

Do Coconut Auctions Offer a Fair Price to Producers? Evidence from the Colombo and Regional Coconut Auctions in Beliatta and Kuliyaipitiya

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ABSTRACT

Formulation of competitive policies to establish an efficient marketing system which that can create fair and competitive game in the coconut trade is of prime objective of the Coconut Development Authority (CDA). Coconut auctions were established to achieve above purpose and to ensure remunerative price for coconut producers. But the question of low price exists in the industry even after introduction of regional coconut auctions at Kuliyaipitiya and Beliatta. But the question remains whether coconut producers in Sri Lanka get a fair prices even after introduction of regional coconut auctions at Kuliyaipitiya and Beliatta.

This study was carried out to assess the market concentration, degree of competition among buyers at auction markets and examine the weaknesses of coconut auctions. Primary data were collected from producers (suppliers), buyers and officers of the CDA. Secondary data were collected from CDA officials. Market share and competitiveness of buyers at the auctions were analyzed using four firm concentration ratio (CR_4) and Herfindahl-Hirschman Index (HHI) respectively. The results revealed that there is a strong oligoposonic and moderately concentrated market structure exists in the Colombo and regional coconut auctions. The CR_4 has come down from 73 percent to 59 percent and the HHI has come down from 1732 to 1240 in the Colombo coconut auction moving the market into less concentrated and more competitive end which is favourable. The study found that, the CR_4 and the HHI index of Beliatta and Kuliyaipitiya is higher than that of Colombo, indicating increased disparity in buying volume between buyers. So the competitiveness in regional auctions is lacking compare to Colombo auction. The study concludes that CDA established auctions are not capable enough to create a fair and competitive coconut market in the country.

KEY WORDS: Coconut auction, Coconut industry, Competitive market, Market concentration.

INTRODUCTION

Coconut industry in Sri Lanka plays an important role in the national economy in terms of employment generation, foreign exchange earnings and import substitution (Liyanaage, 1999). Among coconut growing countries in the world, Sri Lanka is in the forefront as major exporter of Desiccated Coconut (DC) and brown fibre. The crop has contributed Rs 19,108 millions to the GDP and earned foreign exchange of Rs. 8,926 millions by way of exporting a range of kernel and non-kernel Coconut products in year 2003 (Anon, 2003).

Coconut Development Authority (CDA) carry out assistance programmes for the development of the processing and marketing activities of the coconut industry in Sri Lanka. Marketing Development and research division of CDA has implemented main coconut auction in Colombo and two regional coconut auctions in Kuliyaipitiya and Beliatta. Fresh coconut auction in Colombo has been implementing once in a week and two regional coconut auctions are implemented once in a month.

CDA launched regional auctions in coconut producing areas (*i.e.* Kuliyaipitiya and Beliatta) to facilitate producers to participate in auctions. The first regional coconut auction was held in Kuliyaipitiya located in the heart of North Western province representing major coconut growing region of the country's. The main objective of Kuliyaipitiya auction was to find a guaranteed market for coconut growers who are well maintaining their estates for high quality nuts and cater to the growing needs of

the desiccated coconut and copra millers who are in need of quality coconuts for their processing industries. Coconut growers are unable to obtain remunerative prices for their nuts due to lack of a proper marketing system. Somehow only small and medium scale growers benefit from this exercise (Kangaraarachi, 2004).

The main objective of Tangalle auction was to find a guaranteed and assured market for a large, medium and small scale grower in the southern province for their quality nuts and to encourage growers to pluck and supply matured nuts by offering attractive prices and to cater to the growing needs of the DC millers, copra millers and fresh coconut exporters. Coconut harvest in the mini triangle which covers Matara, Hambantota and Deniyaya are of big size nuts and the average weight of a nut is more than a one kg. But mostly the prices do not reflect the quality of products (Kangaraarachi, 2004).

The auctions are organized by CDA in association with the National Chamber of commerce of Sri Lanka with the aid of the Coconut Cultivation Board (CCB) and the Sri Lanka Coconut Producers' Cooperative Society Union.

So the regional coconut auctions are for the benefit of the coconut producers, growers, suppliers, buyers, DC millers, copra manufactures and shippers and dealers in fresh coconut and copra. Price fluctuation, low prices and reduced yield due to drought are the difficulties faced by most of the coconut growers. The coconut auction is a part of the

country's ambitious marketing programme, to expand coconut sales at the regional level and achieve multiplier effect on stakeholders (*i.e.* coconut producers, buyers, DC and oil millers, copra manufactures and shippers).

Coconut auctions are conducted under specific rules and regulations which are manipulated by CDA. The auction dates are decided by the chairman of the CDA. Coconut growers/suppliers should provide at least 5,000 nuts to market their products in the auction. Amount of one thousand nuts are considered as one lot. The suppliers should supply random samples of ten nuts prior to start the auction to examine them by buyers. The beneficial groups in this system are coconut growers and coconut buyers.

Among various channels exist in marketing of coconut, most of the farmers sell their coconut to the private traders/collectors. There is an interlinked relationship between village trader and most coconut producers, where trader gives credit or household provisions which are setoff against the sales of coconuts. So auction market system has to compete with other marketing channels.

The Coconut auction has been subjected to substantial criticisms. Most of the times people claim that it does not ensure fair competition among buyers and not functioned satisfactorily. When compared to the total fresh coconut production, the contribution of the coconut auction is very low. So, the importance of the auction has eroded due to the decline of the quantity of fresh coconut sold through the auctions. The corporate sector, large processors (DC millers, oil millers and brown fiber producers) and the exporters are well represented by powerful organizations that are capable of united action on issues affecting them. But the small holder farmers, small processors and cottage industries are not well organized because of their atomistic nature. This has resulted in the loss of bargaining power and the lack of channels to percolate benefits down the line (Perera, 1993).

With this background this study was conducted to assess the competition and market concentration of Colombo and regional coconut auctions and to analyze the trend of the prices and volume of coconut sold through the auction in between the years 2001-2005. The study further examine the strength and weaknesses of coconut auctions.

METHODOLOGY

This section presents the method used to analyze the auction market, prices and its weaknesses. It first describes the theoretical framework and then data collection and analysis. Both primary and secondary data were used in this study.

(1) Theoretical Framework

a. Market structure

The concentration ratio of an industry is used as an indicator of the relative size of firms in relation to

the industry as a whole. This may also assist in determining the market structure of the industry. One commonly used concentration ratio is the four firm Concentration Ratio (CR₄), which consist of the market share of the four largest firms in an industry as a percentage.

According to Kohls and Uhls (1985) if the CR₄ value is less than or equal to 33 percent it is generally indicative of a competitive market structure, if the value is in between 33 to 50 percent and between 50 to 100 percent it indicate a weak and strongly monopsonic/oligopsonic market structure, respectively. When the result is closure to 100, it is the monopoly market.

b. Market power concentration

Market concentration is a function of the number of firms in a market and their respective market shares. Herfindahl-Hirschman Index (HHI) which is a commonly accepted measure of market concentration was used in this study. It is calculated by squaring the market share of each buyer competing in the auction and then summing the resulting numbers. The HHI number can range from close to zero to 10,000. The HHI is expressed as,

$$HHI = \sum_{i=1}^n (s_i^2)$$

Where, s_i is the market share of i^{th} firm in the market, and n is the number of firms.

Unlike the four-firm concentration ratio (CR₄), the HHI reflects both the distribution of the market shares of the top four firms and the composition of the market outside the top four firms. It also gives proportionately greater weight to the market shares of the larger firms, in accord with their relative importance in competitive interactions.

The HHI approaches zero when a market consists of a large number of firms relatively equal in size. The HHI increases both as the number of buyers in the auction decreases and as the disparity in buying volume between those buyers increase. According to U.S. Department of Justice and Federal Trade Commission, the spectrum of market concentration as measured by the HHI, is divided into three regions that can be broadly characterized as (1) Unconcentrated or competitive (*i.e.* HHI below 1000), (2) Moderately concentrated (*i.e.* HHI between 1000 and 1800), and (3) Highly concentrated (*i.e.* HHI above 1800) (Anon, 1997).

(2) Data Collection and Analysis

a. Primary data

Primary data were collected from three field surveys *viz.* (1) Officers of CDA (2) Coconut producers (3) Coconut buyers, using three pre-tested semi structured questionnaires, from June to August 2006. Selected sample consist of five officers of CDA, 30 randomly selected coconut producers from

Kuliyapitiya region and 15 coconut buyers from Kuliyapitiya regional coconut auction. In addition in-depth interviews were held with officers of CDA, buyers and suppliers in the Colombo and Kuliyapitiya auctions. Data were analysed descriptively and Microsoft excel software was used for analysis.

b) Secondary Data

Secondary data were gathered from the marketing development and research division of the CDA. Market share and competitiveness of buyers at the auctions were analyzed using four firm concentration ratio (CR_4) and Herfindahl-Hirschman Index (HHI) respectively. Trends in the average coconut prices and volume of coconut sold at the auction markets were analysed descriptively using graphs and tables.

RESULTS AND DISCUSSION

1. Marketing Problems

According to the results of the survey conducted among officers of CDA, It found that the fluctuation of prices is the main problem for producers (Table 1). They further stated that, the major reason for price fluctuation is seasonal variation of production. Sixty percent of officers stated that well organized storing and distribution system as a suitable solution to this problem. All the officers further stated that the aim of implementing regional auctions is to provide a reasonable price for the grower as well as to supply of better quality nuts for the buyers. The view of the officers towards auction is that in both auctions Colombo and regional, there is a less competition among buyers. According to the survey conducted among producers in Kuliyapiya region, it is found that, their major problem is low price for their products. (Table 1). It is also found that, thirty percent of growers who participated in the survey own more than 10 ha land. Ninety percent of those who responded stated that, they could sell their nuts through other marketing channels. It also revealed that Coconut auction is not a popular marketing channel among producers and buyers. Fifty percent of producers suspect that, growers team-up and do the collusive bidding at the auction, thereby bringing the price down. Producers further suggested that, for the improvement of the auction system the prevailing strict rules and regulations in coconut auction should be released. Generally producers supply their coconuts to the auction either with husk or without husk.

According to the survey fifty percent of producers responded that they are not in a position to supply the required number of nuts to the auction. As a result small scale producers do not get the opportunity to participate in the auction. So the minimum lot size has become an entry barrier to the small growers. According to the results of survey conducted among the buyers, it is found that seventy percent of the buyers who participated in the auction

are DC millers. Sixty percent of buyers participated in the auction mentioned that they buy expected number of nuts from the auction and fulfill their requirements. They buy coconuts from the auction as well as from other available marketing channels viz. village collector or directly from producers. Most of the buyers who do not participate to auction are in the opinion that participating in coconut auction is a time wasting activity. Thus awareness programs are needed to bring them to the right path and make the auction a success.

Table 1 - Views on general problems in coconut marketing

Problem	Producers (%)	Buyers (%)	Officers (%)
Lower Price	50	0	0
Price Fluctuation	43	100	80
High Involvement of Middlemen	7	0	20

2. Trends in Prices and Volume of Coconut

The number of nuts sold at the auction has varied from a low volume (25,204,351) to high (43,480,389) indicating that coconuts sold at the auction during the period of 2001 to 2005 were subjected to fluctuation due to market demand and changes of the volume of the production (Figure 1).

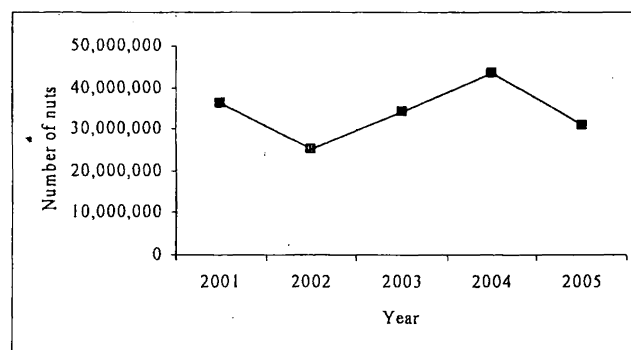


Figure 1 - Volume of coconut sold at Colombo auction

Obviously the rainfall of the previous years have directly affected to the coconut production of the country. In 2002 supply of coconut decreased due to drought prevailed in previous year. In 2003 there was good rainfall, which brought good coconut production (Table 2).

The result showed that volume of coconut production in Sri Lanka is subjected to fluctuation of climatic factors and the area under cultivation.

Table 2 - Volume of coconut production

Year	Production (millions)
2001	2769
2002	2392
2003	2562
2004	2591
2005	2515

The total production of coconuts in Sri Lanka and number of nuts sold at the auction showed a same shape (Figure 1 and 2). The above analysis clearly indicates the volume of coconut production in the island directly affected to the supply of nuts to the auction.

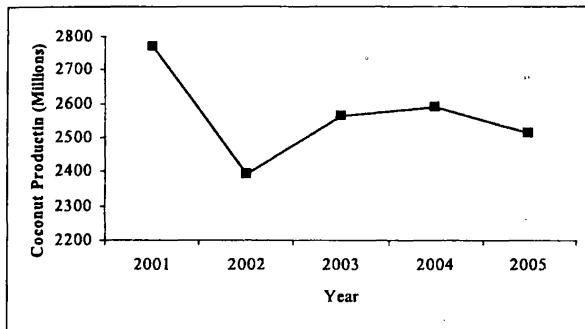


Figure 2 - Volume of coconut production (Millions)

Results found that the Island average wholesale price of 1,000 nuts is lower than average price of 1,000 nuts in Colombo coconut auction. (Table 3). It made a preferable condition for the suppliers whereas; buyers are discouraged to participate in the auction which creates a less competitive market structure in the auction market system.

Table 3 - Average price of coconuts (1,000 nuts)

Year	Colombo Auction	Island Wholesale Price
2001	7,383	6,176
2002	12,262	10,811
2003	9,530	8,998
2004	10,784	9,583
2005	13,379	12,480

3. Market Structure, Market Power Concentration

a. Market Structure

Four Firm Concentration Ratio (CR₄) of Colombo auction market is calculated to analyze the market concentration and competition. According to the results it indicates that value of CR₄ has declined during the period from 2001 to 2005, with the introduction of regional coconut auctions (Figure 3).

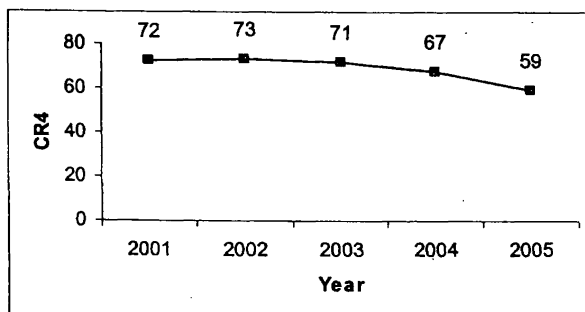


Figure 3 - Variation of CR₄ value in Colombo auction

The highest value of CR₄ has shown in year 2002 and has gradually declined moving the auction

into less concentrated market structure. According to CR₄ values, it confirms that the Colombo auction market has a strongly oligopsonic market structure.

b. Market Power Concentration

Using HHI market power concentration of Colombo auction was calculated from year 2001 to 2005. HHI stands for the percentage of the market owned by each of the firms. Results showed that HHI varies from 1,732 to 1,240 (Figure 4). Accordingly the highest HHI value was observed in year 2002 during the period of investigation and it has declined from year 2002 to 2005 continuously (Figure 4). These results confirm that, there exist moderately concentrated market structures in Colombo coconut auction and it is operating with moderate competitiveness.

Declining of the HHI value indicate that the auction market has moved from highly concentrated market structure (HHI=1,857) to moderately concentrated market structure (HH=1,240).

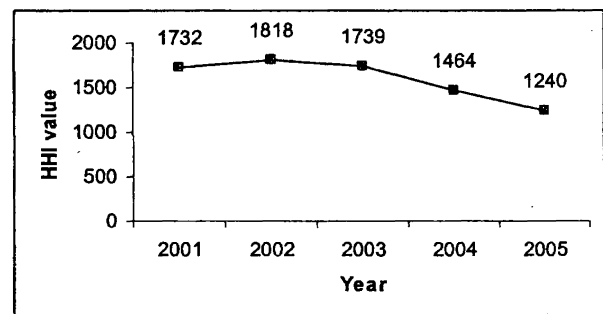


Figure 4 - Variation of HHI value

In this study an effort was take to compare the market structure and market power concentration of Colombo and two regional auctions (Table 4). Accordingly, CR₄ value remains in 67 in Colombo auction compare to 81 and 92 in Kuliypitiya and Beliatta respectively. Greater CR₄ value in regional auctions compare to Colombo auction clearly indicates that few number of buyers owned large market share in regional coconut auctions with strong oligopsonic market structure (less competitiveness). In Beliatta auction which is the youngest regional auction market showed very tight oligopsonic market structure.

Table 4 - Comparison between Colombo auction and regional Coconut auctions

Auction Centre	CR ₄	HHI
Colombo	67	1,464
Kuliypitiya	81	3,306
Beliatta	92	2,859

The results showed that the value of HHI was high in Kuliypitiya and Beliatta regional auctions compare to Colombo auction indicating that less competition in regional auctions with increased disparity in buying volume between buyers. So the

competitiveness in regional auctions is lacking compare to Colombo auction.

4. Weaknesses of Coconut Auction

Through the in-depth interviews with authorities and participants to the Kuliypitiya and Colombo auction it is found that unlike in the past in recent years price difference between auction and other market channels has reduced. This may be due to an organized teaming-up among the buyers. It is not favorable for the auction market and as a result, the trend of withdrawing coconuts from the auction (out lots) due to less price realization has increased by many leading suppliers. This has become a common feature in Colombo auction as well as in regional auctions.

The study reveals that there exist a promising difference between auction price and wholesale price which is an outstanding weakness in the regional as well Colombo auction markets.

CONCLUSIONS

Low price and price fluctuation is the major problems faced by the coconut producers in Kuliypitiya region. Establishment of an efficient marketing system with well organized storing and distribution system could mitigate the issue.

Study concludes that necessary popularity and attractiveness to the auction market is lacking. Study suggests a propaganda mechanism should be launched and incentive schemes should be granted to small scale producers as well as to small scale buyers.

Also producers claim that they could realize higher price compare to auction from selling the products to the collectors. They are in a view that buyers in the auction team up and purposely bring the prices down.

Small scale producers found it difficult to enter to the auction due to size of the minimum lot (*i.e.* 5000 nuts). So such entry barriers should be released.

The study revealed that few number of buyers owned large market share in regional coconut auctions with strong oligopsonic market structure (less competitiveness). Market power concentration study indicates an oligopsonic market structure in both auctions and this oligopsonic market structure is

much tighter in regional auctions. Reason for this nature is clear that few buyers are dominating in the auction market.

It is necessary that government authorities should contribute to develop more favorable environment by encouraging coconut producers and buyers to participate more and actively in the auction to increase the transparency, competitiveness and efficiency of coconut auction mechanism through which producers could realize fair price.

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