

Investigating Basis Link as a sustainable solution in the agricultural commodity trading industry

PF Roux

 **orcid.org/0000-0003-0126-1280**

Mini-dissertation submitted in partial fulfilment of the
requirements for the degree *Master of Business Administration*
at the North-West University

Supervisor:

Mrs K. Nell

Graduation May 2018

Student number: 24037753

ABSTRACT

Basis trading around the world dates back as far as 10,000 BC when the trading of commodities started. After the deregulation of the Maize Board in 1995, producers were faced with selling their products in the free market environment. This meant that more than one buyer could gain access to agricultural products within certain demographical areas. The extent to which Basis Link will change the current trading of agricultural products is discussed.

The study starts by writing about the commencement of global trading in agricultural products. The study narrows down to the trading of agricultural products in South Africa after the deregulation of the Maize Board. The reason why Basis Link was developed in 2013 and why the platform provides a sustainable advantage to both producer and off-taker in the agricultural trading sector is explained.

The verdict delivered by the competition tribunal in terms of the anti-competitive nature of “market squeeze” regarding the Competition Act 89 of 1988, is summarised. In a free market environment supply and demand have a direct impact on the price of agricultural commodities. The opportunity commenced with the implementation of the Basis Link online platform in 2013 where the true value of supply and demand could be presented to both producers and off-takers of grain within the silo region of Senwes in a transparent and sustainable manner.

Because the Basis Link online trading platform is very new in the marketing environment, historical data is used to illustrate the rapid growth of the system. Tonnages traded since the start of the system as well as premiums illustrate that the market is ripe for a transparent non-bias trading platform that links the producer to the highest bidder in the free market environment at a fraction of the costs of procuring the grain directly from the producers via the silo network of Senwes.

The online bidding system and the terms and conditions are discussed in contents of the usage of the system for both producers and off-takers of grain.

The empirical research was conducted on the primary users of the Basis Link online bidding system (registered clients). These users represent the demand for agricultural products within the Senwes silo region. Producers of grain can offer their grain on the Basis Link platform; yet without the buying power of the buyers on the system there would be no significant advantage to the producers for using the Basis Link online trading platform. Several very important reasons were identified by the respondents for the Basis Link platform which are determined in the literature study as well as a qualitative study that preceded the quantitative study.

The data collected indicates that, although the idea of basis trading in a transparent manner was born out of necessity in 2013, the trading market has developed over time and the need for access to grain with the least percentage of risk in the South African agricultural sector is one of the most important drivers in indicating that *Basis Link Online Trading Platform* can indeed become a sustainable solution in the agricultural trading industry, not only within the Senwes silo region, but in the entire industry.

Recommendations are given on how to expand this opportunity that has been proven to be sustainable to the entire industry.

KEY WORDS

Maize Board, price risk management, SAFEX Exchange, free market economy, innovation, consumer driven choices, import and export parity, agricultural market product division, Basis Link.

ACKNOWLEDGEMENTS

I would like to recognise the following people:

- My family, Hannelie, Jeanelie, Jacques and Johann, for their love and support.
- My parents, Magda and Buks, for their support.
- My study group, Tiaan, Johan and Francois. We started up as individuals climbing a mountain and ended up as companions at the top looking down at what we have achieved together.
- My study leader, Karolien Nell, for her patience and support.
- Rentia Mynhardt for language editing and proofreading of the dissertation.
- Marelize Pretorius and Prof Faans Steyn and the Statistical Consultation Services at the North-West University for their statistical advice and analysis.

I would like to recognise the following institutions:

- North-West University Potchefstroom Campus School of Business and Governance.
- Senwes.

Above all, I want to honour my Father and God.

- “The Lord is my strength and my defence; He has become my salvation.”

Exodus 15:2

ABBREVIATIONS

AMD – Agricultural Market Division

BASIS LINK – Basis link online trading service

BASIS RISK – The difference between the location of Grain Terminals

BUSHEL – Measurement of grain used in the United States

CAC – Competition Appeal Court

CBOT – Chicago Board of Trade

CLEARING HOUSE – An organisation who collects and distributes something

JSE – Johannesburg Stock Exchange

SAFEX – South African Futures Exchange

SHORTING – Selling the specified futures contract month

SSF – Single stock futures

the Act - Competition Act 89 of 1988

the Tribunal – Competition Tribunal

DIFF – Transport Differential

LIST OF FIGURES

FIGURE 2.1 CHICAGO BOARD OF TRADE INTERIOR (GREGORY, 2005)	7
FIGURE 2.2 GRAIN GRADING IN CBOT (GREGORY, 2005).....	8
FIGURE 2.3 WHEAT BOAT ON ILLINOIS-MICHIGAN CANAL (VASILE, 2016).....	8
FIGURE 2.4 ELEVATORS, BUNKERS AND SHIPS ON THE CHICAGO RIVER (GREGORY, 2005)	9
FIGURE 2.5 SOUTH AFRICAN AGRICULTURAL PRODUCTION (CLOETE <i>ET AL.</i> , 2014:308)	15
FIGURE 2.6 JSE EQUITY MARKET (ANON, N.D (B).).....	16

LIST OF TABLES

TABLE 3.1 TOTAL TONNAGES TRADE SINCE 2013 (SOURCE: SENWES 2017)	28
TABLE 3.2 TONNAGES SOLD VIA BASIS LINK SINCE THE LAUNCH IN 2013 (SOURCE: SENWES, 2017)	33
TABLE 3.3 TOTAL TONNAGES TRADED PER COMMODITY SINCE 2013	33
TABLE 3.4 TOTAL TONNAGES PER SILO SINCE 2013 (SOURCE: SENWES, 2017) ..	35
TABLE 3.5 TOTAL PREMIUMS TRADED IN RAND VALUE SINCE 2013 (SOURCE: SENWES, 2017)	36
TABLE 3.6 WHAT IS YOUR FIRST REACTION TO THE BASIS LINK ONLINE BIDDING PLATFORM?	37
TABLE 3.7 HOW OFTEN DO YOU USE THE BASIS LINK SERVICE?	37
TABLE 3.8 HOW INNOVATIVE IS BASIS LINK?	38
TABLE 3.9 HOW USEFUL IS BASIS LINK?	38
TABLE 3.10 HOW WOULD YOU RATE THE VALUE FOR MONEY ON THE BASIS LINK SYSTEM?.....	39
TABLE 3.11 COMPARED TO COMPETING SERVICES, HOW EFFECTIVE IS BASIS LINK?	39

TABLE 3.12 OVERALL, ARE YOU SATISFIED OR DISSATISFIED WITH BASIS LINK?	40
TABLE 3.13 HOW WOULD YOU RATE THE QUALITY OF BASIS LINK?	40
TABLE 3.14 HOW PROFESSIONAL IS BASIS LINK?	41
TABLE 3.15 DESCRIBE THE BASIS LINK PLATFORM	41
TABLE 3.16 HOW SATISFIED ARE YOU WITH THE SECURITY OF BASIS LINK?	42
TABLE 3.17 THE PRIMARY BENEFIT OF USING BASIS LINK?	43
TABLE 3.18 WITH REFERENCE TO COMPETING SERVICES HOW IS THE QUALITY OF THE SERVICE?	43
TABLE 3.19 WITH REFERENCE TO COMPETING SERVICES, HOW ARE THE COSTS OF THE BASIS LINK SERVICE?	44
TABLE 3.20 RATE THE EMPLOYEES OF THE BASIS LINK SERVICE DEPARTMENT	44
TABLE 3.21 WHAT INFORMATION COULD BASIS LINK PROVIDE TO USERS OF THE SYSTEM?	45
TABLE 4.1 WHAT CHANGES WHOULD MOST IMPROVE BASIS LINK.....	52

Table of Contents

ABSTRACT	I
KEY WORDS.....	II
ACKNOWLEDGEMENTS	III
ABBREVIATIONS	IV
LIST OF FIGURES	V
CHAPTER 1: NATURE AND SCOPE OF THE STUDY	1
1.1 INTRODUCTION.....	1
1.2 PROBLEM STATEMENT	3
1.3 OBJECTIVES OF THE STUDY	3
1.3.1 Primary objective	3
1.3.2 Secondary objectives	3
1.4 SCOPE OF THE STUDY	4
1.5 RESEARCH METHODOLOGY.....	4
1.6 LIMITATIONS OF THE STUDY	5
1.7 LAYOUT OF THE STUDY	5
CHAPTER 2: LITERATURE REVIEW OF BASIS LINK AS A SUSTAINABLE SOLUTION IN THE AGRICULTURAL COMMODITY TRADING INDUSTRY	6
2.1 INTRODUCTION.....	6
2.2 HISTORY OF THE AGRICULTURAL COMMODITY TRADING INDUSTRY	6
2.3 HISTORY OF THE AGRICULTURAL COMMODITY TRADING CONTRACTS.....	8

2.4	ROLE OF SPECULATION IN COMMODITY TRADING	12
2.5	MARKET INFORMATION AND ROLE OF THE FUTURES MARKET ON THE SPOT PRICE	13
2.6	THE SOUTH AFRICAN AGRICULTURAL SECTOR.....	15
2.6.2	Production of agricultural products in South Africa.....	15
2.6.2	The South African derivatives market	16
2.7	The role of agricultural companies in the South African commodity market.....	17
2.7.1	Handling and storage	18
2.7.2	Human consumption - The maize milling industry	18
2.7.3	Animal consumption - the animal feed industry.....	19
2.7.4	Traders / brokers	19
2.8.	THE COMMENCE OF BASIS LINK IN THE AGRICULTURAL COMMODITY TRADING INDUSTRY	20
2.8.1	The Competition Commission Tribunal versus Senwes Ltd.	20
2.8.2	The birth of Basis Link in Senwes Ltd.....	22
2.9	SUMMARY	25
CHAPTER 3:	EMPIRICAL STUDY.....	27
3.1	INTRODUCTION.....	27
3.2	OBJECTIVES OF THE STUDY	27
3.2.1	Primary objective	27
3.2.1.1	Tonnages traded	27
3.2.1.2	More buyers willing to use the system to gain access to grain in the Senwes region	28
3.2.1.3	More producers willing to sell their product on the Basis Link system.....	28
3.2.2	Secondary objectives	29
3.3	RESEARCH METHODOLOGY	29
3.4	RESEARCH INSTRUMENTS	29
3.4.1	Qualitative study.....	29
3.4.1.1	Quantitative study	30
3.5	RESEARCH POPULATION	30
3.5.1	Data collection and sample size	31
3.6	ANALYSIS AND DISCUSSION OF RESULTS	32
3.6.1	Historical data.....	32
3.6.1.1	Volumes per commodity traded per year	32

3.6.1.2 Volumes traded per silo	34
3.6.2 Questionnaires	36
3.6.2.1 Question 1 – What is your first reaction to the Basis Link online bidding platform?	36
3.6.2.2 Question 2 – How often do you use the Basis Link service?	37
3.6.2.3 Question 3 – How innovative is Basis Link?	38
3.6.2.4 Question 4 – How useful is Basis Link?	38
3.6.2.5 Question 5 – How would you rate the value for money on the Basis Link system?	39
3.6.2.6 Question 6 – Compared to competing services, how effective is Basis Link?	39
3.6.2.7 Question 7 – Overall, are you satisfied or dissatisfied with Basis Link?	40
3.6.2.8 Question 8 – How would you rate the quality of Basis Link?	40
3.6.2.9 Question 9 – How professional is Basis Link?	41
3.6.2.10 Question 10 – Describe the Basis Link platform	41
3.6.2.11 Question 11 – How satisfied are you with the security of Basis Link?	42
3.6.2.12 Question 12 – What is the primary benefit of using Basis Link?	43
3.6.2.13 Question 13 – With reference to competing services how is the quality of the service?	43
3.6.2.14 Question 14 – With reference to competing services, how are the costs of the Basis Link service?	44
3.6.2.15 Question 15 – Rate the employees of the Basis Link service department	44
3.6.2.16 Question 16 – What information could Basis Link provide to users of the system?	45
3.7. SUMMARY	45
CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS	47
4.1 INTRODUCTION	47
4.2 CONCLUSIONS	47
4.2.1 Conclusions concerning the primary objectives	47
4.2.2 Conclusions considering the secondary objectives	48
4.2.2.1 To assess the possibility that Basis Link is a sustainable platform to trade the true intention of supply and demand	48
4.2.2.2 To assess whether Basis Link can overcome the challenges of free market trading	49
4.2.2.3 To evaluate whether all the different role players will accept the fact that Basis Link indicates the true value of supply and demand at a specific delivery point at a specific point in time	49
4.3 RECOMMENDATIONS	50
4.4 ACHIEVEMENT OF THE STUDY’S OBJECTIVES	54
4.4.1 Primary objective	54
4.4.2 Secondary objectives	54
4.5 RECOMMENDATIONS FOR FUTURE RESEARCH	55
4.6 SUMMARY	55
ANNEXURES	60

ANNEXURE A – QUESTIONNAIRE60

ANNEXURE B – BASIS LINK ONLINE PLATFORM.....66

ANNEXURE C – LANGUAGE EDITING71

ANNEXURE D – DATA72

CHAPTER 1: NATURE AND SCOPE OF THE STUDY

Basis Link says exactly what the system does - it's the link between the basis at a specific point or silo and the producer.

1.1 Introduction

The perception exists that in the free market economy individual farmers would have the opportunity to be more innovative regarding their agricultural product marketing and price risk management. A free market economy promotes the production and sale of products and services with little or no involvement from any central government agency (in this case the Maize Board). According to (Hanks, 2017) a free market economy provides the following advantages:

- **Innovation**

- ✓ Business owners can develop new products and services.
- ✓ Entrepreneurs need not depend on government agencies telling them what they can or cannot do.
- ✓ Firms can compete against each other by using innovative ideas to better existing products or services which in turn mean better products or service to consumers.

- **Consumer drive choices**

- ✓ Customers make the ultimate decision on whether which product or service would be sustainable or not.
- ✓ Customers also determine the ultimate selling point of a product or service which requires producers to set prices high enough to make profit (supply) but not too high that the consumer will not purchase the product or service (demand).

The Agricultural Markets Division (AMD) came into existence in the month of January in the year 1995 as a subdivision of the South African Futures Exchange (SAFEX). The ADM swiftly settled as the agricultural market leader with esteem to price transparency, by making use of future contracts, a standardised (product, quality, quantity, time and place) agreement through exchange for price determination and price risk management. Futures exchange

does not set prices; they are free markets where the forces of supply and demand are brought together in a transparent way. (Anon, n.d (a).1)

According to this statement the price of maize on the SAFEX Exchange futures contract should in certain harvest seasons be trading at higher levels (import parity) and when there is a smaller crop, at lower levels (export parity). The perception that individual farmers could use the future exchange as price determination and price risk management platform, failed to take into account that in 2007, although the indications were clear, the 2006/2007 harvest would be smaller (Coetzee, 2007) and the maize price continued to stay low. This was an indication that demand and supply were not the only forces driving the agricultural futures market. According to Coetzee (2007) the chairman of Grain SA, Neels Ferreira, asked the Competition Commission to investigate the working of the agricultural futures market.

According to the JSE (2005:7) there are other underlining challenges that exist in the free market, like:

- Biased competition: The playing field is not level; the futures market is also used as a speculation platform for speculators to gain financial revenue from price movement.
- One sided: There is no link between inputs and outputs.
- Needs requirements.
- Needs data collection and interpretation.
- Does not respect tradition or history.
- Makes use of technological processes.

By rethinking the approach to the perception that the futures exchange provides a price determination and price risk management platform (JSE, 2005:9), the problem that the futures contract does not reflect the true indication of the forces of supply and demand can be fixed.

Basis Link provides a transparent platform for buyers and sellers of grain to trade their supply and demand for maize. This platform uses the same basic characteristics as a future contract (product, quality, quantity, time and place) to represent the supply and demand forces.

The curtail difference between the Basis Link platform and the futures contract on the SAFEX Exchange is that there are no speculative positions on this platform, in other words the true indications of supply and demand will reflect in the price of the commodity at a specific time, quantity, commodity and place. By eliminating the financial gain that speculators can gain from price movement on the futures contract, this platform can eliminate some if not all of the challenges of a free market trading system. The primary objective of the Basis Link platform is not to eliminate the need for agricultural derivatives as a pricing tool, but rather for it to be used as an enhancer for the marketing of agricultural commodities.

With the Basis Link platform producers (individual farmers) can set prices high enough to make a profit (supply), but not too high that the consumer (end users and trading houses, both nationally and internationally) will not purchase the product (demand).

1.2 Problem statement

Since the demise of the Maize Board in 1997, price risk management and maize marketing were placed in the hands of individual farmers (Bown *et al.*, 1999:3). The respondents of the SAFEX Exchange increased markedly ever since. It has been heavily debated amongst individual farmers and other role players whether the SAFEX Exchange is the best platform for maize marketing.

1.3 Objectives of the study

1.3.1 Primary objective

To assess the possibility that Basis Link can provide a sustainable platform for supply and demand and overcome the challenges of free market trading.

1.3.2 Secondary objectives

The specific objectives of this research are:

- To assess the possibility that Basis Link is a sustainable platform to trade the true intention of supply and demand.
- To assess whether Basis Link can overcome the challenges of free market trading.

- To evaluate whether all the different role players will accept the fact that Basis Link indicates the true value of supply and demand at a specific delivery point at a specific point in time.

1.4 Scope of the study

This research study's focal point is on the basis trading development of agricultural commodities. In the agricultural market, where the pricing mechanism used to price agricultural commodities (SAFEX Exchange) is mainly speculative driven, the question arises whether this platform provides producers and off-takers with the functionality to take part in the true supply and demand of the selected agricultural product.

Market studies conducted on the Basis Link system since 2013 in the agricultural commodity sector revealed that this platform provides producers and off-takers the opportunity to take advantage of the pure driver of the free market system (supply and demand) in a transparent way without and biasness.

1.5 Research methodology

Basis trading on the Basis Link platform is not currently a functionality under the JSE agricultural commodity platform trading on the JSE, although the JSE platform has a similar product for trading basis at different storage locations. The main difference is embedded in the fact that the JSE platform of basis trading is still speculative driven and does not guarantee physical delivery at a specific delivery location.

The sample strategy that will be used in this research will be a probability sample, using a stratified sampling method. With this method, the population of suppliers / producers will be classified into groups according to region, namely North-West and the Free State, because the different regions imply that different location premiums will be allocated to different silos based on the location of the silos. The off-takers of grain will be classified into groups according to type, processor or trader, because different needs will be allocated to the type of off-taker.

For example, a miller in Bothaville will have a different need for procurement of grain close to the mill than a trader in Cape Town looking to buy and sell the maize in a specific silo.

Due to the fact that the research problem is based on an opinion, qualitative research will be used to gather and interpret data. When problems are identified after interpreting qualitative data, a hybrid system of quantitative data will be implemented to justify the opinion of the particular unit of analysis. For example, if an off-taker indicates that Basis Link can't enhance the true nature of supply and demand, yet he has procured more than 70 % of his total procurement need through the Basis Link system, his opinion can be rendered valid.

Self-assessment questionnaires will be distributed to producers and off-takers as well as focus groups with certain producers in certain regions.

1.6 Limitations of the study

Basis Link was launched in the month of December 2013 as a leading new product in the grain market industry. This by implication means that there is only limited data available regarding the trading of the system.

One of the most important competitive advantages of Basis Link is that the system is 100 % transparent, meaning that all users of the platform are treated equally according to the stipulations of the free market. This means that there is specific legislation that prohibits an individual to gain access into certain quantitative data and demographic information.

1.7 Layout of the study

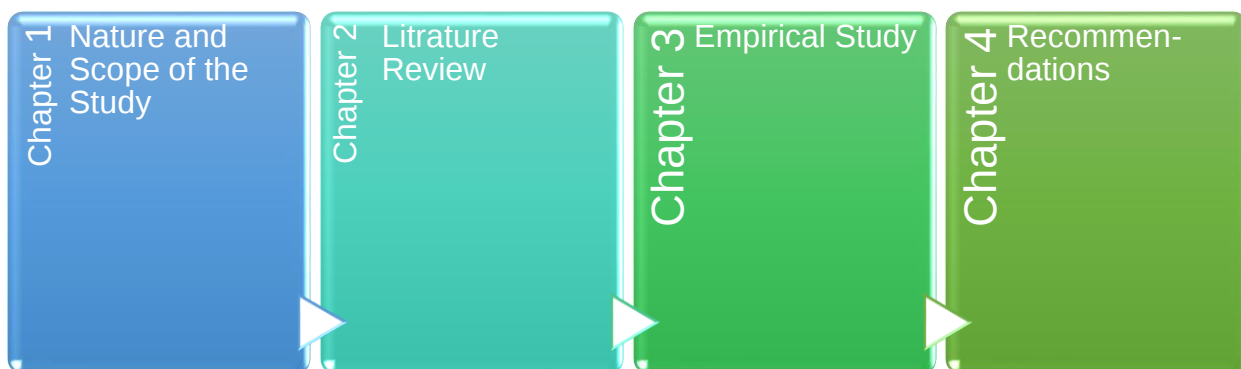


Figure 1.1 Layout of the study

CHAPTER 2: LITERATURE REVIEW OF BASIS LINK AS A SUSTAINABLE SOLUTION IN THE AGRICULTURAL COMMODITY TRADING INDUSTRY

2.1 Introduction

The trading of commodities is as ancient as human evolution (Hur, 2017). Sources state that the first agricultural development started around 10,000 BC, when people started living in communities. These communities started with farming practices in agricultural commodities as well as live stock (UniversalClass.com, 2017). The shift in agricultural commodities dates back to 8,500 BC, when farming products were traded between these communities.

2.2 History of the agricultural commodity trading industry

As this evolution of trading commodities continued, buyers and sellers of agricultural products soon realised that factors like supply and demand and weather had a devastating effect on prices and looked-for ways to hedge (protect) the prices of the commodities. Another factor was that, as supply grew, so did the demand for storage space (UniversalClass.com, 2017), meaning that producers and traders were also looking for means to raise capital until the product was sold. The answer to these problems led to the birth of futures contracts. The first futures trading occurred in the 17th century in Japan, with trading of rice futures dating back as far as 6,000 years ago (Rb-trading.com, 2017). In Japan wholesalers stored rice in depositories for future use in order to raise capital. Depository owners sold receipts against the stored commodities (rice) in the depository; these receipts, known as “rice tickets” (Rb-trading.com, 2017) were accepted as monetary currency. Regulations were implemented to institutionalise the trading of these tickets. These rules were much the same as the rules used in America.

The conclusion of the Illinois-Michigan canal in the year of 1848 in North-America triggered the grain futures trading industry (Santos, 2013:288). This period was followed by further innovative infrastructure changes like grain exchanges, railroads, elevators and forward contracts. These infrastructure changes allowed producers to store, transport and hedge their grain for cash flow. The Chicago Board of Trade (CBOT) was established in 1848. In the first ten years the CBOT acted as a gathering place for trades to debate the controversy of contracts and trade issues. The first board of directors of the CBOT was appointed in 1853. These 25 board members ranged from a pharmacist to a hardware trader and almost

everything in-between. In the initial stages of the CBOT, the attendance for meetings were so poor that free lunches were offered in the hope that attendance will be insured.



Figure 2.1 Chicago Board of Trade interior (Gregory, 2005)

One of the first breakthrough initiatives that was implemented by the CBOT, was the implementation of a set of grading standards and regulations that would apply on the grading of wheat (Hieronymus, 1977:72). This initiative gave way to a system of grading and weighing grain and also led to the appointment of the CBOT by the state of Illinois in 1859 as a governing body to employ and train personnel to enforce the system that involves the classifying of grain commodities. With the development of a system that could classify grain using weight instead of volume as measurement, led to the advancement of grain handling equipment that was essential in the development of Chicago as a main grain-trading terminal (Hieronymus, 1977:73). Another result of this was the sustainability of warehouse receipts. When grain became exchangeable, it was a huge step in the development of future trading contracts.



Figure 2.2 Grain grading in CBOT (Gregory, 2005)

2.3 History of the agricultural commodity trading contracts

To establish a precise point in time when the trading of futures contracts started, a clear contrast between a futures contract and a forward contract is required (Hieronymus, 1977:73). The best correlation between these two types of contracts can be explained by using the development of the corn trading industry as example (Hieronymus, 1977:73).

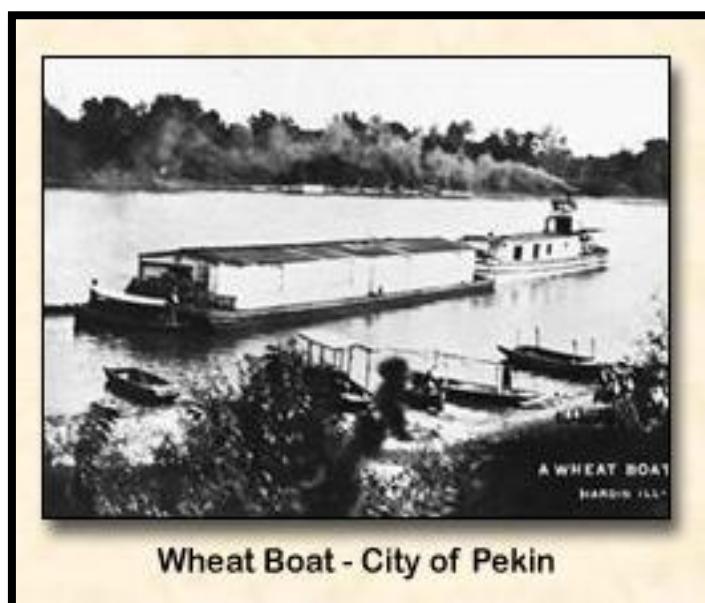


Figure 2.3 Wheat boat on Illinois-Michigan canal (Vasile, 2016)

When the Illinois-Michigan canal opened, the trading of grain quickly started. Farmers started producing grain close to the river (Hieronymus, 1977:74). The grain was then transported with the use of wagons to local brokers that build bunkers to store the grain until the moisture content of the grain was acceptable and the canal was accessible for transport to Chicago.



Figure 2.4 Elevators, bunkers and ships on the Chicago river (Gregory, 2005)

Farmers that produced grain wanted remuneration for their product when it was delivered in the bunker in order to start producing new crops on account of the huge price risks involved in storing grain from winter time to spring time. The bankers were unwilling to pay large loans to farmers until the grain were sold in Chicago. The brokers (bunker owners) started making scheduled visits to Chicago in order to negotiate fixed price contracts (Hieronymus, 1977:74). These contracts were forward-priced contracts that were standardised in terms of quantity, price, delivery place and delivery period. The delivery period was differentiated between immediate delivery and delivery later on. The first contract was recorded on 13 March 1851 and included the following specifications:

- *Price*: 1 cent under the 13 March 1851 price
- *Quantity*: 3,000 bushels
- *Commodity*: Corn
- *Delivery period*: June 1851

Some Chicago brokers provided funds to remunerate farmers. Bankers used the forward contracts as collateral to provide the loans to the brokers (Hieronymus, 1977:74). These transactions provided more liquidity in the market as the farmers could be paid more frequently for their grain when it was sold to brokers. Usually these brokers paid prices below the forward contract price to mitigate their price risk until delivery of the grain in Chicago. Other visionaries paid higher prices for grain that did not own forward contracts. These individuals, called speculators, were other brokers like land brokers or lawyers. This type of speculative interaction between different types of brokers and speculators led to the discovery that by the mid 1850's (Hieronymus, 1977:75) forward contracts changed hands several times before ending up with the broker that was actually interested in receiving the delivery of the commodity.

This key characteristic of exchanging contracts without the intent of taking delivery is one of the most significant differences between futures and forward contracts (Hieronymus, 1977:75). Futures contracts entails the exchange of contracts between brokers or speculators without necessarily having the need to obtain delivery of the grain, where forward contracts entail the fixing of a price for a specified grain commodity in a future period in order to secure delivery of the commodity at a specific price at a specific location.

The physical settlement of the futures contract deemed to be problematic for the CBOT. In some cases when physical settlement was required the parties that entered into the contract agreement could not be located. In 1863 the CBOT passed a law that, whenever a party is in default in terms of the contract that was entered into, the default party would be dismissed as member of the CBOT (Hieronymus, 1977:75). This law however was not the solution and in May 1865 a rule was implemented for parties trading in futures contracts that margins are payable on futures contracts equal to the amount of 10 % of the monetary value of the grain commodity.

The prevailing regulation of the CBOT was implemented on the 13th of October 1865 and the margin regulation formed part of the rule as well as the penalties involved when parties defaulted on the contracts that were entered into (Hieronymus, 1977:76). The trading of standardised futures contracts was a new marketing field and in the initial stages of futures trading brokers (bunker owners) were reluctant to support this new initiative. As time passed and relative volumes of future contracts were traded, brokers started using the future contracts to hedge the price of the commodity and earn income relative to storage costs.

Whenever a contracting party agrees to enter into a contract with a specified commodity for a specified future delivery date (futures contract), he agrees to receive delivery of the specified commodity on a specific date in the future or the individual can offset (Carlton, 1984:238) his position in the future by not receiving delivery of the physical commodity. This implicates that the contracting party can either receive physical delivery of the specified commodity or cash out his future position by selling his position to another off-taker at a profit or a loss from the price level where the position was bought. This exchange of future positions had to have a buyer for every seller and vice versa. These transactions usually required the use of a clearing house acting as middleman between the buyer and seller of futures transactions. In order to ensure the sustainability of the future contracts exchange, the future contracts were standardised in terms of commodity, future delivery point and price.

A futures contract exchange attempts to promote liquidity in the commodity exchange market by standardising the futures contract (Carlton, 1984:239). The estimated percentage of physical deliveries on the futures contract exchange was less than 1 % by 1983. In order to comprehend the role of a futures exchange there must be a clear understanding of why a party to a contract would offset the position without receiving physical delivery. One of the main objectives of a futures exchange is to provide a price risk hedging instrument (Carlton, 1984:240) for contracting parties. For example, when a commodity owner, in this case 3,500 bushels of corn, in January plans to sell the 3,500 bushels in July, the commodity owner can mitigate the price risk by selling the July futures price at a specific level in January. The term used for selling the futures market can also be expressed as *shorting* the futures market. When the July price becomes the *spot* price (in July) the difference between the futures price (of the July price in January), whether resulting in a profit or a loss, will become the price that the commodity owner receives for the physical stock on hand.

One of the main concerns in the futures exchange is that there is a difference in the locations of the grain terminals, for example there is a difference in the location of Chicago and Minnesota (Carlton, 1984:240). In layman's term, this means that the delivered price is different at each terminal, resulting in a *base price risk* based upon delivery at the specified terminal. In the ideal world, a commodity owner would like to mitigate the price risk as close as possible to the price that mirrors the price of the owned commodity, yet this would result in a low possibility to net off the commodity owner's position.

To completely eliminate the risk, it would be easier just to sell the 3,500 bushels to another individual in January on a forward contract basis for delivery in July (Carlton, 1984:240). If a forward contract then eliminates the risk, the question to be answered is thus why individuals would then use a futures contract?

As indicated, the primary advantage of a future's contract lies within liquidity. There are a large number of participants that the risk can be shipped to. For example, if a contracting party may not know his exact future requirement, so if the individual can't offset his futures position to a counter party, the individual would be cautious to make a commitment to a broker or off-taker of the specified commodity (Carlton, 1984:241). When an unexpected parcel of grain needs to be sold immediately, the spot market may have some difficulty in locating the appropriate buyer and facilitating the transaction. The future contract on the other hand, provides the facility based on the liquidity, where a broker can purchase the parcel and hedge the price in a future month. So, when another broker / miller needs tonnages in the short-term period, the individual owning the future position can offset the position for physical delivery of the parcel of grain.

2.4 Role of speculation in commodity trading

This preliminary analysis of the historic overview of commodity trading provides only a part of the trading story of agricultural products. In order for the sustainable evolution of the commodity trading market, other individuals outside of the commodity market were required (Hieronymus, 1977:83).

The extension of mitigating price risk on the future exchange is also the facilitation of speculative contracts that represent the market participant's view of the market. The future contract price of a specified commodity will reflect not only the delivered price of the physical commodity, but also the view of all the market participants (Carlton, 1984:241). When the view of the market participants is that the price of a specified commodity is too high and that the price may come down due to many factors, not only limited to supply and demand, then the market participants with this view can short (sell) the futures contract and whenever they buy the position back, the profit or loss on the position is for the account of the participant. The same is true for participants whose view is that the price of a specified commodity should rise. These different views from role players in the future commodity exchange help

liquidity by buying and selling futures contracts based upon the belief to profit from the price movements of the futures contracts. The key to attracting investors to the futures exchange is the payoff that resides in informed participants.

2.5 Market information and role of the futures market on the spot price

The association between a spot (physical) price and a futures price is correlated. The futures price of a commodity represents the market price of the commodity based upon the perception of the market players less the carrying costs of the specified commodity. For example, the January price of corn / maize represents the July futures price of the specified commodity less carrying costs (Cox, 1976:1216). The carrying costs mean the cost of carrying the physical stock from one period to another, including storage and interest costs. This means that one broker buys the commodity from another. Then the owner of the physical stock has to pay interest on the amount paid per tonne for the commodity as well as storage to a warehouse owner until he / she can resell the commodity to someone else.

The anticipated price of a commodity in the future depends on the information gathered by different role players in the market based upon supply and demand. The more informed the market participant is, the more factual the perception of the future price of the commodity (Cox, 1976:1216). If all the market participants had access to all the right information regarding future circumstances, there would be no sense in relying on futures trading to impact price intentions. In actual markets, small chunks of data / information are spread to various parties. The data is intermittently exchanged between the relevant parties.

When establishing the conclusion that futures trading can reflect the number of information gathered in the perceived price of a commodity there are two logics to take into account. Firstly, the standardised futures exchange invites more participants to engage in the trading of futures contracts that are not interested in taking physical delivery of the specified commodity. When these individuals, called speculators, take a view on the market resulting in a long or short position, other participants that are interested in taking delivery of the physical stock have a reciprocal position that results in the number of stock for future consumption to differ considerably from the stock to be consumed when the speculators in the futures market would have been absent (Cox, 1976:1217).

So, when the indication of future supply is not reflecting the actual supply, it stands to reason that the perception of the market participants will be different from the actual facts. Some of the contradicting parties to speculators' involvement in the futures argue that these speculators are ill informed, and on the other hand others believe that these speculators bring informed price decisions (Cox, 1976:1217). If some participants in the futures market exchange are willing to take on the risk on profiting from informed decisions or accumulating losses over a period of time due to uninformed decisions, liquidity is promoted by uncertainty.

The second logic involves the cost of transacting on the futures exchange (Cox, 1976:1218). When individuals can only engage in physical delivery transactions in some future date, the cost of the transaction will be too costly for traders to share information; this type of transactions will rather involve some sort of negotiation between parties. In the futures market, all relative information is imbedded in the futures price. Information of the futures price is distributed to a vast variety of firms and individuals making it viable for different traders to obtain the information and use the information to make informed decisions on what the futures price should do in terms of price movement.

Without market information, the futures exchange would not be able to attract different brokers to speculate in the futures exchange and would result in low levels of liquidity. This would have a devastating effect on the trading of commodities as there would not be sufficient numbers of roll players that are willing to mitigate the risk from one broker to another and making it difficult for producers of the physical stock to offset their product in due time. The future exchange provides liquidity in the market that stimulated the sale of physical product from one broker to another. Without this liquidity or relevant market information the price of physical commodities sold will always reflect the value of the commodity in some future date less the risk and cost of carrying the product.

The concept of using the future market as price risk and hedging instrument soon evolved and spread throughout the rest of the world. This led to the birth of the derivatives market in sub-Saharan Africa.

2.6 The South African agricultural sector

2.6.2 Production of agricultural products in South Africa

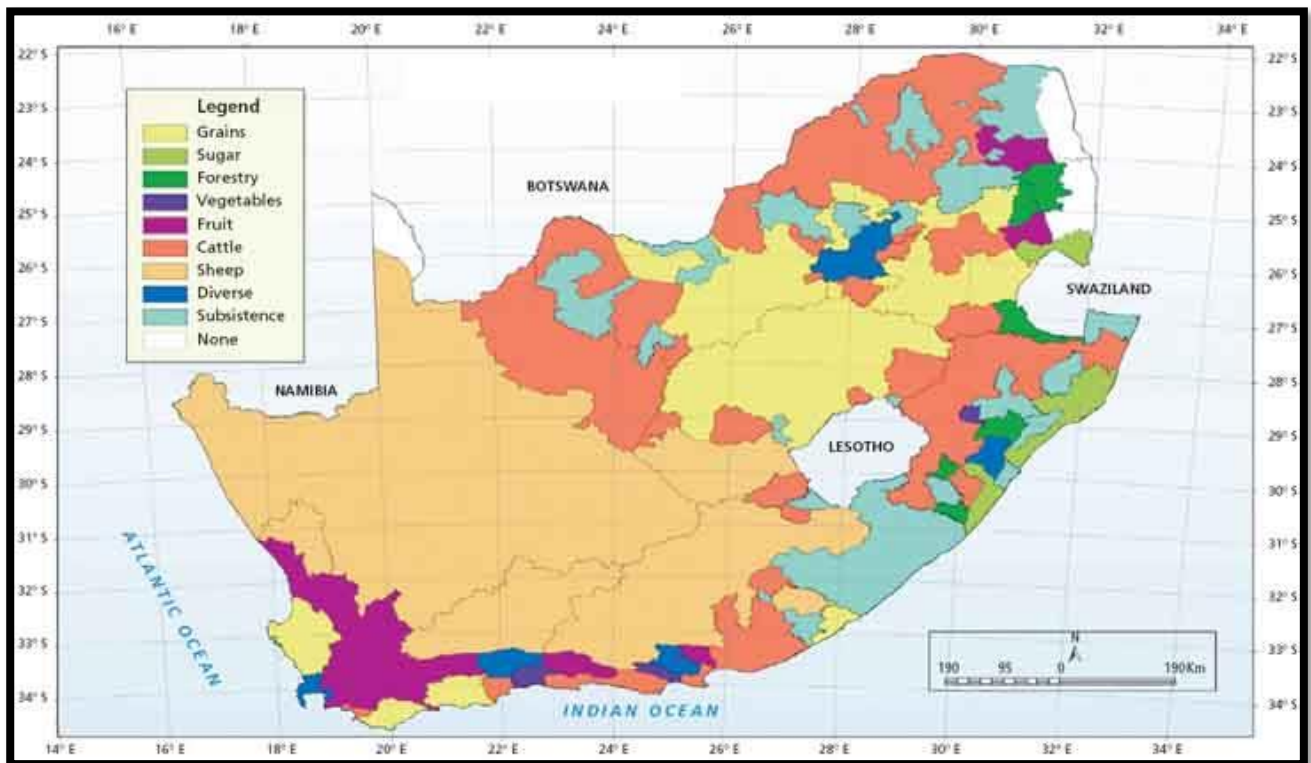


Figure 2.5 South African agricultural production (Cloete *et al.*, 2014:308)

South Africa is renowned for having a large variety of different cultures as well as a wide variety of soil types and agricultural farmers. These producers of agricultural commodities range from vegetable, grain, oilseed and livestock farmers. These farmers plant highly intensive crops in summer rainfall areas to winter crops in the winter rainfall production areas (Goldblat, 2017:2). Only 12 % of South African hectares are suitable for growing crops that can grow with natural rainfall. 69 % of the hectares are only suitable for livestock farming. South African producers not only produce in limited rainfall areas, they also produce with limited resources.

The population of South Africa is expanding exponentially at an annual growth rate of round about 2 % per annum; the expected population will be about 82 million people by the year 2035 (Goldblat, 2017:3). This figure indicates that the production of food and food imports must double to sustain the growing demand for human and animal consumption. On average South Africa produces 2.9 million hectares of maize at an average yield 3.95 tonnes per hectare. These hectares are made up of 60 % white maize, mainly used for human consumption and 40 % for yellow maize used for animal consumption.

2.6.2 The South African derivatives market

The derivatives market developed into an established market in April 1987 (Adelegan, 2009:4), after a regional bank, Rand Merchant Bank, initiated an intimated financial market. Option contracts were brought into the derivatives market in October 1992, followed by the introduction of agricultural commodities in 1995. The introduction of these various types of products led to the birth of an entirely electronic trading platform in May 1996.



Figure 2.6 JSE equity market (Anon, n.d (b))

This platform trades in products like warrants, single stock futures (SSF), financial future and options. The equity division of the JSE has been working in helping with the facilitation of the trading in these different products since 1990.

With the removal of the imposed trade in agricultural commodities in 1995, after the deregulation of the Maize Board and the introduction of the free market trade, it led to the agricultural commodity trading division. The SAFEX Exchange was started in January 1995. At this point in time the government agreed that there will be no influence from them on the price determining process.

With capital of R4.2 million there were two products introduced on the SAFEX Exchange; firstly a beef contract and later a potato contract (Adelegan, 2009:4). These contracts did not last long on the exchange due to insufficient activity and were later delisted. White and yellow maize contracts were launched in May 1996. The volumes traded and the success behind these two listed commodities led to the listing of the wheat contract in November 1997 and the sunflower seed contract in 1999. Options were also made available to individuals using the SAFEX Exchange since 1998. With the introduction of all of these agricultural commodities as well as options, SAFEX became a prime price risk management tool to producers of physical grain as well as brokers / speculators. The SAFEX Exchange also attracts agricultural companies, both local and domestic, that use the exchange for base price risk mitigation as well as price risk hedging. The SAFEX Exchange is open weekdays from Monday to Friday between 09:00 and 12:00 and is a fully automated trading system which can be accessed from a variety of systems like Nutron, Swordfish and Diro-client to name but a few. Trading of more than hundred thousand tonnes of maize per day takes place. The most active commodity is the white maize commodity, followed by yellow maize.

2.7 The role of agricultural companies in the South African commodity market.

Agricultural companies play an integrated role in the agricultural sector in South Africa. These companies are involved in the value chain of producing agricultural products, with activities that range from financing producers of agricultural commodities to providing them with all the necessary resources to enable them to plant, fertilise and harvest their crops. Some of these agricultural companies also own processing plants that process the raw product for animal or human consumption.

The main source of income for these companies is the handling and storage of produced commodities acting as warehouse owners that store the grain in order for producers and brokers to buy and sell the commodities, either on the spot basis or at some stage in the future. The companies act not only as storage facilitators, but also as clearing houses on the SAFEX Exchange assisting in the process of futures trading between brokers, speculators and farmers. This is an important function due to the fact that producers need to sell their product to these companies in order to pay back the loans granted by these companies for the production of crops.

The planting time for maize crops in South Africa is from October to December and the harvesting period is from May to August the following year. From this timeline it is clear that there is a need for futures and forward contracts. Farmers need to sell their product in planting time in order to mitigate price risk until they harvest their product in the following year; brokers and speculators use these future contracts to profit from price movements in order to make money and the agricultural companies act as clearing house for these types of speculative contracts as well as the facilitating of futures contracts for delivery of the physical product.

2.7.1 Handling and storage

The South African producers have a couple of options regarding the storage of the produced commodity. The producer can directly deliver the product to a miller, store in alternative storage facilities like silo bags, store in his own silos or make use of the commercial silos owned by local grain handling and storage companies (DAFF, 2011:27). With the removal of the Maize Board in 1995, 90 % of the local corporations were privatised. These companies own 85 % of the total storage capacity which currently is 20 million tonnes. There are 432 registered silos; 172 are on-farm silos and 260 are commercial silos owned by 17 silo owners. Agricultural companies like SENWES, AFGRI and NORTHWEST own 73 % of the commercialised silo infrastructures. The on-farm silo storage capacity is busy to expand as costs for transportation from the farm to the silo is increasing (DAFF, 2011:27). Other role players that do not own silos are also erecting silo infrastructures like silo bags and bunkers which they can use to store the grain for future sale to millers. These commercial silos are distributed throughout the production region of South Africa, resulting in a different base price per silo given the calculated transport costs to the major consortium of millers based in Randfontein.

2.7.2 Human consumption - The maize milling industry

Since the removal of the imposed Maize Board the number of milling companies expanded from 111 to 296. The total processed maize products' consumption in South Africa is lower than production, resulting in a surplus of white maize. In 1991 after the maize milling industry was deregulated, the milling companies were allowed to sell their product to preferred customers. This resulted in the decline of the milling industry. Some of the larger maize millers are the Pioneer Foods Group, Premier Foods Group and Tiger Brands. Maize is

milled in two main manners. Dry milling is the process of producing maize meal that is also considered the staple feed for a large number of the population (DAFF, 2011:28). The wet milling process involves wetting the maize that is milled and producing products like starch and gluten.

2.7.3 Animal consumption - the animal feed industry

This industry mainly uses yellow maize. The poultry industry is the largest consumer of animal feeds in this industry. This industry uses the by-product like gluten to make animal feeds. Processors of animal feeds range from small to large scale producers and consist of about 100 to 150 processors that produce 60 % of the animal feeds in South Africa (DAFF, 2011:29). These processors make animal feeds for all types of animals in South Africa.

2.7.4 Traders / brokers

Brokers account for a large part of the liquidity in this sector. They move the product from producers to local millers or export markets (DAFF, 2011:29). When there is an oversupply of a commodity, traders buy the product from local farmers and use the futures market to mitigate their price risk until the oversupply of the product can be exported via the grain terminal available. In a year where the crop is not exceeding local human and animal consumption needs, these brokers purchase the grain from the farmers and sell it to local processors like millers and animal feed producers, also using the futures exchange to mitigate their risk.

These actions result in the trading of future contracts between all the different role players in the industry, mitigating risk from one broker to another and so forth until the end user purchase the product for human or animal consumption.

2.8. The commence of Basis Link in the agricultural commodity trading industry

Examining the history of the agricultural trading market and its origins and development over the ages, one factor stands out above the rest. The market changed from a regulated market in South Africa in 1995 to a transparent free market environment. Agricultural companies dominated the domestic scene for a long period of time.

Senwes Ltd is one of the dominant agricultural companies in the South African agricultural sector (Anon, 2016 (c). :4). The company has an illustrious past that dates back 107 years ago, when the company was founded under a tree by 12 starting members.

Senwes plays an integrated role in the agricultural and food sector providing the value chain with specialised services from farmer to end user (Anon, 2016 (c). :5). The company has a large domestic footprint within South Africa with businesses in the following provinces: North-West, Free State, Gauteng, Mpumalanga, KwaZulu-Natal, Eastern Cape, Northern Cape and Western Cape.

Senwes Grainlink silo infrastructure consists of 68 silos across the business region of the company (Anon, 2016 (c). :8). These silos consist of 2,223 bins and can handle and store 4.6 million tonnes. These tonnages represent more than 25 % of the total South African domestic grain and oilseed production.

Senwes with all of its infrastructure and services as well as a long and rich history of excellent customer service has also undergone extreme diversification over the years. Some of these diversifications were initiated by transformational leaders like current CEO, Francois Strydom, together with a dynamic board of directors. But the road to sustainable success was not always smooth for the company. One of these challenges came in the form of a court order from the Competition Commission in 2012.

2.8.1 The Competition Commission Tribunal versus Senwes Ltd.

Senwes exists for more than a hundred years, although for most of the time period Senwes was an co-operative known as Sentraal-Wes (Froneman, 2017:5). It was in April 1997 that the co-operative converted into a public company.

The infrastructure in terms of the silos was considered to represent 90 % of the available storage space in the geographical business region of Senwes. The company provides services to farmers in regards to input costs and storage of grain commodities (upstream). They market and also buy the stock from farmers and then sell it to traders and millers (downstream). Senwes was considered to be a vertically integrated company (Froneman, 2017:3).

The case that was brought before the Competition Tribunal (the Tribunal), was that in accordance with the Competition Act 89 of 1988, Senwes, being a vertical integrated company, has violated section 8(c) of the Act by participating in what is called a market squeeze. Because of the fact that Senwes silos represented almost 90 % of the available storage space, the Competition Appeal Court (CAC) ruled that Senwes, being a vertical integrated company participating in both the upstream and downstream market, has misused its dominance by charging costs for services that made it impossible for the other competitors in the market to compete with Senwes (Froneman, 2017:3).

At this stage in 2012 Senwes Grain was made up of the silo operational division as well as a marketing division with procurement officers in the field. The marketing division would procure grain from farmers via the procurement division in Senwes silos and then sell the stock to traders and end users. This made it extremely difficult for other role players to compete with Senwes in the company business region, because the stock has been bought by the marketing division of the company and whenever another trader needed stock to deliver to a local mill, the trader had to obtain the stock by purchasing from the marketing division that also delivers to local mills. Another barrier for market penetration in the Senwes region that was also brought before the CAC, was the acquisition that the company charged different storage and handling tariffs to farmers and traders.

The CAC delivered the verdict that, because Senwes was involved in margin squeeze and misuse of its dominance in the geographical business region, the company had to dismantle its silo operations and marketing divisions into two separate entities. The company also had to trade in agricultural commodities in a transparent manner that allows all relevant competitors equal opportunity to obtain grain as well as storage in the Senwes region; hence the Basis Link platform was created.

2.8.2 The birth of Basis Link in Senwes Ltd

After the CAC delivered the verdict in 2012, Senwes divided the marketing division and the silo operational department. The marketing department moved to a company called Trade Vantage. This company is independent of silo operations. Silo operations consisted of 68 registered silo infrastructures as well as a procurement department responsible for procuring grain in the silo infrastructures.

Without a marketing division, the silo operations department were looking for a transparent way to buy and sell grain in the silo infrastructures. The essential problem to solve was not to end up in the same position as before where the conducting of business was considered market squeezing. Basis Link was designed as an internet platform that would allow all market players in the Senwes region to gain access to grain from farmers in a transparent way without discriminating between any of the role players. Trade Vantage, like all the other market participants, must also gain access through the system like every other market player.

2.8.2.1 Background

The Senwes online silo bidding system (“bidding system”) allows approved and registered clients to bid on the premium at specific silos, in respect of both physical stock and pre-season contracts.

2.8.2.2 Application

A potential client must complete the required application form together with all ancillary documentation and submit the information to Senwes at 1 Charl de Klerk Street, Klerksdorp, 2570. Upon receipt of a complete application form, Senwes shall evaluate and in its sole discretion, decide whether or not to approve, or conditionally approve, a client to make use of the bidding system. Once approved, or conditionally approved, a client will be registered on the bidding system as an approved client.

2.8.2.3. Log on details

Should the client be approved and registered with Senwes to utilise the bidding system, the client will be furnished with log on details, which may include, but not restricted to, a PIN

code and / or password. The client agrees and warrants that it will use and / or implement any log on details in accordance with the terms and conditions and / or any other conditions which Senwes may impose from time to time, always subject to the provisions of applicable law. The client accepts that failure to use and / or implement any log on details may result in unauthorised use of the client's account which may result in losses, for which the client will be liable. The client is responsible for ensuring that the log on details are kept safe.

2.8.2.4. Credit limit and Information

Should a client require a credit facility from Senwes in order to finance its bids and / or commodity purchases on the bidding system, the client must apply to the Senwes Credit Division ("Senwes Credit") for such a facility.

2.8.2.5. Trading, payment, delivery and risk

Trading on the bidding system is restricted to specific trading hours, namely 09:00 to 12:00 during business days. The client is responsible for all of its bids placed via the bidding system and in particular, but not exclusively, the following:

- The client's bidding decisions; and the premium chosen in respect of bids placed via the bidding system.
- All bids placed on the bidding system shall correspond, in volume, with SAFEX-based commodity contract volumes of the same commodity.
- Placing a bid on the bidding system does not guarantee that such a bid will be successful. The success of a bid is determined by the relevant market and the value of the bid placed by the client.
- All bids placed by way of the bidding system are FCA (ex-silo) based.
- A bid shall endure for the period indicated by the client at the time of placing the bid. The bid shall automatically lapse at the date and time indicated by the client.
- A bid placed must include specific reference to the silo chosen by the client, the premium offered, the time for which the bid will remain effective and the exact volume and specific commodity and grade to which the bid relates. Incomplete bids will not be processed by Senwes.

- A client may amend or withdraw its bid at any time prior to it being accepted by Senwes. A successful bid will be indicated on the bidding system against the client account.
- Should a client's bid be successful, the client shall be obliged to accept the total tonnage of commodity allocated to a client in terms of the bid.
- Senwes guarantees the availability of the total tonnage of the commodity allocated to a client in terms of a successful bid.
- Delivery of the commodity must be taken by the client within the delivery period and specific silo indicated by the system at the time the bid was submitted. It is the responsibility of the client to verify the delivery periods as indicated on the Basis Link system.
- Should the client wish to amend the delivery date, the client may in writing request Senwes to change the delivery date to an earlier or later delivery date. Senwes may, in its sole discretion, allow such amendment of the delivery date. Senwes shall however not be liable for any damages suffered by a client in granting or refusing such amendment to the delivery date. No such approval to amend a delivery date shall have any force or effect unless confirmed by Senwes in writing.
- Subject to any conditions set by Senwes in approving and registering a client in respect of the bidding system, the client must make the payment of all transactions within 48 hours (excluding weekends & public holidays).
- Senwes shall invoice the client as soon as possible after a transaction was booked against the client's account. The client shall however remain responsible to monitor and verify its account, specifically (but not exclusively) in respect of bids placed, transactions booked against the account, amounts (including interest) due and date payable, delivery periods and silo costs where delivery is to occur.
- Subject to the relevant silo operator / owners' storage agreement where delivery of the commodity must be accepted, the total risk in respect of the commodity shall pass to the client as soon as the relevant transaction is booked against the client's account.
- The client is responsible to arrange and pay for all storage agreements, storage fees, interest as well as logistical requirements from the moment the commodity has been booked against the client's account. For the sake of clarity, it is confirmed that from the moment the commodity is booked against the client's account, interest and storage fees shall be for the client's account.

- Ownership of the commodity shall not pass; neither shall delivery be permitted to the client until such time as the client has paid all amounts due in respect of a specific transaction. Should delivery be taken prior to full payment, the delivery will not prejudice any of Senwes' rights set out herein.

2.8.2.6. Internet-based system

The client acknowledges and accepts that the bidding system is an internet-based system. Due to the fact that the internet falls outside of Senwes' control, Senwes does not guarantee access to the internet or to the bidding system. Senwes does not warrant that a bid placed via the bidding system will be received and / or processed simultaneous with the placing thereof.

2.8.2.7. Interest, fees and charges

Senwes shall be entitled to recover from the client any fee, charge, levy, tax or penalty imposed on Senwes and / or the client in terms of any applicable law. Interest shall be charged and be payable in respect of all transactions concluded in terms of this agreement. Interest shall be calculated from date following the date of invoice. Interest is payable, calculated at the prime lending rate of Absa Bank from the day following the date of transaction up to the 48-hour payment (excluding weekends and public holidays) period limit.

2.9 Summary

The true nature of supply and demand determines the basis of a specified commodity at a certain point in time at a specified delivery point. Or at least that is the logic behind basis trading.

Deregulation of the Maize Board in 1995 brought rivalry to the market as well as adaptability to producers and off-takers with regards to marketing opportunities. The availability of market information and hedging tools enables producers to obtain better selling prices for their agricultural products.

The access to more than one buyer of grain within the Senwes silo region provides the producers with the opportunity to market the basis of their grain at a specified location. That

is not only derived from the Randfontein price. The more buyers compete for physical stock, the higher the location premium that enables the producer to obtain a better price for his / her product.

The buyers on the Basis Link system are not restricted to local buyers of agricultural products. Multi-national roll players can also gain access to grain via the Basis Link online trading service. This provides the opportunity to farmers in certain geographical locations to sell their grain to buyers that will export the product. This market opportunity provides the producers with the opportunity to cut out the middleman and directly go to the source of the buying power and sell his / her product to the highest bidder.

As discovered in the literature study, the field of basis trading is not a new phenomenon and there are many reasons why local producers can benefit from a transparent online trading service that links the buyer and seller of agricultural products together and thus shortening the sales chain where a large chunk of the true premium on grain at specific locations gets traded away between middlemen. Chapter 3 consists of an empirical study that explains each of the primary and secondary objectives.

CHAPTER 3: EMPIRICAL STUDY

3.1 Introduction

The previous chapter gives a broad overview of the history of basis trading and its origins, both in the global market and the South African market. The chapter also takes a look at the different components within the agricultural trading market that play an integrated role in price movements and the impact that these factors have on supply and demand.

The conclusion was that certain rules and regulations implemented by the Competition Act 89 of 1988, with specific reference to the agricultural company called Senwes, produced an opportunity for the trading of physical grain in the agricultural sector in a transparent manner whereby all role players within the geographical boundaries of Senwes would be treated equally in terms of access to grain.

This chapter aims to provide an unbiased analysis of statistical data. All conclusions and recommendations will be discussed in Chapter 4.

3.2 Objectives of the study

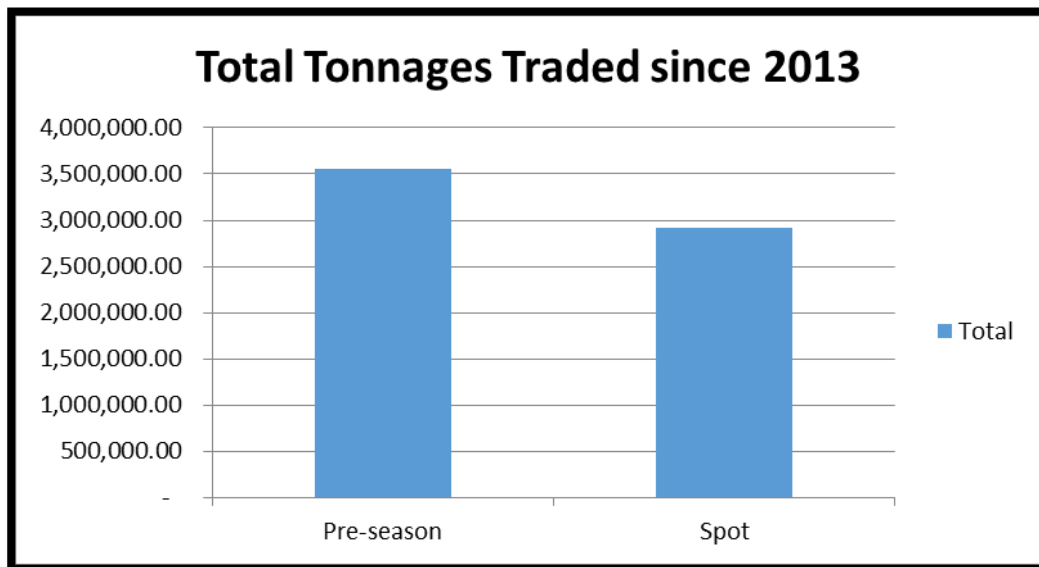
3.2.1 Primary objective

The knowledge gathered from interpreting the data shows that Basis Link can indeed become a sustainable platform in the agricultural trading sector. Since the launch of the Basis Link system in 2013, this platform showed steady growth in the following areas:

3.2.1.1 Tonnages traded

As indicated in Table 3.1, since Basis Link was launched in 2013 the total tonnages that were facilitated via the Basis Link system between buyers and producers were about 6,472 million tonnes of grain, both on a spot and pre-season basis. These tonnages indicate that the transparency as well as the costs for using the Basis Link system is favourable for both buyers and producers of grain locking in the true nature of supply and demand without speculation.

Table 3.1 Total tonnages trade since 2013 (Source: Senwes 2017)



3.2.1.2 More buyers willing to use the system to gain access to grain in the Senwes region

When Basis Link was launched in 2013 it came with some resistance from other competitors. The general perception was that this platform was created to place Senwes and its subsidiaries in a position to gain access to grain in an anti-competitive manner again. The perception slowly changed and by 2016 most or all the competitors were registered on the system. These competitors were able to gain access to all of the tonnages that were traded within the Senwes region silos in a transparent manner.

3.2.1.3 More producers willing to sell their product on the Basis Link system

The main importance of Basis Link is to stimulate the true nature of supply and demand of a specific commodity at a specific delivery point (silo). For a long period producers of grain were used to selling their product at a derived price based upon the delivery basis in Randfontein that represented the SAFEX price. With Basis Link producers of grain within the Senwes region can enjoy the benefit of the free market environment by offering their grain on the platform at a premium above the SAFEX Randfontein price that reflects the value of the specified commodity at a specific point in time at a specific delivery point. Since producers in the Senwes region realised the value of being in control of the value of their commodities, offering their product on the Basis Link system, placed them in a position to have choices about who to sell to at what SAFEX price and at what basis.

3.2.2 Secondary objectives

While the primary objective aims to prove that Basis Link is a sustainable solution in agricultural trading, it will also be beneficial to determine the following secondary objectives:

- To assess the possibility that Basis Link is a sustainable platform to trade the true intention of supply and demand.
- To assess whether Basis Link can overcome the challenges of free market trading.
- To evaluate whether all the different role players will accept the fact that Basis Link indicates the true value of supply and demand at a specific delivery point at a specific point in time.

3.3 Research methodology

The research methodology was as follows:

- Conduct informal meeting with 9 random buyers of the Basis Link online trading platform.
- Conduct a Basis Link questionnaire to be completed by buyers that use the Basis Link system on a regular basis.
- Obtain information.
- Test the authenticity of the data.
- Interpret and discuss the processed data.

3.4 Research instruments

A hybrid of a qualitative and a quantitative study was used during the empirical study.

3.4.1 Qualitative study

The main reason why Basis Link can and will be a sustainable solution in the agricultural trading market was acknowledged by conducting 9 informal meetings with random buyers on the Basis Link online trading system. The informal meetings were done as preparation for the quantitative study. The results were therefore available before the quantitative study started.

The 9 buyers were selected by using a non-probability sampling method, also described as a purposive sample. Every one of the buyers that were selected was asked to provide answers to why the Basis Link system could be considered a sustainable trading solution.

3.4.1.1 Quantitative study

The qualitative study was followed by a quantitative study, obtaining the information from a questionnaire that was distributed between buyers on the Basis Link system. The questionnaire was designed with a multiple purpose to obtain the input of the selected buyers in terms of the advantages and disadvantages of the Basis Link system, the functionality of the system and the expansion of the Basis Link platform. The questionnaire was distributed to 20 buyers and obtained a 90 % response rate.

The structure of the questionnaire (see Appendix A):

- Section 1: The general perception of the Basis Link platform.
- Section 2: The general feedback regarding Basis Link and the functionality of the platform.
- Section 3: The Basis Link system perceived from a technological perspective.

Because of the transparency of the Basis Link system there is certain information that should not be disclosed to the market. Information like who the buyer of a specified commodity is, the tonnages that the buyers purchase as well as the premium they are willing to purchase at.

3.5 Research population

The buyers were selected by compiling a list from a data base of all registered buyers on the basis link system since 2013. The entire population was used as a sample (n=20). This decision was made because of the fact that the Basis Link system is a first mover within the agricultural trading scene.

3.5.1 Data collection and sample size

Basis Link forms part of the mandate department operating from the head office of Senwes in Klerksdorp in the North-West Province. The manager of the mandate department distributed the questionnaires to the 20 registered buyers using the electronic platform called SurveyMonkey. The mandate department has an integrated roll in communication with all the buyers on the basis system on a daily basis. The personnel of the mandate department are well informed about market trends and basis trading and with their knowledge are always informed about what the true value of grain is at specific delivery points. The questionnaire and goals of the research were explained to them in detail.

The questionnaire was presented to the buyers in electronic format and whenever contact was made with the mandate manager, the buyers were reminded to complete the questionnaire.

There were no respondents that were unwilling to participate in completing the questionnaire.

Collection of the information gathered from the questionnaire had a response rate of 90 %; the population (n=20) is a small population, yet it represents all the buyers that is currently active on the Basis Link system. The 9 informal meetings that were conducted were also part of a roadshow conducted by the mandate department.

3.6 Analysis and discussion of results

The analysis of data gathered from historic information, questionnaires and informal meetings will be discussed in detail to reach a conclusion.

3.6.1 Historical data

The historical data was gathered from the Basis Link system records regarding offers traded per commodity, silo and period since the launch of the Basis Link trading platform in December 2013.

3.6.1.1 Volumes per commodity traded per year

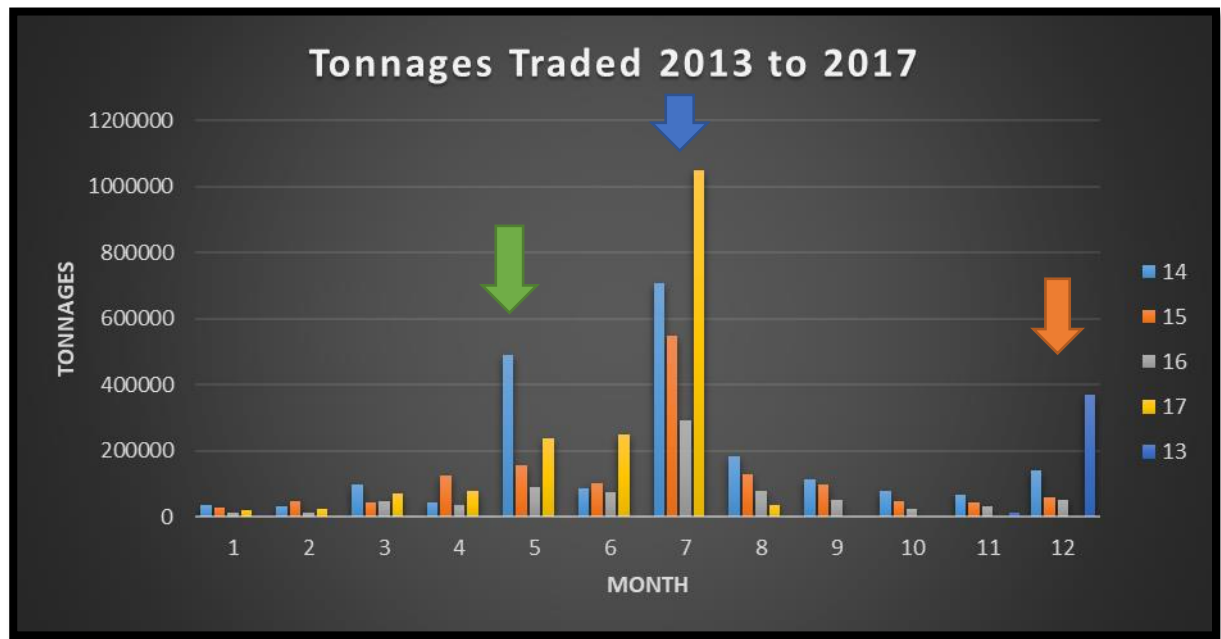
As indicated in Table 3.2, since 2013 the tonnages that were traded on the Basis Link system exponentially grew, taking into account that the worst drought ever recorded in the history of the agricultural sector in South Africa took place in the 2015/2016 marketing season, with one of the largest crop recorded in South Africa in the 2016/2017 marketing season.

Also indicated in Table 3.2 is the spike in tonnages sold that happen in harvesting time of commodities, which is as follows:

- Sunflower and soya beans – May (Month 5)
- Maize – June / July (Month 7)
- Wheat – December (Month 12)

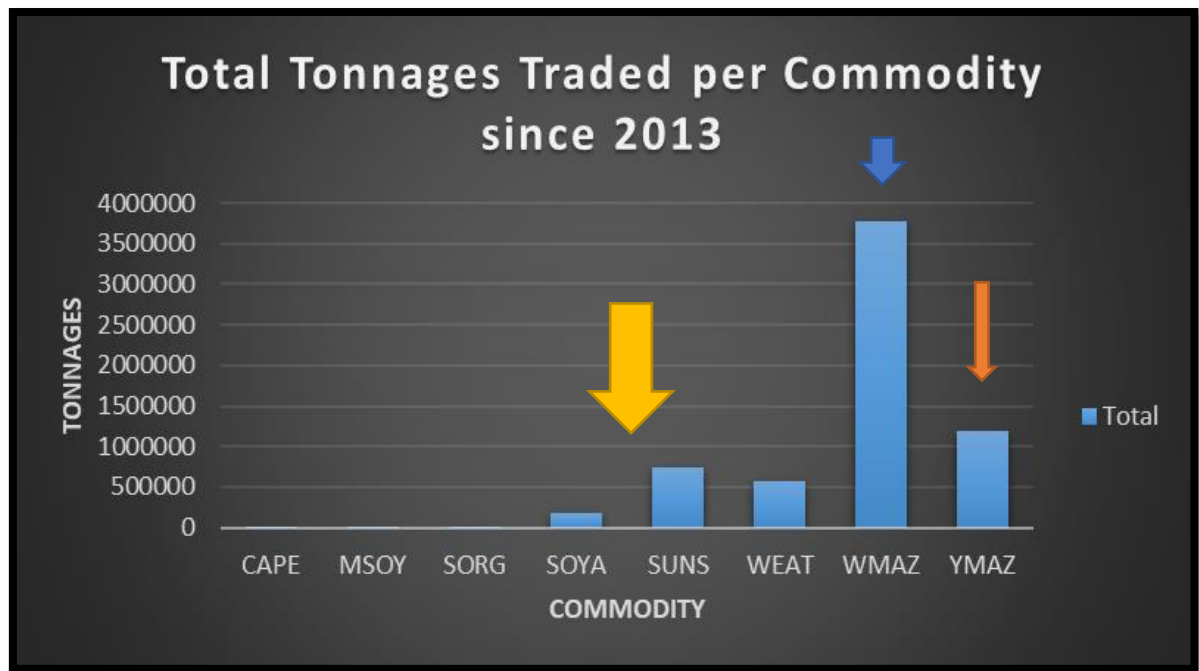
This indicated that buyers in the Senwes region could gain access to tonnages within the Senwes region in the peak seasons of harvesting times in a transparent manner that is not anti-competitive. The Basis Link system is designed to provide tonnages to the buyer that is willing to pay the highest premium on both pre-seasons and spot at a specific silo.

Table 3.2 Tonnages Sold via Basis Link since the launch in 2013 (Source: Senwes, 2017)



As indicated in Table 3.3, the Senwes region is mostly a white maize production area followed by yellow maize production and oilseeds like sunflower and soya beans growing rapidly. Wheat planting has dramatically decreased in the last 5 to 6 years within the Senwes region and is basically limited to irrigation areas, the reason being that the seasons have shifted in terms of rainfall. Winter rains on average does not occur in September any more; this is a crucial period for the dry land wheat production.

Table 3.3 Total tonnages traded per commodity since 2013



3.6.1.2 Volumes traded per silo

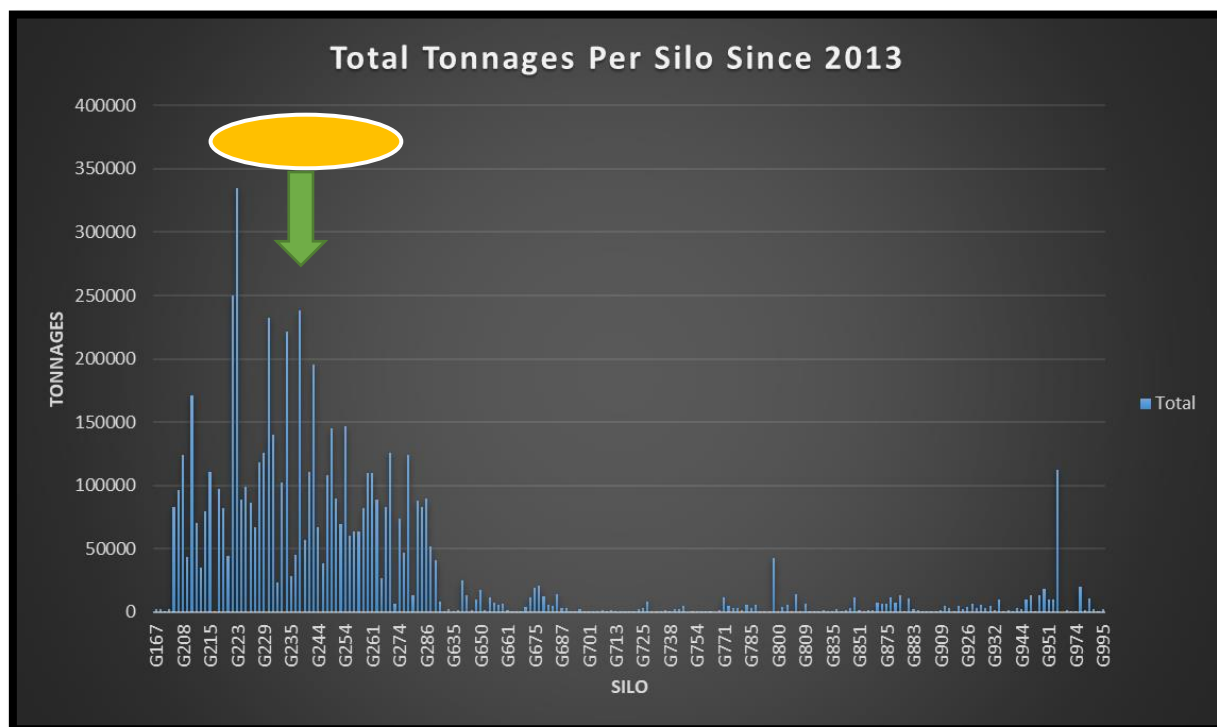
Table 3.4, the total tonnages on all commodities since 2013 per silo; shows the cluster of sales in a specified silo region; this silo region is mainly based in the southern and central Free State as well as parts of the North-West Province. The reason why tonnages in these geographical regions are well sought after is the fact that these silos are closest to the major milling companies that are not situated in Randfontein.

Milling companies like Premium Milling, Itau Milling and BKB Grainco are all millers that are situated in the geographical region of the silos and based upon the fact that the silo differential that is coupled to each delivery point is based upon the delivery of grain in Randfontein. It is safe to assume that premiums can be paid in these silos because they are closer to the off-takers mill. The illustration of this statement can be best explained by using an example:

- Farmer “X” in Bultfontein silo sells 100 tonnes of white maize on the basis of SAFEX less the transport differential. In the example SAFEX is R2,200 and the transport differential is R285, thus farmer “X”, without Basis Link had to sell his grain at R1,915. With the Basis Link platform in place buyers who deliver their grain at a local mill in Bloemfontein can purchase the grain using the following formula:
 - SAFEX (R2,200) less real transport to Bloemfontein (R150) = R2,050.
 - Thus, the buyer can pay a premium based upon SAFEX (R2,200) less Differential (R285), plus Premium: R135 = R2,050.

This example illustrates the value of basis trading for both farmer and buyer. Before the deregulation of the Maize Board in 1995 producers and buyers did not have the advantage of trading grain in a non-regulated transparent trading system.

Table 3.4 Total tonnages per silo since 2013 (Source: Senwes, 2017)



As indicated in Table 3.5, the premium in rand value traded on the Basis Link system since 2013 per commodity per year is a clear indication that the Basis Link platform trades the true value of supply and demand. In the 2014/2015 marketing season a drought was recorded in South Africa that had a devastating effect on the production of agricultural commodities. The premiums traded above SAFEX at specific silos show that buyers of agricultural commodities within the Senwes region had to pay more (premium) to obtain possession of the specified commodity. The higher premium paid to obtain grain is 100 % transparent and the highest premium obtain the specified commodity.

The premium that is paid by buyers to obtain grain is passed on the producer. Basis Link as part of the market access department of Senwes Grainlink does not take any commission on the premium. Thus, the platform triggers the true nature of supply and demand, irrespective of speculation.

Table 3.5 Total premiums traded in Rand value since 2013 (Source: Senwes, 2017)

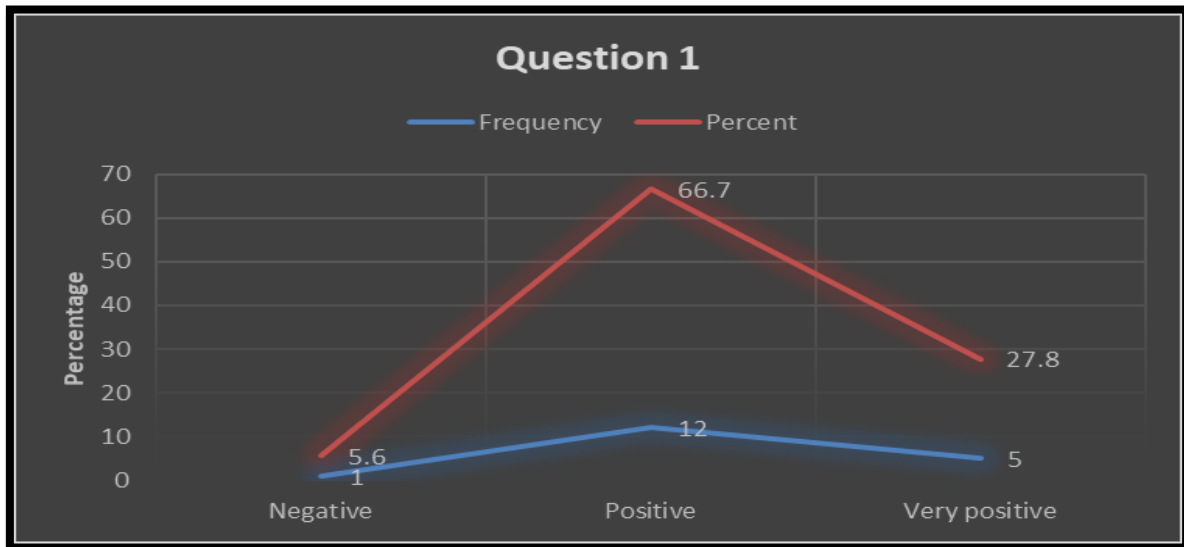


3.6.2 Questionnaires

The data gathered from the 18 respondents who completed the questionnaire will be discussed using frequency tables. This analysis will illustrate the perception and functionality as well as the improvement of Basis Link based upon the primary users of the Basis Link online bidding system.

3.6.2.1 Question 1 – What is your first reaction to the Basis Link online bidding platform?

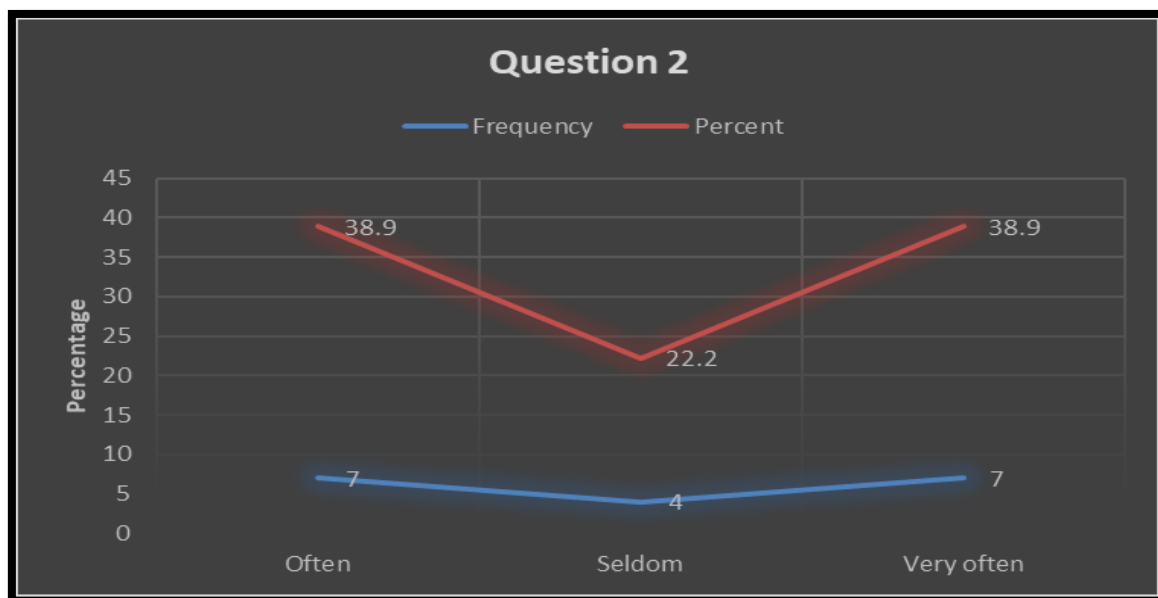
Table 3.6 What is your first reaction to the Basis Link online bidding platform?



As indicated in Table 3.6 the first reaction of the primary users of the Basis Link online bidding system was on average more positive than negative. This indicates that the primary users of Basis Link are more positive towards Basis Link than negative.

3.6.2.2 Question 2 – How often do you use the Basis Link service?

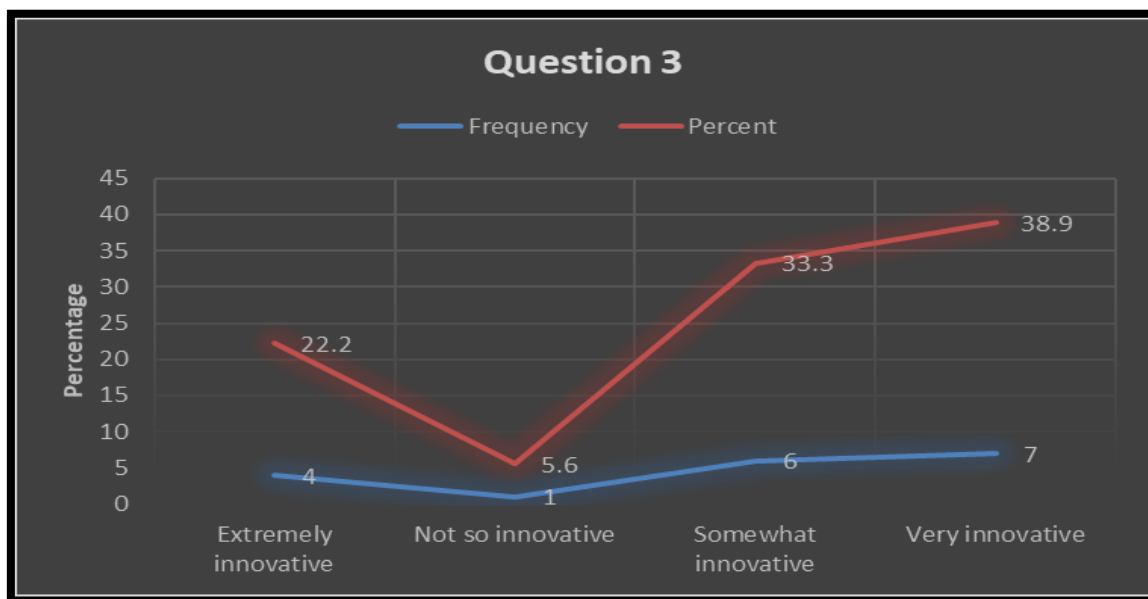
Table 3.7 How often do you use the Basis Link service?



As indicated in Table 3.7 most of the primary users of the Basis Link online platform use the trading service more often than seldom to obtain grain within the Senwes region.

3.6.2.3 Question 3 – How innovative is Basis Link?

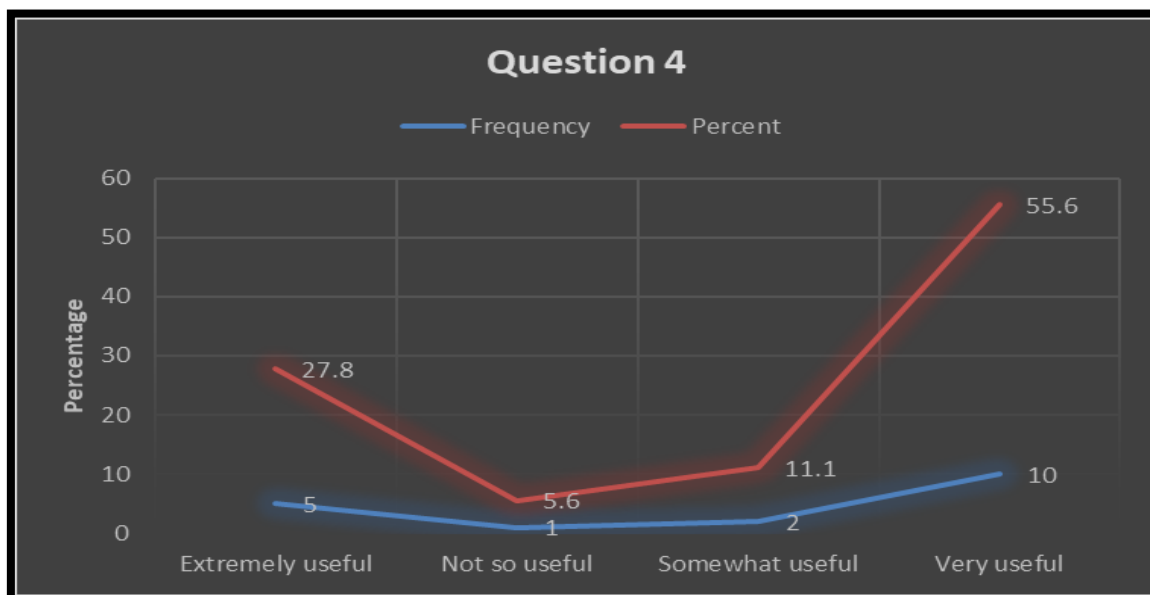
Table 3.8 How innovative is Basis Link?



As indicated in Table 3.8 the majority of the primary users of the Basis Link online bidding system consider the system to be an innovative system, indicating that Basis Link is a new product with great innovation and potential.

3.6.2.4 Question 4 - How useful is Basis Link?

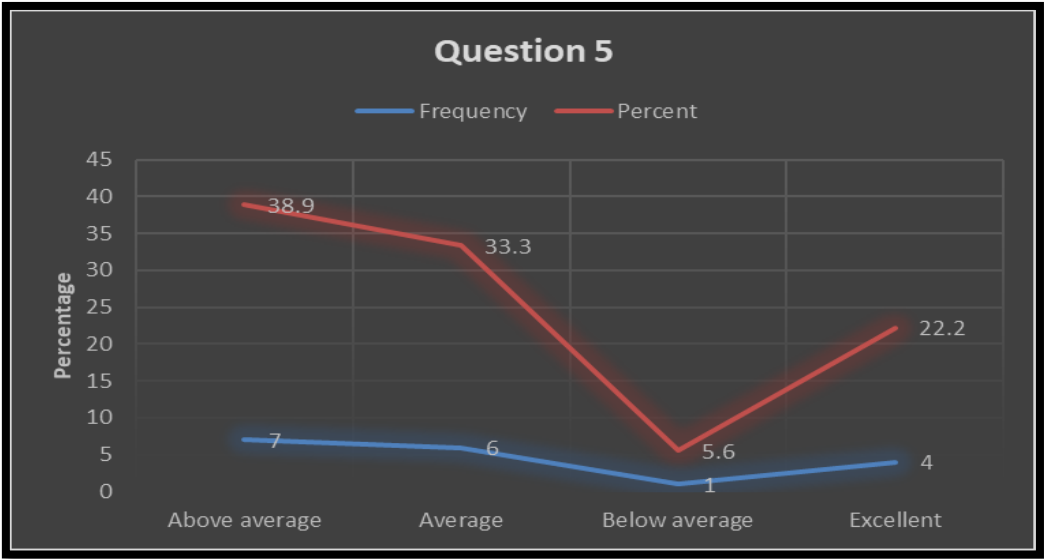
Table 3.9 How useful is Basis Link?



As indicated in Table 3.9 most of the primary users of Basis Link online bidding platform find this bidding system useful, indicating that the users of this system make use of the platform to gain access to grain in a transparent manner in the Senwes silo region.

3.6.2.5 Question 5 – How would you rate the value for money on the Basis Link system?

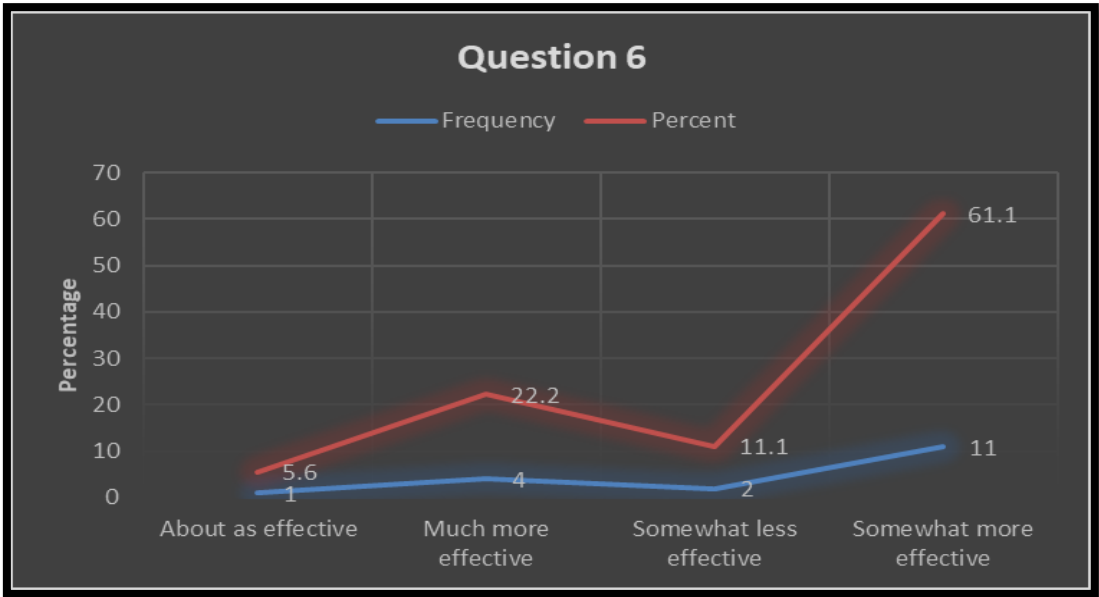
Table 3.10 How would you rate the value for money on the Basis Link system?



As indicated in Table 3.10 most of the primary users of the Basis Link online trading platform rate the system as value for money. This is an important rating from the perspective of the Basis Link platform, because if the costs of using the online bidding system is too high, then these buyers will try and find other alternatives for procuring grain in the Senwes region, like opening up procurement offices.

3.6.2.6 Question 6 – Compared to competing services, how effective is Basis Link?

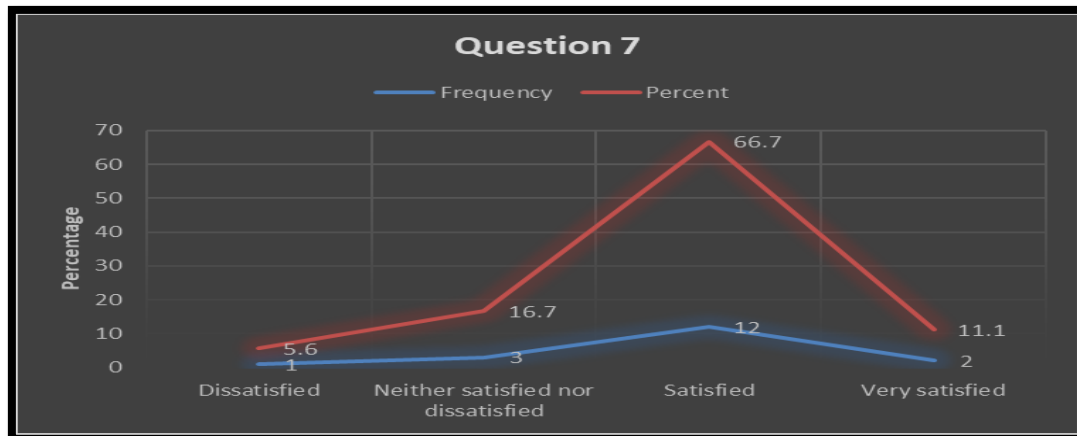
Table 3.11 Compared to competing services, how effective is Basis Link?



As indicated in Table 3.11 most of the primary users of the Basis Link online bidding system rate the service more effective. This is also an important factor for the expansion of Basis Link; this will be discussed in the following chapter under recommendations.

3.6.2.7 Question 7 – Overall, are you satisfied or dissatisfied with Basis Link?

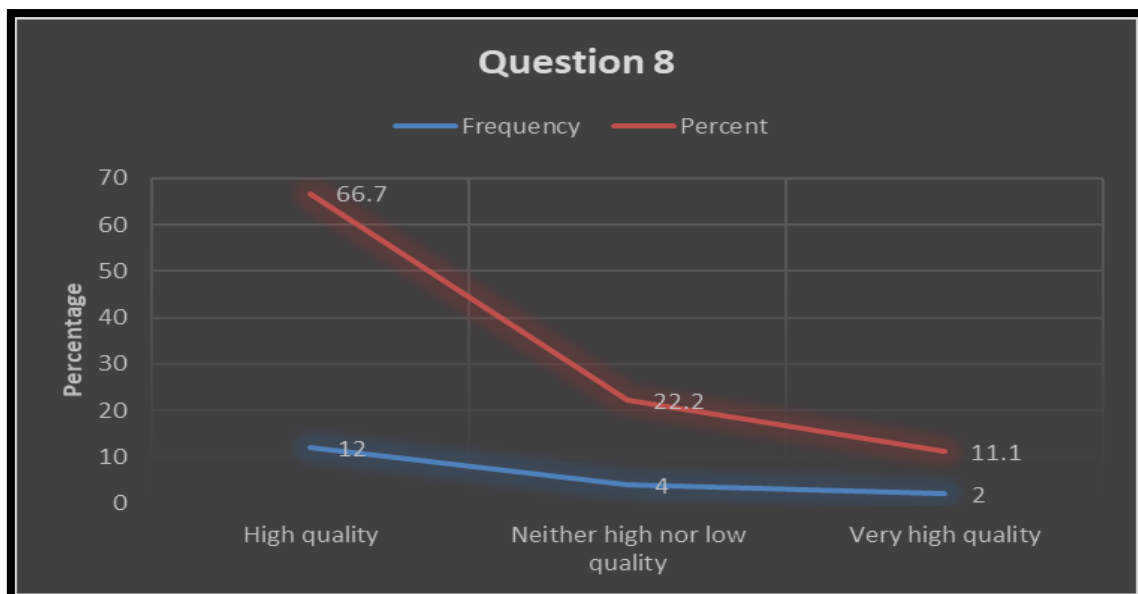
Table 3.12 Overall, are you satisfied or dissatisfied with Basis Link?



As indicated in Table 3.12 most of the primary users of the Basis Link online bidding system are satisfied with the trading platform, indicating that these users (buyers) will use the Basis Link system to gain access to grain.

3.6.2.8 Question 8 – How would you rate the quality of Basis Link?

Table 3.13 How would you rate the quality of Basis Link?

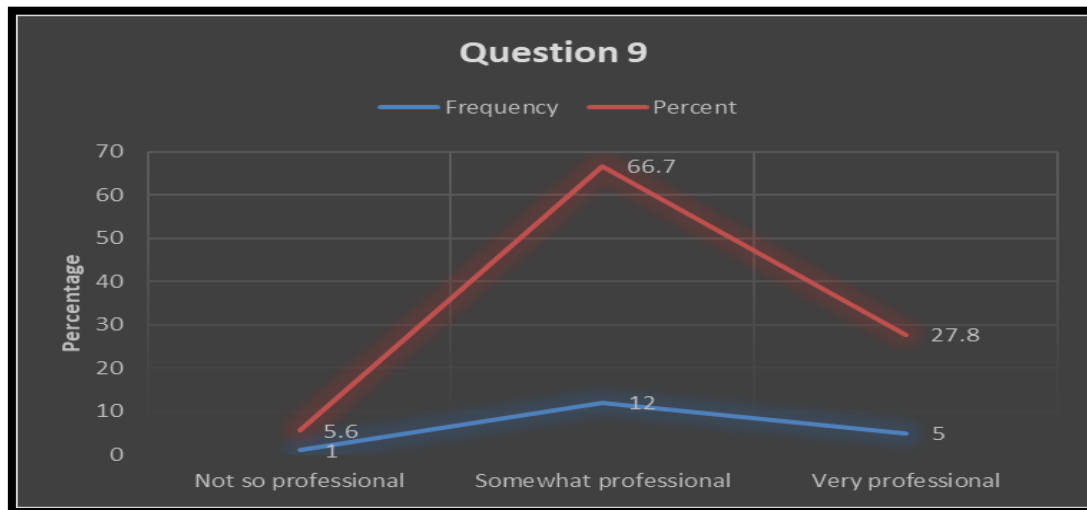


As indicated in Table 3.13 most of the primary users of the Basis Link online bidding system consider the service to be of higher quality, indicating that the Basis Link service is not only

another trading platform that provides a trading service, but provides a high-quality service to buyers registered on Basis Link.

3.6.2.9 Question 9 – How professional is Basis Link?

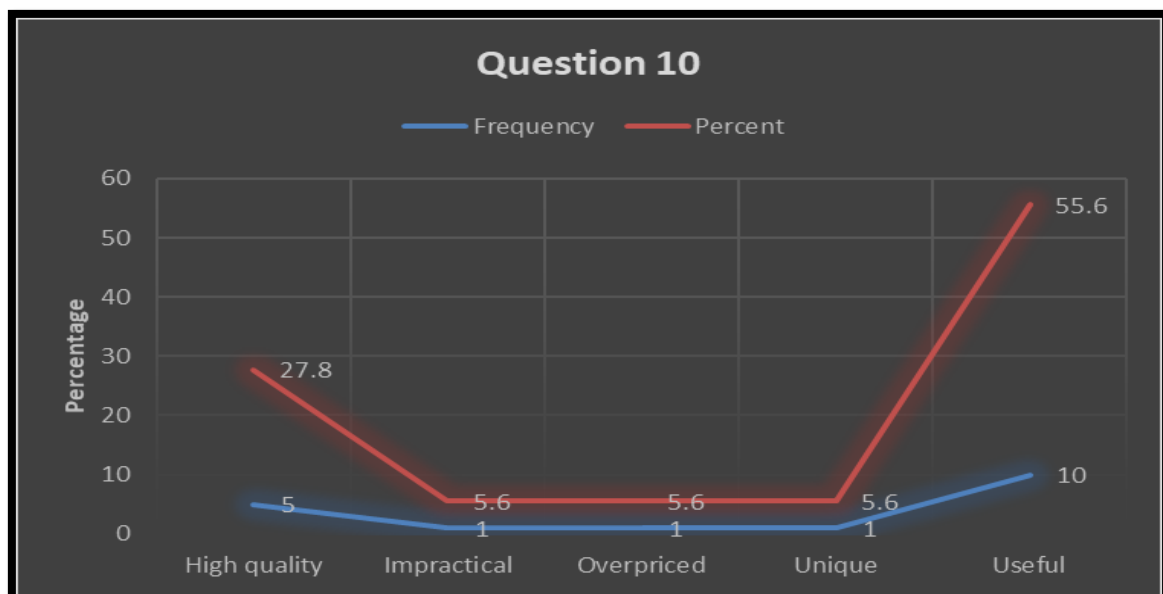
Table 3.14 How professional is Basis Link?



As indicated in Table 3.14 the majority of primary users of the Basis Link online bidding system rate the service as professional, indicating that the Basis Link platform provides a professional service to its users.

3.6.2.10 Question 10 – Describe the Basis Link platform

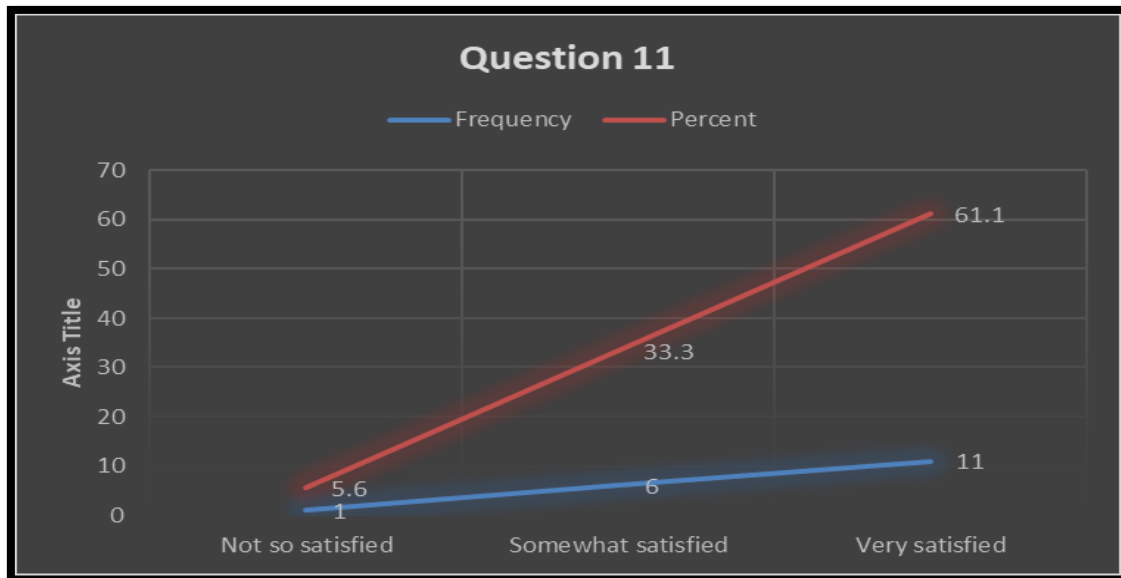
Table 3.15 Describe the Basis Link platform



As indicated in Table 3.15 most of the primary users of the Basis Link online trading platform consider the trading platform and service to be of high quality as well as useful, indicating that the online bidding service fulfils the needs of the buyers.

3.6.2.11 Question 11 – How satisfied are you with the security of Basis Link?

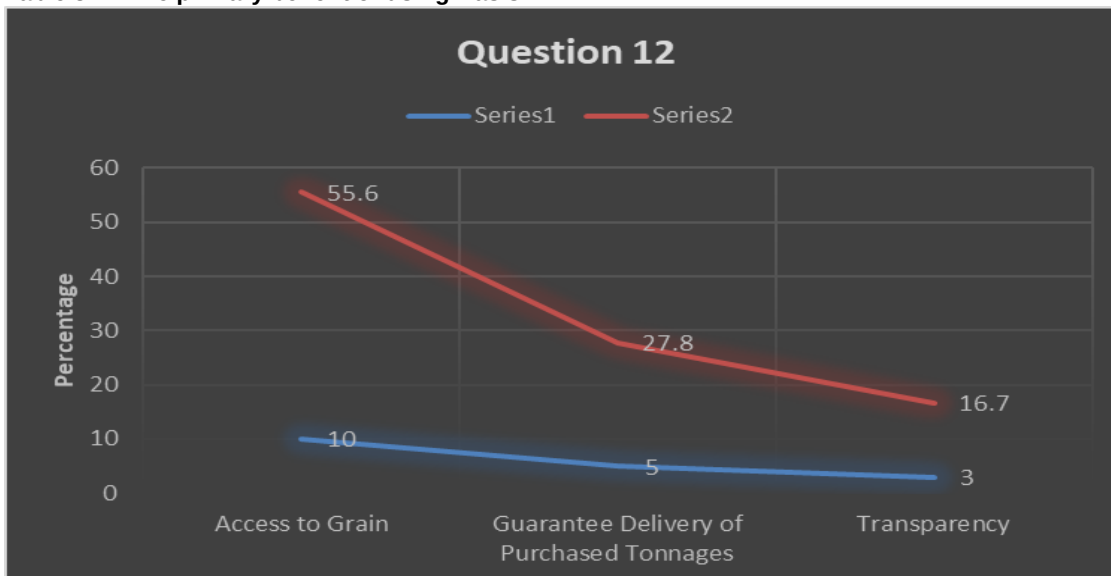
Table 3.16 How satisfied are you with the security of Basis Link?



As indicated in Table 3.16 the majority of the primary users of the Basis Link online trading platform experience the online bidding system as safe in terms of security. This is a very important rating because one of the main drivers of the online system is security in terms of information. The system would not work if buyer “X” had information regarding transactions that were concluded by buyer “Y”.

3.6.2.12 Question 12 – What is the primary benefit of using Basis Link?

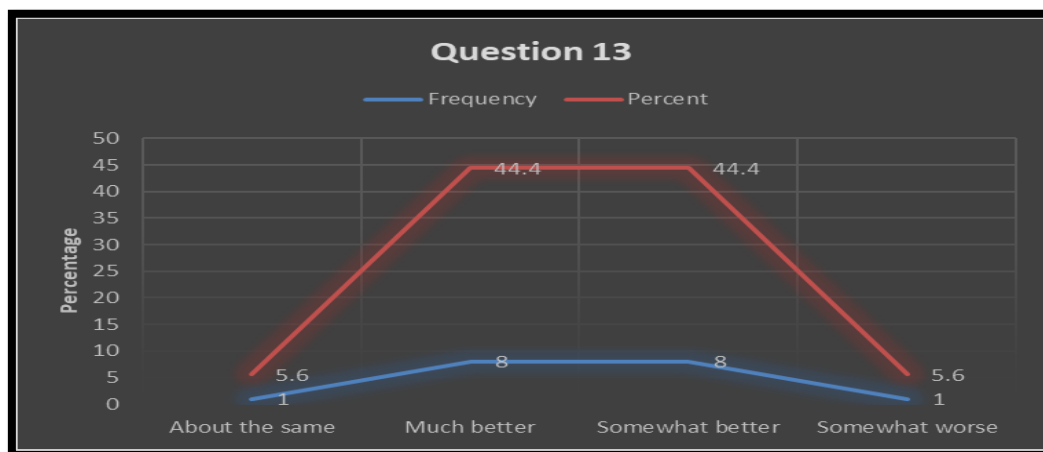
Table 3.17 The primary benefit of using Basis Link?



As indicated in Table 3.17 the primary users of the Basis Link online trading system indicated that the transparency as well as the guarantee of tonnages as well as the access to grain are the most important benefits of Basis Link.

3.6.2.13 Question 13 – With reference to competing services how is the quality of the service?

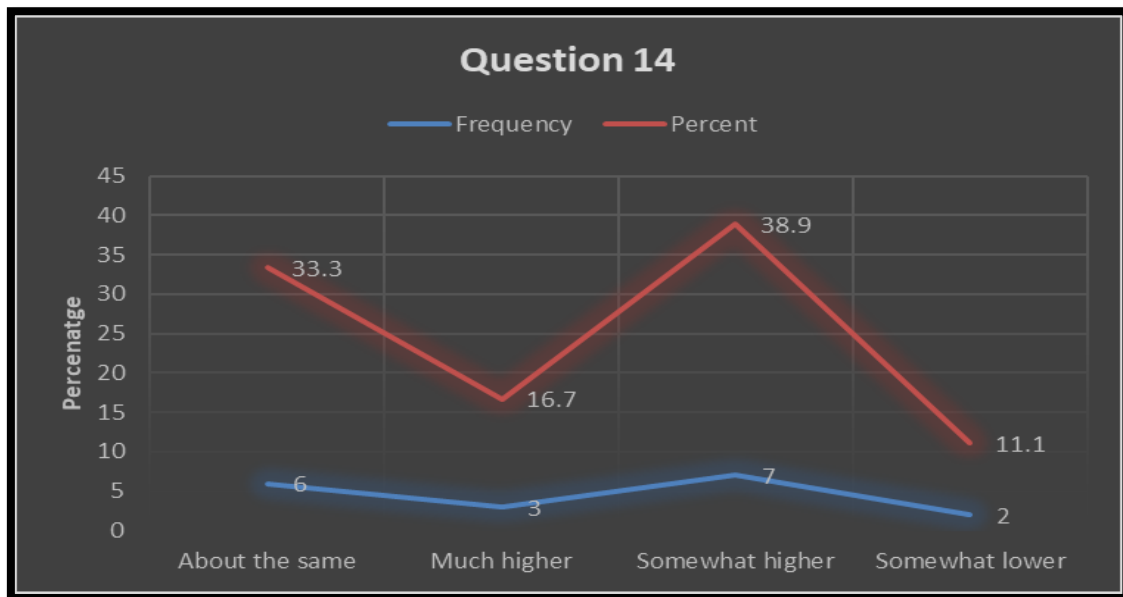
Table 3.18 With reference to competing services how is the quality of the service?



As indicated in Table 3.18 the primary users of the Basis Link online trading platform rate the service better than competing services in the industry. This indicates that the service provides the users with what they want in terms of grain trading in the Senwes region.

3.6.2.14 Question 14 – With reference to competing services, how are the costs of the Basis Link service?

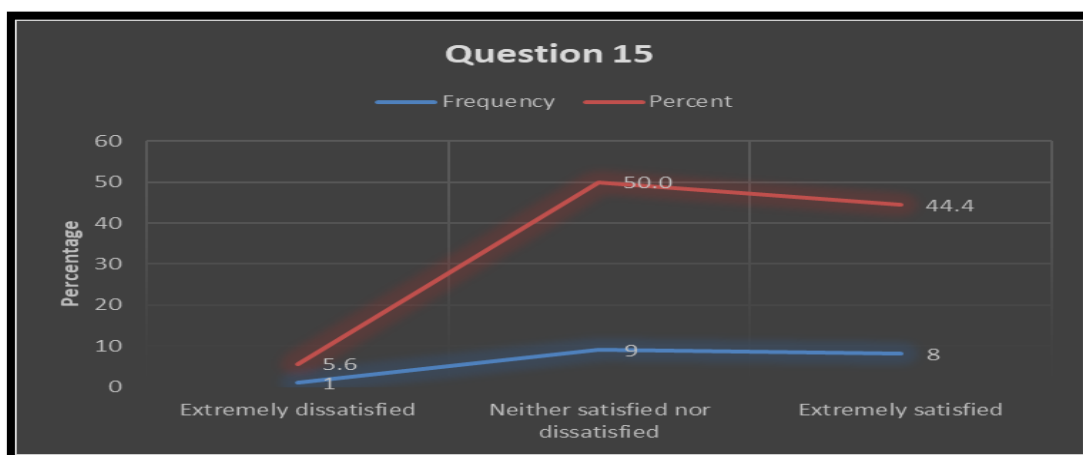
Table 3.19 With reference to competing services, how are the costs of the Basis Link service?



As indicated in Table 3.19 the primary users of the Basis Link online trading service indicated that the costs of using the system are not the primary reason for using the system compared to other competing services. This indicates a point of further development on the online trading system.

3.6.2.15 Question 15 – Rate the employees of the Basis Link service department

Table 3.20 Rate the employees of the Basis Link service department

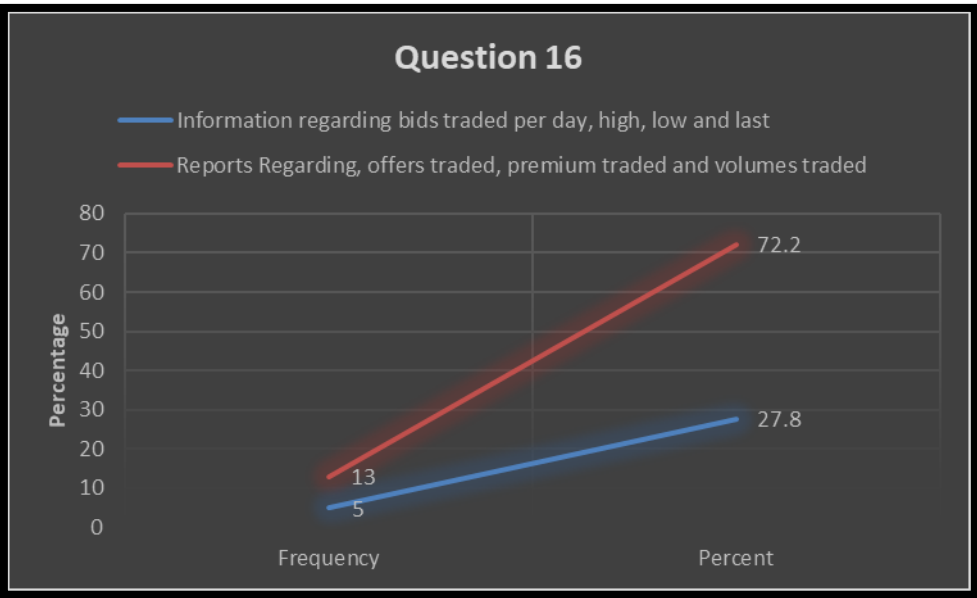


As indicated in Table 3.20 the primary users of the Basis Link online service department are more satisfied with the employees of the Basis Link system. This indicates that the

employees in the Basis Link department perform a key service towards users of the Basis Link system.

3.6.2.16 Question 16 – What information could Basis Link provide to users of the system?

Table 3.21 What information could Basis Link provide to users of the system?



As indicated in Table 3.21 the majority of users of the Basis Link online trading system would like to have access to historical data as well as tonnages traded per day per silo, commodity and premium. This indicates that information is the key to sustainable trading.

Question 17 to 20 was set up to establish what need there exists with buyers on the Basis Link system that will improve the future use and sustainability of Basis Link online trading system. These questions were based on the information gathered from the informal interviews and will be used to make recommendations in Chapter 4.

3.7. Summary

The historical data that was analysed shows that the online trading service traded 6,472 million tonnes of grain since it was established in 2013. The tonnages traded also indicate that the largest quantity of the volumes that were traded is represented by the commodity white maize; this is because the Senwes region is mainly a white maize production area. The data also shows that there are specific silos based upon location that are more suited for buyers of grain to pay premiums. The online trading systems data showed that premiums represented the true nature of supply and demand in surplus and shortage years.

The respondents that completed the survey indicated that the Basis Link online trading service is a sustainable solution to gain access to tonnages produced in the Senwes region. The respondents also indicated that the system is safe, efficient and reliable to use. Most of the respondents indicated that this type of transparent physical trading platform can be utilised, not only in the Senwes region, but in the whole of South Africa.

Chapter 3 specifically only reports the statistical results obtained in the empirical study. Conclusions and suggestions that flow from the statistical analysis are discussed in Chapter 4.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 Introduction

Chapter 4 marks the end of the research. This chapter ends off with conclusions, recommendations, evaluations, suggestions and limitations.

Conclusions are drawn from the empirical research. It is used to make recommendations in terms of interpreting the sustainability of the Basis Link online bidding service. Recommendations are also made with reference to expanding the range of the online bidding platform.

Evaluations will be done to determine if the primary and secondary objectives, as set out in Chapter 1, are achieved. Suggestions for future study will then be given and limitations will conclude the study.

4.2 Conclusions

The conclusions of the primary objectives will be examined.

4.2.1 Conclusions concerning the primary objectives

The primary objective of the study was to determine whether Basis Link can become a sustainable solution in the agricultural trading sector.

The primary users of the Basis Link online trading service that responded to the informal meetings and surveys indicated in Q1, Q2, Q3, Q4, Q7, Q8, Q9, Q10, Q11 and Q12 that the online trading service can indeed become a sustainable solution in the agricultural trading sector. The respondents indicated that the Basis Link platform is safe and reliable to use. This is very important in the free market environment.

Another important indicator is that the primary users of the Basis Link system regard the system as value for money as indicated in Q5. The costs of gaining access to grain produced within a geographical area can be very high if a buyer decides to open up procurement offices in the specified region. Based on recent calculations the costs of acquiring resources

like a procurement officer, office, trading systems and relationships building with local producers can be as high as R20 per tonne.

This type of access to grain is not only expensive; it also attracts a huge amount of risk. As indicated in the empirical study farmers in South Africa that produce agricultural products are dependent on rainfall to produce crops. Whenever a buyer decides to procure grain directly from local producers, the risk is always there that the local producers will not be able to deliver the promised amount of tonnages to the buyer who in turn contracted the tonnages to other markets like local millers or exporters.

With the Basis Link service, the risk on non-delivery or non-performance from the producers lies not with the buyer but with the facilitator, in this instance Senwes for less than 8 % of the costs of procuring the grain directly from farmers without the risk.

The Basis Link online bidding system does not only provide reliable, safe and transparent access to grain that is considered to be value for money to primary users (buyers) of the service, it also provides local producers with access to more than one market of grain and thereby ensuring the producers the true supply and demand advantage or disadvantage.

4.2.2 Conclusions considering the secondary objectives

The conclusions of the secondary objectives will be examined.

4.2.2.1 To assess the possibility that Basis Link is a sustainable platform to trade the true intention of supply and demand

As indicated in Table 3.5 premiums traded on the Basis Link online trading system reflected the true nature of supply and demand. The interesting period that the online trading system undergone since its birth in 2013 was that the system was involved in the worst drought in 2014 in the history of South Africa, as well as that it was the largest crop in the history of South Africa in 2016. The data indicates that, when the drought hit the production region of Senwes, the premiums skyrocketed, and in the surplus production season the premiums were in a downward trend. This is an indication that the Basis Link online trading service presents the opportunity to farmers to take advantage of the true impact of supply and

demand on agricultural product prices without the involvement of speculators who profit from these price trends.

4.2.2.2 To assess whether Basis Link can overcome the challenges of free market trading

One of the major challenges in the free market environment is that certain roll players in the industry are only interested in price movement and the profits that can be made from these price movements. The average tonne of grain on the SAFEX futures exchange is traded 29 times before the tonne traded between the producer and the end user. This means that in this chain there are 29 counter parties that have a profit or loss from the exchange of grain.

Being a physical platform, the Basis Link online trading platform only trades in physical stock, on a spot or pre-season basis. The delivery of tonnages is guaranteed by Senwes. As indicated by the respondents the fact that the online trading platform is reliable, shows that the primary users of the Basis Link service can enjoy the opportunity of physical delivery of purchased grain without having the concern of non-performance.

4.2.2.3 To evaluate whether all the different role players will accept the fact that Basis Link indicates the true value of supply and demand at a specific delivery point at a specific point in time

As indicated in Table 3.4 and 3.5, commodity volumes traded per silo as well as premiums traded per silo, indicate that the true nature of supply and demand was available for users of the online bidding system.

In the 2015/2016 marketing season South Africa recorded the worst drought in decades. This weather phenomenon called “La Nina” crippled the agricultural commodity production in South Africa to a point where only 7 million tonnes of grain were available for sale.

With a domestic demand of round about 10 million tonnes there was a shortage of grain in South Africa. The impact that this drought had on the commodities traded on the online bidding system was that the premiums skyrocketed due to the physical demand of grain.

Even in this period where grain was sold to the highest bidder at a high premium, the primary users of the Basis Link system still preferred the use of the system to purchase the grain in the spot and pre-seasons market. The reason for this is answered in Question 12 of the survey, where respondents indicated that the primary benefit of the Basis Link online bidding system is 55 % access to grain and 27 % guaranteed delivery of the commodity purchased on the system.

To put this observation into perspective let's use an example. In a time of drought there is a high demand for white maize to be milled for maize meal; maize meal is considered to be the staple food of South Africans. If farmer "X" in Bothaville who usually produces 1,000 tonnes of white maize only has 200 tonnes of white maize due to the drought, the premium payable for the grain will increase due to a shortage of grain. If buyer "Y" wants access to the grain in Bothaville, the online bidding system provides access to grain in a transparent online system. If the buyer "bid" is the highest on the online system he will not only gain access to grain by the click of a button, but the delivery of the grain will also be guaranteed by Senwes.

The flipside of the coin is also analysed in the 2016/2017 marketing season that is characterised by the largest crop in decades. This was due to a weather phenomenon called "El Nino". This phenomenon is known for providing good rainfall. The crop in this marketing season was about 16.4 million tonnes. With this large crop on hand the premiums as well as the price of grain (SAFEX) drastically dropped.

Again, the online bidding system provided buyers with the opportunity to purchase grain at the true value, even if the premiums in some locations were below zero (negative).

4.3 Recommendations

The deregulation of the Maize Board in 1995 provided the opportunity for producers to sell their grain on the futures exchange. This exchange also provided the opportunity for speculators and investors to speculate. With the use of market information these roll players could buy or sell future positions and offset them against other roll players at a profit or loss without ever taking physical delivery of the commodity.

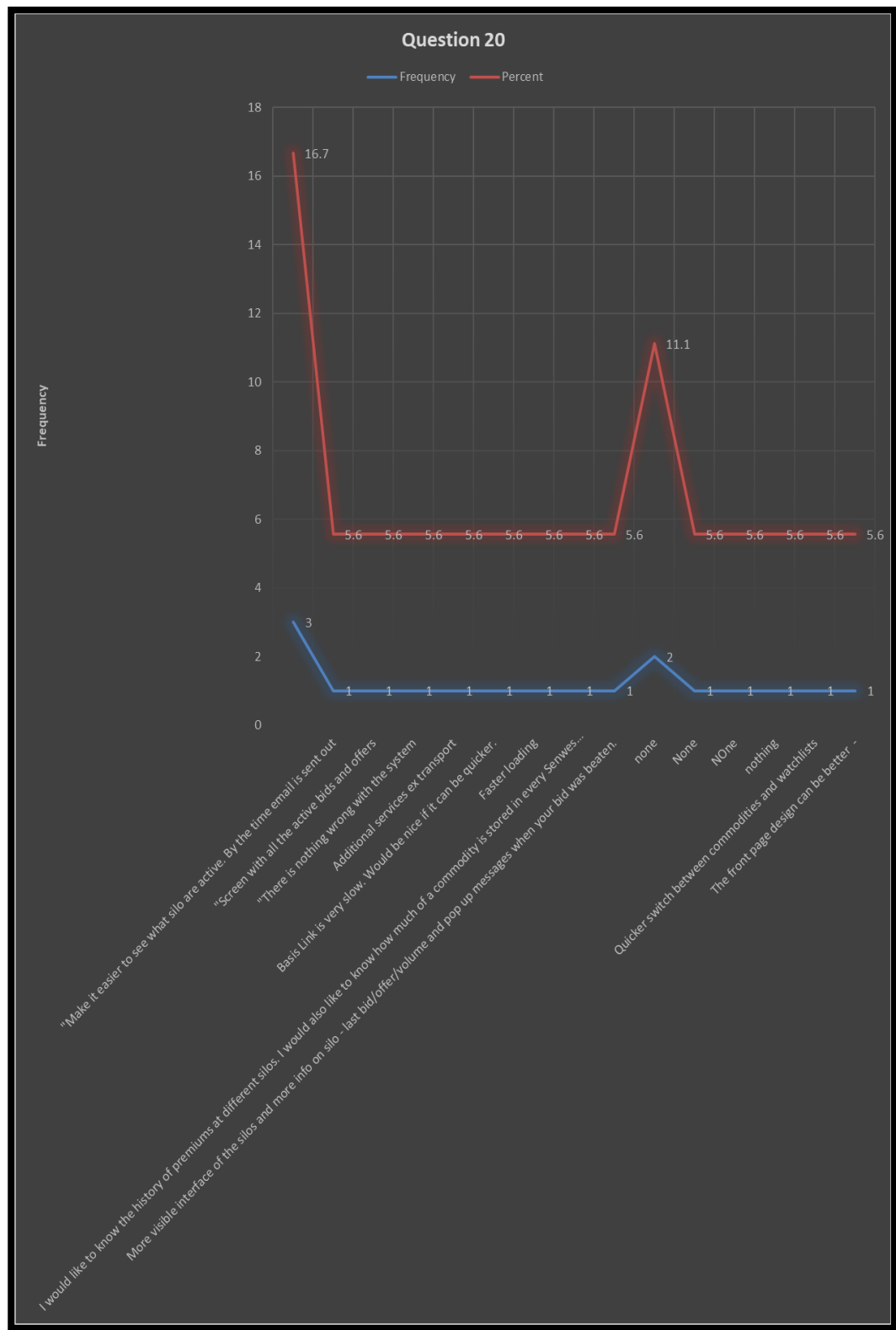
These activities of roll players in some instances had an effect on the price of commodities (SAFEX) that was not the true value of supply and demand.

Finding the primary reason why Basis Link can indeed become a sustainable platform in the agricultural trading sector is not only beneficial to producers of grain, but also to buyers of grain as well as the entire industry.

The research confirmed that buyers of grain want access to grain, with minimal risk and costs. It further showed that the online trading system provides a non-bias, transparent platform where the highest “bidder” will buy the grain from the highest “offer” no matter who the buyer is. The entire value of the premium gets transferred to the producers, enabling the producers of agricultural products to enjoy the free market environment in terms of location premiums.

Based on the results of the research and the informal meetings conducted, Question 17 to 20 as mentioned in Chapter 3, are consolidated to indicate what changes and recommendations will make the Basis Link online trading platform more sustainable.

Table 4. 1 Question 20 – What changes would most improve Basis Link.



- Basis Link online trading system is at the present moment confined to the Senwes silo region. Most of the buyers indicated during informal meetings that they would like to purchase grain through the whole of South Africa on a transparent true value basis as well as have access to historical data.

- As indicated in Table 4.1, the following recommendations can be made:
 - The Basis Link online platform must become more interactive in terms of data, like offers traded and premiums traded. This means that users of the Basis Link online trading platform would like to have access to historical data and also the availability of pop-ups. The perfect suggestion is to transform the Basis Link platform into an electronic application that can be accessed from any device. The application should inform the buyer when tonnages are offered as well as when the bid that was placed by the buyer has been beaten.
 - The online trading platform should be streamlined with less data, as indicated in Annexure B. The Basis Link online platform displays data like:
 - “Bids” – buyer side
 - “Offer” – seller side
 - Month, physical month “spot” or “pre-season”
 - Commodity
 - Tonnages
 - Premium
 - Silo
 - The analysis indicates that primary users would only like to see silos on the system if tonnages are “offered”; not the whole list of silos.
 - The system as a web-based platform is sometimes slow because of the number of figures loaded on the page; the system speed should be addressed.
- The Basis Link online trading system should also trade transport quotations from different silos to millers and feeding paddocks.

4.4 Achievement of the study's objectives

4.4.1 Primary objective

The primary objective of the study was to determine whether the Basis Link online trading system can become a sustainable solution in the agricultural commodity trading industry.

Before the study commenced the decision was made to base the research on the primary users of the Basis Link online trading system. These users of the Basis Link system represent the buying “bidding” side of the Basis Link platform. Historical data from past transactions were also used to determine the primary objective.

The primary objective was achieved with the research as discussed in 4.2.1 and recommendations were made in 4.3.

4.4.2 Secondary objectives

The secondary objectives to be determined were:

- To assess the possibility that Basis Link is a sustainable platform to trade the true intention of supply and demand.
- To assess whether Basis Link can overcome the challenges of free market trading.
- To evaluate whether all the different role players will accept the fact that Basis Link indicates the true value of supply and demand at a specific delivery point at a specific point in time.

These secondary objectives were determined by the study of the respondents as well as the historical data.

4.5 Recommendations for future research

This study only focuses on the primary users of the Basis Link online trading system, their perspective of the system and the usefulness of the system based upon transactions that were concluded within the geographical Senwes silo operations.

Not only was the study confined to the silo operation region of Senwes, but the study was also confined to buyers and sellers of agricultural commodities. The online bidding system provides the opportunity to trade in any commodity on a transparent and risk-free manner. The study should be expanded by investigating the possibility of trading other commodities besides agricultural commodities on the bidding system.

The trading in commodities is not limited to agricultural commodities in South Africa, but in the whole of Africa. Further research on the expansion of the type of products as well as the geographical reach of the online trading system will help all producers of commodities to enjoy the free market without the interference of speculation in the price of commodities.

4.6 Summary

Since the study commenced it was clear that the commodity trading environment is well established through time and has evolved from the early ages, where “rice tickets” were sold by warehouse owners as collateral for the physical product, to an era where trading took on an electronic form and traders and producers of agricultural commodities can enjoy the freedom of a connected trading system.

The production of agricultural products is a very old and important trade passed on from generation to generation; producers and buyers of agricultural commodities play an integrated roll in the economy. Producers of grain have undergone transformation for many decades turning farming practices into agricultural businesses. This indicates that producers of grain are in the business of not only producing food for a country, but also in the business of market their products in a risk free and transparent market.

The online bidding system can transform the trading industry into a risk-free market that allows all industry roll players to focus on what they do best within the agricultural value chain. Producers can produce the product, handling and storage operators can focus on

taking in grain, storing the grain and out loading the grain to end users or traders. Traders and end users can focus on buying and selling grain to different markets around the world.

Whenever an industry reaches a point where all do what they do best, the industry can become sustainable without the interference of regulation.

BIBLIOGRAPHY

Adelegan, O.J. 2009. The derivatives market in South Africa: lessons for sub-Saharan African countries. Washington, D.C.: International Monetary Fund. (IMF working paper WP/09/196.)

Bown, A., Ortmann, G. & Darroch, M. 1999. Use of maize marketing alternatives and price risk management tools by commercial maize farmers in South Africa / Gebruik van mieliebemarkingsalternatiewe en prysrisiko-bestuursmiddels deur mielieboere in Suid-Afrika. *Agrekon*, 38(3):275-301.

Carlton, D.W. 1984. Futures markets: their purpose, their history, their growth, their success and failures. *Journal of futures markets*, 4(3):237-271.

Cloete, S., Olivier, J., Sandenbergh, L. & Snyman, M. 2014. The adaption of the South Africa sheep industry to new trends in animal breeding and genetics: a review. *South African journal of animal science*, 44(4):307-321.

Coetzee, K. 2007. Safex: less investigation, more education needed. *Farmer's Weekly*. <https://www.farmersweekly.co.za/tax-and-management/global-farming/safex-less-investigation-more-education-needed/> Date of access: 17 April 2017.

Cox, C.C. 1976. Futures trading and market information. *Journal of political economy*, 84(6):1215-1237.

Froneman, J. 2017. Competition Commission of South Africa v Senwes Limited: 24. Constitutional Court of South Africa. Case CCT 61/11, [2012] ZACC 6.

Goldblat, A. 2017. Agriculture: facts & trends South Africa. Pretoria: Agri SA

Gregory, O.K. 2005. Commodities market. (In Encyclopedia of Chicago. Chicago, Ill.: Chicago Historical Society.) <http://www.encyclopedia.chicagohistory.org/pages/317.html>. Date of access: 17 April 2017.

Hanks, G. 2017. Explain the advantages & disadvantages of free market economies. Hearst Newspapers. <http://smallbusiness.chron.com/explain-advantages-disadvantages-market-economies-70553.html>. Date of access: 17 April 2017.

Hieronymus, T.A. 1977. Economics of futures trading: for commercial and personal profit. 2nd ed. New York, N.Y.: Commodity Research Bureau.

Hur, J. 2016. History of commodities trading. Elk Grove Village, Ill.: Businesses. <http://bebusinessed.com/history/history-commodities-trading/> Date of access: 17 April 2017.

JSE (Johannesburg Stock Exchange). 2005. Agricultural derivatives 101. Johannesburg: JSE Agricultural Products Division.

JSE (Johannesburg Stock Exchange). 2010. Exchange traded agricultural derivatives. Johannesburg: JSE. <https://www.jse.co.za/content/JSEEducationItems/Introduction%20to%20Agricultural%20Derivatives.pdf>. Date of access: 17 April 2017.

JSE (Johannesburg Stock Exchange). 2013. Introducing JSE equity market enhancements. Johannesburg: JSE. <https://www.jse.co.za/trade/equity-market>. Date of access: 17 April 2017.

RBT (Reality Based Trading Company). 2017. The history of commodity futures trading. Cameron Park, Calif.: RBT. <http://www.rb-trading.com/begin4.html>. Date of access: 23 June 2017.

Santos, J.M. 2013. Trading grain now and then: the relative performance of early grain-futures markets. *Applied economics*, 45(3):287-298.

Senwes. 2016. Senwes as a brand: breaking new ground. *Senwes integrated report, 2016*. Klerksdorp: Senwes.

South Africa. Department of Agriculture, Forestry and Fisheries (DAFF). 2011. Maize market value chain profile. Pretoria: DAFF. [http://www.nda.agric.za/docs/AMCP/MaizeMVCP 2011.pdf](http://www.nda.agric.za/docs/AMCP/MaizeMVCP%202011.pdf). Date of access: 27 August 2017.

Universal Class. 2017. Understanding the history of commodities markets and futures markets. Tampa, Fla.: Universal Class. <https://www.universalclass.com/articles/business/investments/understanding-the-history-of-commodities-markets-and-futures-market.htm> Date of access: 22 June 2017.

Vasile, R. 2016. A corridor in time. Romeoville, Ill.: Lewis University. <http://www.lewisu.edu/academics/library/corridor/chapter.htm?id=3>. Date of access: 17 April 2017.

ANNEXURES

Annexure A – Questionnaire

 Investigating Basis Link as a sustainable solution in the agricultural commodity trading industry	
Mini-dissertation submitted in partial fulfillment of the MBA Degree at NWU	
Section 1	
* 1. What is your first reaction to the Basis Link service?	
☐ Very positive	
☐ Positive	
☐ Negative	
☐ Very negative	
* 2. How often do you use our Basis Link service?	
☐ Very often	
☐ Often	
☐ Seldom	
☐ Not at all	
* 3. How innovative is Basis Link?	
☐ Extremely innovative	☐ Not so innovative
☐ Very innovative	☐ Not at all innovative
☐ Somewhat innovative	
* 4. How useful is Basis Link?	
☐ Extremely useful	☐ Not so useful
☐ Very useful	☐ Not at all useful
☐ Somewhat useful	
* 5. How would you rate the value for money of the Basis Link service?	
☐ Excellent	☐ Below average
☐ Above average	☐ Poor
☐ Average	

1

* 6. Compared to competing services, how effective is Basis Link?

- | | |
|---|---|
| ☐ Much more effective | ☐ Somewhat less effective |
| ☐ Somewhat more effective | ☐ Much less effective |
| ☐ About as effective | |

* 7. Overall, are you satisfied or dissatisfied with Basis Link?

- | | |
|--|---|
| ☐ Very satisfied | ☐ Dissatisfied |
| ☐ Satisfied | ☐ Very dissatisfied |
| ☐ Neither satisfied nor dissatisfied | |



Section 2

* 8. How would you rate the quality of Basis Link?

- | | |
|--|--|
| ☐ Very high quality | ☐ Low quality |
| ☐ High quality | ☐ Very low quality |
| ☐ Neither high nor low quality | |

* 9. How professional is Basis Link?

- ☐ Very professional
- ☐ Somewhat professional
- ☐ Not so professional
- ☐ Not at all professional

* 10. Which of the following words would you use to describe the Basis Link platform ? (Choose one or more)

- | | |
|--|------------------------------------|
| ☐ Reliable | ☐ Overpriced |
| ☐ High quality | ☐ Impractical |
| ☐ Useful | ☐ Ineffective |
| ☐ Unique | ☐ Poor quality |
| ☐ Good value for money | ☐ Unreliable |

* 11. How satisfied are you with the security of Basis link?

- ☐ Very satisfied
- ☐ Somewhat satisfied
- ☐ Not so satisfied
- ☐ Not at all satisfied

* 12. What is the primary benefit that you have received from Basis Link?

- ☐ Transparency
- ☐ Guarantee Delivery of Purchased Tonnages
- ☐ Access to Grain
- ☐ Other (please specify)

* 13. Compared to our competitors, is the Basis link platform's quality ?

- ☐ Much better
- ☐ Somewhat better
- ☐ About the same
- ☐ Somewhat worse
- ☐ Much worse

* 14. Compared to our competitors, is the costs of transacting via Basis link ?

- ☐ Much higher
- ☐ Somewhat higher
- ☐ About the same
- ☐ Somewhat lower
- ☐ Much lower



Section 3

- * 15. Overall, are you satisfied with the employees at Basis Link, neither satisfied nor dissatisfied with them, or dissatisfied with them? (With 1 being not at all)

	1	2	3	4	5	6	7
Extremely satisfied	☐	☐	☐	☐	☐	☐	☐
Extremely dissatisfied	☐	☐	☐	☐	☐	☐	☐

- * 16. What information would you like to have Basis Link provide?

- ☐ Reports Regarding, offers traded, premium traded and volumes traded
- ☐ Historical Data of Basis Trading as specified silo's
- ☐ Other (please specify)

- * 17. How satisfied are you with the look and feel of Basis Link Webpage?

- ☐ Extremely satisfied ☐ Not so satisfied
- ☐ Very satisfied ☐ Not at all satisfied
- ☐ Somewhat satisfied

- * 18. How often does Basis Link Webpage freeze or crash?

- ☐ Very often
- ☐ Somewhat often
- ☐ Not so often
- ☐ Not at all often

- * 19. What improvements would you make to the design of the Basis Link Webpage?

* 20. What changes would most improve Basis Link Platform?

- ☐ Expansion to other Geographical Regions
- ☐ Adding other Commodities to The Platform - Like Harmony Chop
- ☐ Other (please specify)

6

Annexure B – Basis Link Online Platform

BasisLink [BasisLink Buyer Help Guide](#)

Bid Types **Silo Owners** **Commodity** **Client Number**

Normal Senwes YMAZ 533913

Silo Search [Search](#) [Default Bids](#) [Base Price](#) [My Bids](#) [My Filled Bids](#)

Page loaded in: 0.687 second(s).

Your bid / offer is top. New bid / offer since opening page. (flash once) (no bids / offers of your own). There are higher bid(s) / lower offer(s) than yours. You don't have any bids / offers.

YMAZ

Silo

Allanridge Silo - G259 - YMAZ [Remove from Watchlist](#)

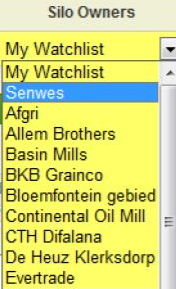
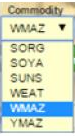
NOV17 Spot		NOV17		DEC17		JAN18		MAR18		MAY18		JUL18		SEP18			
R	50	Offer	R	50	Offer	R	Bid	Offer	R	Bid	Offer	R	Bid	Offer	R	Bid	Offer
T	500		T	1000		T			T			T			T		

Arlington Silo - G220 - YMAZ [Remove from Watchlist](#)

NOV17 Spot		NOV17		DEC17		JAN18		MAR18		MAY18		JUL18		SEP18			
R	101	175	R	80	Offer	R	Bid	Offer	R	Bid	Offer	R	Bid	Offer	R	Bid	Offer
T	1000	161	T	3000		T			T			T			T		

Attie Silo - G230 - YMAZ [Remove from Watchlist](#)

Item	Instructions
 Your bid is top.	A green R field means it is the top bid.
 New bid since opening page. (flash once) (no bids of your own).	A yellow flashing R field means a new bid has been placed since opening the page.
 There are higher bid(s) than your bid.	A red R field means that a higher bid was placed than the current bidder's bid.
 You don't have any bids.	A white field means there is no bid at the moment.
	
Item	Instructions
	The Basislink home page will display.
	Select desired bid type from the Bid Types drop down menu. Normal: Buyer will be able to choose between year and day storage. Volume Year Storage: Only year storage is available for these commodities. Buyers bid on tonnage at a high demand silo at a premium. They are then ensured of the tonnage of the specific commodity. Storage is at a fixed yearly rate. Small Tonnages : Is only applicable in the current month of trading – not in any of the Future Months , Bids can be placed in Small tonnages if the buyers needs small tonnages in the current month

	Select desired silo from Silo Owner drop down menu.
The next screen will appear.	
	
Item	Instructions
	Select desired commodity from the Commodity drop down menu.
The next screen will appear.	

BasisLink

BasisLink Buyer Help Guide

Bid Types

Normal

Silo Owners

Servaes

Client Number

533913

Commodity

WMAZ

Silo Search

Search

My Active Bids

My Filled Bids

Page loaded in: 22.407 second(s).

Your bid / offer is top.

New bid / offer since opening page. (flash once)

There are higher bid(s) / lower offer(s) than yours.

You don't have any bids / offers.

WMAZ

Silo

Afgri-com K  peratief BPK - G101 - WMAZ

Add to Watchlist

JUN15 Spot

JUN15

JUL15

AUG15

SEP15

DEC15

MAR16

MAY16

JUL16

SEP16

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

R Bid Offer

New bid for : WMAZ JUL15 Afgri-com Kōoperatief BPK - G101

New bid

Bulk Bids

Current top premium: R Tonnes:

Premium

Tonnage

Delivery Start Date

Delivery End Date

Bid End Date

Save Bid

Item	Instructions
Premium 10 Tonnage 1000	Enter numerical values in Premium and Tonnage field.
Current top premium: R Tonnes: Premium 30 Tonnage 300	Premium: Rand value bidder is prepared to pay for desired amount of specific commodity in specific month at the desired silo. Tonnage: Volume of commodity bidder wants to bid on measured in tonnage.

Annexure C – LANGUAGE EDITING

RENTIA MYNHARDT

BCom (UNISA)



SA Translators' Institute (SATI)

Membership number: 1002605

PO Box 6986, FLAMWOOD 2572

Cellphone: 082 7717 566 * E-mail: rmynhardt@vodamail.co.za

Reference number: FR1
Date: 2017/11/15

To whom it may concern,

LANGUAGE EDITING

This letter serves as proof that the following document was submitted for language editing in November 2017:

Author: Ferdie Roux

Document type: Mini-Dissertation: MBA (NWU)

Title: *INVESTIGATING BASIS LINK AS A SUSTAINABLE SOLUTION IN THE
AGRICULTURAL COMMODITY TRADING INDUSTRY*

I applied all reasonable effort to identify errors and made recommendations about spelling, grammar, style and punctuation.

I attempted to be consistent regarding language usage and presentation.

The bibliography was also checked and corrections were made where necessary.

I confirmed the content as far as possible, but cannot be held responsible for this as all facts could not be confirmed. This remains the responsibility of the author.

Thank you very much.

Kind regards.

Rentia Mynhardt

Annexure D – Data

[illegible]