

Degree of Competition at the Colombo Tea Auction in Sri Lanka

M.R.MOTHA¹, K.G.M.C.P.B GAJANAYAKE² AND P. SARUKKALI³

*Department of Agribusiness Management¹
Department of Plantation Management,²*

Faculty of Agriculture & Plantation Management, Wayamba University of Sri Lanka, Makandura, Gonawila (NWP)

³Sri Lanka Tea Board, 574, Galle Road, Colombo 03.

ABSTRACT

The study was carried out to assess the present marketing system of tea through the Colombo auction and to analyze the degree of competition existing among buyers. Primary data were gathered from key stakeholders at the auction *viz.* brokering firms and buyers through a sample survey. The degree of competition was analyzed using both the measure of inequality, calculated by the Lorenz co-efficient and the market power concentration calculated by the market power concentration ratio (CR4). The auction mechanism was analyzed descriptively, to identify its strengths and weaknesses in comparison with other channels *viz.* private sales, direct sales and forward contracts and to determine the stakeholders' preference to have electronic auctions in place of the conventional auctions. Findings revealed that, few buyers dominate in the auction reflecting a high degree of inequality and a weak oligopsonic structure, indicated by a 33.3 percent concentration of market power. All stakeholders preferred the auction to other channels. Eighty percent of brokers and 95 percent of buyers showed interest in operating the Colombo auction as an intra-net operation by computerizing the procedures in place of the conventional auction. The study further discovered that a policy revision by the Sri Lanka Tea Board and the Colombo Tea Traders Association is necessary to make the competition fair, at the auction and to eliminate collusion among big buyers. Incentive schemes for small buyers and more focus on value addition to tea purchased, in order to increase their profit margins were identified as suggestions to increase small buyer participation at the Colombo tea auction.

KEY WORDS: Tea Auction, Competition, Inequality, Market Power Concentration, Marketing

INTRODUCTION

Sri Lanka is a major player in the global tea industry accounting for 10 percent of tea production and 20 percent of tea exports (Anon, 2001). The tea sector plays a vital role in the economy of Sri Lanka, contributing 1.23 percent to the Gross Domestic Product (GDP) and Rs. 61.2 billion (US \$ 660 million) which is a 14 percent of national foreign exchange earnings from agriculture. The employment generated by the sector was 650,000 in 2003 (Anon, 2003).

The lions' share of the tea manufactured in Sri Lanka is marketed through the Colombo auction. It is currently the worlds' largest tea auction, which handles over 300 million kilograms of tea annually. The Colombo Tea Traders Association (CTTA) conducts the auction, under the by-laws and conditions of sale of the Sri Lanka Tea Board (SLTB), in conjunction with the Ceylon Chamber of Commerce (CCC). The auctions are held twice a week on Tuesdays and Wednesdays in the CCC building and open to all registered members of CTTA (Anon, 1996). The auction system consists of brokering firms and buyers. Tea producers offer tea for sale through brokers and the brokers' auction tea. There are nine brokering firms operating at the auction, and they all are members of the Colombo Brokers Association (CBA). Many buyers are exporters who purchase tea, to service their export orders and some sell tea to local market. At the auction brokers value teas based on the price levels fetched, during previous auctions and the demand and supply condition in the market. Buyers on the other hand, bid on tea at a level that they are confident of marketing to the secondary buyers. The prices that traded weekly therefore depend on market forces prevailing at the time of offer.

There are four major marketing channels for tea; *viz.* Colombo auctions, private sales, forward contracts and direct sales. In private sales, tea is offered through a broker, and a panel certificate is issued after valuation of tea and this channel is confined to quality tea at present. Under forward contracts, a seller can enter into a contract by offering tea at a pre-determined price, subjected to the approval by the SLTB and a selling broker. Producers are allowed to directly enter into contracts with buyers without brokers under direct sales.

The auction has been subjected to substantial criticism and studies on the tea marketing system in Sri Lanka reveal that the large and powerful exporters collude in price fixing and dominate in the Colombo auction (Anon, 1996). On the other hand, prices in the tea market have been stagnant in real terms in the last twenty years and the cost structure in Sri Lanka is significantly higher than many other new competitors, thereby affecting the overall industry competitiveness. The dependence of Sri Lanka on the commodity markets and the relatively low level of value addition affect industry profitability. (Anon, 2001).

Therefore, the survey examines the level of inequality and concentration of market power, to explore the degree to which competition exists among buyers and their level of participation in bidding at the auction. Further it reflects on value addition option and how it would benefit the small buyers. The study further analyzes the strengths and weaknesses of the auction, in comparison to other channels and buyer preference for a web based electronic auction.

METHODOLOGY

Data Collection

A survey was conducted among brokering firms and buyer firms to get general information on tea trade and the auction mechanism. There were 371 buyers registered with the SLTB in 2004. Generally, 95 percent of tea purchased at the Colombo auction is exported. Therefore, the 269 exporters were assumed as buyers. Through pre-tested questionnaires, primary data were collected from five brokering firms and a sample of 60 buyers that represent both small and large buyers. Primary data collection was carried out from March 2005 to May 2005.

Secondary data were obtained from the Sri Lanka Tea Board Reports.

Conceptual framework

The concepts of inequality and market power concentration among buyers were used as key measures to analyze the degree of competition.

a) Measure of inequality

Lorenz co-efficient technique is a graphical method used to analyze competitiveness and at the auction it measures, the degree to which the quantities purchased by buyers are unequal. It plots the cumulative percentage of quantities purchased by the cumulative percentage of buyer firms, starting from the firm with the smallest quantity purchased. Greater inequality in the quantities results in, the Lorenz curve lying further from the diagonal line or the line of perfect equality. If the area between the line of perfect equality and the Lorenz curve is A, and the area underneath the Lorenz curve is B, then the Lorenz coefficient is $A/(A+B)$. This ratio is expressed as a percentage or as the numerical equivalent of that percentage, which is always a number between 0 and 1. Greater the shaded area, greater the inequality among buyers is indicated.

The software, "Free on-line calculator" (<http://www.wessa.net/co.wasp>), which computes the Lorenz coefficient, plots the Lorenz curve, was used to compute the data (Thomas *et al.*, 2000).

b) Market Power Concentration

A market power concentration exists, when one group of marketing agents has a higher bargaining power than the other group of marketing agents. When sellers exert marketing power over buyers, it is called oligopoly and when buyers exert marketing power over sellers, it is called oligopsony power. In short, it gives an idea of the degree of market power that a firm enjoys in its' respective industry and refers to the number and relative size distribution of buyers/sellers in a market. Economists and policy makers are interested in the degree of market power in different industries as its presence implies a market failure (Weerahewa, 2003). There are a number of measures of market concentration, but the most commonly used is the market concentration ratio, which measures the percentage of traded volume or share accounted for, by a given number of participants.

Studies in the fields of industrial organizations suggest certain levels of concentration at which non-competitive behavior of market participants begin. For example, Kohls and Uhl (1985) suggest that a four-firm concentration ratio (CR4), that is, the market share of the largest four firms; of less than or equal to 33% is generally indicative of a competitive market structure, while a concentration ratio of 33% to 50% and above 50% may indicate a weak and strongly oligopsonic market structures, respectively.

RESULTS AND DISCUSSION

The survey revealed that stakeholders preferred the auction, to the other channels due to its relative strengths (Table 1).

Table 1: Volume of tea marketed through various channels (Quantities in million kg.)

Marketing channel	Years		
	2002	2003	2004
Public Auction	286.3	278.1	269.9
Private Sales	30.1	29.6	39.9
Direct Sales	1.5	1.7	1.5
Total	317.9	309.4	311.3

Source: Sri Lanka Tea Board

Many buyers stated that fluctuating prices reflect the market forces (demand and supply situation) prevailing in the market place. They stated that the prices indicate the market clearing equilibrium price of tea and viewed the system as fair. However some of the small buyers disagreed with this stated that their active participation in the system is not adequate and sharing of large lots by big buyers, leads to collusion.

All buyers were satisfied about the brokers' knowledge on tea and market conditions. Further, they felt that the auction procedures are efficient as the Colombo auction is the fastest in the world, where the average speed is 5 lots/minute and maximum of 7 lots/minute once. Buyers admitted that, tea receive good exposure to a number of buyers through the auction, and hence fetch a premium price. The provision to divide large breaks was seen as a relief, from the small buyer point of view. Availability of wide range of tea grades was considered, both a strength and a weakness. It was a strength as it caters to the demand of buyers who need a variety of teas and it was considered as a drawback for buyers who need only few grades in large quantities.

Even the most experienced commodity trader is unable to predict future price levels, despite the enormous data available, was considered as a major drawback. Moreover, 90 percent of the buyers felt that the quality of tea could be increased further. Outdated auction rules and procedures were criticized by buyers. Out of norm practices, for example, some buyers undercutting quote prices below the standard market price were looked down upon. Large buyers as well as the brokering community condemned infiltration of tea from estates. In addition to above strengths and

weaknesses, availability of large number of lots in small quantities was seen as an advantage, by small buyers, but vice versa by large buyers. Some stakeholders, identified availability of only Sri Lankan teas, as an advantage because it would expand the auction further but some held the opinion that bringing in tea from other parts of the world might affect the quality.

Major buyers felt that, increasing the quantity per lot and limiting the number of lots would enhance the effectiveness of operations at the Colombo auction. Some stated that, cataloguing tea grade-wise instead of would improve efficiency. Since the quality is less emphasized, buyers preferred an improvement in quality of the produce, from manufacturing stage onwards and felt that factories must change their attitude from quantity to quality oriented. A combination of conventional and electronic auctions was recommended, by 20 percent of the buyers in order to minimize the waste of time in procedures. Buyers recommended computerizing pre-auction procedures such as catalogue confirmation and all felt that the auction rules and regulations should be completely revised. Zero political influence was seen as the ideal scenario in the auction setting.

Eighty percent of the buyers stated private sales, as the next best channel to buy due to better quality and freshness of tea, accessibility to a wide range, quickness of the transaction, and less complexity in procedures. However, more control over prices by supplier, and less organized nature as a system were considered as drawbacks in this channel.

Buyers were not interested in direct sales as it is likely to lead to corrupt practices, for example switching of samples. They stated that the channel helps even the closed factories, to sell outside teas under their factory name and for poor quality teas to be sent off from the factories. Poor storage facilities were also seen as a drawback. Furthermore, they stated that direct sales could hedge against market prices and initiation should take place from the producers' side.

Quick access to fresh tea and availability of teas to cater specific market niches were agreed upon as strengths. Twenty percent of buyers preferred forward contracts when they wanted to purchase large quantities. However, in a falling market buyers preferred to wait for the auction in the expectation, that they could buy tea cheaper. Nonetheless, 75 percent claimed that it has practical implications and considered this option as a time wastage. Few felt that quality would deteriorate over a period of time.

Inequality and market power concentration

The Lorenz co-efficient given by the software for the 269 buyers for the quantities they purchased was, 0.879385. The value lies very close to 1 which is the extreme point in the range. This indicates a high degree of inequality in terms of volume annually purchased and therefore and a much control of market by a few buyers (Figure 1).

In the Colombo auction total quantity exported by 269 buyers from January to December 2004 was 297,079,895 kg. The quantity exported by the major four buyers was 98,966,898 kg. This is a 33.3 percent of the total exports (Table 2) and according to the CR4 concept; this indicates a weak oligopsonic market (Kohls and Uhl 1985).

Even though simple to calculate, the concentration ratio presents an incomplete picture of the market power concentration of firms in an industry. It also does not provide information about the distribution of firm size. For example, if there were significant change in the market shares among the firms included in the ratio, the value of the concentration ratio could not change. Further, a more equal market share of the firms not listed among the top four would also not alter the ratio.

However, Porter (1980) writing about competitive strategy says that intensity of competition in an industry is neither a matter of coincidence of bad luck, but more a question of how that industry is structured.

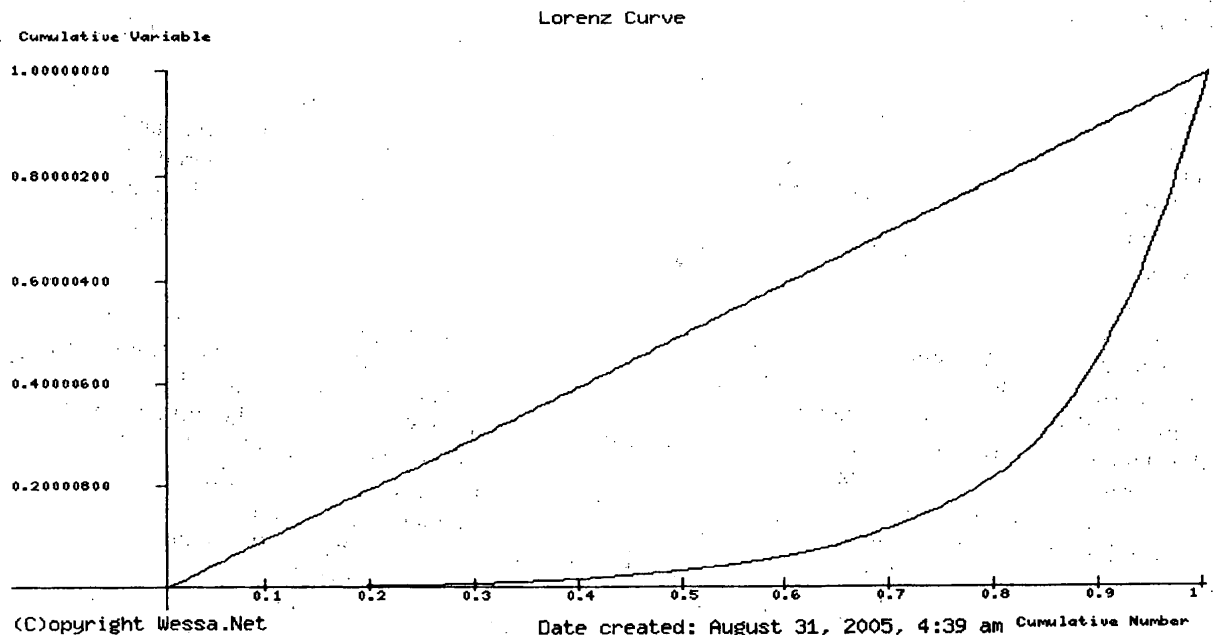


Figure 1. Lorenz curve computed for buyers at the Colombo tea auction (Source. <http://www.wessa.net/desc.wasp>)

Table 2. Quantities purchased by the major four buyers (2004 Jan - Dec)

Buyer	Quantity	Share %
Akbar Brothers	41,593,497	14.0
Stassen Group	24,689,744	8.3
Jafferjee Bros.	17,666,535	5.9
Ceylon Tea	15,017,122	5.1
Others	198,112,997	66.7

Source: Sri Lanka Tea Board

He analyzed the structure of an industry in terms of five basic forces, of which only one is existing competition. Others are buyers, suppliers, potential competitors and substitutes. Followed by above arguments the analysis of competition can be further assisted using a matrix that takes five competitive forces and compares them against three levels of impact as low, medium and high (Table 3).

It is apparent that Sri Lankan tea industry and the Colombo tea auction are synonymous, as both are in existence for more than 125 years. The high correlation between these two enables us to assume that any force explained by Porters model that affect the tea industry has a direct impact on auction performance. When industries and their leading products are at the maturity stage, there is intense competition between them and this is true in the case of Colombo auction which is more than 100 years old and known as the world's largest, best organized auction in the world. Therefore, the collective strength of these five forces determines intensity of competition of at the auction and potential profitability of the tea industry as a whole.

The tea auction has survived the electronic age virtually unchanged. Many buyers were of the opinion that an electronic auction, in place of the conventional auction is not a dire need. Nevertheless, they agreed that introduction of technology to the auction setting is important, and 80 percent of brokers and 95 percent of buyers preferred a system where, buyers assemble to the auction and access the brokers' catalogues and bid on-line than a web based electronic auction where one would be able to function on-line from a long distance..

They, as advantages of the electronic auction voiced that it would ease the handling of expected high production in future, ensuring more buying efficiency. Furthermore, buyers stated that it would reduce the amount of pre-work and might enable additional sales to be handled on a demand driven basis. Speedy post

Table 3. Impact / intensity of competition in the tea industry

		Competitive Force			
Level	Rivalry	Entrants	Substitutes	Customers	Suppliers
Low		Few due to large market shares			
Medium			Coffee and soft drinks		Competitive bidding
High	High			Large customer base	

sale processing, for example automatic confirmation of purchases to buyers and the ability to access on-line to the auction from place of work, were also listed as strengths of an electronic auction. In addition, some buyers were optimistic that this would attract a wider buyer audience and therefore, it has the potential for new sales.

However, most of the buyers were pessimistic, and reluctant to comment on electronic auction, and stated that, it would sharpen the bidding time for buyers and limit the opportunity for bidding. Furthermore, they were of the opinion that sales could be started without all buyers being able to connect and time allocated for a buyer to bid would be problematic. Few stated that the pulse of demand could be lost. Some had reservations on affordability and inadequacy of information technology (IT) infrastructure and felt that high cost of operations and poor IT skills could result further reduction in smaller buyer participation. Security problems and net-work failures were emphasized as inevitable by some buyers. In addition, some affirmed that the electronic auction would not be as fast as the conventional auction.

When the respondents were asked specifically about the competition at the Colombo auction, they expressed the following views. Mostly large buyers felt that the competition at the auction is fair and that any industry has a concentration of market power. To be in line with the competition buyers commented that generations of business (financial stability), economies of Scale, good knowledge about tea, good relationships with foreign buyers, a strong marketing arm, opening up of new foreign markets, political influence and value addition work as strengths.

In Sri Lanka value addition to the bulk tea purchased remains at a low level (Table 4). If small buyers focus on quality of the products than the quantity and concentrate more on adding value to their products, this would increase their profit margins and ultimately will increase their purchasing power.

Table 4. Tea exported by Sri Lanka in various forms during the year 2004

Modes of tea export	Percentages
Bulk	62.4
Packets	26.7
Bags	6.3
Instant tea	0.2
Green tea	0.7
Others	3.8

Source: Sri Lanka Tea Board

CONCLUSIONS

The Market power concentration indicates a weak oligopsonic structure. A much higher Lorenz coefficient of inequality, reveals that a few large sized firms share the major quantity of the produce. Therefore, it is conclusive that a few buyers do have the greatest market share domination at the Colombo tea auction.

Where the auction market fails to function in a competitive manner, the mechanism becomes inefficient and the government intervention to ensure equal buyer participation is necessary. A policy revision and implementation of a code of conduct, by the SLTB and CTTA is necessary to stimulate active small buyer partaking. Stolen and adulterated tea tarnish the image especially at the "Pettah Auction" where, a large number of small buyers are actively operating. Sensitizing the stakeholders on being more quality conscious is necessary. Moreover, regulations on punishment of persons involved in sales of tea through unauthorized channels with poor quality should be made more severe.

Incentive schemes should be granted to empower small buyers. Encouraging them for more work on newer and better products would increase their profit margins. Further, encouraging small buyers towards private sales would empower the small buyers and would improve the industry competition in the end.

An immediate shift from conventional to electronic might suppress the small buyers further and give rise to more acute unfair competition. Setting up of a strong market intelligence unit also, is a timely need, for the benefit of all involved in the auction system as price, demand and supply forecasts are invaluable in securing good prices for teas auctioned. However, further research to figure out actual reasons behind competition is important, by incorporating time series data and Porters' other four competitive forces.

ACKNOWLEDGEMENTS

Authors wish to thank the staff of the Sri Lanka Tea Board for providing their assistance in numerous ways and gratefully acknowledge the support of Prof. S. J. B. A. Jayasekera, the Dean, Faculty of Agriculture and Plantation Management, Dr. A. M.T. P. Athauda, the Head, Department of Agribusiness Management. Also, the staff of the computer unit for their assistance. Very special thanks are due for Mr. J. C. Edirisinghe, the Economist, Rubber Research Institute for his guidance in analysis.

REFERENCES

- Anon (1996). Economic and Social Commission for Asia and the Pacific. Tea Marketing Systems in Bangladesh, China, India, Indonesia and Sri Lanka. United Nations, New York. pp 76.
- Anon (2001). *Summary of the Sri Lankan tea strategy project* (implemented by the A. T. Kearney Ltd: International management Consultancy firm) *Plantation World* 1(1): pp 15 -16.
- Anon (2003). Annual Report. Sri Lanka Tea Board: Colombo.
- Cooke, A. (2005). Personal Communication (Senior Vice President. Asia Siyaka Commodities (Pvt) Ltd).
- Cole, G. A. (1997). Strategic Management, Theory and Practice. 2nd Edition, 4.
- Free on line calculator: software that computes Lorenz coefficient at <http://www.wessa.net/desc.wasp>: accessed on 31, August 2005.
- Porter, M. E. (1980). *Competitive Strategy: Techniques for analyzing industries and competitors*. The Free Press: New York.
- Thomas, V. Wang, Y. and Fan, X. (2000). Measuring Education Inequality: Gini co-efficient of education. World Bank institute, Washington D.C.
- Thompson, L. and Ewart. (1997). Electronic Tea Auctions. *Journal of National Institute of Plantation Management*. 12 and 13: 30-35
- Weerahewa, J. (2003). *Sri Lankan Journal of Agricultural Economics*. Sri Lankan Agricultural Economics Association. 5 (1): 69-70
- Kohls, R. and J. Uhl (1985). *Marketing of Agricultural Products*. Macmillian publishing company, New York: 35-45