

**Trading Margins and Contracts in a Vertical Marketing Chain:
Evidence from Edible Oils Market in Bangladesh**

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Introduction

There is a broad consensus among the development economists and practitioners that well-developed and integrated domestic markets are essential for economic development and poverty alleviation in developing countries. However, opinion about the role and efficacy of domestic marketing intermediaries for agricultural commodities has witnessed dramatic changes in last four decades, both among the academic economists and the policy makers. Distrust in the domestic commodity traders was common in 1960s and 1970s in developing countries, which manifested in policy interventions such as price controls and marketing boards. The opinion shifted in favour of a liberalized agricultural market when evidence accumulated regarding the inefficiencies of such interventions that hindered, and in some cases, supplanted the operation of domestic markets. The distrust in the marketing intermediaries (middlemen), however, seems deeply ingrained among the people and policy makers in many developing countries. Collusion and market power among the middlemen and destabilizing speculation are regularly blamed for price anomalies in the agricultural markets.

Surprisingly, the policy responses with respect to price increases have rarely been based on rigorous empirical analysis of the role played by the marketing intermediaries. There is little or no credible evidence on whether market power exists in a commodity market such as edible oil or potato in Bangladesh, if it exists, where in the marketing chain the market power is located, and whether the market power is the outcome of collusion. Can the observed price anomalies be due to other factors such as market segmentation because of weak infrastructure (transport and information) and storage bottleneck, rather than collusion and market power? Do market intermediaries add value along the supply chain by providing credit and insurance? To answer these questions, we conducted a survey of traders along the entire supply chain of edible oils in Bangladesh. This paper describes the summary statistics from the surveys of edible oils value chain in Bangladesh conducted in 2013. We start with the coverage of the surveys along

with data collection procedure. In the following sections, we describe the summary statistics covering three main topics: (1) margins along the value chain; (ii) characteristics of contracts; and (iii) use and costs of credit.

Surveys of Edible oil Supply Chain

The survey of the edible oil market conducted during 2012-2013 covered nearly the entire spectrum of the edible oil value chain including Delivery Order traders (DOTs), brokers, wholesale, and retail traders. For each layer of the market, we implemented two types of surveys: a survey to collect information about the characteristics of the agents and/or production units and a weekly survey that collected information on prices, quantities, contracts, and payment details etc. for weekly and individual transactions. For traders (DOTs, brokers, wholesale, and retail), the one-time survey collected information on the scale of operation (total employment, storage capacity, short-term and long-term credit etc.), expenses on rental and other market fees, average turnover etc. The survey also collected information on the personal characteristics of frequent market traders (e.g. education level, age, years in business, business and social relationships etc.). The second type of survey collected information on market transactions over time at different layers of the market (excluding refinery). As variations in price are important for our study, we collected data on transactions for six months on a weekly basis. The main information that are collected are: quantity and value of sales, credit, costs incurred and storage at each layer of the market. From each trader we collected information on 5 most recent transactions. For each transaction, it collected information on contract terms (e.g. delivery date), quantity purchased, purchase price, product quality (loose, bottled, brand name), manufacturer of the product, costs in transport and storage and other fees, size and business relationship with buyers/suppliers etc. The

questionnaires also included questions about agent (brokers/traders') expectation about prices next week as well as price trends and reasons behind the observed price trend in the current week.

The total sample of traders in the repeated weekly survey is 574 traders (115 large wholesale traders, 264 retailers, 91 DOTs and 104 brokers). The DOTs and wholesalers accounted for much of the transactions in these two layers (these are the largest traders in terms of volume of transactions). With six months of weekly data collection, we have data on nearly 10 thousand transactions. As the same trader is tracked on a weekly basis, the survey provides trader level panel data. The survey covered two geographical locations: Dhaka and Chittagong which constitute the central DO and wholesale markets for edible oils in Bangladesh.

Prices and Margins along the Value Chain

We utilize the weekly data for investigating prices and margins along the supply chain. Table 1 provides the summary statistics on prices and margins. The difference between the purchase and sale prices increases as one moves down the supply chain from DOTs to retail traders. The downstream traders incur more costs for storage and transportation. Another interesting finding is that the traders seem to report higher purchase prices than the sales prices of the immediate upstream layer. The quantity bought and sold also decline as we move downstream along the supply chain. We take purchase price of DOTs as refiner's sales price (row 2 in Table 1).

Table 1: Prices during last week at different market layers

	Average	Median	Stand. Dev.	N
Delivery Order Traders				
Sale Price (taka/maund)	3356	3030	631	2375
Purchase Price (taka/maund)	3286	2960	617	1536
Quantity sold (maund)	1536	750	2296	2383
Quantity bought (maund)	671	300	1124	1555
Wholesale Traders				
Sale Price (taka/maund)	3533	3245	642	4468
Purchase Price (taka/maund)	3464	3180	628	4388
Quantity sold (maund)	150	110	169	4480
Quantity bought (maund)	167	150	312	4480
Retail Traders				
Sale Price (taka/maund)	3861	3658	656	4509
Purchase Price (taka/maund)	3680	3400	663	4537
Quantity sold (maund)	144	77	167	4537
Quantity bought (maund)	56	15	113	4537

Note: 1 maund is equivalent to 37.3242 kg.

To provide a standardized measure of margins, we express sales prices at each layer of the market as a ratio of refiner's price. The ratios are reported in Table 2. Column 1 reports the ratio of average sale price to average refiner's price. The ratios in column 2 are ratios of median prices. As clear from Table 2, the ratio of median wholesale price over refiner's price is about 1.096 indicating a margin of 9.6 percent. The margin at the final consumer level is about 23.6 percent. The margin between wholesale and retail trade is larger as it involves transportation, distribution over longer distances and storage. The margin at DOT layer is quite slim around 2.4 percent as DOTs are financial intermediaries and are not involved in transportation and storage of oil.

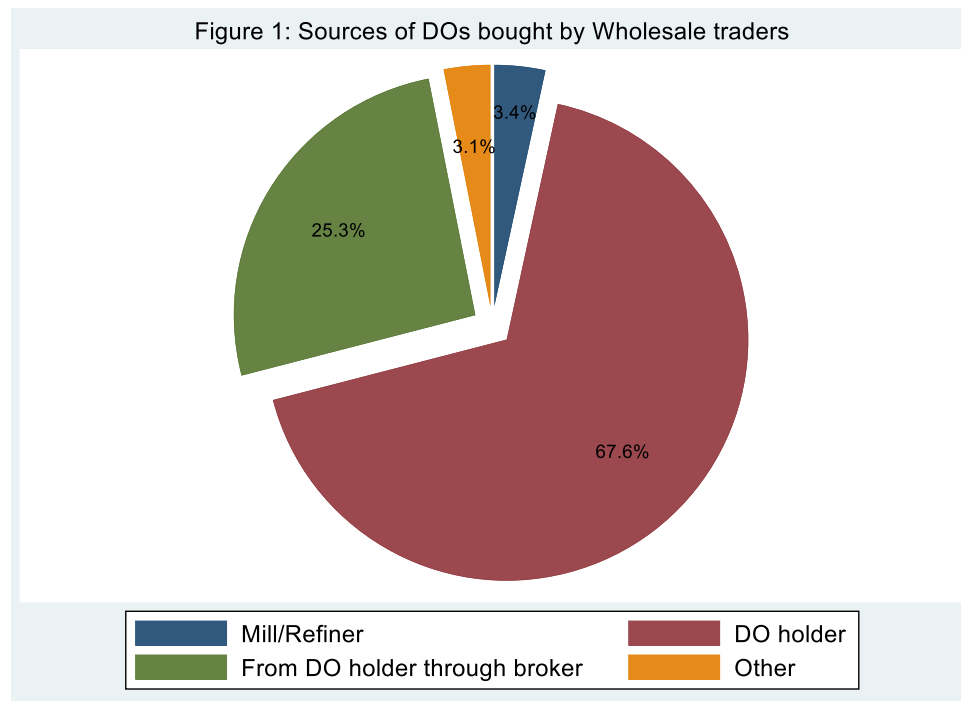
Table 2: Ratio of Sales Price to Refiner/Factory gate Price

	Average	Median
Delivery Order Traders	1.021	1.024

Wholesale Traders	1.075	1.096
Retail Traders	1.175	1.236

Contracts and Credits in Edible Oils Supply Chain

In this section, we focus on the relationships between the DOTs and wholesale traders. Figure 1 shows the distribution of sources of DOs purchased by the wholesale traders. The wholesale traders in our sample bought about 93 percent of DOs directly or through brokers from the DOTs. Direct purchase from refiners constitutes only 3.4 percent of all DOs bought by wholesale traders. A typical wholesale trader maintains long-term business relationship with DOTs: the average years of doing business with a DOT is about 7 years, median is 6 years. Figure 2 shows the distribution of wholesale traders in terms of their business relationship with DOTs.



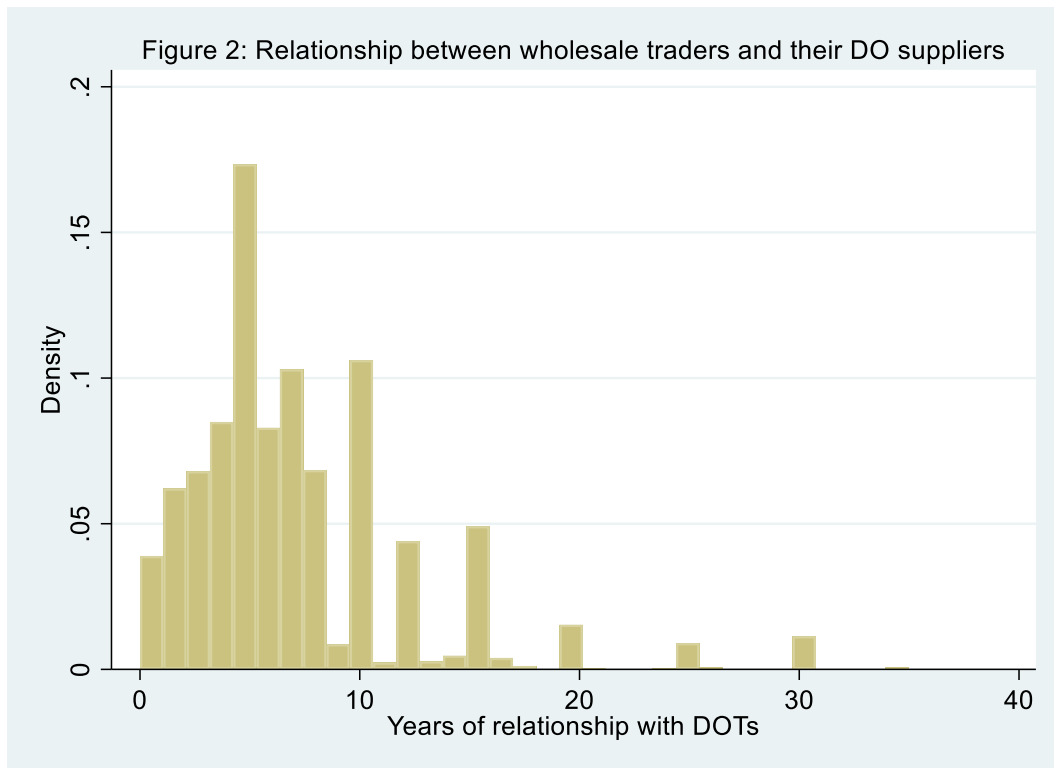


Figure 3 plots the proportion of transactions with DOTs that constitutes spot transaction vs. purchase on credit. About 70 percent of transactions are spot transactions in the sense that full amount is paid at the time of purchase. The transactions on credits involve purchases which were paid at later times. Figure 4 shows the share of total quantity purchased under spot and credit contracts. About 32 percent of quantity were bought with credit. On average, transactions in credit involve larger quantity/volume than spot transactions.

Figure 3: Transaction Type between DOT and Wholesale traders

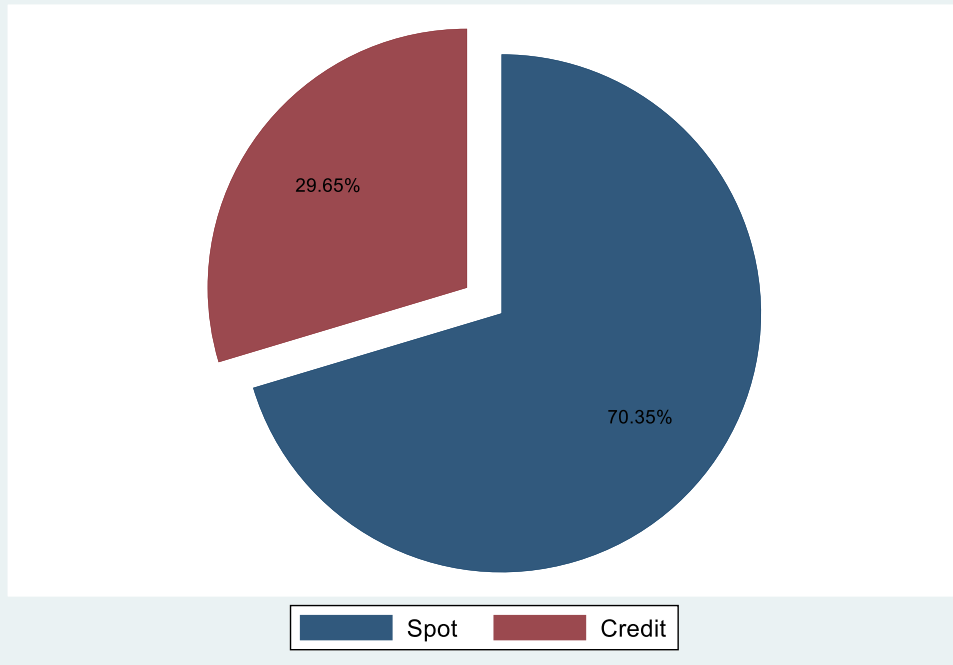
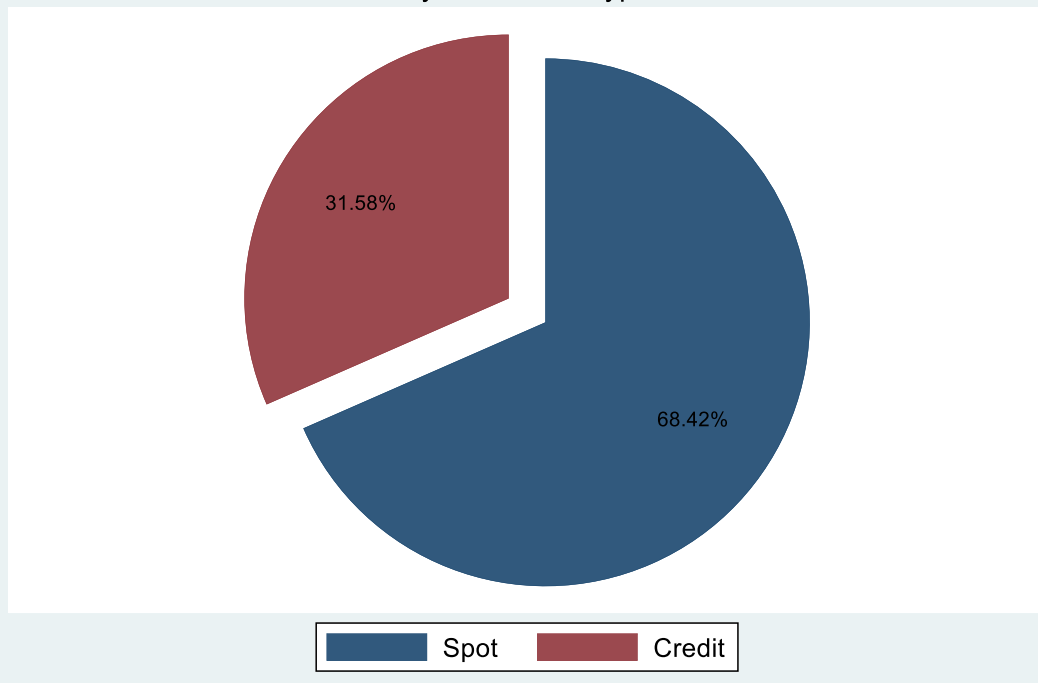


Figure 4: Composition of Quantity traded between DOT and Wholesale traders
By transaction type



Apart from purchasing oil using trade credits, wholesale traders can and do borrow from official sources such as banks. As the survey interviewed large wholesale traders, it is not surprising that all of them maintain a credit line with banks (Table 3). The median interest rate on this credit lines from banks is about 18 percent and the average about 17.74 percent. The survey administered a one-time questionnaire to collect information on fixed costs and traders’ socio-economic backgrounds. The wholesale traders were asked about usage of trade credits for purchasing and selling activities which are reported in the bottom two rows of Table 3. About 80 percent of traders reported using trade credits from DOTs at least once a year.

Table 3: Use of credit by wholesale traders and interest rate paid by them

	Average	Median	Stand. Dev.	N
Weekly Panel Questionnaire				
% of Traders with Credit Line from Banks	100	100	0	788
Annual Interest Rate on credit line	17.74	18.00	1.29	788
One-time Questionnaire				
% of traders make purchase on credit	80	100	40.05	96
% of traders sell on credit	80	100	40.05	96

Conclusions

This paper describes the key insights from the surveys of traders along the entire supply chain of edible oil in Bangladesh. The key findings from the summary analysis are that (i) trader’s margins vary across market layers, increasing as one moves from up to downstream. This is expected as downstream traders bear additional costs of transportation and storage. (ii) Nearly a third of all transactions involves trade credits from financial intermediaries called DOTs to wholesale traders where both sets of traders maintain long term business relationships; (iii) Buying and selling on credit is ubiquitous as 80 percent of traders are involved at least once in a year. Equally importantly, the average price margin between refiners and wholesale traders is smaller than bank interest rate, implying that cost of trade credit tends to be lower than that of accessing formal credit.