives market. This is indicated by p-value of 0.000 indicating higher level of significance acceptable at 1% level. It is also supported by the R square change which is 0.834, indicating that 83.4% of the variation in the gaur seed futures prices are explained by the volume and value of guar seed futures contracts traded in the derivatives exchange. Similarly, Durbin-Watson value is 2.046, which is more than 1 and not greater than 3, also supports this regression model. Factor R of multiple cross correlation of 83.4% show high cross correlation which is greater than acceptable significance level.

Table 14: ANOVA in Appendix

Interpretation

The table 14 shows the results of ANOVA. Since the computed p-value 0.000 is less than the acceptable significance value of 0.01, it is concluded that volume of Guar seed contracts and value of contracts has a significant influence in determining the guar seed futures prices being traded at derivatives market. Thus the null hypothesis is rejected and alternate hypothesis is accepted.

Table 15: Coefficients in Appendix

Interpretation

The table 15 shows the co-efficients of the regression analysis. Thus, regression equation can be derived

$Y = 3323.071 + 0.002X_1 - 0.006X_2$

Y is the Guar seed futures prices and X1 indicates the value of contracts and X2 indicates the volume of contracts traded in the derivatives exchange. Thus based on the beta scores, it is clear that value of contracts have positive relationship with Guar seed futures prices while volume of contracts have a negative relationship with Guar seed futures prices with value of contracts being highly significant in influencing the price of the Guar seed futures in the derivatives exchange.

Suggestions & Conclusion

To conclude, weather derivatives and catastrophe derivatives seems to be a good solution for risks caused due to climatic conditions. Weather derivatives are often different from other derivatives as often they are focused on hedging against the volume of yield and less emphasis is given for price risk. Some consider weather derivatives to be different from catastrophe derivatives while others consider catastrophe to be falling within the scope of weather derivatives. Since these derivatives are only in a initial stage of development, the way it is carried out, may not exactly represent the developed markets format. For example, weather contracts are based on Heating Degree Days or Cooling Degree Days in developed markets whereas in India it is based on Rainfall Index. This paper presents a clear view of how price volatility due to weather conditions can be hedged using commodity futures. However to successfully hedge against the losses India needs some infrastructural developments.

Weather stations should be established in the village where these crops are grown and reliability of weather data is needed to be ensured. Sufficient funds must be allocated for development of weather stations and technological innovations in metrological departments to have fair predictions of future weather conditions. Similarly, researches in the area of the weather derivatives should be encouraged and steps should be taken to make Indian derivatives market players aware of these derivatives and the established infrastructure for weather trading should be put to optimal use to get best out of the derivatives instruments.

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APPENDIX

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.893[a]	.797	.757	125.09361	.797	19.644	.000	1.507
a. Predictors: (Constant), Castor contracts, Castor value								
b. Dependent Variable: Castor price								

Table 2: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	614783.588	2	307391.794	19.644	.000[b]
	Residual	156484.105	10	15648.410		
	Total	771267.692	12			
a. Dependent Variable: Castor price						
b. Predictors: (Constant), Castor contracts, Castor value						

Table 3: Coefficients

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	4250.976	82.942		51.252	.000
	Castor value	.010	.002	8.617	4.348	.001
	Castor contracts	-.044	.011	-7.951	-4.012	.002
a. Dependent Variable: Castor price						

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.748[a]	.560	.472	684.77897	.560	6.360	.017	2.647
a. Predictors: (Constant), Cotton contracts, Cotton Value								
b. Dependent Variable: Cotton Price								

Table 5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5964485.342	2	2982242.671	6.360	.017[b]
	Residual	4689222.350	10	468922.235		
	Total	10653707.692	12			
a. Dependent Variable: Cotton price						
b. Predictors: (Constant), Cotton contracts, Cotton value						

Table 5: ANOVA

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	19790.371	632.372		31.295	.000
	Cotton value	.040	.017	8.478	2.320	.043
	Cotton contracts	-.202	.094	-7.896	-2.161	.056

a. Dependent Variable: Cotton price

Table 6: Coefficients

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.875[a]	.765	.718	388.70666	.765	16.289	.001	1.098

a. Predictors: (Constant), Tumeric contracts, Tumeric value

b. Dependent Variable: Turmeric price

Table 7: Model Summary

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4922323.646	2	2461161.823	16.289	.001[b]
	Residual	1510928.662	10	151092.866		
	Total	6433252.308	12			

a. Dependent Variable: turmeric price

b. Predictors: (Constant), turmeric contracts, turmeric value

Table 8: ANOVA

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	6995.823	249.220		28.071	.000
	Turmeric value	.063	.012	3.326	5.453	.000
	Turmeric contracts	-.217	.038	-3.478	-5.702	.000

a. Dependent Variable: turmeric price

Table 9: Coefficients

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.913[a]	.834	.801	414.57966	.834	25.188	.000	2.598

a. Predictors: (Constant), Guar gum contracts, Guar gum value

b. Dependent Variable: Guar gum price

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.913[a]	.834	.801	414.57966	.834	25.188	.000	2.598
a. Predictors: (Constant), Guar gum contracts, Guar gum value								
b. Dependent Variable: Guar gum price								

Table 11: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8658376.292	2	4329188.146	25.188	.000[b]
	Residual	1718762.938	10	171876.294		
	Total	10377139.231	12			
a. Dependent Variable: Guar gum price						
b. Predictors: (Constant), Guar gum contracts, Guar gum value						

Table 12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6845.064	649.883		10.533	.000
	Guar gum value	.010	.004	2.164	2.696	.022
	Guar gum contracts	-.032	.020	-1.291	-1.609	.139
a. Dependent Variable: Guar gum price						

Table 13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.913[a]	.834	.800	161.58764	.834	25.072	.000	2.046
a. Predictors: (Constant), Guar seed contracts, Guar seed value								
b. Dependent Variable: Guar seed price								

Table 14: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1309268.147	2	654634.073	25.072	.000[b]
	Residual	261105.661	10	26110.566		
	Total	1570373.808	12			
a. Dependent Variable: Guar seed price						
b. Predictors: (Constant), Guar seed contracts, Guar seed value						

Table 15: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3323.071	209.772		15.841	.000
	Guar seed value	.002	.001	2.426	2.550	.029
	Guar seed contracts	-.006	.004	-1.552	-1.632	.134
a. Dependent Variable: Guar seed price						