

Exploration of Structure-Conduct-Performance of Coffee Market System in Ethiopia The Case of Jimma Zone

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Abstract

A study entitled farmers perspective exploration of structure-conduct-performance of coffee market system was undertaken in Jimma zone, Ethiopia with the aim of computing a four firms concentration ratio, observing the price setting strategy, estimating costs, margins (gross and profit). 138 smallholder farmers from eight kebeles were sampled using multi-stage sampling techniques. Besides, respondents comprised of cooperatives, unions, suppliers, and were selected following the chain of actors starting from the sample farmers. Data were collected from primary sources through semi-structured interview schedule, checklist, and group discussion accordingly. Data were also collected from secondary sources. Descriptive method of data analysis using structure-conduct-performance model was used to analyse the data. The result of four firms concentration index revealed that in all districts a few suppliers have largely conditioned the volume of coffee traded revealing the existence of market imperfection as few suppliers seem to have monopolized the coffee market in general. The market conduct analysis detected that unfair price setting practices, in advance credit based binding contractual agreement, confusing marketing informations, and collusion mechanisms were followed by suppliers while purchasing coffee from farmers. The performance component analysis based on gross margin and profit margin revealed that despite, farmers do all the work of production and harvesting activities, and bearing the associated risks, received the very smaller portion of profit shares from both washed and unwashed coffee type. Still, farmers relatively perform better and efficient while participated in drying coffee than selling the red cherry coffee type as in drying cherry coffee the proportion of gross marketing margin reached to smallholder farmers is higher than the one absorbed in the market for other intermediaries. Finally, the study recommended that, as farmers are the pro-poor groups who needs to be prioritized in any intervention, legal tactics and conditions under which illegal and imperfect market practices would not likely to prevail should be implemented. Legal interference in coffee business prevailing price ceiling and price floor in accordance with keeping farmers' advantage should be accompanied with farmers.

Keywords: Supplier, Red cherry, Dry cherry, Structured conduct performance

1. INTRODUCTION

Coffee, Ethiopia's largest export crop is the backbone of the economy (Nicolas 2007). It has been cultivated, traded and consumed over centuries and still play a significant role in the daily life of most Ethiopians and for the state of Ethiopia as a whole (Stellmacher 2007). Coffee is the major cash crop and, being a cornerstone in the export economy of the country, is source of foreign currency for Ethiopia (FAO/WFP, 2008). It contributed 35.8% of total foreign exchange earnings (524.5 million of USD) in 2007/08 and increased to 744.9 million of USD¹ in 2012/13 (ECEA 2013). In a country Ethiopia where about 44% of the population is under poverty (Woods, 2003), coffee cultivation plays a vital role both in the cultural and socio-economic life of the nation. While coffee employed an estimated 100 million people in the world (NRI, 2006), about 25% (15 million) of the Ethiopian population depend, directly or indirectly, on coffee production, processing and marketing, transporting and ancillary activities (DFID 2004; Mekuria *et al.* 2004; Oxfam 2002b; Petit 2007; USAID 2010). More importantly coffee is providing income for a large number of smallholder farmers. It is estimated that between 7.5 and 8 million households depend on coffee for a considerable share of their income, and provides jobs for many more people in coffee-related activities of processing, transporting or marketing along the value chain (Samuel and Eva 2008). Because coffee is labor-intensive during harvesting and processing it provides an important source of income from casual labor for poor, rural populations.

Farmers would benefit from income generation and then escaping from poverty through participation in the market. Enlarged involvement in agricultural markets is coming to be important as a key factor to secure smallholder farmers in African countries from poverty and food insecurity (Delgado 1995, Heltberg and Tarp 2002). Empowering farmers to participate in markets could transform them from subsistence farming to commercialized farming system and advantage from these economic opportunities. In order to expand the leading role agriculture plays in income generation, economic growth and poverty reduction, smallholder farmers need to improve marketing of coffee to the market. Despite coffee's economic and social importance for

¹ However, its share from the total foreign earnings/exchange is 24.2%

the Ethiopian economy, the performance smallholder farmers in the coffee sub-sector have remained unsatisfactory. This is mainly due to the imperfect market interactions, conditions and infrastructures prevailing in the area. Smallholder farmers in the area continue to face numbers of challenges related with marketing. Though coffee is one of the world's most traded goods, as the commodity price has plunged in recent years it is increasingly hard for coffee farmers to survive on their crops (Tora Bäckman 2009). Limited access to market facilities, less exposure for market information, infrastructural problem (poor road), inadequate support services and problem in transportation services are some the problems resulting lesser benefits to smallholder farmers for their products. The objective of this paper was, therefore, to study the marketing system of coffee form farmers' perspective focusing on structure-conduct-performance of coffee market

2. METHODOLOGY

2.1. Description of the Study Areas

The study was conducted in four coffee growing districts (namely Limmu Seka, Manna, Gomma, and Limmu Kossa) of Jimma zone. The Zone is located in the South-Western part of Ethiopia between Latitude 6° and 9° North and Longitude 34° and 38° East, and between altitude ranges of 880 to 3340 meters above sea level (ORG, 2003). Jimma zone is one of the coffee growing zones in the Oromia Regional State, which has a total area of 1.1 million hectares of land. Currently, the total area of land covered by coffee in the zone is about 0.1 million hectares, which includes small-scale farmers' holdings as well as state and private owned plantations. Jimma zone covers a total of 21% of the export share of the country and 43% of the export share of the Oromia Region (JZARDO 2008). There are favourable climatic conditions, variety of local coffee types for quality improvement and long history of its production in the Zone. In Jimma zone, coffee is potentially produced in eight districts namely, Gomma, Manna, Gera, Limmu Kossa, Limmu Seka, Seka Chokorsa, Kersa and Dedo, which serves as a major means of cash income for the livelihood of coffee farming families (JZARDO 2008). According to the report from the same source, 30-45 % of peoples in Jimma zone directly or indirectly benefit from the coffee industry.

Manna is one of the major coffee producing districts in Jimma zone located at 368 km southwest of Addis Ababa and 20 km west of Jimma town. The total area of the district is 478.98 km² (47,898 ha) of which 12% is highland, 65% intermediate highland and 23% lowland with altitudinal ranges between 1470–2610 m.a.s.l (ARDO 2008). The mean minimum and maximum temperatures are 13.0°C and 24.8°C, respectively (ARDO 2008). Based on long term (15 years) weather data obtained from the nearby JARC meteorological station, the average annual rainfall is 1523 mm. Distric Nitosols and Orthic Acrisols are the dominant soil types with slightly acidic Ph, which is suitable for coffee production found in Manna *district* (ORG 2003).

Limmu-Kossa district is geographically located between 70 50' to 80 36' North and 360 44' to 370 29' East (ORG 2003). The total surface area of the district is 1355 km². Agro-climatic condition of the district comprises of highland (25%), midland (65%) and lowland (10%) with annual rain fall varying between 1200 to 2000 mm and altitude ranging between 1450 to 1950 masl while annual temperature is 10°C to 25°C. The total population of the district is 187,815 out of which 50.5% are male. There are about 29,138 households (92.3% male-headed) living in 40 kebeles and 3 towns (Limmu Genet, administrative center of district, Ambuye, and Babu). The average land holding size per house hold is 2.39 hectare out of which 24.6% is covered with annual crops.

Gomma district is one of the known coffee growing districts of Jimma Zone. It is located 397 km Southwest of Addis Ababa and about 50 km west of Jimma town (ORG, 2003). Its area is 1,230.2 km². The annual rainfall varies between 800-2000 mm, while the mean minimum and maximum annual temperatures of the district vary between 7°C-12°C and 25°C-30°C, respectively (ARDO 2008). Based on 15 years weather data obtained from Gomma district, the average annual rainfall is 1524 mm. Altitudinal range of the district is between 1387-2870 masl. The three dominant soil types in the district are Eutric Vertisols, Humic Alfisols and Humic Nitosols. Nitosols are the most abundant covering about 90% of the district, which is dark reddish brown in colour, slightly acidic and suitable for coffee production. Agro-ecologically, this district is divided into highland (8%), midland (88 %), and lowland (4%).

2.2. Data Types, Sources and Method of Collection: The data, both quantitative and qualitative type, of this study was collected from both primary and secondary sources. Quantitative data on volume of production, cost of production, marketing and processing cost, volume of sale, and selling price of coffee for marketing actors were collected from primary source by semi structured interview schedule. Qualitative data about the patterns and socio-economic activities of the farmers in the study areas were gathered informally through interview and informal discussions with key informants like DAs, agriculture sector officers, and administrators. On the other hand, secondary data of both qualitative and quantitative such as agricultural inputs supplied and consumed, physical characteristics, population size etc. were gathered through thorough reviewing and examination of reports as well as records of published and unpublished documents.

2.3. Sampling Techniques and Sample Size Determination: Multi-stage sampling techniques were employed. In the first stage from among the eight production potential districts, four districts namely Gomma, Limmu-Kossa, manna, and Limmu-Seka districts were sampled randomly for this study. In the second stage, agro-ecology as a best proxy for production potential of *kebeles* was assumed to be important criteria to stratify *kebeles* for deriving representative sample *kebeles*. Accordingly, after screening out non-producing *kebeles*, sample of eight *kebeles* were selected randomly and proportionately from midland, highland and lowland category of districts.

In the third stage, to consider the target populations (to avoid probability of including non-producers of coffee in the sample), only list of coffee farmers from sample *kebeles* were considered. Then, based on the number of coffee farmers available, proportional size of sample coffee farmers were selected from each sample *Kebeles* using simple random sampling technique.

As household populations are large, for adequate size of sample to get, following the above sampling procedure, a total of 138 samples of smallholder farmers from sample districts were selected using Cochran (1963) sample size determination formula as follows.

$$n_0 = \frac{z^2 pq}{e^2} \dots \dots \dots (1) \quad n_0 = \frac{(1.96)^2 (0.1)(0.9)}{(0.05)^2} = 138$$

Table 1: Distribution of sample household farmers across districts

District	Number of farm households	Sampled farm households
Limmu-Seka	29138	38
Manna	22156	29
Gomma	30514	40
Limmu-Kossa	23584	31
Total	105392	138

Source: Author’s computation from secondary information

Sampling technique and sample size determination for actors other than farmer: In this study, information from, suppliers (Akrabi), primary cooperatives, cooperative unions, exporters were selected for the purpose calculating the concentration ratio, and estimating the costs and margins. Following the chain of actors trading with each other starting from 138 sampled farmers, the following sample sizes were taken for actors other than farmers.

Cooperatives/union: Following the chain of actors, two cooperative unions and eight primary cooperatives that were linked with the sampled farmers with marketing and other activities were selected.

Suppliers: 24 sample suppliers were proportionately sampled using systematic random sampling technique. The systematic randomization was based on the volume of coffee they bought from the farmers.

Exporters: currently there were more than 120 exporters involving in Ethiopian coffee business (ECEA 2013). These exporters had licence to buy coffee comes from any region across the country. However in the year 2015/16 only 50 were frequently buying coffee from the Jimma. Thus for the purpose of my analysis, five of them were and sampled systematically.

2.4. Method of Data Analysis: Descriptive analysis was employed for estimating cost, margins and profits along coffee market chain. Statistics such as average, weighted average, frequencies, and percentages were computed. Structure, conduct-performance descriptive model was employed to study the marketing conduct, structure, and performance of the coffee marketing system. The S-C-P approach analyses the relationship between functionally similar traders and their market behaviour as a group and provides a broadly descriptive model of the nature of various sets of market, attributes, their relationship and performance. The approach, based on ideal competitive market attributes such as barrier to entry and market concentration, postulates that as market structure deviates from the theory of perfect competition the degree of competitive conduct would decline and there would be a consequent decrease in output and allocative efficiency (Scott 1995). Hence, in this study the SCP framework was used in analysing the coffee market performance and the behaviour (conduct) of suppliers. Market structure characteristics stressing on degree of market concentration (the number and size distribution) of firms in relation to the size of the market and the market barriers to entry were used to analyse the coffee market structure.

According to Kohls and Uhl (1985), as a rule of thumb, four largest enterprises’ concentration ratio of 50% or more (an indication of a strongly oligopolistic industry), 33-50 % (a weak oligopoly) and less than that (competitive industry) was used to evaluate in what manner the coffee market is structured. The greater the degree of concentration, the greater the possibility of non-competitive behaviour, such as collusion, exists in the market

$$C = \sum_{i=1}^{i=r} S_i, \quad i = 1, 2, \dots, r, \dots \dots \dots (3)$$

Where:

C = Concentration ratio

S_i = the percentage market share of i^{th} traders

r = the number of largest traders which participate in the market for which the ratio is going to be calculated.

The marketing conduct was analysed in terms of the price fixing mechanisms, price information transmittal, competitive behaviour, practices or strategies of maximizing profits, existence of formal and informal marketing groups, illegal practices prevailing, and the alternative market outlets in the market with respective to smallholder farmers.

Performance of the market is reflection of the impact of structure and conduct on product price, costs and the volume and quality of output (Cramers and Jensen 1982). If the market structure in an industry resembles monopoly rather than pure competition, then one expects poor market performance benefiting some groups in the market adversely. Market performance was assessed using gross and profit margin analysis.

The computation of the total gross marketing margin is as follows.

$$\text{TGMM} = \frac{\text{Consumer Price} - \text{Framer's price}}{\text{Consumer price}} * 100 \dots \dots \dots (2)$$

Where,

TGMM = Total gross marketing margin

$$\text{GMMp} = \frac{\text{Price paid by consumer} - \text{Marketing gross margin}}{\text{Price paid by consumer}} * 100 \dots \dots \dots (3)$$

Where,

GMMp = Gross marketing margin of producers

The net marketing margin (NMM) is the percentage over the final price earned by the intermediary as net income once marketing costs are deducted.

$$\text{NMM} = \frac{\text{Gross margin} - \text{Marketing cost}}{\text{Price paid by consumer}} * 100 \dots \dots \dots (4)$$

Where,

NMM = Net marketing margin

3. RESULT AND DISCUSSION

3.1. Structure of the market: Structure of the coffee marketing system evaluated against degree of market concentration, barrier to entry (licensing procedure, capital and know how, and policy barriers), and the degree of transparency (Pender *et.al* 2004). In this study the structure of coffee market is assessed using a four firm market concentration ratio, degree of transparency (market information) and entry conditions (licensing procedure, lack of capital and know how).

Degree of market concentration: Suppliers, who are entitled to buy coffee from farmers, are the most potential and prevailing traders in the study market influencing farmers. Because coffee markets within the district were not independent, the computation of degree of market concentration in district level was appropriate. Concentration was calculated by taking annual volume of purchased coffee by the whole suppliers at the district level (Limmu-Seka, Manna, Limmu_Kossa and Gomma). The result revealed that in all the sample districts, coffee purchased was relatively concentrated in the hands of few suppliers (Table 2).

Table 2: Market concentration ratio for the sample districts

Coffee type	District	Four firm concentration index (%)
Red cherry	Limmu_Kossa	60.57
	Gomma	52.40
	Manna	51.20
	Limmu-Seka	58.90
Dry cherry	Limmu_Kossa	55.70
	Gomma	38.63
	Manna	36.00
	Limmu-Seka	45.40

Source: Survey result, 2016

As depicted in Table 2 above, in Limmu_Kossa, Gomma, Manna, and Limmu-Seka districts the four largest suppliers mobilized 60.6%, 52.4%, 51.2%, and 58.9% of the total volume of red cherry coffee purchased respectively. The corresponding figures for dry cherry coffee were found to be 55.7%, 38.6%, 36%, and 45.4%.

Following the market structure criteria suggested by Kohls and Uhl (1985), in all sample districts, the red cherry coffee market characterized with strongly oligopolistic market structure; whereas except in Limmu-Kossa district, dry cherry coffee market depicted weakly oligopolistic market structure (Table 2). These indicated there is market imperfection because of the case that a few suppliers seem to have monopolized the coffee market in general. It was also seen that, for both coffee types, the degree of market monopolization is stronger in Limmu-Kossa district than in others. In summary, the market concentration ratios revealed in all districts a few suppliers have largely conditioned the volume of coffee traded. It is therefore important to look into the entry barriers so as to find out if the few suppliers are the major impediments to others who want to get involved in purchase and supply of coffee.

Barriers to entry

Licensing procedure: The secondary information revealed that there are about 220 legal suppliers registered in the study districts. Collectors, in the new ECX market policy, have been prohibited from participating in the coffee market unless legally delegated by the suppliers. According to the survey result 60% of suppliers responded that it is easy to get coffee trade license provided that initial capital requirement is fulfilled. In practice, however, this was not the case, as some of the traders operating (supplying and exporting illegally) in the study areas had no coffee-trading license. The informal survey result showed that there were again unlicensed collectors including brokers participating in collecting coffee from the farm-gate, but will be punished if red-handed. The informal survey also revealed that it was not only illegal traders but also legal traders who have been participating in trading coffee illegally with in and out of the country. Unless being large scale private and state farm, exporting besides production is not allowed for exporters. But suppliers are legally allowed to engage in both production and supplying to resolve supply inconsistency.

Capital requirement: There is indeed capital barrier to enter the market because new suppliers and exporters are assumed to register with initial capital. Besides, both suppliers and exporters are expected to buy seat in ECX to transact coffee through ECX with their own account. There is however a possibility for traders having no seat to transact their coffee with the account of other seat-owner suppliers. Though capital requirement is a barrier for entry, coffee is a strategic commodity on which suppliers had the opportunity of receiving credit from banks unless constrained for lack of guarantor.

The nature of the business itself: The coffee business has been known with being international in that its price is always determined globally. In the survey about 78% of the sample suppliers responded that the greatest problem to run their business was not lack of capital rather is the very volatile nature of the international price which has something to do with the domestic price. In this case the nature of the business besides initial capital requirement has discouraged entry into coffee business market.

In general, this study identified trade licensing procedure, huge capital requirement for start-up and buying trade seat from ECX, the nature of the coffee business itself as entry barriers for new entrants in the market in turn leading to illegal market practices.

3.2. Marketing conduct

Price setting and purchase strategy: Price setting and purchase strategy by suppliers were given emphasis and analysed to understand the marketing conduct in the system. Suppliers using their collusion power tried to fix more or less similar lower price so that farmers couldn't choose alternative better prices. If the marketing relationship among suppliers is competitive, farmers would get competitive market price and better maximum profit. However, in practice there was no as such positivity from such traders for farmers rather is very exploitive in nature. This oligopolistic nature of the market had worsened the weak bargaining power of smallholder farmers. This problem was more in the case of red cherry coffee.

However, coop/union put effort in balancing this power difference by benefiting the smallholder farmers through fixing higher price so that the suppliers, at least highly powered suppliers, would become to agree to buy at a price that farmers would receive from coop/union. This doesn't, however, mean that coop/union offered farmers a higher price, but are price catalyst, buying some amount of product with higher price so that suppliers will follow and even decide to pay further higher price. In other ways, suppliers weaken the competitive power of coop/union through looking for new investment opportunities (engaging in coffee production besides purchasing from the farmers) and collecting financial credit from all possible institutions and strengthen their financial capability. Smallholder farmers followed drying and storing coffee as a mechanism for increasing their bargaining power through reducing the burden of exploitation by traders. Some of them preferred the kind of illegal markets when assumed it offered higher price. This in turn led to expansion of illegal trading system '*contraband*'.

3.3. Marketing performance

Market performance can be evaluated by analysing costs and margins of marketing agents in different channels. A commonly used measure for market performance analysis is marketing margin or price spread. It is used to

show how the consumer's price is distributed among participants at different levels of marketing system (Mendoza 1995). Under this study one quintal of red cherry coffee is considered as a reference commodity for which all the price and other cost components are computed following the chain of actors ahead.

Production costs: This involves mainly those disbursements associated with labourers and/or materials for production of coffee. Coffee production needs costs for land clearing, purchase of seedling/seeds, cost for cultivation and weeding, management of coffee trees (pruning, shearing, planting shadow trees) and other costs related with production. Smallholder farmers' production cost is identified as the major portion of all costs along the marketing chain.

Marketing costs: In coffee marketing activities, the major marketing costs found to be handling cost (packing and unpacking, loading and unloading), transport cost, product loss storage costs, processing cost, and capital cost (interest on loan), market fees, commission and unofficial payments. Costs incurred and price received by major actors in the chain are exhaustively identified for both washed and unwashed coffee types separately. Gross margin, associated costs, and profit margins of actors along the chain were also computed together with price and cost components as presented in Tables below.

Table 3: Estimated costs and marketing margins for farmers

Cost birr/qtl of:	Coffee type	
	Red cherry	Dry cherry
Farmers		
Production and harvesting cost	442.75	442.75
Processing & marketing cost		
Sorting/grading	24.50	24.50
Drying	-	100.00
Packaging(bag and labour)	7.00	7.00
Storage	-	2.25
Loading/unloading	2.50	1.25
Transport	20.00	12.00
Loss	44.50	87.55
Transaction cost	5.00	5.00
Service cost	3.00	3.00
Overhead cost	25.00	25.00
Tax	15.00	15.00
Capital cost	2.46	3.02
Total processing & marketing cost	148.96	285.57
Total cost	591.71	728.32
Selling price (to coop)	690.85	1038.24
Selling price (supplier)	791.98	1073.06
Weighted average selling price	723.79	1071.91
Gross margin	281.04	629.16
Net margin (Profit margin)	132.08	343.59

One quintal of red cherry after being dried becomes 36 kg of dry cherry

Source: Survey result, 2016

Table 3 indicated the major portion of cost for farmer was production (74.83% and 60.79% of the total cost for red cherry dry cherry respectively). The remaining 25.17% and 39.21% were processing/marketing costs for red and dry cherry respectively. Excluding the proportionate dividend payment (if any) from cooperative, the average selling price for farmers received from private suppliers was greater than that of cooperative. The average weighted selling prices per quintal of red cherry and dry cherry were 723.8 birr and 1071.9 birr respectively. Farmers on average obtained a profit margin of 132.1 birr per quintal of red cherry. However, farmers could earn a profit margin of 343.6 birr (48.1%) additional benefit through drying a quintal of red cherry to sell in dry cherry form. From this it can be understood that engaging in value addition through drying would benefit farmers more than selling the red cherry form.

Table 4: Estimated cost and margin for primary cooperatives and cooperative union

Cost birr per:	Coffee type	
	Washed	Unwashed
Primary Cooperatives		
Purchasing of 100 kg red cherry	690.85	-
Purchasing of 36 dry cherry ¹	-	1038.24
Pulping (washing)	53.00	-
Drying parchment coffee	32.50	-
De-husking dry cherry	-	36.00
Cleaning/sorting/grading	5.25	4.50
Packaging (bag and labour)	12.00	10.00
Storage	4.00	3.50
Loading	1.25	1.00
Transport to Jimma ECX	11.55	8.80
Transit fee to municipality	2.52	1.92
Unloading in Jimma ECX	1.25	1.00
ECX service/commission cost	20.70	22.95
Overhead cost	6.30	4.80
Interest on capital	3.50	4.72
Total marketing cost	153.82	99.19
Total cost	844.67	1137.43
Weighted average selling price	1034.88	1214.00
Gross margin	344.03	175.76
Profit margin (Net margin)	190.21	76.57
Cooperative Unions		
Purchasing 21kg washed parchment coffee ²	1034.88	-
Purchasing 16kg sun-dried coffee bean ³	-	1214.00
Loading and transport to A.A	14.70	11.20
Unloading in A.A	1.50	1.25
Hulling parchment coffee	15.75	-
Polishing and blending	5.25	4.00
Packaging green bean (labour and bag)	17.21	9.41
Warehouse storage service	2.25	1.50
ECX service/commission cost	20.70	22.95
CLU liquoring/grading cost	2.10	1.60
Loading and transport to port (freight/container)	27.30	20.80
Unloading and handling at port	1.00	0.75
Overhead cost	7.50	5.65
Export tax	2.80	2.10
Promotion charge	0.60	0.45
Insurance fee	2.60	1.95
Custom and transit	4.00	3.00
Capital cost	4.83	5.42
Total marketing cost	130.09	92.03
Total cost	1164.97	1306.03
Weighted average selling price (FOB)	2352.00	2043.00
Gross margin	1317.12	829.00
Profit margin (Net margin)	1187.03	736.97

Source: Author's computation, 2016

Table 4 above depicted both purchasing and marketing costs related to transaction of coffee by primary cooperatives and cooperative union. Transportation, hulling, packaging and ECX's service costs were the major cost components for cooperative union. Cooperatives incurred costs on pulping, drying, de-husking, and packaging activities. For both primary cooperatives and union, the marketing costs incurred on washed coffee type were higher than unwashed type. This was mainly due to the reason that major value adding activities on unwashed coffee is already done by farmers than on washed coffee type. The marketing costs for primary cooperatives (153.82 birr for washed coffee and 99.2 birr for unwashed coffee type) were higher than that of

¹ 36kg of dry cherry coffee is a derivative of 1 quintal of red cherry.

² 21kg of washed parchment coffee is derived from the 36 kg of dry cherry coffee.

³ 16kg of sun-dried coffee bean is derived from the 21 kg of washed parchment coffee following the chain

cooperative unions (130.1 birr for washed coffee and 92 birr for unwashed coffee). Comparing these two actors, both gross and profit margins from both coffee types obtained by union were larger than that of cooperatives. This high profitability of union than cooperatives is because of the high premium price earned from international market. As around the 85% of the FOB price is assumed to reach to farmers, all the high profit earned by cooperative union however is not retained in the union at all, rather some share of it will be distributed as a dividend to cooperative members proportionately based on the volume of coffee mobilized. This is what makes the price of coffee earned by membered farmers higher than normal price from private traders.

Table 5: Marketing costs and selling price for suppliers and exporters

Cost birr/qtl of:	Coffee type	
	Washed	Unwashed
Suppliers		
Suppliers		
Purchasing of 100 kg red cherry	791.98	-
Purchasing of 36 kg dry cherry	-	1073.06
Pulping	40.50	-
Drying parchment coffee	21.00	-
De-husking dry cherry	-	27.00
Cleaning/sorting/grading	4.00	2.75
Packaging (labor & material)	8.50	6.00
Storage	3.00	2.50
Loading	1.20	1.10
Transit fee to municipality	2.52	1.92
Transport to ECX – Jimma	7.00	5.75
Unloading and re-bagging in ECX	2.50	1.90
Storage and parking cost in ECX	2.52	1.92
ECX service/commission cost	20.70	22.95
Overhead cost	5.00	3.50
Tax	2.80	2.10
Capital cost	3.80	4.80
Total marketing cost	125.04	84.19
Total cost	917.02	1157.35
Selling price to exporter (Weighted)	1248.45	1257.44
Selling price to local market (Weighted)	963.9	1044.80
Weighted average selling price	1234.22	1262.81
Gross margin	385.34	189.65
Profit margin (Net margin)	260.30	105.46
Exporters		
Purchasing of 21kg parchment coffee	1248.45	-
Purchasing of 16 kg sun-dried coffee	-	1257.44
Loading & transport from ECX to A.A	14.70	11.20
Unloading in A.A	1.50	1.25
Hulling parchment coffee	15.75	-
Polishing and blending	5.25	4.00
Packaging (labor and bag)	17.20	9.40
ECX service fee	20.70	22.95
CLU liquoring and grading	3.15	2.40
Warehouse storage	2.25	1.50
Loading & transport to Djibouti port	27.30	20.80
Custom and transit	4.00	3.00
Unloading and handling at port	1.00	0.75
Bank transaction fee	6.30	4.80
Insurance fee	2.73	2.08
Loading	0.42	0.32
Promotion fee	0.32	0.24
Export tax	2.94	2.24
Overhead cost	5.25	4.00
Capital cost	5.75	5.62
Total marketing cost	136.51	96.55
Total cost	1384.96	1353.99
Weighted average selling (FOB) price	1960	1702.50
Gross margin	711.55	445.06
Profit margin (Net margin)	575.04	348.51

Source: Own computation from survey result, 2016

Table 5 above revealed that the marketing costs for suppliers (125 birr for washed and 84.2 birr for unwashed coffee type) were less than for that of exporters (136.5 birr for washed and 96.6 birr for unwashed

coffee type). For washed coffee type, the major cost components which accounted 65.7% for suppliers were pulping, drying, and ECX service fee. The corresponding major costs for unwashed coffee types were de-husking and ECX service cost which weighs 59.3% of the total marketing cost. For exporters, transportation, hulling, packaging are the most important cost components in washed coffee type. Under unwashed coffee type, transportation, packaging and ECX service costs are major costs incurred by exporter. Relatively higher gross and profit margin were obtained by exporters than suppliers. This high profitability of exporter than supplier is not the result of cost efficiency rather is relatively higher price that exporters obtained from international market.

Table 6: Summary of marketing costs and benefit shares of actors along the market chain

For washed coffee						
Items (br/ctl)	Farmer	Primary Cooperative	Supplier	Cooperative Union	Private Exporter	Horizontal sum
Purchase price	-	690.85	791.98	1034.88	1248.45	3766.16
Production cost	442.75	-	-	-	-	442.75
Marketing cost	148.96	153.82	125.04	130.09	136.51	694.42
Total cost	591.71	844.67	917.02	1164.97	1384.96	4903.33
Sales price	723.79	1034.88	1234.22	2352.00	1960	7304.89
Gross margin	281.04	344.03	385.34	1317.12	711.55	3039.08
% share of margin	9.25	11.32	12.68	43.34	23.41	100
Profit margin	132.08	190.21	260.30	1187.03	575.04	2344.66
% share of profit	5.63	8.11	11.10	50.63	24.53	100
For unwashed coffee						
Purchase price	-	1038.24	1073.16	1214.00	1257.44	4582.84
Production cost	442.75	-	-	-	-	442.75
Marketing cost	285.57	99.19	84.19	92.03	96.55	657.53
Total cost	728.32	1137.43	1157.35	1306.03	1353.99	5683.12
Sales price	1071.91	1214.00	1262.81	2043.00	1702.50	7294.22
Gross margin	629.16	175.76	189.65	829.00	445.06	2268.63
% share of margin	27.73	7.75	8.36	36.54	19.62	100
Profit margin	343.59	76.57	105.46	736.97	348.51	1611.1
% share of profit	21.33	4.75	6.55	45.74	21.63	100

Source: Own computation from survey result, 2016

Table 6 above depicted the summary of costs, gross margin and profit margin of actors of for both washed and unwashed coffee type. It is understood that the % of margin share and profit share of farmers during selling red cherry were the smallest (9.25 % and 5.63% respectively) relative to other actors in the chain. However, when it comes to dry cherry selling, the corresponding shares become largest next to that of unions. The engagement of farmers in value addition by drying coffee reduced the % of margin share and profit share of all the remaining actors. The two actors, unions and private exporters play a role in receiving highest share of market margin and profit margin. Compared to farmers, the marketing expense of unions and private exporters is lower in both coffee types and even together is less than half of farmers' marketing cost in unwashed coffee marketing, but their profit margin together is 75.2% and 67.4% of the total profit earned by all actors from washed and unwashed coffee respectively.

Despite farmers do all the work of production and harvesting, and bearing the associated risks, received only 5.6% and 21.3% of profit shares from washed and unwashed coffee respectively. In general, traders other than farmers received more than 75% of the total profit share from coffee business. This uneven share of benefits might be the reflection of power relationship among actors. In fact, the highest profit share taken by cooperative unions has an advantage for farmers benefiting them it in the form of dividend, social service, capacity building via their respective cooperatives. Concluding, for the farmers to get a better profit share, they had better to engage in farm level value additions and/or organize under cooperatives to take the advantage of membership and related services.

Marketing margins of coffee in different channels: From Table below, for unwashed coffee type, the proportion of gross marketing margin, in both channels reached to smallholder farmers is higher than the gross marketing margin absorbed in the market for actors other than farmer. However, when farmers engaged in selling of coffee in red cherry form, the gross marketing margin for farmers is less than that of other actors. Looking gross marketing margin for farmers (GMMp) across channels, one might figuratively understand and mistakenly conclude that farmers selling price and GMMp from channel II (where farmers follow the supplier outlet) are higher than that of channel I (where farmers follow the cooperative outlet). However this calculation is regardless of the additional price cooperatives distribute to farmers later. The 2352 birr and 1774.50 birr of washed and unwashed coffee importers' price respectively received by union are not all retained for union.

Because union is not profit oriented organization, it is only 15% of union FOB price that is assumed to be reserved in union for administrative and other activities; the remaining 85% of the FOB price received by union will reach to the farmers. Besides the farmers' immediate price of 690.85 birr and 1038.06 birr as market price, there is additional payment proportionately given to those farmers who are member and sold coffee via primary cooperative.

Table 7: Marketing margins of actors in different marketing channel of coffee

Market channel	Coffee Type	Farmers' price (birr)	Importers' price (birr)	TGMM (%)	GMMp (%)
Channel I (coop/union. outlet)	Washed	690.85	2352.00	70.63	29.37
	Unwashed	1038.24	1774.50	41.49	58.51
Channel II (private trading outlet)	Washed	791.98	1960	59.59	40.41
	Unwashed	1073.06	1478.75	27.43	72.57

Source: Own computation from survey, 2016

4. CONCLUSION AND POLICY IMPLICATIONS

Coffee, Ethiopia's largest export crop is the backbone of the Ethiopian economy at large and main livelihood means for farmers in Jimma zone. It has been providing income for a large number of smallholder farmers; millions households depend on coffee for a considerable share of their income, and provides jobs for many more people in coffee-related activities of processing, transporting or marketing along the chain. The major actors identified along the coffee market chain were smallholder farmers, primary cooperatives, cooperative unions, suppliers and/or large scale growers, exporters, importers, domestic wholesalers, retailers and consumers.

The result of market S-C-P analysis revealed that in all districts a few suppliers have largely conditioned the volume of coffee traded. The licencing procedure, huge capital for start-up and buying trade seat from ECX, the nature of the coffee business itself were identified as the major challenges as entry barriers for new entrants in the market in turn leading to illegal market practice. It is therefore important to look into the entry barriers so as to find out if the few suppliers are the major impediments to others who want to get involved in the purchase and supply of coffee in the study areas. The information asymmetry and poor market transparency (especially between suppliers and farmers), inappropriateness of the price information from ECX is another characteristic prevailing in the coffee market. The market conduct analysis detected that unfair price setting practices are followed by suppliers while purchasing coffee from the poor farmers. Thus, as farmers are the pro-poor groups who needs to be prioritized in any intervention, legal tactics and the conditions under which such practices would not likely to prevail should be implemented. Legal interference in coffee business prevailing price ceiling and price floor in accordance with keeping farmers' advantage should be accompanied with farmers.

The performance and efficiency analysis based on gross margin and profit margin revealed that farmers relatively perform a better and efficient on unwashed coffee type than washed coffee type. In the case of unwashed coffee type, the proportion of gross marketing margin reached to smallholder farmers is higher than the one absorbed in the market for other intermediaries. The engagement of farmers in value addition by drying coffee reduced the % of margin share and profit share of all other actors. Compared to smallholder farmers, the marketing expense of unions and private exporters is lower in both coffee types and even together is less than half of farmers marketing cost in unwashed coffee marketing, but their profit margin together is by far larger than all the remaining actors. Despite, farmers do all the work of production and harvesting, and bearing the associated risks, received very smaller portion of profit shares from both washed and unwashed coffee type.

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