
**A COMPARATIVE STUDY OF GAINS FROM TOMATO TRADE IN THE
KPANDO MUNICIPALITY AND GAINS FROM GHANA NATIONAL
TREASURY BILLS**

¹Albert Laurent Sakabutu, ²Lawrenda Adiasany, ³Florence LardiManamzor

¹Department of Accountancy, Faculty of Business and Management Studies. Ho Polytechnic, Ho – Ghana

²Registrars Department, Ho Polytechnic, Ho - Ghana

³Department of Marketing, School of Business and Management Studies, Bolgatanga Polytechnic,
Bolgatanga - Ghana

ABSTRACT

The objective of the study is to determine the full year profitability of tomato trade by analyzing all associated cost and compare the rate of return with the Ghana's Treasury bill rate to test the principle of risk – return tradeoff and also to determine which of them offers a better investment opportunity. This study focused on the full year marketing activities of tomato traders in the Kpando Municipality of Ghana, which comprises the lean and the glut seasons. The study employed mostly primary data and the data collected was analyzed using descriptive and inferential statistics and financial ratios. The results from the study revealed that the rate of returns for the tomato traders were higher in both seasons than that of the Treasury bill rate. The students' t - Test conducted revealed that there was a significant difference between marketing margins of traders across the seasons. The study also revealed that the abnormal gains obtained in the lean season compensated for the lower gains made in the glut season. Also the higher gains obtained from investing in the tomato trade (which is a risky business) compared to the lower gains obtained from investing in a risk free business in this case the Treasury bills, further affirms the principle of the theory of risk – return tradeoff that, the higher the risk the greater the gains. The study concludes that it is more profitable to invest in tomato business than to invest in Treasury bills in Ghana. The study recommends the provision of storage and processing facilities and provision of good roads in order to ensure the full year availability of tomatoes on the Ghanaian market at affordable prices for the benefit of consumers.

Keywords: Ghana; Kpando; Lean; Glut, Marketing; Margin; Tomato; Treasury bill and Risk – Return Tradeoff.

1. INTRODUCTION

One common concept of marketing is that it fundamentally involves sales. Other viewpoints consider marketing as comprising such activities such as advertising, market research and other retailing activities. For marketing to be successful, managers must recognize the interrelationship between some of the fundamental marketing activities such as sales and promotion and how they can be integrated to design a formidable marketing strategy. The marketing of a product is a characteristic that distinguishes a modern producer from his ancestors. In the past tomato production was meant to satisfy domestic needs whereas producers today produce for commercial purposes.

The most important point to note here is how firms reduce time and cost on various activities that fall within the marketing chain of products. For the marketing process to be complete, products need to be transferred from the point of production to the consumers and these transfers involve activities in one form or the other, which also involves cost.

At the very basic level, the time taken by the producer to walk to the nearest market and stay till the produce is finally sold may be the only cost involved. Where the product needs storage for longer periods and transportation at the same time over long distances under adverse conditions, the costs involved becomes high and the marketing becomes complex compared to the basic level. Fundamentally, the more complex and lengthy the marketing chain, the higher the associated marketing cost.

Most consumers often question why the prices of produce in retail shops are so much higher than prices paid to the producer. The cost involved in marketing is always not fully comprehended. It should however be understood that traders or processors spend money on all the activities within the marketing chain and sometimes because these costs may not be visible, it is overlooked and traders are therefore accused of making super abnormal profits.

Most often the difference in the producer price and the consumer price is the only one taken into consideration before assuming that the consumers are being exploited. It is arguable too that tomato traders sometimes on the average do make very high profits in the lean season, but in the glut season they make small profits or even losses. Clearly it is assumed that if these traders were not making any profit, they would not be keen on staying in business hence their continued stay

in business gives credence to the fact that they are making huge profits at the expense of the consumers.

It is not enough doing a simple comparison of producer prices of tomato with retail prices to conclude on the efficiency of the market since that does not take into account the full cost involved in moving produce along the marketing chain through to the consumers. For example a farmer who lives far from the market will charge higher prices than one who is very close to the market because of lower transport cost assuming it is not a perfectly competitive market. Also perishable crop producers such as tomato producers are likely to receive lower share of the final price than the one who grows a non-perishable crop such as coconut because some of his crops (tomato) may be unsalable by the time it reaches the market. A producer who stores his produce for a number of months to take advantage of higher prices later in the year will definitely spend more on storage than one who sells soon after harvest.

Hence in analyzing the marketing margin, it is important to identify all the costs involved in order to determine if excessive profits are made or the marketing system is inefficient or if the high costs associated with marketing of specific products are justified. (Shepherd, [1993])

An efficient marketing system is a prerequisite for any production system if income is to be realised. The perishable nature of tomato, the meager marketable surpluses, the remoteness from organized markets and the weak financial standing of the traders make it difficult for producers to withhold their produce for high prices. These phenomena influence the decision of producers to sell locally at comparatively low prices at the farm gate to wholesalers. Also the seasonal nature of tomato production in Ghana, which is divided into the lean season (April-June) characterized with very high prices and the glut season (September-December) noted for its very low prices, gives rise to fluctuating margins in the marketing of tomato. Producers most of the times assert that they are exploited by the wholesalers, judging from the prices paid for the produce by the final consumer.

The fundamental question therefore is; can the very high margins be fully justified by considering the additional services and risk, which the traders undertake in each case?

The objective of this study is to determine the full year profitability of the tomato trade by analyzing all associated costs and compare the rate of return with Ghana's Treasury bill rate in order to test the principle of risk – return tradeoff and determine which of the two offers the best investment opportunity.

This study further seeks to answer the following questions

1. Do the gains in the lean season compensate for the losses in the glut season?

2. Is an investor better off investing in tomato trade or investing in the Ghana National Treasury bills?
3. Does the result of the comparison of gains from tomato trade and the Treasury bills affirm the principle of the theory of risk – return tradeoff?

The hypotheses of the study are stated below as;

H₀: There is no significant difference between profit margins of traders in the lean and glut seasons.

H₁: There is a significant difference between the profit margins of traders in the lean and glut seasons.

H₀: There is no significant difference between the gains from investment in tomato trade and investment in the Ghana National Treasury bills.

H₁: There is a significant difference between the gains from investment in tomato trade and investment in the Ghana National Treasury bills.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature. Section 3 presents the methodology of the study. Section 4 presents the results and discussions and finally section 5 draws conclusions and makes appropriate recommendations.

2. REVIEW OF RELEVANT LITERATURE

2.1 Theoretical Concepts

The mark – up or margin in marketing is the variation that exists between the price consumers pay for a produce and the producer price. It denotes all cost associated with marketing such as such as transport, storage, processing, wholesaling, retailing, advertising, etc.

Mathematically, the marketing margin is given as $M = RP - PP$ (1)

Where

M represents Margin or Mark – up

PP stands for producer price and

RP stands for consumer price

The marketing margin, M comprises an absolute amount and a percentage or mark-up of the retail price: Also the Mark up consists of the profit and overhead expenses.

$$M = a + b \cdot RP, \text{ where } a \geq 0 \text{ and } 0 \leq b < 1. \quad (2)$$

Using the logarithmic data, the long-run elasticity between the prices is readily available from the marketing margin model. If prices are determined at the level of the producer, the mark-up model is used:

$$RP = \alpha_1 + \epsilon_{PP} PP \quad (3),$$

where ϵ_{PP} is the price elasticity from the producer price (PP) towards the consumer price (RP).

If $\epsilon_{RP} = 1$, then we have perfect transmission, and thus the mark - up will be $(e^{\alpha_1} - 1)$.

$0 < \epsilon_{PP} < 1$ implies that the transmission between the two prices is imperfect. Bakucs and Fertő (2005) are of the view that anytime prices are calculated on consumer level, then the appropriate framework to use is the mark-down framework:

$$PP = \alpha_2 + \epsilon_{RP} RP, \quad (4)$$

where ϵ_{RP} is the elasticity of transmission between the consumer price (RP) and the producer price (PP). A necessary condition for a perfect transmission is, if $\epsilon_{RP} = 1$, and the mark - down equals $(1 - e^{\alpha_2})$. Imperfect transmission results if $\epsilon_{RP} > 1$.

The mark-up pricing model was designed and suggested by Waugh (1964) where he pointed out that the consumer price is the determining factor in concluding the difference between the retail price and farm price.

A popular understanding is that the reactions to increases in price were dissimilar from reactions to a reduction in price. Furthermore, the retailer passes on the excess increment in price to the consumer, but most importantly, it takes a longer time for consumer prices to adjust if the producer prices experience a reduction.

There are a number of outstanding clarifications for the existence of lack of equality in prices. To begin, the lack of equality in price arises as a result of organisations taking advantage of rapidly changing prices as expatiated in the theory of the search costs by Miller and Hayenga (2001). The authors opined that this phenomenon happens in indigenous imperfect markets, where retailers exercise their indigenous market power. In addition, it was made clear that although customers would have an endless number of choices, they most of the time face difficulties with regards to gathering quick information about the pricing of the competing stores as a result of the search.

2.2 Marketing Margins

In the USA, the retail price variations for individual foods are routinely determined and reported as a measure involved in marketing of produce. Gardner (1975) postulated a fundamental model

for analysing marketing mark-up or margins. The study outlined the principal avenues of variation in the retail – producer price range. Most of these changes include change in the retail food demand, farm product supply, or supply of marketing services.

Heien (1977) used the Cobb-Douglas production function to elaborate the producer – retailer margin in terms of percentages that are associated with margin of farm output and the proportion of research on retail price and various costs involved in the cost of marketing. The analysis of the results brought to light the fact that an increase in all costs associated with marketing of products and the level of farm output, result in the reduction in the percentage of the marketing margin.

Wohlgenant (2001) also revised the earlier works on marketing margin analysis and the establishment of practical models. The work further analysed other possible descriptive factors that had been included in an analysis that employed the reduced-form frameworks instead of a full structural framework apart from the factors that are included when employing the skeletal framework that considers the farm, retail, and input market equilibrium. In the study, it was revealed that the key variables that were normally employed in the review of the reduced-form framework were retail price, marketing input costs and factors that affect demand such as population and income. Apart from the factors listed above, there are equally a number of other important factors that can affect the magnitude of marketing margins according to Wohlgenant.

In determining marketing margins, we have to take into consideration the interactions of all these factors since they may all be important in analysing the marketing margin for a specific commodity.

For example, Richards et al. (1996) employed a marketing margin framework that elaborated the relative price range framework of Wohlgenant and Mullen (1987) to encompass a number of other relevant variables which comprises the market share as proxy factor for market deviations from perfect competition, changes in technology and quality over the period. The analysis further concluded that all the variables that affect marketing margins were very important in examining the price spread except for the risk factor. One should not lose sight of the fact that Wohlgenant's conclusion gave an insight into the predicted relationship between marketing margins and these variables, as well as simplifications on the disparity among past research findings. The findings again indicated for example that, an increase in quantity leads to an increase in marketing margins, assuming the input proportions are constant.

Nonetheless, the practical proof from the works of Buse and Brandow (1960), Waugh (1964), George and King (1971) and Tomek and Robinson (1990) revealed that a negative relationship exists between quantity and marketing margin and this is in line with the assumptions of variable input factor proportions.

Finally reading through existing literature on the topic, it is evidently clear that much work has not been done in the field of analysis of marketing margin of most products around the globe. Most of the existing literature also analysed only marketing margins without any comparison with any other factor. This research has built upon the existing literature by making a comparison of the gains in the margin analysis of the produce and that of the Treasury bill rate to determine the better investment opportunity for a potential investor and also test the principle of the theory of risk – return tradeoff which says that the higher the risk, the greater the gains.

3. METHODOLOGY

This study focused on the full year marketing activities (an enterprises profit per annum) of tomato traders in the Kpando Municipality of Ghana. The full marketing year for tomato is divided into two seasons. Thus the glut season (September – December) where there is abundance of tomato due to favorable weather conditions thereby causing supply to exceed demand and the lean season (April – July) where the weather conditions are not favorable for tomato production and this eventually results in poor yields and causes demand to exceed supply.

Information regarding the cost associated with the various activities undertaken by the traders at various marketing stages was obtained solely from primary sources. Primary data was collected by administering questionnaires to wholesalers and retailers in the tomato business.

There are total of four (4) markets in the Kpando Municipality. These include two (2) small-localized markets and two (2) major markets.

The major markets are Kpando Main and Kpando Torkor markets. The local community markets are Kudzra and Sovie markets.

Purposive sampling was used in the selection of the two major markets namely Kpando Main and Kpando Torkor markets for the study. The two major markets were the only markets selected for this study because they are the only markets in which wholesalers sell their produce. The localized community markets were left out of the study because most of the traders in the localized community markets purchase their merchandise from the retailers in the two major markets.

Random sampling was employed to select 5 (five) wholesalers out of about 8 (eight) wholesalers on the average who supply tomatoes with huge trucks to the retailers in the two major markets.

15 (fifteen) retailers each out of about 27 retailers on the average from each of the markets were chosen randomly for the study.

Each trader responded to separate questionnaires on the glut and the lean seasons.

Informal interviews were also held with farmers, truck drivers, market queens, market assistants and market managers of the Kpando Municipal Assembly to confirm the information provided by the traders. The study covered a one-year period of tomato trading activities and spans from January 2015 to December 2015. The data was gathered on the two main seasons of tomato trading activities for the period under study mainly on;

- i. Source of finance for traders
- ii. The various forms of risk faced by traders
- iii. The means of risk management by traders
- iv. Purchase cost per crate
- v. Selling price per crate
- vi. Handling cost per crate
- vii. Ghanaian Treasury bill rates

Local agents collected the data from the traders on the variables above between the periods of 10th – 25th June 2015 for the lean season and 15th – 23rd November 2015, for the glut season.

The data collected was analyzed using descriptive statistics, inferential statistics, and financial ratios.

The descriptive statistics used were tables, frequencies, bar charts, standard deviations and means.

The inferential statistics used gross marketing margins and student's T- test to determine whether marketing margins of the traders in each season were significantly different.

Under the financial ratio analysis, the rate of return was used to determine the interest rate of the tomato traders and this was compared with the Ghana National Treasury bill rate on a three month (91 - day) fixed rate for one (1) year.

4. RESULTS AND DISCUSSIONS

4.1 Source of Finance

Financing is a common phenomenon with small scale trading activities. This study revealed that all the traders have a weak capital base and this is evident in their activities taking into account the value of produce they handle at a time and their marketing arrangements and planning. As shown in figures 1 and 2, some of the wholesalers do not take credit from the bank but rather depend on their own capital as the main source of finance for their business. This can be attributed to the cumbersome banking procedures and the non-availability of collateral

securities for the procurement of loans, coupled with high interest rates charged by the banks. At the retail level, it was discovered that most of the traders access bank loans whilst some depend on their own capital and relatives. It has been possible for some of these retailers to access bank loans because they have formed an association that has a link with some banks and this enables them to take group loans. This removes certain barriers such as going through cumbersome procedures at the bank and the challenges of collateral requirements. A number of the traders also obtained assistance from private moneylenders which are sometimes not sufficient hence hindering the expansion of the business of the traders.

Fig. 1 Source of Trading funds for Retailers

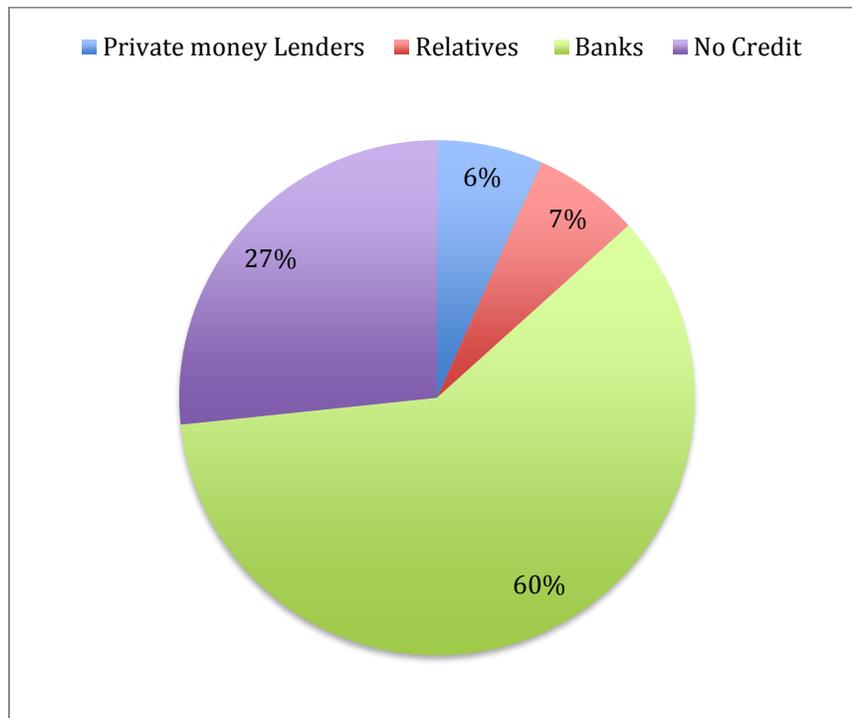
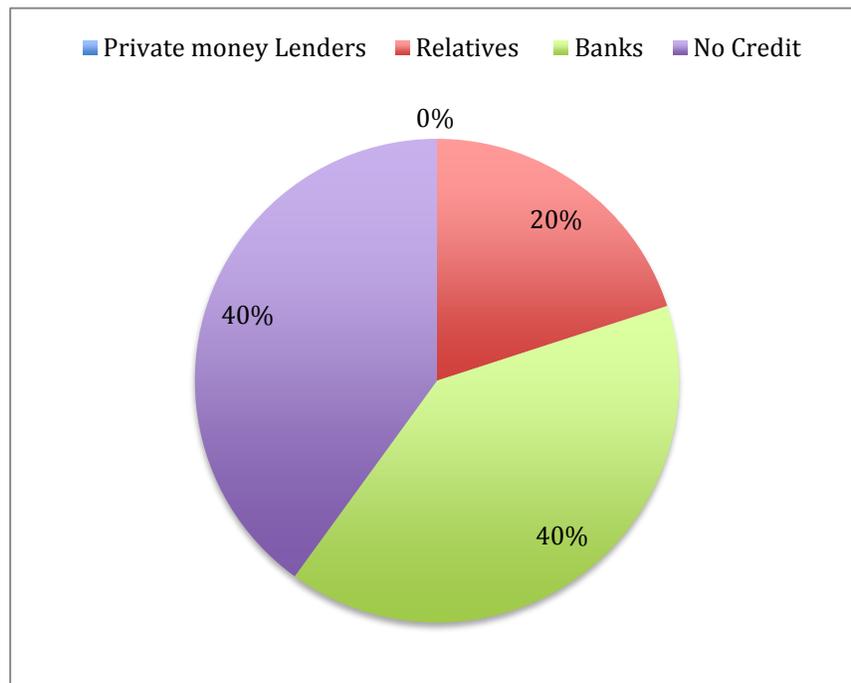


Fig. 2 Source of Trading funds for Wholesalers



4.2 Risk Baring and Loss Management by Traders

From the study both wholesalers and retailers suffered several forms of physical risk such as commodity losses through deterioration of produce, truck breakdowns, theft at assembling points etc. These losses were on the average estimated at 10% per crate of tomato. The traders however made some money out of some of the deteriorated produce by selling them at reduced prices. Some give them out to friends and families as gifts. Asked if they insure their businesses, they responded in the negative citing reasons like inadequate capital, cumbersome procedures, lack of trust or confidence in the activities of insurance companies, ignorance about the activities of insurance companies as some of their challenges.

4.3 Marketing Margin

The marketing margin is the difference between the producer price and the consumer price for a product. The margin is used in the analysis of efficiency of marketing systems.

The percentage distribution of the marketing margins in the study revealed that a higher proportion of the consumer price went to the producers during the lean season. In the glut season, a higher proportion of the consumer price went to the traders. Wholesalers got a higher proportion of the consumer price during the glut season. This can be attributed to the fact that the wholesale cost component is higher than that of the retail component. Also the higher margins do not necessarily mean high profits since the margin is made up of profit and cost of handling or overhead expenses.

Table 1 Average Purchase Cost, Revenue, Margin and Profit per Crate of Tomato

Season	Type of Trader	Average Purchase Cost /crate (Ghs)	Average Selling Price/crate (Ghs)	Total Handling cost/crate (Ghs)	Margin /crate (Ghs)	Profit/crate (Ghs)
Glut	Retailer	165	187.5	16.4	22.5	6.1
	Wholesaler	62.5	165	91.5	102.5	11.0
Lean	Retailer	1000	1090	16.4	90	73.6
	Wholesaler	750	1000	91.5	250	158.5

Source; Survey Data, 2015

In table 2, the traders receive a higher proportion of the consumers' price in the glut season. Also marketing cost form the highest proportion of the margin that is 58.32% as depicted in table 3. The higher margins of the traders can be explained by the high marketing cost and risk associated with tomato marketing in the glut season. In table 2 however, the farmers receive more than half of the consumer price, which is 68.80% in the lean season, and marketing cost constitutes a small proportion of the margin, which is 9.86% as seen in table 3.

Table 2 Percentage Distributions of Marketing Margins

Season	Producer	Wholesaler	Retailer
Lean	68.80	22.94	8.26
Glut	32.43	55.41	12.26

Source; Survey Data, 2015

Table 3 Distribution of consumer price for Tomato in the Glut season

Component	Amount (Ghs)	Proportion of consumer price (%)
Producers' share	60	32.43
Marketing Margin	125	67.57
Marketing Cost	107.9	58.32
Retailers Profit	6.1	3.3
Wholesalers Profit	11	5.95

Source; Survey Data, 2015

Table 4. Distribution of consumer price for Tomato in the Lean season

Component	Amount (Ghs)	Proportion (%)
Producers' share	750	68.80
Marketing Margin	340	31.2
Marketing Cost	107.9	9.86
Retailers Profit	73.6	6.75
Wholesalers Profit	158.5	14.54

Source; Survey Data, 2015

4.4 Analysis of the Cost Components of the Traders

4.4.1 Wholesalers Cost Component Analysis

In general, loading and assembling takes 3.5 Cedis per crate and the average cost of Transportation from BrongAhafo Region, Ashanti Region and Burkina Faso to Kpando is about 45 Cedis per crate. Market toll costs 50 pesewas whilst a wooden crate costs 12.50 Cedis.

Table 5. Wholesaler Cost Component

Item	Cost (Ghs)
Cost of wooden crate	12.5
Loading and Assembling	3.5
Cost of Transportation per Crate	45
Personal Transportation	30
Market Toll	0.5
Total	91.5

Source; Survey Data, 2015

4.4.2 Retailer Cost Component Analysis

At the retail level, jute sacks are used as floor mats on which the tomatoes are stored to prevent them from quick deterioration. An empty jute sack costs 7.5 Cedis and it is expected to last for two months and two jute sacks cut and well spread on the floor can take care of a crate of tomato in storage. A crate is expected to last in storage for at most a day before being sold out completely. Hence the cost of jute sack for handling a crate of tomato is about 40 pesewas. The cost of sorting out and dry cleaning is about 5 Cedis per crate and transportation to the market centers costs approximately 2.0 Cedis on the average. Packaging for consumers takes about 5.0 Cedis and this includes the cost of take away black and white polythenes. Finally, retailers pay a market toll of 50 pesewas a day. The explanation above is summarized in Table 6 below.

Table 6. Retailer Cost Component

Item	Cost (Ghs)
Cost of empty Jute sack	0.4
Packaging for consumers	5
Market Toll	0.5
Sorting and Dry cleaning	5
Transportation per crate	3.5
Personal Transportation	2
Total	16.4

Source; Survey Data, 2015

4.5 Inferential statics

Here the students’ t –Test was used to test whether there was any significant difference between the marketing margins of the traders across the seasons. As indicated in table 7 below with a *p* value of 0.014 we can conclude that the difference between the mean marketing margins of wholesalers in both the glut and lean season is highly significant. At 95 % confidence interval of the difference, the lower limit is Ghs 108.019 and the upper limit is Ghs 554.981

Table 7. Students’ t – Test of Significance for Wholesalers

Pairs	Mean (Ghs)	Standard deviation	Standard error mean	T	Df	P – value	Remarks

Marketing margin in lean – glut season	326.5	175.958	78.6905	4.149	8	0.014	Significant
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Source; Survey Data, 2015

In table 8 below at the retail level, the results of the *p*value from the students’ *t* – Test is 0.006, which means there is a significant difference between the marketing margins of retailers across the seasons. At 95 % confidence interval of the difference, the lower limit is 54.92 and the upper limit is 277.0585

Table 8 Students’ *t* – Test of Significance for Retailers

Pairs	Mean (Ghs)	Standard deviation	Standard error mean	T	Df	P - value	Remarks
Marketing margin in lean – glut season	166	200.55	51.78	3.206	28	0.006	Significant

Source; Survey Data, 2015

4.6 Return On Investment

The profit levels of each of the traders were compared with interest rate on the Treasury bills to determine which of the two investment opportunities offers the investor a better return on investment. Using the current interest rate of 20% on a three month Treasury bill (91- day bill) as cut off rate for the three month return accrued for all traders, the gains from the lean season was found to be higher compared with the current cut off rate of the Treasury bill. Thus from Table 9 below, it can be concluded that the returns on investment of the wholesalers and retailers which is 211.25 % and 113.88% respectively on a 91 – day bill in the lean season were abnormally higher than the 91- day Treasury bill at 20% rate. In the glut season however, it was revealed that wholesalers were making a fairly higher gains of 54. 47% and that of retailers is about 18.395%. Considering the two seasons and their returns on investment, each with a minimum period of three months, one will think it will not be too profitable to invest in the tomato trade in the glut season and also think that the traders make excessive returns on investments in the lean season.

Since the lean and the glut seasons are in the same year, it will be more rewarding to invest in the tomato business because the losses in the glut season will be compensated for by the excess gains in the lean season. Let us note that the gains from the tomato trade takes a maximum of two weeks which means that the traders take delivery of new merchandise after a maximum of two weeks. Hence the rate of return obtained is actually calculated on a 14 – day rate and converted pro rata to a 91 – day rate for purposes of uniformity and clarity of explanation. This is shown in table 9 below.

$$\text{Return on Investment} = \frac{\text{Average Profit}}{\text{Average Capital}} \times 100\% \tag{1}$$

Table 9 Summary of Rate of Return on Investment of Traders

Kind of Trader	Season	Av. Capital (Cedis)	Av. Profit (Cedis)	Return on Investment (%) 14 – day rate	Return on Investment (%) 91 – day rate
Wholesaler	Lean Season	6724.5	2195.18	32.64	211.25
	Glut Season	6724.5	563.55	8.38	54.47
Retailer	Lean Season	16572.0	2903.62	17.521	113.87
	Glut Season	16572.0	467.66	2.822	18.343

Source; Survey Data, 2015

5. CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

The wholesalers purchase the tomato from Burkina Faso in the lean season and from BrongAhafo and Ashanti regions in the glut season. The retailers purchase their merchandise from the wholesalers in the two major markets considered in this study. The results revealed that the farmers (producers) received the highest proportion of the consumer price as their margin. In the glut season, the producers receive 32.43% and 68.80 % respectively. Also it was found out in general that the wholesalers' margin in both the lean and glut seasons were higher than that of the retailer in both seasons. Furthermore, the study revealed that the marketing cost for the wholesaler was higher than that of the retailer. Additionally the marketing cost for the traders in the two seasons was found to be the same since the seasonality of the tomato has no effect on the cost of marketing. For example if a crate of tomato is transported for Ghs 45.0 in the lean season, it will cost the same amount to transport it in the glut season all other things being equal. The major cost component is the transportation cost, which forms the greatest part of the total margin for the traders and therefore has a significant effect on the consumer prices for the tomato. The profit of the traders was compared with the interest rate of 20% on a three months fixed period (91- day) Treasury bill rate. It was found out that the returns accrued for the traders were abnormally higher in the lean season and fairly higher in the glut season compared to the Treasury bill rate. The study therefore concludes that it is more profitable investing in the tomato business than investing in Treasury bills in Ghana. Also the higher gains obtained from investing in tomato trade which is a risky business compared to the lower gains in investing in a risk free business in this case the Treasury bill, confirms the principle in the theory of risk – return tradeoff that, the higher the risk the greater the gains. The students' t- Test conducted revealed that there was a significant difference between marketing margins of traders across the seasons. Since the differences between the mean marketing margins were significantly different from each other, we reject the hypothesis that the margins are the same for the lean and glut seasons. The study therefore concludes that the margins are not the same for the two seasons. The study also revealed that the differences in the margins for the two periods provide a clue to some traders to withdraw partially or fully from the tomato business in the glut season and prefer operating in the lean seasons only where the profits are abnormally high.

5.2 RECOMMENDATIONS

On the basis of the results analysis, discussions and conclusions drawn, the study makes the following recommendations;

First of all, the possibility of providing storage facilities both at the farm level and the market centers should be critically considered so that the farmers and traders can store their produce to await higher prices. Investment in transport infrastructure will help reduce the cost and losses incurred during transportation. There is also the need for further improvement in the road network especially the construction of feeder roads that link the various tomato-producing areas

to the major marketing centers to cut down on losses incurred by the traders. Efforts should be made by Ministry of Food and Agriculture (MOFA) with the help of government to process surpluses in the time of glut into tomato paste and powder. This will ensure the availability of tomato all year round thereby promoting food security and reducing the abnormally higher prices during the lean (scarce) periods.

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