IMPACT OF CORPORATE INVESTMENT ON TRADING OF AGRICULTURAL COMMODITIES: A STUDY OF SELECT DISTRICTS OF WEST BENGAL

(Synopsis)

THESIS SUBMITTED FOR THE FULFILLMENT OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN ARTS (COMMERCE) AT THE UNIVERSITY OF BURDWAN WEST BENGAL

BY

Dipankar Das
Department of Commerce
The University of Burdwan
Burdwan
2014
SYNOPSIS

1.0 *Statement of the problem:*

Large capital or corporate investment in agriculture is becoming an important issue in Indian economy. Here by corporate investment we have tried to mean that the investment made by those firms, which are not, confined them within a geographic location but spread beyond a particular nation or operate worldwide. Therefore, we may call these firms as large capital firms. Large capital may be of domestic and foreign or both. The government of India has taken decision in agriculture reforms from time to time through reforms in food processing, single brand and multi-brand retail trading, cash and carry (wholesale) trading, export-import policies and commodities exchange markets etc... The Indian market also reformed for domestic large capital or corporate traders including retailers, wholesalers, exporters and importers, food processing firms etc... 100% Foreign Direct Investment (FDI) in cash and carry has been opened science 2006 with automatic route and in the single-brand retail market by 2012. Complete reforms of FDI in nature for multi-brand retail not yet been taken. Indian domestic large capital or corporate firms are also allowed in the trading (viz. retail and wholesale) market of agricultural commodities. With considering the rise of foreign indirect investment (FII) through franchising mode with domestic large capital firms in the agricultural commodity trading market and foreign direct investment (FDI) in cash and carry wholesale trading in India and particularly in West Bengal we have interest in studding the fact that how these forms of investment acting on the rural agriculture commodity trading market. Therefore to study how the presence of large capital
or corporate traders (both domestic and foreign) mainly retailers, wholesalers and others moving price behaviour and riskiness in the rural wholesale market of agriculture commodities of different districts in West Bengal and the strategic behaviour of large capital or corporate retail traders (of single and multi-brand) in setting retail prices of agricultural commodities of food items including vegetables in the retail market. With these view another interesting objective also is to be studied here the possible interaction of strategies between the group of small capital retailers and large capital retailers in the retail market in setting prices of agricultural commodities. So in summing up it can be said that the entire study is divided into two parts, one impact of large capital or corporate investment in the rural wholesale market regarding the changes of price behaviour based on the selected crop and second is to see the strategic behaviour of large capital retail traders in setting prices in the retail market of agricultural commodities.

1.1 Objects of the study:

The study has been divided into two parts, one, impact of corporate investment on trading of agricultural commodities in the rural wholesale markets and second, strategic behaviour of large capital traders (mainly single and multi-brand retailers) in the retail market (based on study in Kolkata) in setting prices of agricultural commodities. The main objectives related with our study are given below:

(1) To see the changes in the price behaviour of agricultural commodities in the rural wholesale market by dividing the districts from where the large capital or corporate traders are collecting agricultural commodities through their collection centre with other districts.
(2) To see the inter district behaviour of wholesale price change of potato from 2006 to 2013.

(3) To see whether small capital traders (SCTs) and large capital traders (LCTs) are forming a cartel or operating independently in the short run and possibility of cartel between them in the long run.

(4) To know the strategic behaviour of large capital traders (mainly single and multi-brand retailers) in setting prices of agricultural commodities in the retail market and possible interaction with the small capital traders (small capital retailers).

(5) To examine whether large capital traders (retailers) will be able to offer agricultural commodities at lower price or not in the retail market.

1.2 **Hypothesis**:

Based on the above objectives the hypotheses that are to be tested are set as given below:

1. **Hypothesis 1**:
   The districts from where the corporate traders are collecting the agricultural commodities directly from the farmer through their collection centre, there the rural wholesale market price of the agriculture produce will concentrate with higher likelihood on the moderate price than the other districts.

2. **Hypothesis 2**:
   Participation at the rural wholesale market by the large capital or corporate traders in collecting agricultural commodities raises the likelihood of higher price of agricultural commodities on all the districts.

3. **Hypothesis 3**:
   Large capital or corporate traders (mainly retailers of single brand and multi-brand) will not be able to offer lower price of agriculture commodities in the retail market and in presence of them small capital traders (retailers) must not exit from the market who are engaged with the retailing of agricultural commodities.

1.3 **Sources of data under study**:

We have divided our study into two parts, one impact in the rural wholesale market of agricultural commodities and second one is the study of strategic behaviour of large capital or
corporate forms (including single brand and multi brand retailer) in the retail market. For the study of first one, the data sources are given below:

Regarding field survey I surveyed, Hooghly district and North-24 pargana district, West Bengal, India for getting farm level information and evidences. Our work is basically based on the in-depth study and information of North 24th pargana district where three corporate firms including one 100% FDI in cash and carry trade are operating. These are Reliance Fresh, Metro cash and carry, Keventer Agro. For empirical analysis, I have collected data from the sources given below:

1. Data on production, cost of cultivation, farm harvest price and export of potato have collected from the website of Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India (1).

2. We have used the data of whole sale price of potato of weekly basis of all the (based on data availability) markets of 18 districts (except district Darjeeling as data was not available) of West Bengal then derived the average of wholesale price according to district and then applied the methodologies. These data of weekly whole sale price of potato have collected from the website of Agriculture Marketing Information Network-AGMARKNET (2),

(1) Website: http://eands.dacnet.nic.in/
(2) Website: http://agmarknet.nic.in/
3. Data on Production of Principal Crops in West Bengal, Contribution of West Bengal to All India Production of Certain Selected Crops, Yield Rates of Some Selected Crops in West Bengal and India have collected from Economic Review, Statistical Appendix, and Govt. of West Bengal series from 1990 to 2011.


5. Data on Production of Fruits and Vegetables in West Bengal have collected from Directorate of Food Processing Industries and Horticulture, Govt. of West Bengal.

For the study of the strategic behaviour of large capital or corporate firms (including single brand and multi brand retailer) in the retail market we have surveyed Kolkata retail market and collected data from the large capital or corporate firms and little bit from the small capital retail firms.

1.4 Design of the study:

Therefore, the entire study has been divided into two parts; one impact of large capital or corporate investment in the rural wholesale market regarding the changes of price behaviour based on the selected crop and second is to see the strategic behaviour of large capital retail traders in setting prices in the retail market of agricultural commodities. The more detail structures of this study have been divided into different chapters. These are discussed below:

Chapter 1 starts with the brief introduction of the entire study.
Chapter 2 provides a brief description of literature surveyed related with the study. In this chapter initially few literature of purely theoretical in nature are reviewed for the clear understanding of the actual problem and thereafter-particular empirical studies have been discussed.

Chapter 3 provides the scope of the study or the actual areas identified for the study. This chapter begins with brief description of the study there after the objectives are set and based on the objectives the hypothesis are set which are to be tested in the next few chapters and based on the results the conclusions are to be drawn. To test the hypothesis and for detail analysis the database and the methodologies, which are to be applied, are also discussed in this chapter.

From Chapter 4 to chapter 6 the actual analytical studies have been done.

Chapter 4 provides detail study of the impact of corporate firms in the rural wholesale market of agricultural commodities. Here we have studied the impact of corporate investment on trading of potato in the wholesale market and a comparison has been done between the districts from where the corporate traders are collecting the agricultural commodities directly from the farmer through their collection centre, with the other districts. Here a detail study has been done to know the price behaviour of potato between these two groups of districts. Here based on the available data the study has been done on 18 districts including the districts from where corporate firms are collecting the agricultural commodities directly from the farmer through their collection centre. The districts are North 24th pargana district where three corporate firms including one 100% FDI in cash and carry trade are operating these are Reliance, Metro cash and carry, Keventer Agro, Nadia and Purulia districts where corporate firms use to collect agricultural commodities through participatory farming.
Chapter 5 is the extension of chapter 4 where we have studied theoretically based on the empirical evidences have found in the chapter 4. Based on the theory of bargaining and the role of risk aversion we have tried to show theoretically that how a strategic move from large capital or corporate traders of agricultural commodities including exporters, retailers, wholesalers is affecting and changing the preferences of small capital regional or local traders of agriculture commodities in the market than before when only small capital traders were present and large capital or corporate traders were not allowed to enter. With this changing preferences of SCTs (small capital traders) and strategic move or preferences of LCTs (large capital or corporate traders), here we have also tried to show in this chapter the possible conditions of cartel between SCTs and LCTs.

Chapter 6 provides the behaviour of large capital or corporate retail traders in setting prices of agricultural commodities in the retail market and the scope of interaction with the small capital retail traders. This chapter is based on the outcome of the previous chapters and surveys that have done at the districts and Kolkata retail markets. In this present chapter, we have examined based on survey data first empirically then theoretically the competitive behaviour between small capital retailers and large capital retailers. As methodology, we have used the technique of “Industrial organization” and other required mathematical tools. Regarding field survey, I surveyed Hooghly district and North-24th pargana district, West Bengal, India for getting farm level information and Kolkata, India retail markets for retail data and evidences. The main questions, which are to be answered in this chapter, are one, “will the large capital or corporate traders be able to offer agricultural commodities at a
lower price than predominant small capital traders (retailers)?” and second, “will the small capital retailers exit from the retail market where large capital retailers are also present?”

Chapter 7 provides the summary of the entire study and the suggested possible policies, which are to be taken by the government.

1.5 **Methodology:**

We have shown the entire study into two ways, one through the use of data and analysis empirically based on statistical methods and econometrics and secondly we have shown some theoretical implications based on some standard theoretical base of economic theories. These are discussed below:

The theoretical methodologies are given below:

1. To present the matter theoretically we have used Nash bargaining solution where the Nash bargaining solution between buyer and seller is ½ to each of them over total gain fulfilling all the axioms given by Nash are, INV (Invariance to equivalent Utility Representations), SYM (Symmetry), IIA (Independence of irrelevant alternatives), PAR (Pareto efficiency) and the role of risk aversion.

2. Theory of industrial organization, which has been used to study the competitive behaviour of small capital and large capital traders.
Methodologies for empirical analysis to test some theoretical implication and to check the matter in detail are given below:

3. **Summary statistics**

Under summary statistics include mean, variance, coefficient of variations, maximum value and minimum value of natural logarithm of average wholesale price of potato for 18 districts individually in West Bengal.

4. **Skewness/Kurtosis tests for Normality**

Skewness/Kurtosis tests for normality are applied on the wholesale price data of potato of 18 districts of West Bengal.

5. **Test for unit root in time series**

Dickey-Fuller for unit root to test stationary in time series data. The ADF test adjusts the DF test to take care of possible serial correlation in the error terms by adding the lagged difference terms of the regressand. Phillips and Perron use nonparametric statistical methods to take care of the serial correlation in the error terms without adding difference terms. Therefore, to test stationary in time series data if ADF test model becomes insignificant then Phillips-Perron test for unit root will be appropriate. Here in our study Phillips-Perron test for unit root has been applied.
6. Nonparametric density estimation

Nonparametric density estimation is most frequently used for exploratory data analysis. It can also be useful for more sophisticated data analysis. There are different types of Kernel density functions. We have used Gaussian & Epanechnikov Kernel density function.

1.6 Summary and conclusion:

From the study, we have concluded that the large capital or corporate firms are not operating from all the 19 districts through their collection centres in collecting directly from the farmers. The corporate firms use to maintain quality constraints and below a specified quality standard, they do not buy agricultural commodities directly from the farmer and from the wholesale markets. On the other hand, small capital local traders use to collect entire produce and do not follow any constraints in terms of quality standard. From the evidence of North 24th pargana, district that interaction among the farmers, small capital traders and the large capital traders helping the farmers in getting more price than before when large capital traders were not allowed in the agricultural trading market. This keen interaction and concentration at the moderate price acting as insurance to the farmer as beyond that certain limit the probability is lower that the market price will reduce. This short of behaviour we have found by surveying at North 24th pargana district and Nadia, Midnapure West and Purulia districts and from the data interpretations also. We also found that the likelihood for higher price than moderate price is also high for all the districts (18 districts under study). This is so as corporate traders use to maintain a qualitative constraint and farmers are not able to meet and not prefer to sell only quality produce to the large capital or corporate firms so they must intervene in the rural wholesale
markets. This intervention and quality constraints pushing the wholesale price up ward and local middlemen are involved and gaining here as they are able to hoard for some time after collecting from the farmers at a market moderate price. Therefore, the thing is that farmers are now getting little bit more and direct relationship between farmers and large capital or corporate traders are not operating efficiently due to the quality constraints are there as imposed by the large capital or corporate traders. Local level small capital traders will not exit from the market but helping the farmers indirectly in getting more than before. One thing is that participation in the rural wholesale markets by the large capital or corporate traders raising the chance of raising wholesale price and this may raise the probability of rise in retail price in the retail market though I did not study this effect on retail price.

The corporate traders are collecting only quality produce at a higher price from the wholesale markets and from the farmers so they must not be able to offer lower price at the retail market. This particular behaviour we have found at the chapter-6 in detail and concluded that as small capital retailers are competitive in nature and collecting from the rural level small capital traders so they are able to offer agricultural commodities at a lower price. Moreover, small capital retailers are not imposing the strategies like “Tying” and “Mixed Heterogeneous Bundling” but imposing low degree of “Mixed Homogeneous Bundling” on agricultural commodities. On the other hand large capital or corporate traders use to apply strategies like “Tying” on agricultural commodities with “Mixed Heterogeneous Bundling” and “Mixed Homogeneous Bundling” with higher degree on agricultural commodities, which actually raise the price of agricultural commodities. These strategic interactions between the group of small capital retail traders and large capital retailers guarantying the existence of small capital retailers who are engaged with the agricultural commodities in presence of large capital retail traders in the retail market.
1.7 Policy implication:

The main points which we have found here is that whole sale price is showing some degree of concentration at the market moderate price in those districts where large capital or corporate traders are operating through their collection centres in collecting directly from the farmers. Moreover, higher likelihood for higher price is there on all the districts including those districts concentrating high density at market moderate price. We also have found that large capital or corporate traders (retailers of single brand and multi brand) are offering agricultural commodities at a higher price in the retail market. This behaviour must have impact in the rise of food price in the retail market in general. Therefore, the government should take necessary steps in making policies so that this effect can be minimized. One policy can be of; there should be no expenditure in creating brand value through high advertisement cost on those agricultural commodities of necessary in nature, which the large capital retailers are selling in the retail market without adding any value to the produce after collecting from the farmer or rural wholesale market. This may reduce the external effects of rising prices of food items. If this effect can be minimized then the policies relating to the corporate investment in agriculture can be accepted as these reforms are helping to gain more to the farmers than before and giving an insurance benefit in those districts where large capital traders are collecting agricultural commodities directly from the farmers as we have found in our study.
We have seen that the interaction between large and small capital retail traders is not pushing small capital retailers out of market as large capital retailer are not able to offer agricultural commodities at a lower price than small capital retailer.

The policies relating to the retail market are that the government should concentrate in building infrastructure for the small capital retailers like investment in making retail market building through cooperative or other possible ways, in making supportive supply chains, road connectivity, warehouses etc. At the end we are strongly arguing that whatever be the policies are to be taken by the government that must guarantee the farmer’s economic condition as good as possible than the prevailing one.