A CASE OF MISAPPLICATION?

AN ANALYSIS OF THE APPLICATION OF THE MARKET SHARE DEFINITION ON THE GRAIN COMMODITIES STORAGE MARKET AGAINST THE BACKGROUND OF THE GRAIN TRADING MARKET IN DETERMINING DOMINANCE

by

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CHAPTER 1 INTRODUCTION TO THE STUDY

1. Market definition

Competition law promotes and maintains competition by regulating the behavioural and structural conduct in a market through anti-monopoly prohibitions, restrictive practices prohibitions and merger review.[1] Competition law does however not exist in a vacuum.[2] Accordingly competition law contraventions do not occur *in vacuo* but always within the context of a specific relevant market. Market definition is widely regarded as one of the most important analytical tools to examine and evaluate the competitive constraints that a firm faces and the impact of its behaviour on competition.[3] As such market definition serves several purposes in identifying the scope of competition in a market. As pointed out by the OECD, by defining the relevant market and then calculating and assigning market shares, competition authorities are able to assess the market power of firms, which is critically important in understanding competition effects.[4] Market power generally refers to the ability of a firm to keep the price of its product above the long-run competitive level and is generally measured with regard to a firm's market share.[5] In particular competition law seeks to prevent abuse of market power.[6]

Relevant market definition further assists to identify the market participants, to delineate the boundaries of the market and to determine the area of effective competition. The OECD observes that the importance of market definition however goes beyond such a narrow instrumental function as the concept has "permeated

1 Hussein, Manap and Nor "Market definition and market power as tools for the assessment of competition" (2012) *International Journal of Business and Society* 163. According to the UNCTAD Key Terms and Concepts (2004) available at https://unctad.org/en/pages/publicationArchive.aspx?publicationid+337.pdf [accessed on 1 December 2019] competition law "is a law that seeks to prevent distortion of competition resulting from anti-competitive arrangements between enterprises or from the abuse of market power by dominant forms." See also the UNCTAD Model Law on Competition (2000) available at https://unctad.org/Pgae/DITC/CompetitionLaw/The-Model-Law-On-Competition.aspx.pdf [accessed on 1 December 2019] which states in Article 1 that the objective of competition law is to "control or eliminate restrictive agreements or arrangements among enterprises, or mergers and acquisitions or abuse of dominant positions of market power, which limit access to markets or otherwise unduly restrain competition, adversely affecting domestic or international trade or economic development."

2 OECD Policy Roundtables Market Definition (2012) 90 available at https://www.oecd.org/daf/competition/marketdefinition2012.pdf [accessed on 1 December 2019] (Hereinafter OECD Policy Roundtables Market Definition (2012)).

3 OECD Policy Roundtables Market Definition (2012) 11. See also Canoy and Weigand "How relevant is the relevant market? Lessons from recent antitrust cases who remark that the demarcation of market boundaries has a strong impact on the outcome of an antitrust case, whether a merger on a monopolisation case.

4 OECD Policy Roundtables Market Definition (2012) 21.

5 OECD Policy Roundtables Market Definition (2012) 11. See also Krattenmaker, Lande and Salop "Monopoly power and market power in antitrust law (1987) *Georgetown Law Journal* 249.

6 Ibid.

competition law and is, based on its underlying conceptual foundations, now deeply embedded into the law."

The foundations of competition law, but in some sense also of market definition, were laid in the US with the Sherman Act of 1890 and the general notion gained ground that large companies, as eventually measured by market shares in defined markets, wield significant economic and political power against which the law has to afford some protection.[7] Traditionally the initial step in every competition analysis entail the definition of the relevant market, identification of relevant competitors and the computation and assignment of market shares. This was reinforced by the structure-conduct-performance (SCP) paradigm[8] that materially influenced US and EU competition law until the mid-1970s and that emphasised the importance of market structure suggesting a link between concentration and market power. Accordingly the OECD points out that the dominance requirement in a substantial number of competition laws globally, can in part be explained by a deep concern with market power presumed to be correlated with market share. [9]

Markets in which there is no effective competition will generally lead to inefficiencies in the form of higher prices and/or lower quality products, reduced research and development investments as well as retarded innovation as compared to markets where the competitive process functions effectively. These inefficiencies will arise if the behaviour of firms in the given relevant market is not constrained by (potential) other products or services. In these instances, a firm is considered to have market power which refers to the competitive constraints a firm faces *inter alia* due to products and services supplied (or potentially supplied) by competitors (or potential competitors). A reduction in competitive constraints usually leads to increased market power which in turn could induce welfare decreasing effects.[10]

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7 OECD Policy Roundtable Market Definition (2012) 12. See in particular *United States v Brown Shoe Co* 370 US 294 (1962) 325. Boshoff "Why define markets in competition cases?" *Stellenbosch Economic Working Papers* 10/13 (May 2013) 5-6 (hereinafter Boshoff).

8 The Structure-Conduct-Performance Paradigm (SCP) was developed by Edward Mason in the late 1930s and early 1940s to provide a framework for evaluating the relationship between the structures of markets and the results achieved in those markets. See Mason "The current status of the monopoly problem in the United States (1949) *Harvard Law Review* 1265. See also Jacobs "An essay on the normative foundation of antitrust economics" 1995 *North Carolina Review* 2019; Weiss "The structure conduct performance paradigm and antitrust (1979) *University of Pennsylvania Law Review* 1104. As explained by Sutherland and Kemp *Competition Law in South Africa* (Service Issue 21) par 1.6 (at 1-27) structure refers to the elements of a market that are external to firms and are relatively permanent or change slowly. As such structural factors determine the manner in which firms act in the market. They include numbers of buyers and sellers, barriers to entry, techniques of production and marketing, the extent of product differentiation, the geographical distribution of production and also demand and the character of demand. The most important structural factor in industrial organization is market concentration as it increases the likelihood of anti-competitive practices in such market.

9 OECD Policy Roundtables Market Definition (2012) 22. See also Kauper "The Problem of Market Definition Under EC Competition Law" (1996) *Fordham International Law Journal* 1682.

10 OECD Policy Roundtables Market Definition (2012) 24.

The role of competition law is to assure that effective competition prevails by preventing the creation or strengthening of market power or to prohibit the abuse of a position of substantial market power (monopolisation).[11] One role of market definition in competition analysis is accordingly to provide a "crude first screen" to classify competitive situations, particularly mergers or abuse of dominance cases into those that give rise to competition concerns that justify intervention and those that do not. This screening function of market definition allows the competition authorities to concentrate resources on cases where market power may give rise to substantial anti-competitive effects and thus reduces the investigative burden on competition authorities and may also mitigate the risk of false positives. Market definition is further important because a properly delineated market separates the active competitive forces from those operating more passively in the background. Thus, the definition of a relevant market is necessary to identify possible barriers to entry[12] to such market. If the competitive analysis shows there are no substantial entry barriers then even a high market share is presumably not an indication of durable market power. Also, market definition helps to identify the market participants and to examine the structural conditions[13] in the market which is particularly important to determine possible co-ordinated effects. Even if market shares are not used as an indicator of market power, the definition of the relevant market provides a structured frame within which the competitive analysis takes place.[14]

As observed by the OECD, for the market shares and the measures of concentration to be a reliable indicator of market power, it is evident that the market has to be defined "in such a way that the market shares and measures of concentration are as meaningful as possible. If the market is defined too narrowly, important competitive constraints are not taken into account and market power is overstated. If markets are defined too broadly, products are considered competitive constraints that in fact do not substantially constrain the behaviour of firms and could thus understate existing market power."[15]

Competition policy and law is however not an area where law reigns exclusively given the fundamental role that economics also play in this field. Sutherland and Kemp remark that scholars of the Harvard Theory[16] of competition can "take credit and

11 Ibid.

12 As explained by Sutherland and Kemp *Competition Law in South Afric*a (Service Issue 21) par 1.4.2 (at 1-20) most markets are protected by various barriers to entry that exist where incumbent firms can increase their selling prices without attracting entry by new firms.

13 See footnote 8 above regarding structural factors in a market.

14 OECD Policy Roundtables Market Definition (2012) 28-29. As pointed out by the OECD market definition "allows specifying the scope of co-ordination, identifying a maverick firm that could disrupt any co-ordinated behaviour and to evaluate whether the market is susceptible to co-ordinated behaviour."

15 OECD Policy Roundtables Market Definition (2012) 29.

16 The Harvard School dominated competition law in the United States in the 1960s until the late 1970s. Harvard scholars believe that competition is an important constraint on power that is

blame" for being the first to consciously apply concepts from the field of economics in the area of competition law. Sullivan however cautioned in 1977 already that "[C]ompetition law can never be applied economics. Economic ideas have to be absorbed into legal doctrine. But the law's accustomed ways do not take up economics easily; and ultimately conduct is judged in terms of the law." Notably, given the intertwining of economics and law in the competition arena, the concept of a relevant market is not only economic in nature but has been imbedded in competition law frameworks of various countries.[17]

Boshoff points out another important aspect of market definition, namely that that market definition involves judging which "substitutes" belong in the market with the product under investigation. He consequently argues that market definition is an essential first step in a competition investigation, not only for purpose of calculating market shares but more importantly because it involves an *analysis of substitutability*.[18]

A relevant market thus has various dimensions which generally include product, functional and geographic markets. Sutherland and Kemp accordingly remark that "the central aim of market definition is to identify in a systematic way all of those firms that constrain the price at which the product under investigation is sold. This will include all firms that supply a product sufficiently substitutable to constrain the pricing of the product under investigation ("the product market"), that are located in a region close enough to constrain the pricing of the product under investigation ('the

exercised by firms in the part of the economy that is governed by the market. Their view is that competitive processes are not self-correcting and that regulation through competition law is necessary. Their main preoccupation is with market structure and they regard the promotion of efficiency as the most important desirable economic effect of competition. See Mason "The current status of the monopoly problem in the United States" (1949) *Harvard Law Review* 1265; Sosnick; 'A critique of concepts of workable competition" (1958) *Quarterly Journal of Economics* 380; Sosnick "Towards a concrete concept of effective competition" (1968) *American Journal of Agricultural Economics* 827; Hovenkamp *Federal Antitrust Policy* (1999) 38; Markovits "An ideal antitrust law regime" 1985 *Texas Law Review* 253 The ideologies of the Harvard School are usually juxtaposed against the ideas subsequently propounded by the Chicago School that dominated US antitrust in the late 1970s and the 1980s. Chicago Scholars, of which Robert Bork was the most famous, are inherently distrusting of government and intervention in markets. They believe that markets are robust, that their outcomes have to be trusted and that they will mostly produce optimal results. In their view the function of competition is to promote productive and allocative efficiency. They regard the aim of competition law to be the protection of consumers and consumer welfare. See Bork *The Antitrust Paradox* (1978) 90 -115; Posner "The Chicago School of Antitrust Analysis" (1979) *University of Pennsylvania Law Review* 925; Brodley 'the economic goals of antitrust: efficiency, consumer welfare and technological progress" (1987) *New York University Law Review* 1020; Ginsburg "Judge Bork, consumer welfare and antitrust law" (2008) *Harvard Journal of Law and Public Policy* 449; Easterbrook "The Chicago School and exclusionary conduct" (2008) *Harvard Journal of Law and Public Policy* 439. See also Sutherland and Kemp *Competition Law in South Africa* (Service Issue 21) at 1.8 (at 1-41).

17 OECD Policy Roundtables Market Definition (2012) 82.

18 Boshoff 3.

geographic market").[19] In defining the product market, the most important aspect for competition authorities is to delineate all products which consumers regard as substitutes.[20] Insofar as the geographic market is concerned Kuyper indicates that every relevant market includes a geographic market for the obvious reason that firms selling in mutually exclusive geographic areas are not in competition and do not serve to limit each other's ability to increase price significantly. Geographic market definition thus involves the identification of those firms that sell similar products to which customers in the area will turn in the event of a significant price increase, and may also include firms that would enter the geographic area in response to such an increase. [21] The functional market in particular identifies the level of the supply chain at which a firm operates, for example manufacturing, wholesale, distribution or retail.[22]

Competition in South Africa is regulated in terms of the Competition Act 89 of 1998 (herein after referred to as "the Act") which *inter alia* aims to promote and maintain competition in order to promote the efficiency, adaptability and development of the economy; provide consumers with competitive prices and product choices and advance a number of specific public interest goals.[23] Notably the Act does not provide formal guidelines on how markets are to be defined. Boshoff points out that in the absence of formal guidelines practitioners have adopted a market definition approach consistent with the approach in other jurisdictions and rely heavily on the US-based Hypothetical Monopolist test, as dealt with in more detail later in this dissertation.[24] The Hypothetical Monopolist test views a market as that product and geographic space that can potentially be monopolised by the firms under investigation.[25] The focus is on identifying those firms and regions which act as competitive constraints on a firm, preventing it from using its power to raise prices profitably.[26]

The gist is however that, given the centrality of market definition in the competition law context, an incorrect market definition has the potential to yield severely

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19 Sutherland and Kemp *Competition Law in South Africa* (Service Issue 21) 7.7.4.1 (at 7-18).

20 Sutherland and Kemp Competition Law in South Africa (Service Issue 21) par 10.5.1 (at 10-15). In the seminal case of *United States v Brown Shoe Co* 370 US 294 (1962) 325, it was stated that "the outer boundaries of a product market are determined by the reasonable interchangeability of use [by consumers} or the cross-elasticity of demand between the product itself and substitutes for it." The South African Competition Tribunal has also confirmed this position in *Massmart Holdings Ltd/Jumbo Cash and Carry (Pty) Ltd* 39/LM/Jul01 par 8 where it stated that "the relevant product market comprises of all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products 'or services' characteristics, their prices and their intended use."

21 Kuyper (1996) *Fordham International Law Journal* 1682 at 1714.

22 Neuhoff, Govender, Versfeld and Dingley *A Practical Guide to the South African Competition Act* (2nd ed) 33.

23 Section 2 of the Competition Act 89 of 1998.

24 Chapter 2 47.

25 Boshoff 7-8; Geroski 1998.

26 Boshoff 8.

detrimental consequences for a firm, especially if such market definition is too narrow and unjustifiedly magnifies the role of that firm as a perceived dominant player in a perceived concentrated market.

2. Background information to study

The prohibition against abuse of dominance in Act applies to dominant firms. Section 7 of the Act codifies the instances and circumstances in which companies (or firms) may be found to be dominant. As such section 7 defines a firm as being dominant in a relevant market if (a) it has at least 45% of that market[27]; (b) it has at least 35%, but less than 45%, of that market, unless it can show that it does not have market power; or (c) it has less than 35% of that market, but has market power.[28]

Should a firm have 45% market share it is thus deemed dominant. This presumption is irrefutable and the enquiry as to dominance ends there.[29] Notably, the Act does not prohibit firms from holding a dominant position but merely prohibits the abuse of such dominant position.[30]

The prohibited abuses of a dominant position by a firm are listed in section 8 of the Act. These include: excessive pricing of goods or services: denying competitors access to an essential facility: price discrimination (unjustifiably charging customers different prices for the same goods or services) and other exclusionary acts (such as refusal to supply scarce goods to a competitor: inducing suppliers or customers not to deal with a competitor:[31] charging prices that are below cost so as to exclude rivals: bundling goods or services and buying up a scarce input required by a competitor and "margin squeeze").[32]

The hurdle for proving abuse of dominance cases are significant as it requires extensive legal and economic analysis. This is evident in the small number of South African cases where abuse of dominance have been found to have occurred and the extensive evidence that has been required for these findings.[33] Firstly, proving an allegation of an abuse of a dominant position requires proof that the firm in question is dominant as contemplated in section 7 of the Act, as alluded to above. Notably section 7 uses both market share and market power to define dominance. In particular market power is the ability of a firm to behave in a manner that does not

27 Such a firm is *per se* dominant.
28 Section 7 of the Act.
29 *Competition Commission v South African Airways (Pty) Limited 18/CR/Mar01* par 87.
30 Section 8 of the Act.
31 *South African Raisins (Pty) Ltd v SAD Holdings Ltd 04/IR/Oct/1999* 9 par 3.
32 Section 8(d)(vii) of the Competition Amendment Act, 2018.
33 *Harmony Gold (Pty) Ltd v Mittal Steel South Africa 13/CR/Feb04 37* par 110*; Competition Commission v South African Airways (Pty) Limited 18/CR/Mar01* 11 para 44 and 46, 19 and 20 par 83; *National Association of Pharmaceutical Wholesalers v Glaxo Wellcome (Proprietary) Limited 68/IR/Jun00* 30 par 112.

take into account the reactions of its competitors, customers or suppliers, or to control prices without loss of customers.[34] Secondly, there must be evidence that the respondent is abusing its dominance.[35] An investigation into abuse of dominance generally commences with the definition of the relevant product and geographic market to enable a calculation of the allegedly dominant firm's market share, and a subsequent determination of its market power. It is accordingly pivotally and fundamentally important that the market in which any competition law contravention, and specifically abuse of dominance, occurs, is correctly defined given the severe impact on a firm in the event of an investigation by the competition authorities and a subsequent finding of contravention of the Act.[36]

The *Afgri case*[37] was the first South African case to grapple with the "storage and handling" market definition in the commercial grain commodities sector. In this case the product market was defined as the "storing of grain or maize in silo complexes prior to delivery to processors" and the geographic market was defined as regional. According to the Competition Commission (herein after referred to as "the Commission"), the geographic markets for silos were local because farmers generally travelled less than 40km to the nearest silo to store their grain. This was *inter alia* due to high transport costs which limit how far the farmers are willing to travel to deliver their grain before these costs become prohibitive.[38] The definition of the market in this case was accepted as a given by both the parties, as well as the Commission, as other concerns, unrelated to the issue at hand were considered. The Competition Tribunal (hereinafter referred to as "the Tribunal") accepted the view of the merging parties and the Commission that the mergers in these instances should be deemed a "package of products" and not necessarily broken down into the different categories.[39]

The Tribunal in its reasoning in this case was however far more concerned than the Commission about the market. Given the historical and highly regulated "one channel" marketing systems and historical geographical protection of the operational regions of the agricultural co-operatives, the Tribunal was of the view that the consequence of the creation of historical monopolies raised concerns about potential abuses.[40]

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34 The Act defines market power as the power of a firm to control prices, to exclude competition or to behave to an appreciable extent independently of its competitors, customers of suppliers; *Competition Commission v Pioneer Foods (Pty) Ltd 15/CR/Feb07/50/CR/May08 6* para 11 and 12.

35 *The Competition Commission and JT International South Africa (Pty) Ltd v British American Tobacco South Africa (Pty) Ltd 05/CR/Feb05* 38 par 110 89 par 297 (hereinafter *BATS* case).

36 Boshoff *Why define markets in competition cases*? 2.

37 *Afgri Operations Ltd v Natal Agricultural Co-operative Ltd 17/LM/Mar04,* decision of 6 July 2004 (here after *the Afgri case*).

38 The *Afgri case*, 2 para 6.

39 See footnote 37.

40 *BATS* case paras 4, 5 and 6.

Possible acceptable substitutes for silos as the traditional storage facility such as erection of own silos (on farms), were mentioned but not explored in any depth during the trial.[41]

In its judgement, the Tribunal also made reference to different economic analyses,[42] raising fears of oligopoly[43] and abuses in terms of collusion.[44] To allay these fears the merging parties argued that the trading and storage markets are not linked, *inter alia* because grain is traded by negotiable instruments, such as Safex (as discussed in more detail below) and silo certificates[45] and that the silo owners are not the owners of the grains that are being stored.[46]

In a subsequent matter that concerned grain storage, the *Senwes case,*[47] the Tribunal ruled that the grain storage and handling market could roughly be categorised into an "upstream market for grain storage" and a "downstream market for trading" (herein after jointly referred to as "the market"). The Tribunal suggested that "*each silo constituted a local grain storage market for a radius of approximately 60 kilometres surrounding it.*" and that these local markets cumulatively made up the "Senwes area". The reasoning put forward in the Tribunal's judgment was as follows:

" 'The areas surrounding the silo are contiguous as the map of the area shows. For this reason the geographic market that both parties agree comprises the Senwes area is the aggregation of all these areas surrounding the approximately 56 (sic)[48] Senwes silos; this area is mainly located in the Free State province but extends to part of the Northern Cape, Gauteng and the Northwest province.' " [49]

41 *BATS* case, para 2.

42 The *Afgri* Case 8, 9. Two economists that prepared papers for the commission into food prices were quoted namely Prof. van Schalkwyk from the University of the Free State, who dealt with the report entitled *Competition Issues in the South African Agricultural Sector* by the Chair in International Agricultural Marketing & Development, 188 and Neo Chabane: *Markets, efficiency and public policy – an evaluation of recent influences on price in the maize market and government responses,* CSID Research Project University of Witwatersrand, 13, 14.

43 Neuhoff *A practical guide to the South African Competition Act* 38. An oligopoly is a market structure with a small number of firms, none of which can keep the others from having significant influence with either a homogenous product or differentiated product and high barriers to entry. It is characterised by interfirm rivalry. Examples of oligopolies are found in the oil-, railroad and wireless carrier sectors.

44 *The Afgri* Case 9.

45 The JSE general contract specifications, published from time to time, defines a silo certificate (receipt) as a transferable document of title in terms of which the holder thereof may demand delivery to him by the storage operator of grain of a quality and quantity as described on the receipt, subject to payment of the storage operators storage costs as provided for in terms of the receipt 4 par 1.

46 Safex is the Commodity Derivatives Market of the JSE, which was granted a licence to trade commodities by the CME (Chicago Mercantile Exchange which also control the Chicago board of Trade). Refer to footnote 34 for a detailed explanation of Safex.

47 *Competition Commission v Senwes110/CR/Dec06* (judgement delivered on 3 February 2009).

48 Senwes Integrated report 2017 16. Senwes owns 68 silo complexes and 3 delivery points with capacity of 4,8 million tons.

49 The *Senwes* case 16 par 59.

The Senwes case in particular dealt with the concept of "margin squeeze" as an abuse of dominance. Interestingly enough, "margin squeeze" was not a concept found in the Act's wording at that stage and was not pleaded specifically in the Commission's referral.[50] It has until now only found application in South Africa in two reported cases before the courts, namely the *Senwes case* and the *Telkom* case.[51] It has been generally accepted as a form of an exclusionary act to be condemned under section 8(c) of the Act.[52] Recently, the 2018 Competition Amendment Act introduced margin squeeze explicitly as a prohibited practice.[53]

In the *Senwes* case, the Tribunal determined that for a margin squeeze case, the following preconditions must exist:[54]

- The (dominant) supplier of the input concerned is vertically integrated;
- The input in question is essential for downstream competition;
- The vertically integrated dominant firm's prices would render the competing activities of an efficient rival uneconomic; and
- There is no objective justification for the dominant firm's pricing arrangements.

The Tribunal found that the conduct alleged against Senwes was better characterised as a margin squeeze under section 8(c)[55] of the Competition Act than the pleaded alleged contravention of inducement under section 8(d)(i).[56] The Commission did not prove the contravention of the other referred complaints relating to price discrimination under sections 8(d)(i) and 9[57] of the Act.

The focus of this research is however not the introduction of the concept of margin squeeze into South African law, but rather whether Senwes or similar grain silo

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50 Gaudin *Margin squeeze: an above-cost predatory pricing approach* 1. The concept of margin squeeze has evolved in the US and UK antitrust laws and both jurisdictions adopted this as a contravention, albeit with different views of how it should be applied.

51 *The Competition Commission vs Telkom SA Ltd 11/CR/Feb04 (003855.)*

52 Section 8 (c) of the Act provided, before the amendment of the Act, that it is prohibited for a dominant firm to engage in an exclusionary act other that an act listed in paragraph (d) if that act outweighs certain pro-competitive gains.

53 Sections 1(e) and 8(d)(vi) of the Competition Amendment Act 18 of 2018 define margin squeeze as the exploitation by a vertically integrated firm of its position of dominance in an input market to restrict competition in a downstream market.

54 *The Senwes case* as summarised by I Lesofe and N Nontombana, *A Review of abuse of dominance provisions of the Competition Act - is it necessary*? 13 paras 2 and 3.

55 Section 8(c) of the Act provides that it is prohibited for a dominant firm to engage in an exclusionary act, other than an act listed in paragraph (d), if the anti-competitive effect of that act out-weighs its technological, efficiency or other pro-competitive gain.

56 Section 8(d)(i) of the Act stipulates that it is prohibited for a dominant firm to engage in any of the mentioned *exclusionary acts*, unless the *firm* concerned can show technological, efficiency or other pro-competitive gains which outweigh the anti-competitive effect of its act, such exclusionary act to be in this instance requiring or inducing a supplier or customer to not deal with a competitor.

57 Section 9(1)(c)(i) prohibits price discrimination if it involves discriminating between those purchasers in terms of the price charged for the goods or services, unless it falls within the exemptions listed section 9(2) of the Act, which does not find application for purposes of this dissertation.

storage operators are in fact dominant. Thus, the question is whether the market definition attributed in the *Senwes* case was in fact correct.

3. The market

The question of how the concept of "relevant market" in South Africa has been determined up to now for competition analysis purposes may justly be raised. The market in the *Senwes* case in which the alleged conduct occurred was defined as the "physical geographical grain storage market." The Commission only relied on a 2007 report prepared by Vink: *The South African Grain Industry: Key aspects*[58] which placed particular reliance on a report by Bayley: *The market for bulk storage and handling in South Africa: an analysis*[59], a report done 20 years ago which did not recognise alternative storage options, technology, nor the realities in terms of global demand, international price discovery, or the impact of the exchange rate and competition.

Instead Vink portrayed a very negative view of the grain storage market and even described it in his report as "stagnant". The dependency in terms of the physical market on Safex[60] was recognised but not explored at all in terms of global price discovery and both international and local grain demands and supply. Bayley's views in turn mainly originated from the findings by the Kassier Committee.[61] This Committee had been constituted in June 1992 by the then Minister of Agriculture. The mandate of the Kassier Committee was to investigate the marketing of agricultural products in South Africa in the light of the then prevailing Agricultural Marketing Acts enacted respectively in 1937 and 1968.[62]The findings of the Kassier Committee eventually led to substantial amendments and these archaic acts were

58 Vink: department of Agricultural Economics: University of Stellenbosch as per his expert witness report October 2007, 3, 8, 9 10, 12, 18, 27 and 31.

59 See footnote 58. Vink referred to Bayley, 1997 *The market for bulk storage and handling in South Africa: an analysis*.

60 The Equity Derivatives Market, formerly Safex, was established in 1988 to provide a secure and transparent trading market for *inter alia* grain commodities and is the South African platform for trading Futures, Exchange Traded CFDs, Options and other sophisticated Derivatives Instruments in a liquid and transparent environment.https://www.jse.co.za/trade/derivative-market/equity-derivative. Geyser Short and long of futures markets 3: The South African maize harvest trade more than ten times in a marketing year on Safex.

61 Theron Graan en Oliesadebedryf van Suid Afrika, 'n reis deur tyd, Grain SA http://www.grainsa.co.za/about-us/our-history.

62 These acts regulate government intervention in South Africa's commercial agriculture by establishing the single marketing channel of *inter alia* grain commodities to government in the Marketing Act, originally promulgated in 1937, then, consolidated and redrafted, and again promulgated in 1968. This system obliged producers to sell their produce to the co-operatives, which in turn were obliged to sell grain produced to government at a price determined prior to each season.

revoked and replaced by the 1996 Act.[63] The intention of the 1996 Act was to improve *inter alia* market access to all participants in the market, increase the effectiveness of marketing and promote the sustainability of the agricultural sector still within a quasi-regulated environment.[64]

Subsequently, with the 1994 transition to a democracy and the concomitant changes in the political environment, the then "new" Minister of Agriculture, Mr Hanekom, dissolved the marketing boards and schemes effective as from 1 May 1997. This entailed that producers of grain commodities were literally overnight migrated from a controlled grain commodity marketing situation to a totally free market environment.[65] Deregulation meant that prices of grain commodities were determined by import and export parity, national demand and supply, stock levels, and the exchange rate. Price stability was replaced with substantial market volatility as explored more fully in Chapters 2 and 3.[66]

With the aforesaid deregulation, the Agricultural Market Division (hereinafter referred to as "AMD"), as a separate division of Safex, was established as Safex functioned in financial markets since the eighties. Safex therefore also became the trading platform for commodities such as maize, wheat and sunflower, and later soya beans.[67] Price formulation and transparency for grains was done on Safex since 1995. In 2001, Safex formally became part of the JSE and is still known as AMD.[68]

This dissertation argues that the formulation and application of the market definition as defined in the *Senwes* case must be challenged against prevailing legislative and comparable provisions relating to dominance for competition purposes and the realities of both the grain storage and trading markets.

In particular, the Tribunal noted in the *Senwes* case that Senwes' silos were not complete monopolies as there were a number of privately-owned silos within the Senwes area. However, the Tribunal ruled that privately owned silos were only partial substitutes for a Senwes silo as many of these privately-owned silos were not

63 The Marketing of Agricultural Products Act, 47 of 1996.

64 The preamble of Act 47 of 1996; Karaan Report of the committee to review the agricultural marketing environment (to the Minister of Agriculture September 2006) 2. The Marketing of Agricultural Products Act, no 47 of 1996) was promulgated on 1 January 1996, and the National Agricultural Marketing Council established in terms of this Act met for the first time on 7 January 1997. This latter date is important, as the Act stipulated that the statutory powers of the Control Boards established under the Marketing Act of 1968 would lapse one year after the first meeting of the Council. As a result, the agricultural sector faced a rapid and inexorable process of deregulation, a process that was successfully completed within the stipulated time.

65 Theron *Die Graan en Oliesadebedryf van Suid Afrika, 'n reis deur* http://www.grainsa.co.za/about-us/our-history [accessed on 15 May 2019].

66 BFAP Baseline Report: Agricultural Outlook 2018 -2027 32 Figure 22: White maize production, consumption, trade and prices in South Africa 2007 – 2027.

67 See footnote 60 above.

68 Theron *Die Graan en Oliesadebedryf van Suid Afrika, 'n reis deur tyd* http://www.grainsa.co.za/about-us/our-history [accessed on 15 May 2019].

registered with AMD. This meant that these substitutes could not issue silo certificates[69] which are used when physical delivery on ADM of the grain traded is to occur. Similarly, the Tribunal was of the view that silo bags (an alternative storage option) were only imperfect substitutes for traditional silos. This was argued for a variety of reasons, including that grain stored in the bags could not be hedged because silo bags were, at the time of the hearing of the *Senwes* case in 2007 and 2008, not able to be registered on ADM, that silo bags are generally not located along the rail network, and that the quality of grain and oilseed stored in silo bags may be inferior to that stored in silos.[70]

This dissertation seeks to encourage a view that market shares and definitions should in certain instances be rebuttable. As Chabane[71] correctly observes, that the complex interrelationships in the grain storage market should have been be investigated to show that alternatives are available, that local storage operators are exposed to national and international trading conditions, global production and price formation, stock levels, complete dysfunctional rail networks and high levels of international subsided competition. Thus, the main contention of this dissertation is that the definition of the market for purposes of the competition analysis was much too simplistic.

4. Research question

Did the Commission consider all relevant aspects in determining the market definition for purposes of defining dominance in the South African grain storage and handling market in the *Senwes* case?

Thus, which market in relation to the grain industry is relevant to determine market share in terms of section 7 the Competition Act 89 of 1998, as amended and how ought it to have been applied? This research and analyses shall mainly be based on the specific grain commodities, namely maize (white and yellow) and where relevant oilseeds (i.e. soya or sunflower).

The analysis shall furthermore be conducted against the definitions of market share and dominance in the Act, against the background and context provided in the *Afgri* and *Senwes* cases.[72]

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69 The JSE general contract specifications, published from time to time, defines a silo certificate (receipt) as a transferable document of title in terms of which the holder thereof may demand delivery to him by the storage operator of grain of a quality and quantity as described on the receipt, subject to payment of the storage operators storage costs as provided for in terms of the receipt, subject to payment of the storage operators storage costs as provided for in terms of the receipt para 1 4.

70 *The Senwes Case,* 14-15, paras 51 to 54.

71 See footnote 42 above.

72 See footnotes 37 and 47 above.

5. Research objectives

The objectives of this research are therefore:

a) To challenge the current definition of the grain storage market in South Africa as delineated by the Tribunal in the *Senwes* case in order to make provision for a flexible approach in determining market shares and thus dominance in this market;
b) that the definition of the grain storage market should be amended and tempered as it has the inequitable unintended consequences that a firm that is deemed dominant in this market is prejudiced as it would in all probability not be allowed to expand in the local market[73] in order to meet the competition created by major global grain traders and to become a so-called "national champion";
c) to provide research regarding the adequate substitutes and decision-making drivers in electing a storage facility/option;
d) that in market determination, account should be taken of the fact that tariffs for handling and storage are highly sensitive compared to the market price of the grain which is a derivative from the international commodity prices;
e) Contrary to Chabane's opinion, who pursued the concerns raised by the Tribunal, and viewed the silo owners as "market makers", that determines the purchase price of grains, this dissertation aims to also show that silo owners do not determine prices of grain;[74] and
f) that account should further be taken of the fact that in this market, the market fundamentals ensure a situation where a firm cannot just abuse its "so-called" position of dominance to the detriment of competition or the customer. The market dynamics within the market coupled with those in the trading market, keep these firms in check.

6. Research methodology

This dissertation will, against the backdrop of the current case law and the prevailing application thereof regarding the actual factual physical market realities, consider the definition of dominance in the Act and the application thereof. An analysis on a practical level is undertaken as the fundamental elements and market realities allow producers of commodities to elect from different available alternative storage solutions as adequate substitutes dependent on each one's individual situation. This is to be supported by an empirical survey conducted amongst commercial producers

73 S*enwes and MGK Investment Holdings (Pty) Limited* Merger Notice filed at the Commission dated 21 April 2011 (concerns raised by the Commission on 15 August 2011).
74 See footnote 42.

explaining the reasons for electing a specific storage option and their views regarding alternative storage solutions.

The research will also describe the price formulation of specifically maize that is done internationally, the extent of increased global competition in the market, comparative analysis based on actual developments in Australia and North America in terms of which these countries have realised the imperative to ensure protection of their local grain markets and agricultural sectors, by using *inter alia* their anti-trust authorities.[75] The USA and UK also provided limited protection for their agricultural co-operatives in allowing exemptions in their anti-trust legislation and these will also be explored.[76]

7. Delimitation

This dissertation focuses on the definition of the market and does not deal with the concept of dominance nor the provisions regarding abuse of dominance as stipulated in the Act.[77]

8. Chapter lay-out

In addition to this first chapter which provides the roadmap to the study, this dissertation comprises of 3 further chapters: Chapter Two will deal with alternative storage options as substitutes. It aims to show that cheaper substitutes with various other advantages are available as alternative storage solutions to commercial producers. These have resulted in the fragmentation of the market.

Chapter Three will address global grain trading and the impact of competition by international grain traders. It identifies and explore some of the major trends that are influencing both international and domestic aspects of grain markets around the

75 Any foreign acquisition of an Australian firm must be submitted for review to the Foreign Investment Review Board (FIRB) when the value of the target firm is greater the thresholds set by the FIRB. The FIRB will then assess the investment based on several criteria (one of which is the national interest test) and make a recommendation to the National Treasurer who will ultimately make the final decision. https://firb.gov.au/resources/guidance/gn18/[accessed 21 August 2019].

75 Archer Daniels Midland takeover of the Australian grain business GrainCorp in June 2013 Anon 2013 Australia blocks ADM takeover of GrainCorp https://www.ft.com/content/39868472-587f-11e3-9da6-00144feabdc0 [accessed 30 August 2019].

76 Reich, "The Agricultural Exemption in Antitrust Law: A Comparative Look at the Political Economy of Market Regulation (November 2006)". Bar Ilan Univ. Pub Law Working Paper No. 06-7; Texas International Law Journal, Vol. 42, No. 843, 2007. Available at SSRN: https://ssrn.com/abstract=944389 [accessed on 18 May 2019].
Competition Act of 1998 ("the UK Competition Act"), Enterprise Act of 2002(UK); Capper–Volstead Act (P.L. 67-146); The Co-operative Marketing Associations Act (7 U.S.C. 291, 292) was adopted by the United States Congress on February 18, 1922. It gave "associations" of persons producing agricultural products certain exemptions from antitrust laws.

77 Sections 7 to 9 of the Act.

world. These trends are: (a) a deepening globalisation as international traders extend activities into the market (b) the increasing consolidation of the industry; (c) the increasing integration by the major grain trading firms across the entire supply chain and (d) "financialization" within food systems.[78]

This dissertation will to also consider the manner in which these global trends have impacted on the regulatory views of the market and despite general recognition of the benefits associated with foreign investment, whether concern has been expressed over the extent of control of key agricultural assets by foreign firms in the South African market. Examples in similar comparative markets have resulted in the blocking of agricultural acquisitions by foreign-owned companies in for example Australia and this aspect will be explored further.

Chapter Four is the final chapter and will contain the conclusions and recommendations of the study. It is submitted that the simplistic approach by the Commission in interpreting, applying and ultimately defining the grain storage market in the *Afgri* and *Senwes* cases has to reconsidered and serious consideration should be given to changing the way the market share is determined in the said market in order to allow for the fostering of "national champions" in the South African agricultural grain storage market in an attempt to ensure local and affordable food security.

78 Clapp *Financialization, distance and global food politics* 797 explain that "financialization" refers to the increasing importance of financial markets, financial motives and financial institutions in the operation of the economy and its governing structures both at domestic and global levels.

CHAPTER 2 ALTERNATIVE STORAGE OPTIONS AS SUBSTITUTES

1. Introduction

As highlighted in Chapter 1, the Commission in the *Senwes*-case[1], did not pursue any investigation into alternatives or substitutes for traditional storage facilities, being the concrete silos. It also accepted that silos are essential facilities, without appropriately considering the Commission's assumptions.[2] The product market was accepted to be the market for the storage of grain, on a collective basis and not per separate commodity.[3] The geographic market was categorised in the upstream market being the local physical grain storage market and the downstream national market for the trading of grain commodities. [4]

In this Chapter, the assumptions in the *Senwes* case about alternative storage options are to be critically explored and questioned.

2. Essential facility

The Competition Act 89 of 1998 stipulates that it is prohibited for a dominant firm to refuse access to an essential facility when it is economically feasible to do so.[5] In the *Senwes*-case it was accepted that storage in grain silos is an essential input to traders in the trading market and that it thus also qualifies as an essential facility.[6]

The reasons for the prohibition on refusal to grant access to an essential facility as provided for in section 8(b) of the Act, could be explained as follows: certain firms are vertically integrated, dominant in the upstream market, but not in the downstream market. Therefore they are operating in both the supply of inputs (the upstream market) as well as the supply of for example, services, closer to the end-product, that use the particular input (the downstream market).[7] Where

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1 *Senwes Case* par 118 p 30 par 146 37.

2 Par 2 of Chapter 2.

3 Theron *Economic analysis of relevant markets and competitive effects in complaint by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* par 2, 20 referring to the merger between Cargill-BCA and ABF-Allied Grain (regulation no 139/2004 of the Commission of the European Communities), it was stated that: "...the following are the relevant markets: agricultural merchanting as a single service market, not further segmented by product type, or, alternatively and more in line with Commission decisional practice, the merchanting for six distinct product types: the sale of agricultural seed, the sale of fertilisers, the sale of agrochemicals ('crop protection'), the sale of animal feed, the purchase of grain (wheat, barley and oats) and pulses (peas and beans), and the purchase of rape seeds."

4 *Senwes* case para 47 to 49, 13.

5 Section 8(b) of the Act.

6 *Senwes* case 30 par 118 37 par 146.

7 Sutherland and Kemp *Competition Law*, par 7.10.1 7-50(8) and 7-50(9).

such a vertically integrated firm, like Senwes, refuses to deal at one level or making it more difficult to deal, say by differentiating in tariffs, the concern is that competition in that market will be restricted.

The evolution of the prohibition against refusal to grant access can be traced back to concerns about refusing access to an essential facility which eventually led to the development of rules regarding such access in the US and EU. The US Courts, however, have not accepted the concept of "essential facilities".[8]

For purposes of this dissertation, the focus is on the South African legislation. Concerns regarding refusal of access to an essential facility are considered against the actual nature of the input. These may include infrastructures such as ports and railways, resources, goods as well as services.[9] Notably the Act deals in section 8(b) only with infrastructure and resources and not with goods and services. The two last mentioned inputs are covered in sections 8(d)(ii) and section 8(c).[10] These two subsections are also distinguished by their *onus*, potential defences and consequences in terms of penalties.[11]

The question is how did the Commission come to the conclusion that the traditional silo is to be classified as both an essential input[12] to traders as well as an essential facility?[13] Theron testified as expert witness on behalf of the Commission that storage in grain silos (i.e. traditional concrete silo) is an essential input to traders in the grain trading market.[14] At the beginning of and throughout the trial, Senwes objected to the Commission's attempt to expand the complaint referral beyond the contraventions pleaded.[15] These included the assumptions on storage and silos being either an essential input or facility as well as the margin squeeze allegations alluded to in Chapter One. On appeal by Senwes to the Supreme Court of Appeal, against the ruling of the Competition Appeal Court, the full bench of the Supreme Court accepted these objections and upheld Senwes' appeal.[16]

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8 *Harmonizing Essential Facilities* June 2009 Antitrust Law Journal 76(3) 766.
9 Sutherland and Kemp *Competition Law* 7-50(9).
10 Competition Amendment Act, 18 of 2018.
11 Section 59 section (a) and (c) of the Act.
12 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* 28, 29 par 3 38.
13 *Senwes* case paras 118 146 30, 37.
14 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")*, which referred to access to an essential facility.
15 A schedule of objections was handed in at the Tribunal at the commencing of the proceedings on 12 November 2007 as per the transcript of the proceedings 9 line 20.
16 *Senwes v. Competition Commission (*118/2010) [2011] ZASCA 99 (1 June 2011) 13 par 31, 14 par 34, 22 par 57.

As explained above, in its finding the Tribunal accepted the Commission's expert witness' statement that described silos as an essential facility relying on the work of Bayley (1997) and Vink (2007) as mentioned in Chapter One. These works indicated that the Government of the time subsidised the building of silos through relatively cheap Land Bank funding[17] and it appears that, given this historical fact alone, the silos should be classified as an essential input for traders.[18] It is however submitted that the evidence is this regard ought to be reconsidered as the actual facts revealed that the Government did not subsidise the building of silos, but only provided a guarantee to the Land Bank in the event of default. The Land Bank never needed to exercise this guarantee and therefore no taxpayers' money contributed to the building cost of the silos.[19] The relevant co-operatives repaid these loans in full.[20]

The expert witness also relied on the *Uhambo* merger[21] which was prohibited by the Tribunal in 2004, on the basis of concerns regarding foreclosure of rivals and quoted: "*Alternatively Uhambo could utilise the credible threat of foreclosure to raise the price of its inland product or maintain the price at supra-competitive levels. This would raise the costs of the other oil companies relative to Uhambo thus giving the latter a downstream competitive advantage that will have been acquired through an exercise of market power"*.

The expert witness compared the position of Uhambo to that of Senwes. If Senwes' customers in the storage market were threatened with foreclosure by Senwes, they might be willing to pay higher prices as they had no viable alternatives. The raising of rivals' costs in the downstream market was according to Theron a competitive advantage created by Senwes through the exercise of

17 Wentzel 1997 www. Agbizgrain.co.za [last accessed 12 October 2019].

18 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")*.

19 Confirmation of this is evident from a letter from the Department of Agriculture (12/11/1993) which reads as follows: "... the Minister indicated that he cannot commit the Government to assistance ... regarding the utilisation of Government funds to defray the fixed costs attached to the underutilisation of grain silo capacity. ... It should further be noted in this regard that the co-operatives must take into account the economic viability of the silos concerned, as a normal business transaction at the erection thereof ... The guarantee can only become effective when a co-operative becomes insolvent."

20 Ibid.

21 *Sasol Limited Engen Limited and Petronas International Corporation and Sasol Oil (Pty) Ltd and Engen* 101/LM/Dec04 160 par 488. The Tribunal was concerned that Uhambo will be able to act anti-competitively by gaining markets share from its competitors by foreclosure; increasing the prices of fuel to its competitors in the downstream market and allowing Uhambo to act as a shield in order to protect Sasol's anti-competitive wholesale pricing against future competition.

its market power.[22]

Notably, the Act defines an essential facility as infrastructure or resource that cannot reasonably be duplicated and without access thereto a competitor cannot provide goods or services to its customers.[23] In South Africa there are not many cases that have dealt with essential facilities and the classification thereof. The case law[24] at the time of the Senwes case dealt mainly with *access* to essential facilities. In the *Telkom* case[25] the essential facilities were Diginet access to lined and copper links and no precedent existed for access to or the refusal of access to a facility such as a concrete silo. In discussing the features of an essential facility in the *Dorbyl [26]* case, the Tribunal referred to the following statement by Motta:[27]

" 'Any input which is deemed necessary for all industry participants to operate in a given industry and which is not easily duplicated might be seen as an essential facility . . . There are many examples that might satisfy this very loose definition of essential inputs. In the airline industry, slots at an airport; for maritime transportations, a port's installations.' "

Essential facilities are therefore generally infrastructure, and not for instance intellectual property.[28] The Competition Appeal Court has further cautioned that section 8(b) should not be used as "some more general *species* of refusal to deal".[29] According to the judgement in the *Glaxo Wellcome*-case,[30] the elements of the definition of an essential facility should be evaluated against the Constitution and specifically against the property clause in section 25 (protection of ownership) *vis-a-vis* the increase in and protection of competition, especially in markets dominated by state sponsored entities or monopolies such as Telkom.[31]

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22 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* 31, 32.

23 Section 1 of the Act.

24 *Competition Commission v Telkom* 11/CR/Feb04.

25 *Competition Commission v Telkom* 11/CR/Feb04.

26 *DCD Dorbyl (Pty) Ltd / Globe Engineering Works (Pty) Ltd* [2009] 1 CPLR 122 (CT) at paragraph 74.

27 Motta *Competition Policy – Theory and Practice* 66.

28 *Glaxo Wellcome (Pty) Ltd v National Association of Pharmaceutical Wholesaler*s 12/CAC/Feb02

29 *Glaxo Wellcome (Pty) Ltd v National Association of Pharmaceutical Wholesalers* 12/CAC/Feb02 par 54.

30 *Glaxo Wellcome* Case par 54.

31 *Telkom Case* par 87; Sutherland and Kemp *Competition Law* par 7.18 explains that section 25(1) of the Constitution of the RSA 108 of 1996 provides that no one may be deprived of property except in terms of law of general application, and no law may permit arbitrary

Infrastructure, according to Sutherland and Kemp, includes ports,[32]airports, electricity grids, telecommunications networks, railways and pipelines.[33] Furthermore this infrastructure should be of such a nature that it cannot be duplicated and without access thereto the competitor cannot do business with its customer. It should therefore be impossible or materially uneconomic, for the competitor to supply the service or product in respect of which the respondent and the complainant compete, at a profitable level without access to the respondent's facility. Also, harm to one rival *per se* is not adequate, it should be applicable to all competitors or potential competitors and therefore harm to an individual competitor *per se* should not be enough.[34]

It is quite interesting, however that the classification of traditional silos as "essential" on one witness' view that the (alleged) historical subsided funding of the silos and the threat of potential abuse by concentrated near monopolistic ex co-operatives,[35] convinced the Tribunal that they are indeed essential facilities. Such an unconditional acceptance that the Senwes silos were essential facilities based on the simplistic and incorrect explanation and opinion of the expert witness is questionable and it is submitted that this view cannot be upheld and allowed to cloud the view of the actual role of these facilities in the grain storage market.

3. Duplication of storage facilities and substitutes

For purposes of this research and in order to determine the correctness of the views held by the Tribunal in the *Senwes* case, the questions of duplication of the facilities, alternative options and continuance of the competitor's business should also be considered. Would it be possible for another grain trader, as a customer of storage, in the downstream market to conduct its business without access to the traditional concrete silo?

It is to be noted that in the *Senwes* case, access to storage in the silos were not expressly refused but that the tariff structures for grain storage for traders (in

deprivation of property. An order by the Tribunal that a dominant firm supply goods to another party is a deprivation of property.

32 *Siyakhuphuka Investment Holdings (Pty) Ltd v Transnet* SOC 158/CAC/Nov17.

33 Sutherland and Kemp *Competition Law* 7-53.

34 Sutherland and Kemp *Competition Law* 7-56 par 7.10.5.

35 *Afgri* case 5 par 2.

the downstream market) and producers of grain (in the upstream market) were at the time of the complaint referral in 2005, differentiated. Producers that traditionally store grain for longer periods before making a decision to sell their grain qualified for a capped tariff, whereby storage after a period of 100 days period became free, whilst traders could only store grain on a daily tariff, therefore after the 100 days period they did not qualify for the capped tariff.[36]

Sutherland and Kemp explain that in South Africa, refusal firstly needs to mean that competitors do not want to provide the service to their customers that are also competitors.[37]It is highlighted that is not sufficient merely to show that a respondent has an advantage over the competition by having access to or controlling a preferred facility like a silo, whilst there are alternative storage options available. It is also not enough to allege that competitors suffer some sort of inconvenience or loss as consequences of the refusal.[38]

In the aforesaid context, the Commission's expert witness based his inferences on a competitor's ability to source grain in the Senwes area and on the trend that the ability to source was declining. Senwes' expert witness however testified that the number of traders in the Senwes area had declined[39] from 135 in 2002, to 105 in 2005, but the volume that they had traded in the area had increased and thus that volumes of some traders may have been lost to others.[40] The Tribunal did not accept the version that was offered on behalf of Senwes and rather relied on the opinion of the Commission's witness who suggested that the traders were not able to source grain and store it for longer in the "post cap-period as it became too expensive whilst Senwes was able to do so as Senwes' market share at the time increased from 44 to 75%."[41]

It should however be pointed out that the actual reasons, which are generally related to a trader's ability to trade and carry huge volumes of grain (either physically or by means of Safex instruments) for longer periods which can be

36 *Senwes Case* 8 par 30.
37 Sutherland and Kemp *Competition Law* 7-54.
38 Sutherland and Kemp *Competition Law* 7-55.
39 *Senwes Case* 63 par 240.
40 Genesis report witness statement 94 -95.
41 *Senwes Case* 34, 62 para 129, 240 and 241. Theron explained that the data provided by Senwes was used to re-calculate the increase in Senwes' market share and the decrease in the grain marketed by rival traders. She also testified that although "*the traders' declines might not be solid enough to show a pattern, because the volumes they trade are so low, the increase in Senwes' volumes indicate a trend that can be relied on*." Senwes' expert witness, James Hodge, countered the testimony by testifying that post cap volumes traded was only 9% of the total crop (2-3% of the national crop).

subsidised through the spread of the Safex market,[42] the ability to pay premiums for grain at different locations, alternative strategies by traders and competition by multinational grain trading companies such as Louis Dreyfus[43], were not seriously considered.[44] Spread trading, referred to above, involves the simultaneous purchase of one commodity and sale of the same or a similar commodity.[45] Spread positions tend to be less risky than outright long (buy) or short (sell) commodity positions. For example, a trader might buy December maize and sell December wheat. When traders sell a commodity, they take the view that it will decrease in price (in future), so they sell it (on Safex), wait for the price to drop, and buy the same commodity and tonnages back (on Safex) for less to close out the position and make a profit. A conservative trader will not trade the spread unless the profit will cover most or all of the carry cost (interest and storage) as well as the cost of the derivative instrument (called a future or an option).[46] According to Geyser the so-called "golden rule" is not to carry stock unless the market is paying you to do so.[47]

The Commission then proceeded to advance the "margin squeeze" allegations against Senwes which, as alluded to in Chapter One, is not relevant for purposes of this study and will not be discussed further.[48] As the margin squeeze complaint was not referred in particular, the witnesses did not present any comparative analysis of the trading market and realisation of net margins by the continued

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42 *Senwes* Case 57 par 221; the witness for Dreyfus testified that traders should have the ability to hold grain over time and "'*a trader stands to make more money and has more opportunity to generate profits if the period between when he purchases and sells is longer*.'"

43 See par 3.4 below.

44 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* 33.
Senwes also led evidence that that traders have engaged in other strategies in recent years to secure grain from producers. Specifically, Vrystaat Mielies (also known as Free State Maize or FSM), Brisen Commodities, RMB (the Bank) and Louis Dreyfus Africa all reported their use of alternative procurement strategies in the grain trading business. Some of the strategies are the provision of finance to producers and the use of silo bags.

45 Kowalski *Trading Commodity Spread* https://www.thebalance.com/trading-commodity-spreads-809350 [accessed on 22 May 2019].

46 The JSE provide a platform for agricultural derivatives trading as well as a platform for price discovery and efficient price risk management for the grains market in South and Southern Africa. It is a formal exchange that connects buyers and sellers which enables transparent price discovery. Futures contracts have a future expiry date and both parties have to honour the position at the traded price on that date. Option contracts give buyers the opportunity to secure a floor price (Put Option) or a ceiling price (Call Option) at the cost of an agreed premium. Transactions concluded are assured through the Derivatives clearing structure. Grain Futures and Options includes white and yellow maize, wheat, soya beans and sorghum. https://www.jse.co.za/trade/derivative-market/commodity-derivatives/agricultural-derivatives [last accessed on 12 September 2019].

47 Geyser S*hort and long of futures market* chapter 4 74.

48 *Senwes Case* 36 to 38. See Chapter 1 5 for the concept of margin squeeze.

delivery of grain by traders to the off takers[49] of grain as the customers of agricultural companies and traders.[50] A comparative analysis of gross profit margins between traders is not possible without a detailed analysis of the quality and grade of grain procured, premiums paid, time of the season, as well as brokerage levied per trader for each season over a longer period of time. The season and the directions of the spreads (that allows physical grain to be carried into the future) are critical to hedge against the risks of price movements and to cover the costs to carry the grain, as explained above.[51]

In addition to the above, little consideration was afforded to the availability of substitutes for storage of grain. This question was very briefly considered and in its judgement the Tribunal recognised that there also exist privately owned silos and silo bags, but accepted the traders' evidence that neither of these alternatives were adequate substitutes because grain in these storage facilities were not capable of being traded on Safex prior to and during the periods of the Senwes hearing.[52] Notably at the time of the Senwes hearing, Safex did not allow alternative storage facilities to be registered as Safex sites, and subsequently traders could not utilize the derivative instruments to spread or hedge the grain stored in these alternative facilities.[53] The Tribunal remarked that "*In order to be able to issue the certificate, the silo must be registered with Safex, and because most of the private silos in the Senwes area are not, they constitute an imperfect substitute for a Senwes silo*".[54]

The competitors approached by the Commission as witnesses, also testified that silo bags[55] were limiting in terms of physical access as they may not be close to railway sidings and that they may be prone to damage by the elements and rodents.[56] Vink, relying on Bayley, further testified that storage tariffs should reflect supply and demand at particular locations and at a particular time of the season. He remarked that "*Thus one would expect a higher tariff immediately after harvest when the demand for storage is greatest, and for this to decline as the season extends, regardless of who the customer is seeking storage, be it trader or farmer. One would also expect silos which are in low demand areas to lower tariffs so as to attract customers at the margin to travel further than their*

49 Off takers are the millers and processors of grain.
50 *Senwes Case* 10, 11 paras 36 37.
51 Geyser *The short and long of the Futures marke*t 76 and onwards par 4.11.
52 *Senwes Case* 14 paras 50 -51.
53 *Senwes Case* 14 paras -52
54 *Senwes Case* 14 par 51. There is one private silo that is registered with Safex in the Senwes area and that is owned by Allem Brothers. See witness statement of Shane Bird, witness statement file page 204 paragraph 4. This is confirmed by CTH who stated that there are only 2 listed private silos one being Allem Brothers and the other a silo in North West.
55 See par 4 (c) below.
56 *Senwes Case* 15 par 54.

nearest silo so that storage costs compensate for the transport disadvantage as to compensate for the lack either lack of railway facilities or the higher cost of road transport." [57] Vink therefore concluded that the storage market was not competitive.[58]

4. Alternative storage options

This dissertation aims to show that the assumptions made in the *Senwes* case that alternative storage options are not adequate substitutes can be refuted and that the market delineation in the Senwes case is not applicable to current circumstances. Despite the acceptance by the Tribunal of the Commission's witnesses' (the expert and the traders) views, alternative storage options do exist and are readily available, they are being used and different reasons exists for a producer or trader to elect a specific storage option. Subsequently, the way the geographical market was delineated and applied in the *Senwes*-case was not correct and, in any event, it may no longer be appropriate given that 14 years have elapsed since the referral in that matter.

The reality is that there are indeed several different types of storage facilities available to persons who wish to store grain such as concrete silos, steel/zinc silos, bunkers and silo bags. The choice of storage facility will depend on the marketing strategy of the producer, trader of processors (collectively the "storer"), the reasons and application of grain to be stored, tax benefits and the relative construction cost of the type of storage facility in supporting the storer's own unique business model or his marketing strategy.[59]

All the aforesaid, and particularly, the cost of erecting these storage facilities is the main determinant as to whether these other storage options can be regarded as viable alternatives. A comparison of construction cost between the different storage facilities prepared by quantity surveyors that are often involved the erection of these facilities, provides an indication of the costs differences between erection of a traditional concrete silo and the alternatives available.[60] The costs of erecting these facilities are expressed in Rand per ton based on an intake capacity of 100 tons per hour:

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57 *Senwes Case* 15 par 56.

58 *Senwes Case* 15 par 56.

59 Geyser *Short and Long of Futures Markets* 163 par 8.3.7. Edwards *Grain Storage Alternatives: An economic comparison* 2018.

60 Report prepared by HOQS (Pty) Limited *Cost Comparison between different types of grain storage facilities* October 2019 1. The report assumes normal ground conditions and exclude additional services such as aeration as to make the comparison possible. The larger the storage capacity for a concrete silo the cheaper it becomes to construct based on rand per ton. The calculations were done Value Added Tax excluded.

a) *Concrete silos*. A concrete silo complex is a permanent storage facility made up of a collection of individual reinforced steel cylindrical concrete structures (called silo bins).[61] Silo bins differ in size and height depending on the anticipated capacity required. Additionally, silo bins are equipped with aeration equipment, fumigation capabilities and loading facilities such as hoppers.[62] The calculations estimate that the construction cost of a concrete silo with a capacity of up to 30 000 tons is R 2 197 per ton.[63]

b) *Steel/zinc silos*. Steel/zinc silos are generally available in two types, namely corrugated steel or smooth walled.[64] Steel/zinc silos are fully enclosed structures installed with aeration and, fumigation equipment as well as hoppers for in and out loading. The steel/zinc silos can differ by size and capacity depending on the needs of the storer and can be set up quicker compared to concrete silos.[65] It is estimated that the cost for steel/zinc silos with a capacity of up to 10 000 tons is R 1 424 per ton or for a 30 000 ton capacity facility it amounts to R 1 660 per ton.[66]

c) *Silo bags*. Silo bags are semi-permanent storage facilities generally made of a three-layer film (white/black) with UV protection. Silo bags are available in a range of sizes including lengths of 60 metres, 75 metres and 100 metres.[67] Additional investments in mechanical machines called "Baggers" and "Extractors" are required to store and remove grain from silo bags.[68] A potential disadvantage is that once grain is bagged, it is not possible to aerate or fumigate these storage facilities.[69] However, silo bags have the advantage of being considerably cheaper and can be erected and expanded far quicker than the alternative forms of storage. It is estimated that the total cost (including silo bag, construction costs and machinery)

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61 Sika. Reinforced concrete silos. https://www.sika.com/dms/getdocument/brochure_reinforced_concrete_silos.pdf [accessed on 15 June 2019].

62 Most South African concrete silo complexes offer services such as drying, moisture management and handling of grain at the silos; Hoppers are containers in which grain is out loaded that tapers downward with an opening at the bottom from which grain can be discharged; Senwes Grainlink Brochure 2019 http://www.senwes.co.za/en-za/products-services/grain-handling-grain-marketing [accessed 13 August 2019]; Afgri Grain Management https://www.afgri.co.za/afgri-grain-management/ [accessed on 15 June 2019].

63 See footnote 60.

64 http://www.sarcon.co.za/index.html. [accessed on 15 June 2019].

65 Food and Agricultural Organisation of the United Nations *Factors influencing the choice of bulk store* 1.

64 Van der Vyver *On farm storage - the road ahead* 34; see footnote 60 above.

67 For example, see Silobag Systems corporate website http://www.silobag.co.za/index92b5.html?page=products [accessed on 15 May 2019].

68 http://www.silobag.co.za [accessed on 15 May 2019].

69 Charles *Bags or Bins what is the difference?*

of a silo bag complex can range between R373 to R537 per ton dependent on its size[70] (or R6,3 million capital investment with costs including operating costs at R73,00 per ton).[71]

d) *Bunkers*.[72] Grain bunkers are constructed by using different materials such as corrugated iron, wood, cement, or steel for the angled walls while the floor is generally covered with a plastic ground sheet to prevent ground moisture from contaminating the stored grain.[73] Grain is then stored within this bunker, which is generally also covered with sheeting as to prevent *inter alia* wind erosion.[74] In addition to the construction of the actual facility, additional investments are required for loading (e.g. conveyors belts etc.)[75] and drying equipment. In an article in June 2019, Van der Vyver estimated that the cost for a 20 000 ton facility is R1 000 per ton. The larger the capacity the cheaper the erection cost become, and it is estimated that a 30 000-ton bunker facility's construction costs amount to R426 per ton.[76]

e) *Other types of storage facilities*. Other types of storage facilities include grain dams and sheds (or modified structures). The cost of these may vary substantially and is mainly used to store grain for shorter periods.[77]

Historically, only concrete silos with a railway siding were Safex registered which enabled them to provide and issue Safex silo certificates for grain stored and that could be available for delivery to a buyer as a silo certificate.[78] Silo certificates

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70 According to Senwes, silo bags can store from 183 to 195 tons each and cost between R 4 500 and R 6 000 per bag (this is influenced by the supplier and exchange rate movements). The bag cost per ton can therefore range between R 23 per ton (4500/195) and R 33 per ton (6000/183). Additional costs such as the preparation of the ground, weighbridge, grading office, hoppers and equipment to handle the grain must be incurred for grain and oilseeds to be delivered and stored. These costs can range from R 350 per ton to R 500 per ton dependant on the extent of the machinery and equipment used as to maintain a 100 tonne per hour intake capability.

71 Van der Vyver *On farm storage - the road ahead* 36; refer to footnote 55 above.

72 Food Technology Information Centre Navarro Donahaye Kashanch *Bunker storage of cereal grains*. Moisture contamination increases the humidity in the storage facility that can result in the deterioration of the stored grain; Food and Agricultural Organisation of the United Nations *Maize in human nutrition*.

73 Charles *Bags or Bins what is the difference?* Presentation of the University of Tennessee [undated]

74 Ibid.

75 Grain conveyor belts is the most effective and quickest manner to move bulk grain and breakages of for instance kernels are much less.

76 Van der Vyver *On farm storage - the road ahead* 36 par 3; footnote 55 above.

77 Van der Vyver *On farm storage - the road ahead* 36 par 3.

78 Johannesburg Stock Exchange *Agricultural Derivatives Contract Specifications, Annexure D* July 2013 defines a Silo certificate as transferable document of title in terms of which the holder thereof may demand delivery to him by the storage operator of grain of a quality and quantity as described on the receipt, subject to payment of the storage operators

are transferable and have been accepted as some form of a negotiable instrument.[79]

In 2013 the JSE amended the requirements to have a railway siding. The Safex rules thereby opened Safex registration up to all grain storage facilities that satisfy the following three conditions, namely: that the storage facility must have a storage capacity of 10 000 tons, be functional in all weather conditions and be able to out-load 500 tons of grain per day.[80]

5. The investment in storage options

As explained above, an investment in own storage facilities will only be undertaken if it is viable to do so and it supports the business model and strategy of a market participant, albeit being a commercial producer of grain, a trader or a processor. In South Africa the grain storage includes the traditional commercial storage of former co-operatives, on-farm storage, trader-owned storage and processor-owned storage. Each of these role-players in the market occupy different positions in the supply chain and consequently different factors will influence their decision to invest in storage facilities and the storage business model they adopt.[81]

These storage investment decisions and business models for each role-player are as follows:

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storage costs as provided for in terms of the receipt. Safex silo receipts must be issued by an approved storage operator in either electronic or paper form and on the terms set out in these contract specifications;https://www.jse.co.za/trade/derivative-market/commodity-derivatives/agricultural-derivatives [accessed 5 August 2019]

79 *Senwes v. Competition Commission (*118/2010) [2011] ZASCA 99 (1 June 2011) 7 par 14 and 15; Du Toit *The legal nature of silo receipts used in the futures market and bills of lading;* Delivery onto Safex takes place by delivering silo certificates for the grain to the actual exchange.

80 Johannesburg Stock Exchange *Agricultural Derivatives Contract Specifications, Annexure D* July 2013. Minimum load-out rate. The silo shall have a minimum load-out rate of 500 tons of the commodity on a maize equivalent basis per 9 (nine) hour working day, under all weather conditions; Afgri Operations reported in 2014 that they have erected two new stand-alone bunkers at Sandspruit and Bergville. The area around Bergville traditionally had a shortage of storage capacity as a result of both summer grain and wheat cultivated in the area.
All AFGRI bunkers are SAFEX registered and therefore attract the same benefit as silos. It is also explained in the announcement that Bunkers are much cheaper to construct, and the main advantage is that a bunker can be constructed in the correct production location. See https://www.afgri.co.za/afgri-builds-5-new-bunkers-assisting-farmers-with-storage-solutions/[accessed on 13 October 2019].

81 Food and Agricultural Organisation of the United Nations Proctor *Grain storage techniques*.

5.1 Traditional commercial storage

The traditional commercial storage is predominantly provided by agricultural companies in concrete silo complexes. The use of concrete silos reflects a legacy from the regulated era. Most concrete silos were constructed between 1950 and 1980 under encouragement from the then Marketing Boards to ensure enough storage capacity as explained in Chapter one.[82] However, there has been limited investment in new commercial storage facilities following deregulation, and none in large concrete silo complexes. Some of the more recent investments made in 2010 include Senwes' investment in bunkers in its own area[83], Senwes' main competitor in the north east of the country, Afgri Operations' investment in a network of 14 bunkers and 11 alternative storage facilities at different locations across the country[84] and Suidwes' (Senwes' neighbouring rival) which has also invested in three bunker storage sites in its area.[85]

Grain storage is a highly competitive business with each storage operator determining its own rates. Comparisons are difficult as different tailor-made solutions are often available to the customers, including on-farm loading and special packages to attract grain to underutilised silos.[86] Storage owners offer storage and other value adding services to third parties to meet their individual storage needs. Traditional storage facilities typically have a fee structure that includes a once off handling fee to cover the costs associated with in and out loading of grain at the storage facility, daily tariffs for short term storage and annual tariffs for long term storage.[87] For instance, Senwes offers the following storage options for the 2019/2020 season (1 April 2019 to 31 March 2020):

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82 Ministry of Agriculture and Land Affairs 1998 *Agricultural policy in South Africa* http://www.nda.agric.za/docs/Policy/policy98.htm [accessed on 2 September 2019].

83 Senwes corporate website. https://www.senwes.co.za/en-za/products-services/grainlink/industry/silos-and-regions [accessed on 12 October 2019]; par 4 (d) above explains the concept of a bunker.

84 Afgri website *AFGRI builds 5 new bunkers, assisting farmers with storage solutions* 2014 https://www.afgri.co.za/afgri-builds-5-new-bunkers-assisting-farmers-with-storage-solutions [last accessed on 16 October 2019].

85 Suidwes Corporate Website http://suidwes.co.za/ENG/suidwes_handel/suidwes_graan/[accessed on 19 September 2019].

86 Van der Vyver *On farm Storage – the road ahead* 36 par 4.

87 Senwes offers a third storage option called the "deferred tariff scheme". The deferred tariff scheme offers the farmer/trader the opportunity to choose either daily or annual storage tariffs before 31 December each year to suit their storage needs. Clients will only be invoiced after 31 December. If the grain is sold before this date, the relevant storage option taken by the customer will be estimated and immediately payable before the grain is out loaded. See Senwes. Storage and handling tariffs for maize and sorghum 2019/2020 5 http://www.senwes.co.za/en-za/products-services/grain-handling-grain-marketing [accessed on 11 October 2019]. The storage tariffs of traditional silo operators are published prior to every season at the storage sites and websites of operators.

a) Once-off handling fee: A once-off handling tariff is applicable for every ton delivered to a Senwes silo to cover the costs of moving grain in and out of the storage facility. [88]

b) Daily storage. The daily storage tariff is available at all Senwes silos and total storage costs are calculated daily from the delivery date until the grain is removed from the silo. The storage costs are invoiced on a monthly basis.[89]

c) Season storage. This option is available at all Senwes silos where customers can elect to pay an annual storage fee (per ton) in advance which covers all storage and handling costs for the relevant marketing season.

d) Deferred option: the customer has the option to decide by 31 December which of the options as explained in (b) or (c) above he wishes to utilize.[90]

As a commercial provider of storage, handling and storage tariffs must be set at a level to cover total costs incurred in the operation and maintenance of the storage facilities.

Total revenue for traditional commercial storage facilities is a function of the total volume of grain delivered and the total length of storage for the delivered product. This is the main and basically the only driver of any storage business. Storage revenue is therefore highly dependable on the tons received and the length of time a commodity is stored. Only after the fixed costs are covered by the tariffs as described above, is a silo operator able to generate net profit, therefore the "break even"-tons stored must be achieved and exceeded on an annual basis.[91]

Concrete silos are characterised by a high fixed cost (excluding depreciation), i.e. operating and maintenance costs that are not variable in respect of the tonnage stored. According to Senwes' financial information, approximately 73% of its silo division's total costs are fixed.[92] As explained above and as a result of the high proportion of fixed costs, traditional commercial storage providers need to attract sufficient grain volumes into their facilities and for a sufficient period of time in order for a silo complex to be profitable. A decline in either the total volume or

88 Senwes *Storage and handling tariffs for maize and sorghum 2019/2020* 2.
89 See footnote 87.
90 Senwes *Storage and handling tariffs for maize and sorghum 2019/2020* 3.
91 Senwes' break- even is determined to be at least 1,5 m tons of the 4,8 million available storage capacity.
92 Senwes Board of Directors Board documentation for 30 April 2019 CFO Report 45. Senwes' fixed costs were R79.61 per ton and variable cost per ton was R34.12 in 2019. In the same year approximately 2,9m tons of grain was stored in Senwes' silos. Fixed costs as a proportion of total costs per ton was approximately 73%.

average period of storage will result in lower total revenue for these storage providers. The volatility of grain yields that, as a result of *inter alia* drought conditions, contributes to and exacerbates lost volumes.

5.2 On-farm storage

On-farm storage is typically built for self-provision by a farmer and the capacity is not necessarily opened for supplying third parties with storage on commercial grounds. This means that investments into on-farm storage are typically only undertaken if it is financially attractive for the farmer to do so through improving his overall profitability.[93] Investment into storage can improve a farmer's overall profitability by reducing costs and/or increasing flexibility which has the potential to increase revenue opportunities.

As farming activities increase in size, producers are also able to sell grain commodities directly to processors. It is to be noted that the demand for on-farm storage has increased substantially since the *Senwes* case.[94] The growth of on-farm storage and storage at processing facilities comprising of the different options, excluding the traditional silos, according to SAGIS was 1,89 million tons in 2018.[95]

5.3 Role of storage and costs

The potential cost savings from storage investments is dependent on the extent and reasons for farmers to store grain for own use of to sell it after the harvesting season.

Farmers tend to sell a large proportion of their crops at harvest time and may decide to keep a proportion of the total crop in storage for own consumption (often in the form of animal feed but also as seed for the following season) or to sell later in the season.[96] In the event that farmers do not have access to own storage facilities, as explained above, those farmers will need to store their grain in the closest commercial storage facility or elect another suitable alternative storage option. The investment in on-farm storage makes earlier harvesting possible, saves time and reduces the farmer's demand for commercial storage

93 Food and Agricultural Organisation of the United Nations Proctor *Grain storage techniques*.
94 Van der Vyver *On farm Storage – the road ahead* 35.
95 SAGIS 2018 as quoted by Van der Vyver *On farm Storage – the road ahead* 35
96 Food and Agriculture Organisation of the United Nations *Economic and marketing aspects of post-harvest handling of grains*; Food and Agriculture Organization of the United Nations Compendium on post-harvest operations Agro Industries and Post-Harvest Management Service (AGSI) *Grolleaud Post-Harvest Losses: Discovering The Full Story Overview of the Phenomenon of Losses During the Post-harvest System.*

and thereby reducing the variable storage and handling fees paid to commercial storage owners.[97]

Van der Vyver observes that often on-farm storage is elected for convenience, lower transportation costs and more efficient harvesting periods. A producer may also be attracted by the marginal costs, he would normally own the land, have water and electricity readily available and may be able to utilize his labour more effectively.[98] Sales later in the tax year, i.e. January is also preferred as producers defer taxable income to the next accounting year. This is a substantial benefit for especially the larger commercial producer.[99]

However, on-farm storage is not without its own costs and in electing to construct their own storage farmers will incur additional on-farm costs such as the initial investment to construct the facility, ongoing maintenance due *inter alia* to a shorter lifespan and insurance on the storage facility as well as any operating costs (e.g. electricity to operate aeration fans, fumigation, etc.).[100] However, unlike concrete commercial storage options, these costs are frequently fixed and sunk.[101]

There are two primary cost advantages of on-farm storage over utilising commercial storage: firstly the initial investment cost can be capitalised and spread over the life of the asset in the form of depreciation and interest charges and can be spread over the total grain volumes stored in the facility.[102] Thus unit cost of storage may be reduced. And secondly, the storage operating costs would initially have been incurred by the commercial silo owner and passed onto the farmer in the form of storage tariffs. By internalising the operating costs by means of investment, the farmer is able to avoid the margin that commercial storage

97 Netwerk 24 website https://www.netwerk24.com/landbou/Nuus/grootste-silo-op-n-plaas-verrys-by wakkerstroom-20190610 [accessed on 7 October 2019].

98 Van der Vyver *On farm Storage – the road ahead* 36 par 3.; Edwards *Grain storage alternatives: An economic comparison* 5 describes marginal cost in this context to mean that it is cost that is already being incurred such labour cost. Existing resources may be allocated more efficient and productively with an on-farm facility.

99 Edwards *Grain storage alternatives: An economic comparison* 2.

100 Edwards *Grain storage alternatives: An economic comparison* 5.

101 Stinespring JR "*Fixed versus sunk costs: creating a consistent and simplified cost framework*" 2011 19. In both economics and business decision-making, "sunk cost" refers to costs that have already been incurred and cannot be recovered. On the other hand, fixed costs are costs that has been expended and cannot be varied without affecting its price". In the silo storage environment, the fixed costs have to be covered from revenue from handling and storage tariffs. Only after income covers the fixed cost up to a certain volume of tons stored, the silo will be able to cover variable costs and may achieve net profit.

102 Edwards *Grain storage alternatives: An economic comparison* 5.

owners would have included in their storage tariffs and spread the costs over the total grain stored in the on-farm storage facility and over a long period of time.[103]

Simplistically, the average cost per ton from on-farm storage will ultimately depend on the total volume of grain stored and the length of time that the grain is kept in the storage facility.[104] As indicated above, storage costs are fixed and therefore unit costs are dependent on storage volumes and time periods. Therefore, as explained above, the total savings from bypassing traditional commercial storage facilities has to be weighed up against the average costs per ton that are likely to be incurred in on-farm storage to determine whether there is a net cost saving from on-farm storage and whether that saving is sufficient to justify the investment.

An additional saving from on-farm storage may arise from reducing bottlenecks during harvest time by allowing for the consolidation of grain prior to transportation.[105] To use an on-farm storage facility for the initial consolidation of grain volumes during harvest is likely to reduce the total number of grain trucks and sub-contractors used during the harvest as the waiting time is reduced per truck. Trucks can then load quicker and in addition, the optimal trailer size (load) per ton which should be used can be determined once all the volumes have been consolidated. This should reduce the total number of trips and overall transportation cost for the farmer.

5.4 Role of storage in enhancing revenue

On-farm storage investments have the potential to increase revenue for the farmer through providing greater flexibility to the farmer in terms of both the harvesting and sale of grain. This means in particular, greater flexibility during harvest time can increase revenue from (a) lower on-farm losses through harvesting earlier in the season and (b) limiting potential delays at commercial storage facilities or processors (i.e. long waiting periods for off-loading) and (c) the benefit to blend different grades and moisture levels (creating a better grade with a higher value).[106]

Agricultural companies generally do not accept grain with moisture content above certain thresholds.[107] Allowable moisture limits without incurring additional drying

103 See footnote 98.
104 Ibid.
105 Alberta government website https://www.alberta.ca/grain-storage-as-a-marketing-strategy.aspx [accessed on 11 August 2019].
106 Edwards *Grain storage alternatives: An economic comparison* 3.
107 Grain SA website https://www.grainsa.co.za/different-ways-and-options-for-storing-grain [accessed on 15 June 2019].

costs for maize is set at 14% and 10% for sunflower seeds.[108] This requires farmers to monitor the moisture content of their crops to ensure that harvesting only starts once the appropriate moisture content for delivery is reached. However, the late harvesting of grain can result in significant on-farm volume losses due to poor stalk quality from over-drying in the field.[109] At lower moisture levels, grain volumes are lost during harvesting as the smaller dry kernels can fall through the harvester's header and will not be collected at all.[110] On-farm storage with adequate aeration and drying equipment allow farmers to harvest earlier in the season when moisture content is at the optimal level and on-farm losses are minimised.[111] The minimisation of on-farm losses ensure that higher total volumes are collected at harvest and will increase total revenue to the farmer once sold.

On-farm storage also provides farmers with the flexibility to avoid harvest time congestion at commercial storage facilities due to long off-loading lines and restricted business hours.[112] Avoiding harvest time congestion will reduce the probability of volumes losses from the wind while waiting in long off-loading lines[113] and the ability to store grain at any time of the day ensures that harvesting will progress more efficiently.[114]The cumulative effect of these factors reduce the potential loss of revenue and profits that could arise during the busy harvest period. Ultimately, the decision to invest in on farm storage and the extent to which such revenue opportunities exist or not, depends on the size and operations of the farmer, his risk appetite, as well as the extent of harvest time bottlenecks at the nearest commercial storage facilities.

The second potential benefit from on-farm storage is the ability of the farmer to hold grain volumes until later in the season to take advantage of higher prices without concerns about variable storage costs from commercial storage facilities.[115] This is known as capturing the "carry" in the market.[116] This concept may be explained as follows: dependent on a specific season, grain prices may

108 Senwes Storage and Handling Tariffs for Maize and Grain sorghum 2019/20 8 and tariff for sunflower.

109 *Grain drydown and timely harvest decisions* 2018 1.

110 The optimal moisture content for maize is estimated between 23% to 25% and results in the lowest harvest loss of 1% to 2; Directorate Agricultural Information Services Department of Agriculture in cooperation with ARC-Grain Crops Institute Du Plessis *Maize production*, 33.

111 *Grain drydown and timely harvest decisions* 2018 1.

112 See footnote 106.

113 Country Journal Ohio *On-farm grain storage offers farmers higher profit potential and flexibility.*

114 Edwards *Grain storage alternatives: An economic comparison* 1.

115 Food and Agriculture Organization of the United Nations *Economic and marketing aspects of post-harvest handling of grains* 1993.

116 Geyser *The short and long of the Futures market* 76 and onwards par 4.11.

be the lowest during the harvest period as supply is at its greatest level but prices tend to increase towards the end of the season as total supply gradually decreases.[117] This allows for some profit taking if the increase in the price later in the season is higher than the additional costs of holding grain. However not all farmers will invest in own storage facilities based on the expectation of higher grain prices later in the year. The postponement of income does not only result in storage costs but also constrains cash flow and creates delays in the payment of short term debt obligations (such as production credit).[118] Therefore as a precondition, this strategy requires that a farmer has the necessary capital resources and adequate cash flow to sustain the farming business until later or even after a season.[119]

6. Type of farmer owned storage facilities

The evidence suggests that commercial producers tend to prefer permanent storage facilities given the permanency of their location and the long-term nature of their farming activity. As a result, producers generally opt to invest in steel/zinc silos as the evidence show in Table 2.1 below. A steel silo has a longer life span, allows for fumigation and blending of the grain and storing for longer periods. In 2019, there were 327 farmer owned storage sites in the Senwes area of which steel/zinc silo capacity was the largest (71%) followed by silo bags (approximately 15%) and refurbished storage structures (8%). The table below shows the total capacity of farmer owned storage in 2019 by type of storage facility in the Senwes area:[120]

Table 2. 1: Total farmer owned storage capacity by type in the Senwes area, 2019

Type of structure	Total capacity (tons)	Share of total (%)
Zinc silo	329 552	70,2%
Silo bags	68 636	14,6%
Shed (storage structure)	39 610	8,4%
Grain dam	26 260	5,6%
Concrete silo	5 300	1,1%
Total:	**469 358**	**100%**

7. Trader owned storage

117 Viewing your on-farm storage as a profit centre (March 2018); Food and Agriculture Organization of the United Nations *Economic and marketing aspects of post-harvest handling of grains.*

118 Edwards *Grain storage alternatives: An economic comparison* 6.

119 Food and Agriculture Organization of the United Nations *Economic and marketing aspects of post-harvest handling of grains* 1993.

120 Senwes market intelligence collated over a period.

Trader owned storage facilities are used to provide storage services for the trader's own grain in terms of servicing the millers and processors rather than supplying storage on a commercial basis to third parties (such as by traditional commercial storage providers).This is called "book building of grain" as to provide the market by means of "mill door" contracts.[121] The investment in storage is an alternative to the trader making use of commercial storage facilities where charges are typically variable in nature. As investment in storage is used as an input into the trading strategy, the use of own storage must either offer cost savings or provide a strategic advantage which results in higher revenue or lower costs in the overall trading model relative to making use of commercial storage options.[122] Often traders make use of hedging[123] and spread trading strategies and they are highly competitive as their operational costs are much lower than those of commercial silo operators.[124] The lower cost and integrated models of these traders have changed the competitive dynamics in the market to the benefit of producers.[125]

Investments in storage by traders will generally in most instances result in cost savings relative to the use of traditional commercial storage.[126] The investment in own-storage by traders may enable a reduction in "per ton"- storage costs relative to commercial silo storage rates.[127] Whether this is the case or not,

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121 Millers and Processors put out tenders for grain to be delivered at the mill – therefore the trader must source grain of the required quality and quantity and ensure delivery at the mill's different locations throughout a certain period. Tenders often are for periods up to 2-3 years (i.e. Astral Feeds and Senwes mill door agreement as an example Senwes website https://www2.senwes.co.za/en-ZA/Articles/View/largest-single-maize-contract-in-southern-africa-signed-by-astral-and-senwes) [accessed 21 November 2019]. Mostly all of the risks are passed to the trader.

122 Government of Saskatchewan *Introduction to grain marketing* 6 http://publications.gov.sk.ca/documents/20/86870-c5980169-4959-4bbb-82c3-5d0f8d6fc9cf.pdf accessed on 11 September 2019.

123 Geyser *Short and Long of Futures Markets* 5 62. Hedging is the process to sell or buy grain in the future on Safex by using different agricultural commodity derivative instruments or assets as an offsetting position, thereby mitigating the risks of a negative price movement in grain prices.

124 Geyser *Short and Long of Futures Markets* par 2 6; Chapter 2 7 explaining spread trading.

125 See the results of the survey conducted on page 55 and onwards.

126 CRDC Grain Storage Grower notes National 2017 *The economies of grain storage* Chapter 2 22, 27.
https://grdc.com.au/resources-and-publications/grownotes/technical-manuals/grain-storage [accessed on 20 July 2019].
Example for silos: (silos $110,000 + ground works and concrete $10,000 + aeration controller installed $10,000 + auger $25,000) ÷ storage capacity 1000t = $155/t
Example for grain bags: (in-loading machine $20,000 + out-loading machine $25,000 + permanent site preparation $1000) ÷ storage capacity 1000t = $46/t.

127 CRDC Grain Storage Grower notes National 2017 Chapter 2 22 *The economies of grain storage*

ultimately depends on the trading and storage profile as well as the strategy of the trader. The purchase and trading of substantial volumes that are consistently sourced from growing areas and typically stored for sale or delivery much later in the season will enhance the profitability of such own storage investments.

Additionally, to lower unit costs, the flexibility of own storage may also enable cost savings in other parts of the trading function, namely logistics and transportation costs, in much the same manner as farmers but in terms of time that out-loading takes at the silos and less handling costs. In particular and to explain this further, if congestion does occur at particular silo complexes for out-loading (which occurs often during harvest time), then transport costs will increase as fewer loads may be delivered per day which increases the number of trucks required or the cost per load for trucks used.[128] The use of own storage also allows traders to locate storage facilities closer to mills and off-take facilities. As more deliveries per day can be done, transport companies are able to offer better rates as the fixed costs of running the grain truck can be spread over a greater number of trips thereby reducing the average cost per ton of grain delivered.[129] The cost of transport and logistics are important cost components in the value chain and the prices obtained by producers are influenced by transport costs. For many commodities, transport costs can be farmers' second or third highest cost. Larger volumes consequently reduce transport costs per unit.[130]

The cost advantages gained from a greater number of deliveries need to be weighed against the total cost of investing in storage facilities. Only when the cost savings are significant enough to offset the investment cost will traders invest in storage and adopt this trading strategy. Shifts in growing area locations and volumes as a result of deregulation has in some instances resulted in farmers not being located conveniently close to pre-existing traditional commercial storage or not having enough available capacity. Similarly, the growth in crop yields or double-cropping[131] has also meant that in some areas the traditional storage

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https://grdc.com.au/resources-and-publications/grownotes/technical-manuals/grain-storage [accessed on 20 July 2019]; Unigrain website www.unigrain.co.za an integrated trader located in Randfontein and available storage offerings [accessed on 20 July 2019].

128 Government of Saskatchewan corporate website. Introduction to grain marketing, 8. http://publications.gov.sk.ca/documents/20/86870-c5980169-4959-4bbb-82c3-5d0f8d6fc9cf.pdf [accessed on 21 July 2019].

129 Unigrain website http://www.unigrain.co.za/storage.aspx. Economies of scale as well as availability of back loads (trucks not returning empty) are therefore important factors in determining costs of transport. [accessed on 20 July 2019]

130 Mtombeni Bove Thibane and Makgabo *An analysis of infrastructure and inputs as a barrier to entry and expansion for emerging farmers* WORKING PAPER CC2019/02, 52.

131 Double cropping means that a producer can plant winter and summer grain on the same lands as the lands are being irrigated, for example. wheat in winter and maize in summer. Farms that do not have access to irrigation (dry lands) and which is dependent on rainfall requires the soil to rest and is not planted more than once a year (it lies fallow).

capacity may be inadequate for grain volumes.[132] The need for new storage capacity in these areas due to these dynamics, create opportunities for traders to capture the storage markets and to service the storage needs of a particular area.[133] Traders are then able to use their own storage facilities to service markets that are not serviced by traditional storage infrastructure.[134]

As explained above, the investment in own storage may result in the trader fully capturing the unserved market as farmers no longer have to drive long distances to the nearest commercial storage complex. This then offers potential revenue benefits on the trading side from the capture of such volumes, as well as possibly commercial storage revenue. For example, more convenient and closer storage may enable the trader to capture commercial storage volumes due to transport cost savings to farmers, or to procure grain from the producer at a higher premium due to lower own costs of transportation and storage.

The investment could also disincentivise further investment by other players as the high initial investment cost requires at least a certain minimum of grain volumes to justify the investment. As the market is likely to be captured by the first trader that invests in the area it is likely that in more remote areas the total grain volumes might not be enough to warrant more than one storage facility.

7.1 Type of trader owned storage facilities

Generally, traders typically prefer to invest in more temporary / semi-permanent storage facilities such as silo bags. The *rationale* for these preferences is that they typically require a relatively lower upfront construction cost compared to other storage facilities and do not necessarily require a long-term commitment.[135]

Also, these storage facilities offer greater flexibility to traders in terms of their short term storage requirements as storage sites can be expanded or reduced in

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132 As an example, Senwes erected a depot facility (zinc silo) at Kaalplaas especially for this reason. Refer to http://www.senwes.co.za/produkte-dienste/graanhantering-graanbemarking for a map of the different locations [accessed on 20 September 2019].

133 Bester Grain website https://www.bester.co.za/storage-operations/ regarding the Moorreesburg Silo Depot (MSD): has established a healthy element of competition in the grain storage industry. This encourages a continuous strive towards greater efficiency, which in turn results in lower storage costs. Since MSD was established in 2007, storage costs in the area have fallen by approximately 30%. For this reason, MSD plays an important role in making the free market principle of marketing grain in South Africa successful [accessed on 14 August 2019].

134 Silostrat (Pty) Limited that stores grain and provide customers with onsite storage facilities in the form of silo bags as well as direct loading from farmers and delivering to the grain processor. Unigrain a trader located in Randfontein has many alternative own storage sites; Unigrain website http://www.unigrain.co.za/storage.aspx [accessed on 20 July 2019].

135 Country Journal Ohio *On-farm grain storage offers farmers higher profit potential and flexibility.*

size relatively quickly and at lower cost which provides the traders themselves to move their trading activity volumes across different areas if it reduces the cost of supply.[136] By way of example, in 2019 there were 19 trader owned storage sites in the Senwes area with silo bags comprising the bulk of the storage capacity (62%) followed by bunkers (26%). Table 2.2 below shows the total capacity of trader owned storage in 2019 by type of storage facility in the Senwes area.[137]

Table 2.2: Total trader owned storage capacity by type in the Senwes area, 2019

Type of structure	Total capacity (tons)	Share of total (%)
Zinc silo	59 600	6,8%
Silo bags	544 000	62,1%
Grain bunker	226 000	25,8%
Grain dam	34 000	3,9%
Concrete silo	12 000	1,4%
Total:	**875 600**	**100%**

8. Processor owned storage

Similarly, like some of the other role-players, explained above, processors mainly invest in storage to self-supply some of their own storage needs and where their storage capacity is typically not sold on a commercial basis to third parties. Processors require storage in order to ensure a steady flow of grain into the mill or crushing plant in between deliveries from outside. As a result, the extent of storage investment will depend to some extent on the average daily grain intake volumes of the plant and the period of self-supply that the processor prefers from a risk perspective (i.e. how many days' supply the processor wants to keep in reserve)[138]. However, beyond such considerations, the investment decision in the size of storage capacity will also depend on whether there are potential cost savings to the processor or the advantage of greater self-supply in generating higher revenues.

As a result of limited storage capacity and to enable material cost savings, processors usually secure larger volumes of grain during harvest time as prices are at their lowest during this period and direct delivery reduces handling costs.[139]

136 Food and Agricultural Organisation of the United Nations *Farm structures in tropical climates* Chapter 9.

137 Senwes market intelligence and data collated over a period.

138 It is submitted that processors such as mills, feed manufacturers and oil crushers require adequate raw material as to enable uninterrupted production. The storage capacity for raw material (grain) is dependent on the size of the processor and its operations.

139 Food and Agriculture Organization of the United Nations *Grain storage techniques: Evolution and trends in developing countries* 1994.

The Premier Mill in Kroonstad[140] is a good example of this direct delivery model.[141]Accordingly during harvest time farmers have the option of either delivering their grain to a commercial storage facility or delivering straight to the mill-door (i.e. *plaaslaai* (farm-loading) for millers). Processors can then use their own storage to guarantee supply into the mill at a lower price by procuring volumes directly from farmers rather than procuring from traders at potentially higher prices later in the season.[142]

For example, in South Africa, processors can procure grain from traders either using mill door contracts or buying grain on Safex where purchase prices are quoted in terms of the Safex price plus or minus a specific Rand amount. The price is determined by a competitive tender process between traders and is dependent on the net margin that the trader is prepared to earn taking into account the risks of a particular transaction.[143] For traders that are integrated in terms of sourcing, storage and transport it is easier to deliver a competitive price to a processor as the effectiveness of the chain from the farm gate to the processor is within its control. The integration by and relevance of traders to this dissertation is explored in more detail in Chapter three.

8.1 *Type of processor owned storage*

Factually processors tend to invest in more permanent storage facilities due to their fixed location, much like producers. The processing of grain requires compliance with health and safety obligations as well as sound grain management practices.[144]

Table 2.3 show that there are 68 processor owned storage sites in the Senwes area of which concrete silo capacity (54%) was the largest followed by zinc silo

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140 The leading four millers in South Africa are Pioneer, Premier Foods, Pride Milling and Tiger Brands, together these firms mill approximately 75% of the maize meal produced in the country and dominate the wheat milling market with 97% market share. Who owns whom African business information see https://www.whoownswhom.co.za/store/info/4499?segment=Food+%26+Beverage [last accessed 4 November 2019].

141 *Senwes Case* 7 par 27. Also refer to the survey results as explained at the end of this Chapter 56.

142 Food and Agriculture Organization of the United Nations *Economic and marketing aspects of post-harvest handling of grains* Chapter 4 (1993).

143 Brokerage or commission earned Rand per ton. Iowa state University Extension and Outreach *Grain Marketing Terms* https://www.extension.iastate.edu/agdm/crops/html/a2-05.html [accessed 22 August 2019]; Kowalski C Commodity Brokers and Commission Rates July 2019 https://www.thebalance.com/commodity-brokers-and-commission-rates-809124 [accessed 20 November 2019].

144 CSIRO Stored Grain Research Laboratory *Viljoen 2001 Select grain stores carefully to control costs* http://storedgrain.com.au/wp-content/uploads/2013/04/Select-grain-sotes-carefully-to-control-costs.pdf [accessed on 20 July 2019].

capacity (approximately 34%).[145] Processors historically invested in concrete silos, but more recent investments have been in the form of steel/zinc silos. The shift is likely due to the significant cost differences in the construction of steel/zinc silos compared to concrete silos.[146]

Table 2.3 Total processors owned storage capacity by type 2019[147]

Type of structure	Total capacity (tonnes)	Share of total (%)
Zinc silo	284,585	33.8%
Silo bags	62,000	7.4%
Grain bunker	37,000	4.4%
Grain dam	130	0.0%
Concrete silo	458,470	54.4%
Total:	**842,185**	**100%**

9. Growth of alternative storage and its impact

The past decade has seen increasing investment by market participants in alternative storage to the traditional commercial storage owned by former co-operatives. This alternative storage has grown to such levels that it has now started to materially impact on the traditional commercial storage providers and forced them into a competitive response in order to retain profitability. In actual fact these agricultural companies are also utilising alternatives in an attempt to remain competitive, especially where the locations for storage are not readily available, or at silos where the storage capacity has been exceeded.[148] These trends are prevalent in all areas of the previous agricultural co-operatives' traditional regions as explained below, with reference to detailed information in the Senwes' area.

The increase of alternative storage capacity (which is comprised of permanent and semi-permanent structures) in the Senwes area effectively trebled in size from just over 567 000 tons in 2003 to approximately 1.9 million tons in 2019 as can be seen in Figure 2.4 below). Accordingly there has not been any recent investments in concrete silos but rather the new capacity of both traditional commercial storage providers as well as other market participants has tended to be in other types of storage facilities.[149] The locations of alternative forms of

145 Senwes market intelligence and data collated over a period.

146 Steel/zinc silos are approximately 1.5 times cheaper compared to a concrete silo of a similar capacity. Prasad *Encyclopaedia of Agricultural Marketing* 1999, 98; Chapter 2 par 4 22.

147 Senwes market intelligence and data collated over a period.

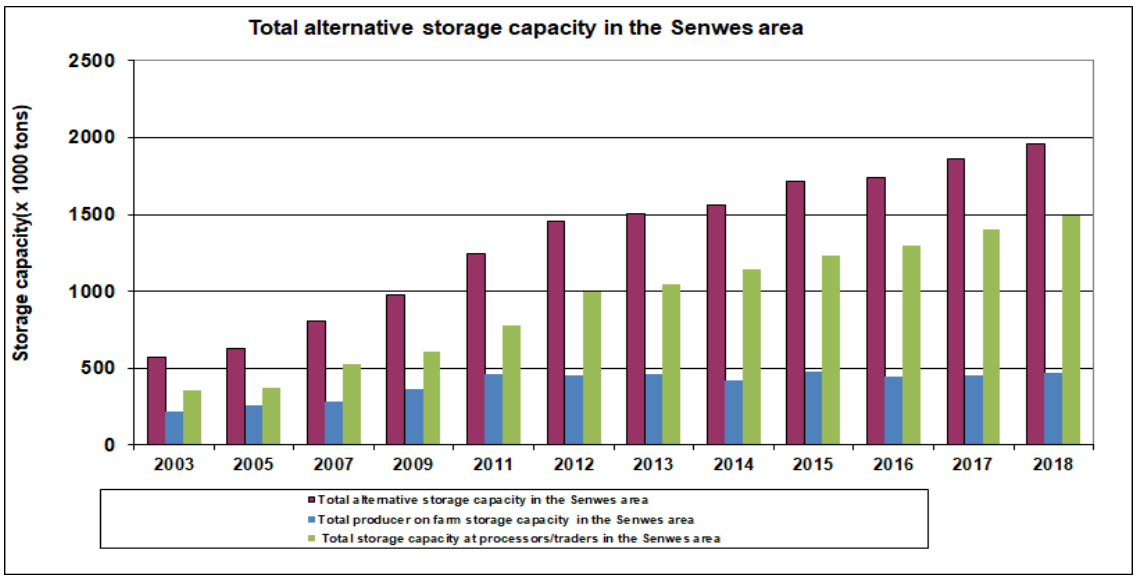
148 *Senwes Scenario magazine* July 2017.

149 For example, Suidwes has invested and operates two grain bunkers (joint capacity of 60 000 tons) and a silo bag facility (20 000 tons) in the Senwes area. One bunker is in Senwes' Losdoorns silo area, the other bunker facility is in Senwes' Bultfontein silo area and the silo bags are located in Senwes' Wesselsbron silo area. It is not clear when the initial investments were made but these sites are operational.

storage close to some of Senwes' large silo complexes are indicated in Annexure 2.1. These are specifically indicated within the 60 km radius in accordance with the definition of the physical market for grain storage as has been determined in the *Afgri* case in 2004.[150] To reflect the growth of alternative storage facilities the 60 km radius was scaled down to show that in the magistrate's district of Wesselsbron, the heart of the Senwes area, and one of the largest areas for the production of maize in South Africa, 21 alternative storage facilities are located . These range from own farm storage to processors' facilities. This exercise was repeated in the other areas as contained in Annexure 2.2 and onwards, which reflected similar growth trends in alternative storage facilities.[151]

The lack of growth in traditional commercial storage facilities and the continuous growth in farmer, trader and processor owned storage has materially increased the capacity of alternative storage in the Senwes area.[152] Senwes' current storage capacity in traditional silo is 4,8m tons with alternative storage capacity approximately in the same area comprising 45,5%. The types of storage options and capacity as quoted by Van der Vyver with reference to the SAGIS (2018) data in terms of national capacity for storage confirm the same trends.[153]

Figure 2. 4



150 *Afgri Case* 2 and 4; see Chapter 1 3.
151 Refer to Annexure 2.2.
152 Refer to Annexure 2.1.
153 Van der Vyver *On farm storage - the road ahead* 35; SAGIS is the South African Grain Information Services, a non-profit organisation established in 2007 responsible for the collection and distribution of reliable information regarding the south African grain and oil seed market https://www.sagis.org.za/ [last accessed on 12 August 2019].

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Average
Total away deliveries	827,195	969,529	1,713,480	1,055,650	565,465	2,151,253	1,507,920
Alternative storage capacity	1,246,000	1,452,000	1,565,000	1,716,000	1,736,000	1,858,000	1,963,000
Utilisation rate	66%	67%	109%	62%	33%	116%	77%

The growth of alternative storage facilities, as seen in the Senwes area and other parts of South Africa, is considered not uncommon in grain markets following deregulation and liberalisation[154] as farmers, traders and processors all try to re-position themselves in a competitive market now driven by market forces.[155] However, the rationale for the investment decision is not always clear as there may be a number of interlinked or even isolated changes in the market that increases the incentives of certain farmers, traders and processors to invest in alternative storage, for example the increases in yields as commercial farming practices and technology enable increased scale.[156]

The growth in investments in alternative storage is likely to have been driven by a number of factors, such as: (a) the increasing scale of commercial farmers; (b) the entry of international grain trading companies into the domestic markets and the rise of national trading by some of the former co-operatives; (c) increased competitive pressure in securing "mill door"-contracts; and (d) the reduced cost and improved quality of different storage technologies in the market.[157]

Following deregulation, farming has become increasingly commercialised and subject to normal market forces such that efficient farmers are rewarded and inefficient ones punished. As there are economies of scale in farming,[158] this has led to the consolidation of farm land and an increase in the average farms' size.[159] In addition to the increase in average farm size, the average yield per hectare of maize planted has increased from approximately 2.3 tons in 1997 to a high of

154 The dismantling of the statutory grain marketing boards and adoption of free market principles as referred to in Chapter 1 7. Deregulation and liberalisation are comprehensively explained in Chapter 3.

155 Food and Agriculture Organization of the United Nations *Economic and marketing aspects of post-harvest handling of grains* Chapter 2.

156 BFAP Baseline Agricultural Outlook 2018 – 2027 10.

157 CRDC Grain Storage Grower notes National Chapter 2 22 2017 *The economies of grain storage* https://grdc.com.au/resources-and-publications/grownotes/technical-manuals/grain-storage [accessed on 28 July 2019].

158 Commercial farms have increased substantially due to high input costs, mechanisation and participation in exports markets. Increased yield per hectare contributes to food security and the profitability of the farming operations; Sihlobo *Does size matter in South African farming?*

159 South African National Treasury. 2016. Provincial budgets and expenditure review: 2010/11 – 2016/17, Chapter 9: Agriculture and land 148. http://www.treasury.gov.za/publications/igfr/2015/prov/09.%20Chapter%209%20-%20Agriculture%20and%20Land.pdf [accessed on 6 July 2019]; WWF *Agriculture: Facts and trends South Africa* 4.

4,75 tons per hectare in 2019.[160] These factors have jointly increased the scale at which the average commercial farmer operates in terms of the volume of grain produced. The increasing scale can affect the own storage investment decision due to the potential for greater harvest time congestion as well as an increase of capital resources available to farmers for investment.

This means that the growth in commercial farmer scale and yields can result in greater harvest time congestion both on-farm and at commercial storage facilities. On-farm congestion can occur as higher average crops are harvested from the same land area due to higher yields but there is not enough transportation support to move the grain off farm. It is submitted that in certain traditional silo areas, congestion could occur at commercial storage facilities that might not have been upgraded in terms of intake and turnaround capacity as to receive the greater volume of grain produced in the region.

A precondition for investing in on-farm storage to hold grain for later in the season requires that a farmer has the necessary capital resources to sustain the business until late in the season.[161] The consolidation and growth of fewer large scale commercial farmers is likely to afford them better access to investment capital and the ability to hold grain later in the year without adversely affecting their cash flow. This has been enhanced by the role of international traders which have frequently provided the finance to farmers in order to set up on-farm storage. For example, Cargill[162] established a structured finance division in 1993 for the funding of storage for farmers.[163] There has been a deepening presence and growth of international traders (e.g. Cargill, Louis Dreyfus, Bunge, etc.) in the South African agriculture market since deregulation. These players have been able to consolidate their positions in the domestic market and, on the back of greater trading volumes annually, are now more willing and able to invest in storage. These aspects will be dealt with in more detail in Chapter three.

The investment risk as well as the unit costs of storage are both reduced where a trader has a steady flow of grain trading volumes. It is submitted that the growth of larger trading volumes on the back of mill door contracts is likely to swing the investment decision in favour of erecting own storage capacity.[164]

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160 SAGIS www.sagis.org.za [accessed on 6 November 2019].

161 Food and Agriculture Organization of the United Nations *Economic and marketing aspects of post-harvest handling of grains* 1993.

162 Cargill is one of the big four global grain traders that also conducts business in South Africa. The identity and role of these traders are explained in Chapter 3.

163 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 2012 63.

164 For example, trading companies such as Unigrain See http://www.unigrain.co.za/ [accessed on 15 August 2019]; See footnote 121 for the concept of a mill door contract.

Many of the international traders are vertically integrated with processors in order to secure demand for their grain trading activities.[165] This trend is common internationally as the few large international traders seek to control the entire supply chain to reduce risk. The agricultural companies are also active in grain trading on a national basis and procure grain outside of their traditional areas.[166] As a result, these companies are looking to invest in alternative storage in other areas if they start to consistently draw grain from those areas.[167] This practice is generally known as the procurement of "*green tonnages.*"

There is accordingly increasing competition for the successful conclusion of "mill door" contracts. Traders compete annually for "mill door" contracts which require the trader to source enough grain (called book building), deliver a specified volume on a specified date throughout a specific longer-term period to the mill. As these contracts ensure long term revenue, traders are using storage to gain a competitive advantage over competing traders. As explained previously,[168] the use of own storage capacity allows traders to locate storage facilities close to the specific mills to ensure a constant flow of delivery. As a result, the trader can ensure early delivery at mills and at a lower cost due to *inter alia* transport cost savings.

Alternative storage options have been improving in terms of technology i.e. by adding capability for drying of grain with costs being significantly lower. The investment decision over alternative storage is impacted by the cost and quality

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165 A few of the prominent vertical integration examples include: Cargill acquired a majority stake in Provimi SSA and formed a joint venture with Astral Foods for the redevelopment and expansion of the animal feed vitamin and mineral premix manufacturing facility in Pietermaritzburg and Louis Dreyfus acquired a 50% stake in NWK's EPKO's sunflower seed crushing facility in Lichtenburg. See Farmer's weekly. 2013. Soya bean processing plantshttp://www.farmersweekly.co.za/article.aspx?id=40150&h=Soya-bean-processing-plants, Astral. 2015. Cargill Completes US$ 12.5 million Investment in Animal Feed Premix Manufacturing Facility. http://www.astralfoods.com/Documents/News/1454405412-AstralPressReleasereCargillinvestmentinProvimiSSA-23Feb2015.pdf [accessed on 27 July 2019] and NWK. 2015. Louis Dreyfus Commodities Africa (Pty) Ltd and NWK enter into edible oil joint venture. http://www.nwk.co.za:8080/nwkgroup/downloads/download.php?f=en/media_liaison_and_press_releases/LDC_and_NWK_new_joint_venture_11_Feb_2015.pdf [accessed on 28 July 2019]

166 Senwes is trading though Tradevantage Grain (Pty) Limited. In terms of the marketing boards' one channel marketing structures, areas of operation were allocated to agricultural co-operatives per agreement with specified parameters. These areas became known as "traditional areas".

167 For example, Suidwes Agriculture, a competitor firm, erected a bunker directly next to the Senwes silo in Wesselsbron. See http://suid-wes.co.za/ENG/silobestuurders/[last accessed on 2 November 2019]; Afgri's bunker facilities in different areas. See https://www.afgri.co.za/afgri-builds-5-new-bunkers-assisting-farmers-with-storage-solutions/ [accessed on 2 November 2019].

168 Chapter 2 21.

of alternative storage technologies. As costs are reduced the investment case for erecting own storage improves. Similarly, as the quality of the storage technologies improve, so are any disadvantages for these types of storage facilities being reduced.

10. Impact of alternative storage on the market definition

The growth in alternative storage impacts on commercial storage even if it does not directly compete on a commercial basis for third party storage services. This is because it does still divert grain volumes away from commercial storage facilities. Furthermore, it is not just the existing alternative storage but also the potential for new investment in alternative storage facilities that may divert more of the remaining grain production (given the low barriers to such investments) that is likely to impact on traditional commercial storage behaviour.[169] Therefore due to the high proportion of fixed costs in traditional commercial storage operations, even a small divergence of volumes can have a significant impact on the overall profitability of commercial storage facilities and hence spur them into a competitive response.

In view of the above it is necessary to explore the "hypothetical monopolist"-test in more detail. This test which emanated from the USA, has been adopted in South African Competition law[170] and is also known as the *small but significant, non-transitory prices increase*-test (the "SSNIP test").

According to Motta[171] a relevant market is "*the set of products, and geographic areas, to which the products of merging firms belong*". It is therefore important to properly define a market in order to establish a sound basis for determining market shares given the potential negative consequences of high market shares of firms. According to Sutherland and Kemp it is therefore necessary to determine a market definition to enable a "systematic" approach to establish if prices of relevant products under consideration constrain one another. This definition of the market should include all firms that provide suitable substitutes product ("the product market") and should also be relatively closely located to one another in a particular geographical area to act as a constraint on pricing ("the geographic market").[172]

169 Landbouweekblad 28 June 2019 5. Private silo erected in Wakkerstroom, Mpumalanga with 11 000 tons storage capacity and in aggregate 21 000 ton storage of maze for the entire complex.
170 Sutherland and Kemp *Competition Law* 7-19.
171 Motta M (2004) *Competition Policy: Theory and Practice* 102.
172 Sutherland and Kemp *Competition Law* par 7.7.4.1.and 7.7.4.2 21.

Clear guidelines to establish these product and regional markets are not readily available. Sutherland and Kemp explain that the courts have made use of different approaches to define markets such as "the homogeneity of the conditions of competition in different regions, taking into account "*import tariffs, quotas, price regulation and transport costs.*" The courts have also made use of factors such as the intended use of a product to determine its substitutability.[173]

One of the most common methods of defining a market is the "hypothetical monopolist" test. This method relies on the premise that the hypothetical monopolist is able to control the price of its product by maintaining a "small but significant and non-transitory increase in price" ("the SSNIP test") over a longer period of time of at least a year or another appropriate period (dependent of the nature of the product). [174]

In an attempt to consider the relevance of the SSNIP test for purposes of this dissertation, the SSNIP tests assumes that a market comprises a range of suppliers or substitute products that are able to control prices if they were grouped together as one single supplier (the so called "hypothetical monopolist".) If such a monopolist cannot control the price of the product (or service) it is constrained by other firms in this group.[175]

The four steps required for the SSNIP test are as follows:

a) Step one: determine the smallest conceivable market (i.e. geographic area);

b) Step two: group hypothetically all firms in the focal area together;

c) Step three: determine whether these firms could then as one "monopolist" raise a price by 5% - 10% above the competitive level;

d) Step four: if the answer is negative the monopolist is constrained and the market should then be expanded, where after steps one to four are to be repeated.

The relevant geographic market will then be deemed to be the market area where the price increase would become profitable for the monopolist.

The SSNIP test is however not always the appropriate manner to define a market, especially in non-merger cases.[176] This was illustrated by the case that gave rise

173 *Nationwide Poles v Sasol Oil (Pty) Ltd* 72/CR/Dec03 par 52.
174 Sutherland and Kemp *Competition Law* par 7.7.4.1.and 7.7.4.2 21.
175 Boshoff *Why define markets in competition cases* 8; Kokkoris *The concept of market definition and the SSNIP test in the merger appraisal* 3, 4 and 5.
176 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* 20 par 2.

to the so called "cellophane fallacy"[177] in the US and which led to a too wide definition of a particular market.

In essence the cellophane fallacy works on the basis that in the event that a supplier has already raised a price of a product (product 1) above a competitive level, say for example 10%, and raises it even more and a number of consumers switch to another product (product 2) which may make the price increase unprofitable, then product 2 should be excluded from the relevant product market as the suppliers of product 2 have already failed to constrain the prices of product 1 at market related or competitive levels.[178] Therefore inferior or less adequate substitutes of a product should not be included to define a relevant market.[179] If a supplier of a product has exercised market power and raised a price above a competitive price level, customers may switch in case of further price increase above the current monopoly price. In the *Nationwide Poles* case,[180] the Competition Authorities acknowledged the cellophane fallacy and accepted that a relevant market may only be restricted to one product. As a firm for purposes of South African competition law, is per statute[181]presumed to be dominant, Sutherland and Kemp warn that careful analysis of a market should be done before the market is defined.[182]

Notably, the SSNIP test was applied in the *Senwes*-case and without substantial evidence, it was accepted that alternative storage options were not a threat to traditional storage.[183] The product market was accepted to be the grain storage market and according to the expert witness on behalf of the Commission, if "*one applies the SSNIP test, then an increase in price by silo owners can lead to some switching (to silo bags), but the switching is limited as this type of storage cannot*

177 *United States v El du Pont de Nemours* Co 351 US 377 (1956).

178 Sutherland and Kemp *Competition Law* 7-22 par 7.7.4.3; Kokkoris *The concept of market definition and the SSNIP test in the merger appraisal*, European Competition Law Review 2005,4; Boshoff *Why define markets in competition cases* 8.

179 The *Du Pont Case* grouped together foils, wax and other packaging materials with cellophane as the only supplier of cellophane thereby interpreting the relevant market as too wide as the other non–suppliers of cellophane were not able to restrict prices of cellophane. The Du Pont case has also been referred to in *Harmony* Gold Mining Company Ltd v *Mittal* Steel South Africa Ltd 13/CR/Feb04 par 56 to 58 17,18. The Tribunal considered and referred to the "cellophane fallacy" explaining the complications of this concept in abuse of dominance cases. For example, that the firm under investigation has substitutes, but that these substitutes are not constraining prices and is therefore not effective. As the *Du Pont* Case erred in its definition of the market, the Tribunal recognised that in certain instance the hypothetical monopolist test has diminished value as actual information about the prices from substitutes are not readily available.

180 *Nationwide Poles v Sasol Oil (Pty) Limited* 72/CRDec03 par 51.

181 Section 7 of the Act.

182 Sutherland and Kemp *Competition Law* 7-23.

183 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* 20 par 3.

fully replace the need for silo storage…In this sense silo bags cannot be an alternative under the SSNIP test." [184]

It is however submitted that the SSNIP test does not address the manner in which it should be determined whether the price increase concerned will be profitable. An analysis used by competition authorities especially in the USA, known as the "critical loss" analysis may rather provide insight into this aspect if the smallest group of firms are able to maintain prices at high levels, thus above the competitive level. A price increase will obviously be unprofitable in the event that too many sales are lost as a result thereof.[185] The "critical loss"-approach is based on two steps, namely first to calculate the sales that can be lost given the price increase, for example 5%; then to consider whether the actual lost sales due to the price increase will exceed the "critical loss".[186]

By using the critical loss-approach, this research aims to illustrate the sensitivity of traditional concrete silos' profitability to the loss of even limited grain volumes. The critical loss is calculated as follows where the contributing margin is defined as "*the difference between the original price and average variable costs stated as a percentage of the original price*" [187] then

Critical loss = (Y)/(Y+CM) x (100%). Where:

- Y is the % of the hypothetical price increase; and
- CM is the contribution margin of the producers in the group as the difference between the original price and the average variable cost as a percentage the original price.

As indicated above, critical loss analysis indicates the proportion of customers that would need to be lost for a price increase to be unprofitable. The formula depends on the contributing margin (given a hypothetical price increase). Importantly, the larger the contributing margin, the lower the proportion of customers that need to be lost to make such a price increase unprofitable. A higher contributing margin is associated with a higher proportion of costs being fixed. In such cases, the contribution from each customer to fixed costs is concomitantly larger and therefore fewer customers need to be lost for a price increase to be unprofitable. In addition, this means that on the supply side, firms which offer (or could offer) a product or a service which are (or would be)

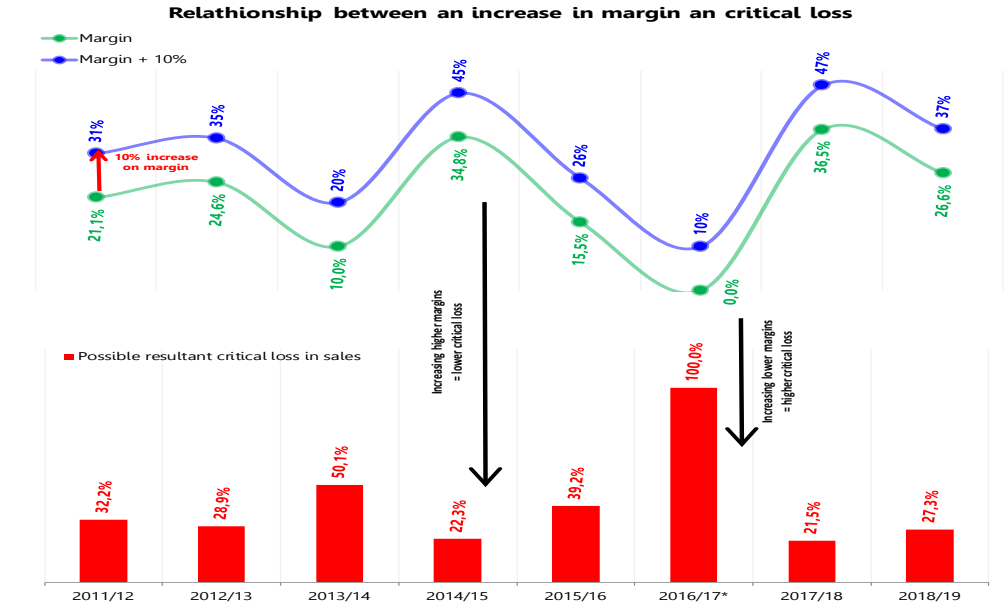
184 See footnote 176. According to Theron and evidence led silo bags is not registered with SAFEX and this makes the normal marketing and trading of grain impossible.
185 Harris *Recent observations about critical loss analysis* par 1; Harris and Veljanovski *Critical Loss Analysis: Its Growing Use in Competition Law* (2003) E.C.L.R 214.
186 Harris *Recent observations about critical loss analysis* 2 par C.
187 Harris *Recent observations about critical loss analysis* 5.

considered an adequate substitute constrain the behaviour of a firm. Equally on the demand side with a price increase, the responses by the customers limit a firm's market power as customers may decide not to purchase the product or not to make use of the services.[188]

It is submitted the critical loss analysis can be usefully applied to situations such as the rise of alternative storage as a substitute and the impact of the loss of grain volumes at traditional commercial storage facilities. As traditional storage facilities exhibit high fixed costs, the contributing margin of each ton of grain will be relatively high. As a result, even a small loss of volume may be enough to have large adverse profit effects and force the storage providers into a competitive response.[189]

Graph 2.5 calculates in graphical format the potential impact of a 10% price increase in Senwes' storage tariffs. The tariffs used in the calculation are the actual storage tariffs for maize that applied per season as from 2011. The graph illustrates the sensitivity of a 10% increase in storage tariffs over a period of the past eight years.[190]

Graph 2.5



** Note: 2016/17 was a drought year, which resulted in negative margin. For the purposes of the critical loss calculation, which can't be negative it was assumed that the margin was zero, which will result in a maximum (100%) critical loss if increased.*

188 Hüschelrath *Critical loss analysis in market definition and merger control Discussion paper No 09-083*.

189 See footnote 92.

190 Calculated by Senwes' corporate finance division during September 2019 based on the actual published storage tariffs for each year which is included in Annexure 2.

The calculation in Graph 2.5 above indicates that a loss of 20% up to 100% (in low volume seasons) in profitability will be suffered with a concomitant severe impact on the company. This is a loss that could not be suffered given the high fixed costs associated to operate a traditional silo effectively.[191]

The growth of alternative storage capacity in the Senwes area has factually caused a bypassing of Senwes' concrete silos in the Senwes area.

Table 2.6 below reflects the maize production in the Senwes area, total deliveries to Senwes storage facilities, the share of crop production in the Senwes area delivered to Senwes storage facilities and Senwes' silo utilization from 2003 to 2019.[192] The share of crop production in the Senwes area delivered to Senwes storage facilities has declined from approximately 80% in 2003 to 60% on average for the previous ten years. Over the same period, Senwes' silo utilization has remained relatively stable (55% - 66% on average) but it has experienced a decrease since the adoption of free market principles. The lower silo utilization and share of crop is a result of lower deliveries to Senwes silos and a significant increase in total production in the Senwes area since 2003/04 from approximately 2.9 million tons on average to approximately 3.5 million tons in 2019.

Table 2.6

	Production in Area (ton) *A* *(D + E)*	Total Senwes Receipts (ton) *B* *(C + D)*	Senwes Receipts from outside Senwes area (ton)* *C*	Senwes Receipts from Senwes area (ton) *D*	Deliveries not Received by Senwes (ton) *E* *(A - D)*	% Deliveries of Competition excl green tonnages *F* *(E ÷ A)*	% Deliveries of Competition incl green tonnages *G*
2003/04	2 923 180	2 285 851		2 285 851	637 328	21,8%	21,8%
2004/05	2 676 492	2 155 519		2 155 519	520 973	19,5%	19,5%
2005/06	2 941 816	2 258 738		2 258 738	683 078	23,2%	23,2%
2006/07	1 524 762	1 071 801		1 071 801	452 961	29,7%	29,7%
2007/08	1 954 853	1 288 727	54 187	1 234 540	720 313	36,8%	34,1%
2008/09	3 280 429	2 520 834	73 414	2 447 420	833 009	25,4%	23,2%
2009/10	3 330 646	2 247 714	87 065	2 160 649	1 169 997	35,1%	32,5%
2010/11	3 445 173	2 277 950	68 045	2 209 905	1 235 268	35,9%	33,9%
2011/12	2 888 883	1 705 125	94 163	1 610 962	1 277 921	44,2%	41,0%
2012/13	2 938 652	1 802 342	213 183	1 589 159	1 349 493	45,9%	38,7%
2013/14	2 349 442	1 585 121	179 500	1 405 621	943 821	40,2%	32,5%
2014/15	3 740 887	2 568 303	273 993	2 294 310	1 446 577	38,7%	31,3%

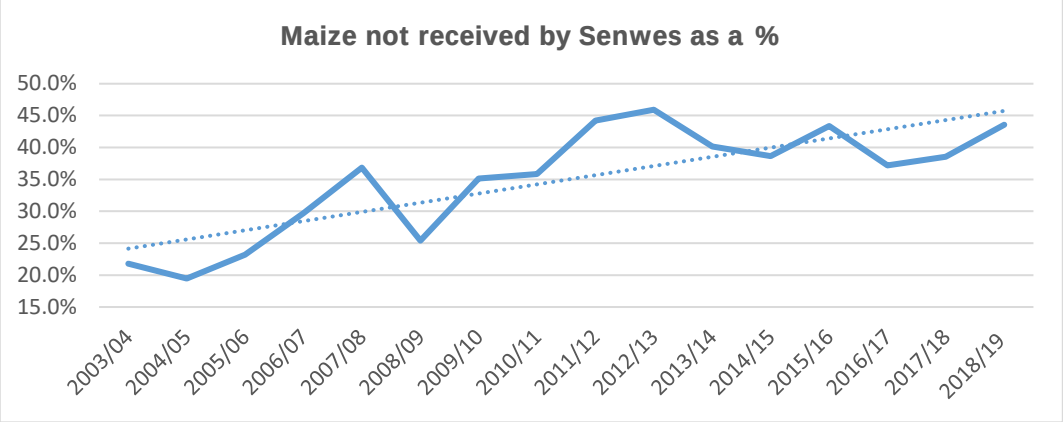
191 See footnote 189.

192 Data extracted from Senwes' records. Green tons mean grain procured from outside of the "traditional area" of Senwes.

2015/16	2 298 133	1 447 321	146 006	1 301 315	996 818	43,4%	37,0%
2016/17	1 081 411	716 181	36 898	679 283	402 127	37,2%	33,8%
2017/18	4 479 531	3 292 549	539 352	2 753 197	1 726 334	38,5%	26,5%
2018/19	3 458 467	2 396 347	445 408	1 950 939	1 507 528	43,6%	30,7%
10 Yr. Average	3 001 122	2 003 895	208 361	1 795 534	1 205 588	**40 %**	33%

Graph 2.7 below show the data in table 2.6 graphically. The increasing trend of maize that is not being stored by Senwes speaks for itself.

Graph 2.7



The increase in alternative storage options and the effect of critical loss by the traditional storage owner, such as Senwes, resulted in Senwes only being able to raise storage tariffs margins slightly above inflation.[193] In some of the previous 15 years tariffs could not be increased at all.

Graph 2.8 below, records the actual day and annual storage tariffs in comparison to normal inflation (not industrial inflation).[194]

Senwes was also not able to add additional expenditure to its tariffs as a result of the multiple substantial increases for water or power (Eskom)[195], or any capital expenditure for maintenance of infrastructure (railway sidings and gravel access roads), capital expenditure to increase the out loading times (from 80 tons per hour to 150 tons per hour) and aeration at the silos (to take in wetter grain earlier

193 https://www.inflation.eu/inflation-rates/south-africa/historic-inflation/cpi-inflation-south-africa.aspx. The average inflation in 2002 was 13,51% and declined to 4,3% in 2019 [accessed on 2 September 2019].

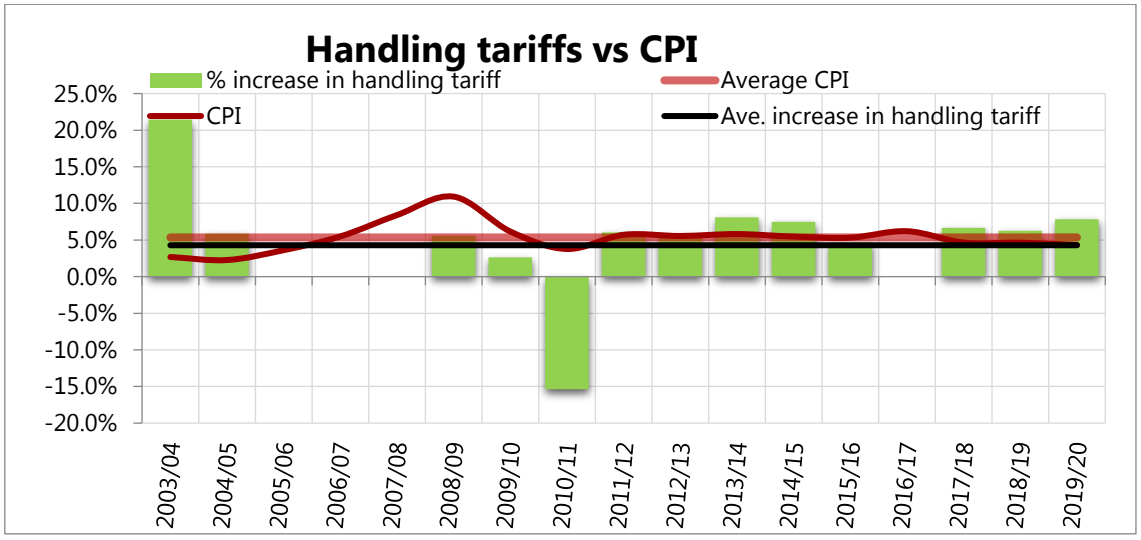
194 Refer to Annexure 2 for the detail.

195 The Eskom average standard tariff increases for the same period increased from 2003 to 2018 with 80.6%. Eskom website: http://www.eskom.co.za/CustomerCare/TariffsAndCharges/Pages/Tariff_History.aspx [accessed on 6 November 2019].

in the season) in an attempt to recover lost deliveries and to regain lost market share.[196]

Graphs 2.8, 2.9 and 2.10 below show that in some years no increases were made, whilst in 2010 an increase in annual storage (over a longer period instead of the normal 100 days) were made whilst handling and day storage were not increased.[197]

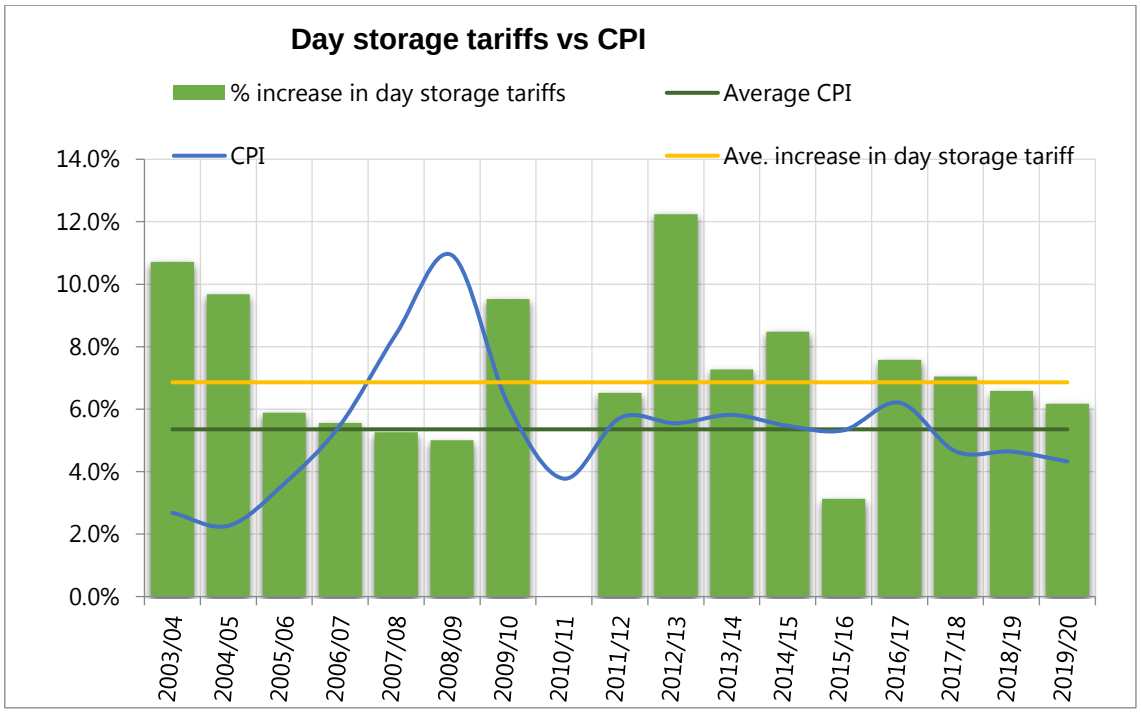
Graph 2.8 [198]



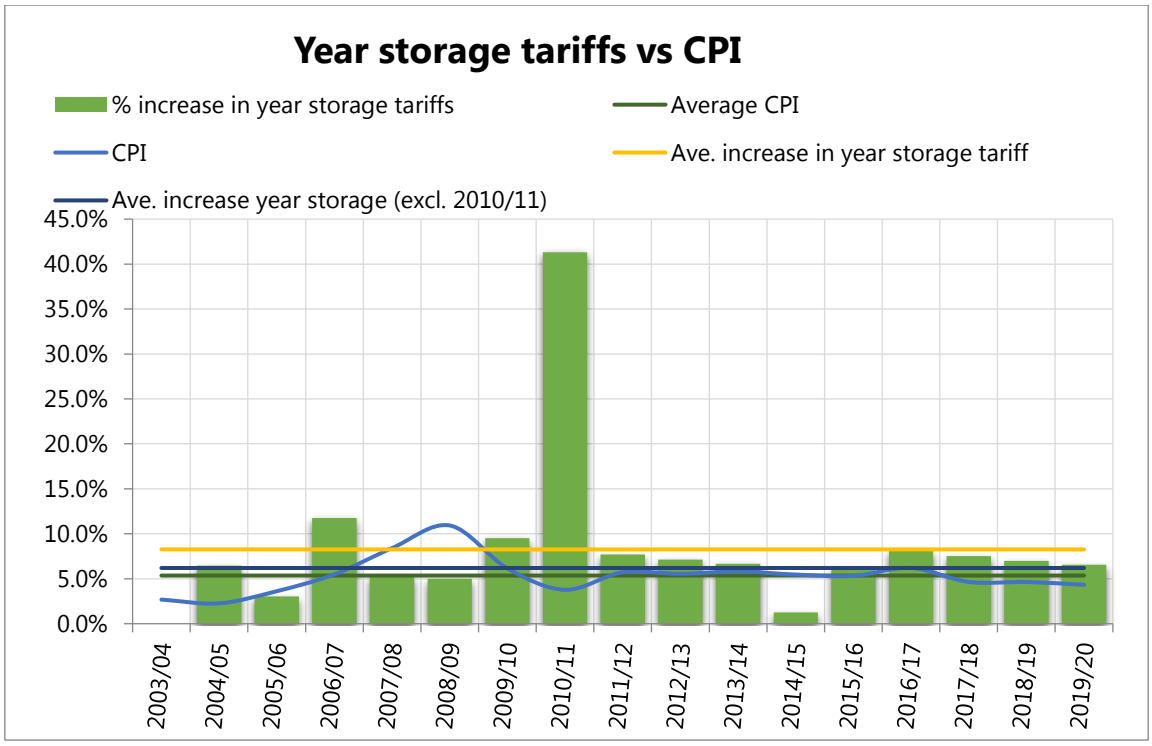
196 Strategy known as Graintech: Senwes Integrated Report 2019 8 and 24. Since 2015 Senwes invested R102,8m in the silo infrastructure to enhance drying capabilities.

197 The traditional storage operators publish storage and handling tariffs for each season. The tariffs generally do not differ substantially.

198 Refer to Annexure 2. 2010/11 was a once off increase in the year storage tariff. This increase was offset by a lower handling tariffs for customer on day storage tariffs as a result of very high stock levels coupled with very low maize prices. There was an overall revision of tariff structures given capacity constraints, coupled with discounts equally available to the market for larger volumes at unutilized silos.



Graph 2.9



Graph 2.10

11. Realities and customer preferences

As indicated, the 60km radius approach was used to define the geographical market in the *Senwes*-case as local.[199] According to Theron, Senwes is dominant in each of the towns where it owns a silo (with the only exception being Klerksdorp where Pioneer has a large silo).[200] She has accepted that it might be that a silo in a certain town will be constrained by towns lying within a 60km radius from that town. As already observed, a detailed analysis of market shares at a local level was not undertaken nor was any substitution possibilities considered.[201] The Tribunal accepted the Commission's contention that if one considers the regional market (including towns within a 60km radius of the Senwes area as analysed by the Commission), then Senwes is also dominant in such a wider regional market.[202]

Theron also testified on behalf of the Commission that " *the supply side of the market might look like a national market (due to national pricing strategies), but from the demand side the market must be local. A farmer will simply not transport grain more than the distance commercially viable. We do not have updated data on transport costs, but from the Bayley analysis the costs indicated for transporting grain over large distances seem prohibitive*. CTH, the complainant stated in their complaint documentation that "*Due to the inhibiting costs of transport, producers store their grain at a silo closest to them."* Theron also added that "*If faced by a SSNIP test in his local market, a farmer can either erect an on-farm silo (at huge capital costs), use silo bags or transport his crop to another silo. From the earlier discussion it is clear that neither of these alternatives can restrain a hypothetical monopolist owner of a local silo. It seems therefore that the market for grain storage is local*."[203]

In a report compiled by Theron in another matter subsequent to *the Senwes* case, she explained the market techniques to define a geographical market in relation to private hospitals and amongst one of them, the method to use radii (geographical distance) of travel times.[204] For the radius test, the report stressed that data on the addresses and travel times of customers (patients) are required. To obtain that data a well conducted survey is recommended. The report also warned the reader against the pitfalls of such tests which may ignore "patients' heterogeneity and that travel time/distances may be determined on an arbitrary

199 *The Senwes Case* par 5 2.
200 Theron Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes") par 2 26.
201 Theron 26.
202 *The Senwes Case* par 59 15.
203 Theron par 3 23 and par 1 24.
204 Theron T*echniques for defining relevant markets in analysing competition in the South African private hospital sector* 7 par 3.1. Compiled to assist the inquiry into the private healthcare sector of South Africa by the Commission.

basis.

Accordingly, this research includes a survey as to assist in the definition of the storage market of which the outcomes are explained below.

12. The customers' views

For purposes of this dissertation and in an attempt to evaluate the relevant market concerned more accurately, empirical research was conducted during September 2019 in an attempt to determine whether grain producers of grain commodities, being the main group that stores grain, are able and willing to elect from different available alternative storage solutions. Customers, being commercial farmers that consistently produce sizeable crops in terms of tons harvested, as described below, were asked about other factors besides traveling/distances that guide the storers' election of a particular storage option.[205]

12.1 The population

Customers of Senwes that have delivered more than 3 000 tons of grain at Senwes' silos annually for the previous five years were elected as the target group for the survey.[206] From the populated target group of 200 producers, 128 of them completed the survey. The questions as well as results of the survey are included as Annexure 3 to this dissertation and explains the age and demographics, production levels and locations concerned. The responders are mainly located in the Free State and North West Provinces, which is the main white maize production areas in South Africa.

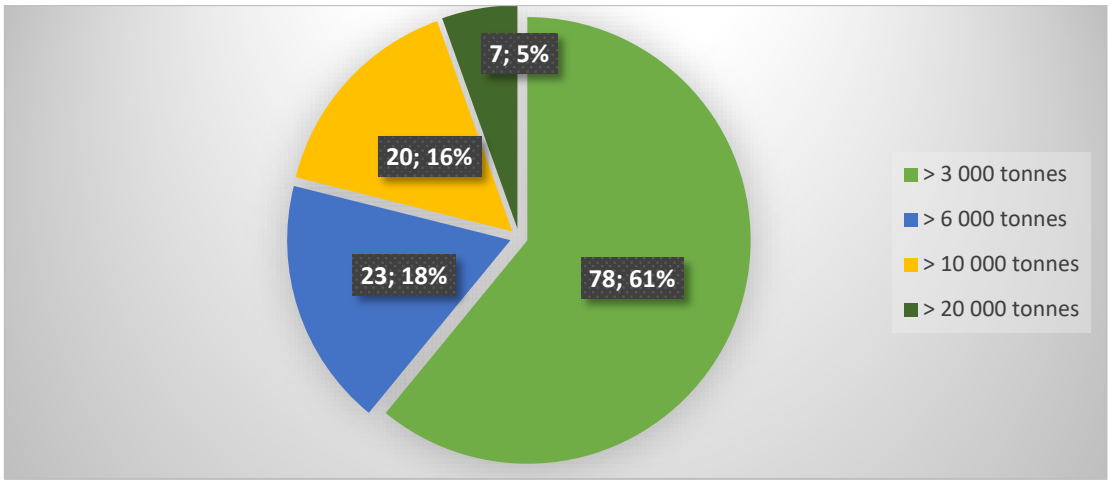
12.2 The results

The responses to the survey proved to be insightful, especially regarding alternative solutions as substitutes to traditional silo storage options.

Graph 12.2.1 Respondents by average tons of maize produced in the past five years

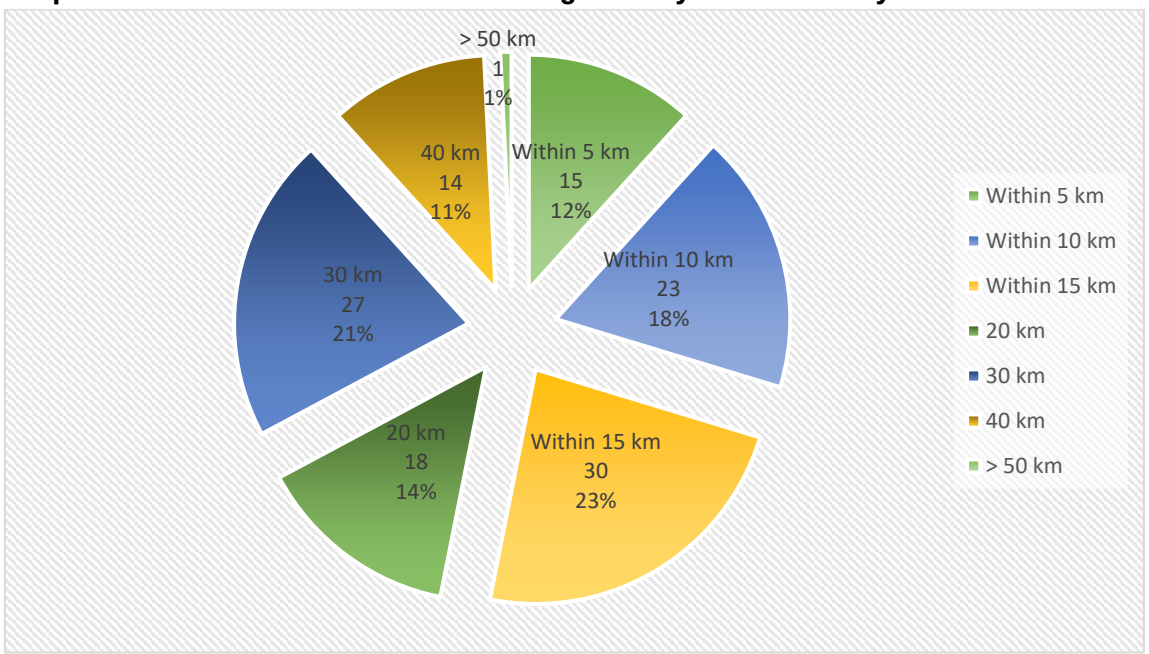
205 Ethical clearance to conduct the survey obtained by the Ethics Committee of the University of Pretoria (department of Public Law) on 9 September 2019 under ER no. L021/10.

206 Conducted in Afrikaans (as target audience is Afrikaans) on an electronic platform known as Jotform. An electronic questionnaire was prepared, and a link was e-mailed to participants together with a consent clause that had to be accepted before any of the questions could be answered.



Graph 12.2.1 reflects the relative size of the producers included in the survey. The main body of farmers produce between 3 000 and 6 000 tons on average. Ten thousand and above tons produced are the truly large commercial producers. These producers are the ones that will generally consider the establishment of on-farm storage as an investment and as a suitable alternative than storage at a traditional cement silo. The decision to make such an investment as described in this dissertation in Chapter two will obviously be dependent on aspects such as location.[207]

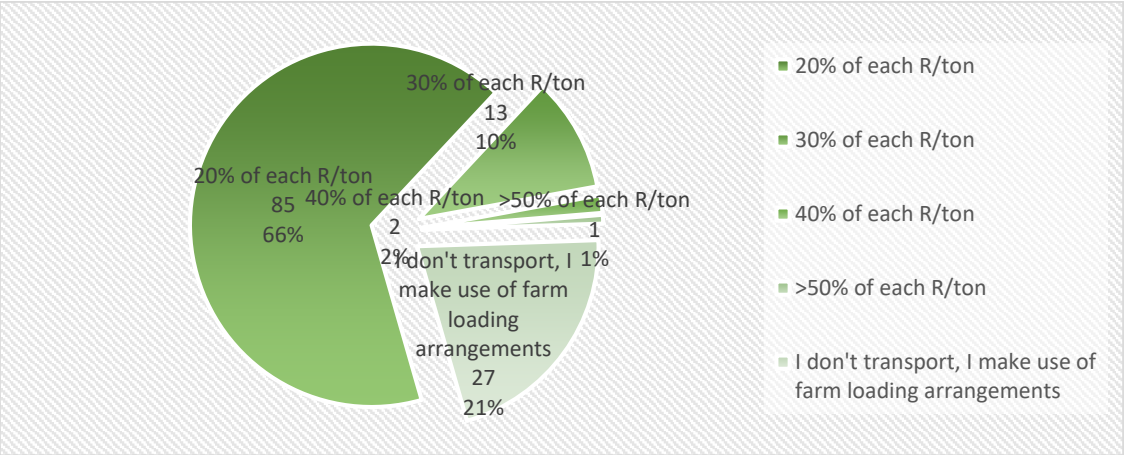
Graph 12.2.2 How far is the nearest storage facility located from you?



Graph 12.2.2 results confirm that most of the producers are located relatively close to a traditional storage facility.

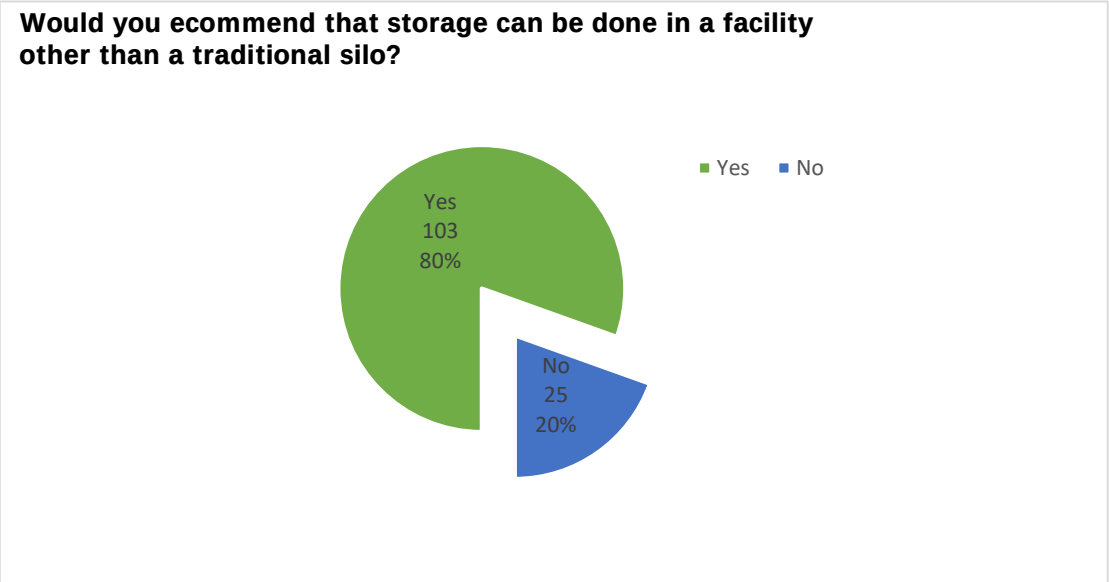
207 Chapter 2 par 5 25.

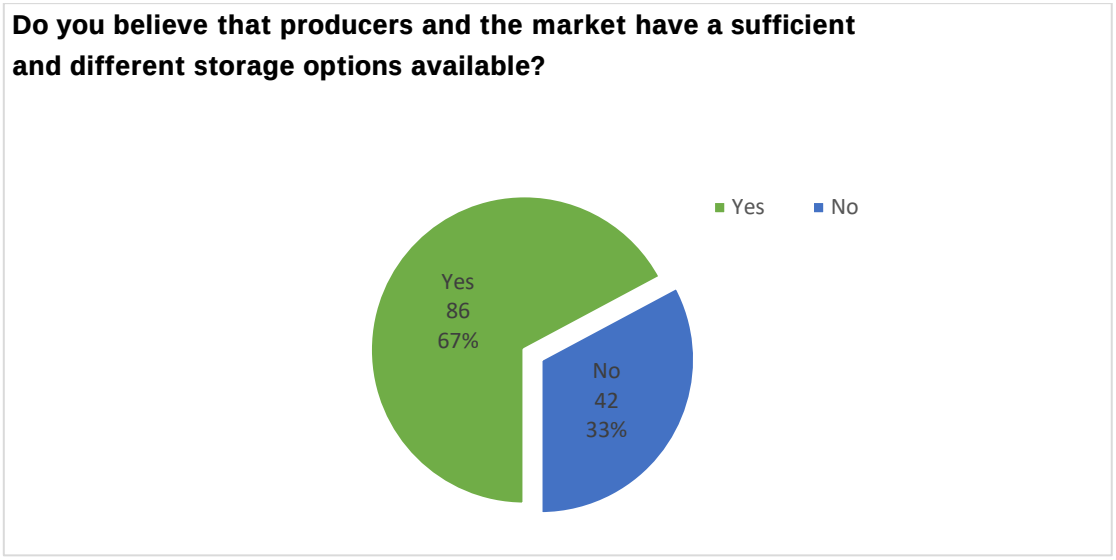
Graph 12.2.3 Expenditure on transport during harvest time as % of each R/ton



The results above and below captured in Graphs 12.2.3 and 12.2.4 confirm that producers rely on mostly own transport and then on "*plaaslaai*" (farm loading) to transport grain to the nearest storage facility or processor. The costs per transport in most instances amounts to 20% of a rand per ton and will obviously increase the further the producer is located from a storage site or if such a producer has not adopted efficient logistical practices (e.g. using tractors and wagons instead of large interlink trucks).

Graph 12.2.4

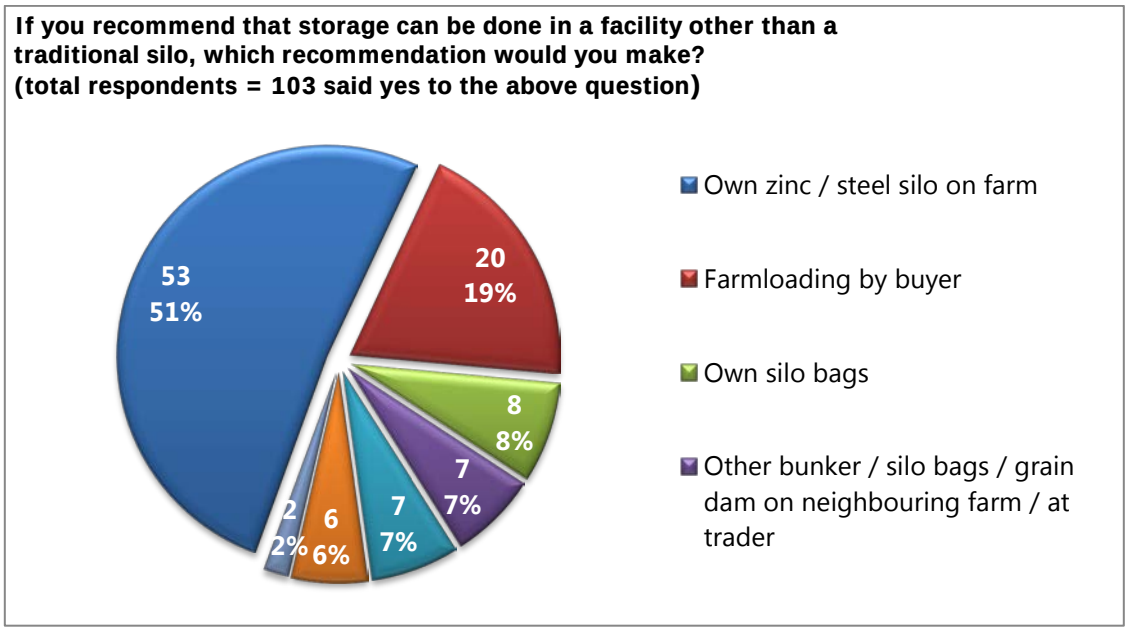




Graph 12.2.5

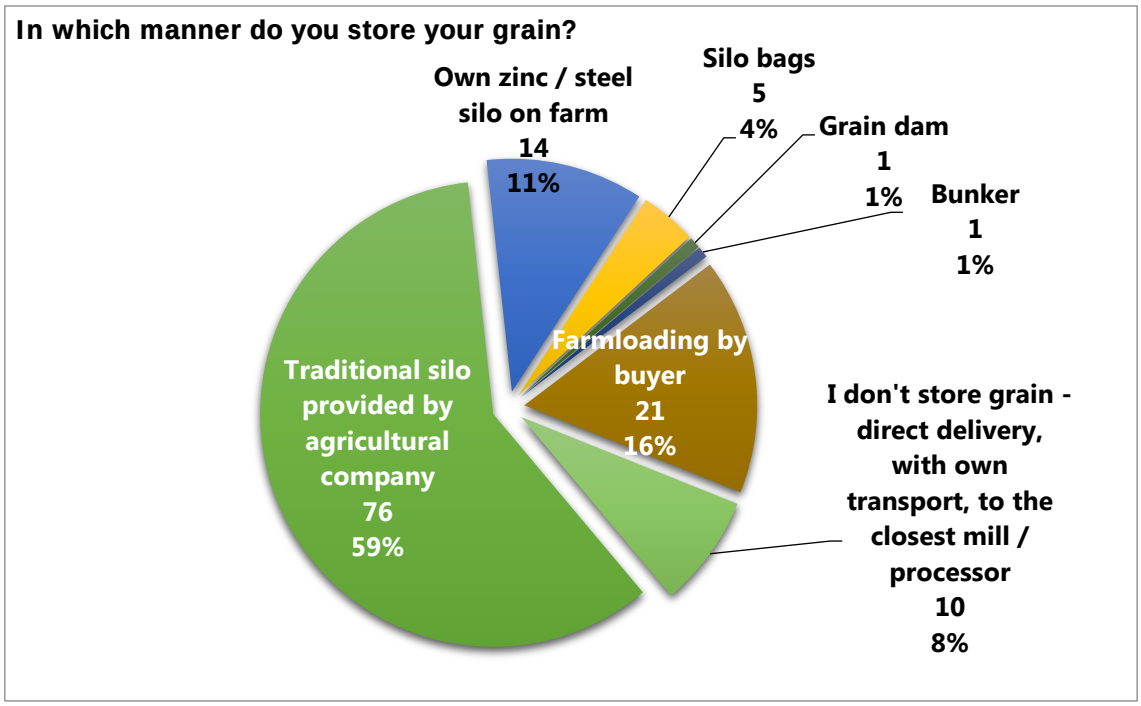
Graphs 12.2.4 and 12.2.5 above confirm that producers accept that alternative storage options, besides a traditional silo, are acceptable and available.

Graph 12.2.6



Graphs 12.2.6 and 12.2.7 above and below confirm that producers accept that storage options are available and that they will make use thereof, again dependent on each own unique circumstance. Farm loading usually occurs in harvest times.

Graph 12.2.7

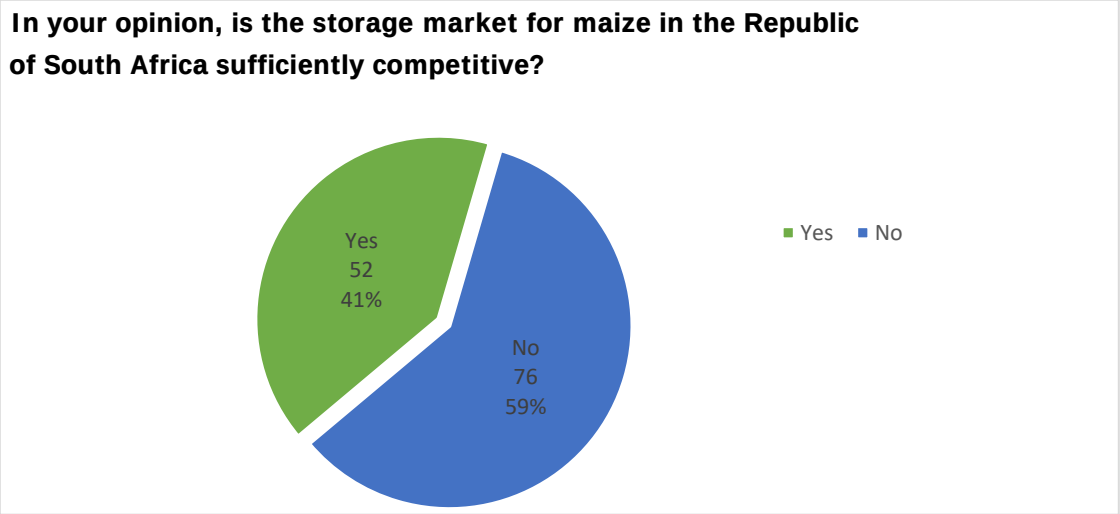


Graph 12.2.7 confirm that the producers deem that alternative storage options are acceptable substitutes although they will generally elect the most convenient

(closest, loading tempo's, turnaround times) as well as the lowest costs option. The comprehensive responses and other factors that producers deem important are included in Annexure 3.

Farm loading is also an important option as generally the costs are for the purchaser and as a result of the poor state of the roads much more convenient for the producers as to undertake own transport.

Graph 12.2.8

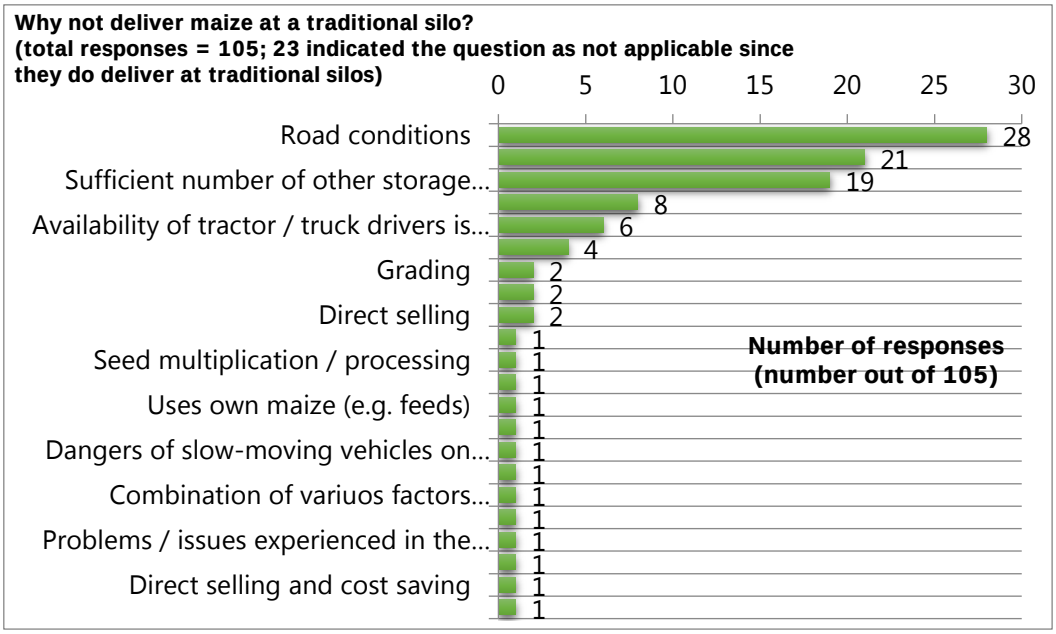


It is submitted that the responses as captured in Graph 12.2.8 mean that producers are of the opinion that storage at traditional concrete silos is not "competitive" in terms of costs. As explained in this chapter, the reasons therefor are the high fixed costs and maintenance of traditional silos towards the other available cheaper storage options.[208] The critical loss calculation and incremental increases over the years of storage tariffs support this view.[209]

Customers also responded and provided different reasons for not delivering at a traditional silo. Graph 12.2.9 below, shows other factors drive a storage decision, of which the availability of alternative storage options is one of the main reasons.

208 See footnote 92.
209 See Chapter 2, Graph 2.5 for the critical loss calculation.

Graph 12.2.9



The customers were also asked which other factors are taken into consideration to guide their decisions regarding a storage option. Their responses are also included in Annexure 3 to this chapter. These included guaranteed payment, the availability of cleaning of grain and earlier deliveries during harvest time. The aforesaid proves that costs (handling and storage tariffs), is not the only factor and that the value add by dependable storage operators also play an important role.

13. Conclusion

The research and evidence, explained in this Chapter two, confirm the view that cheaper and appropriate storage substitutes or options exist and are being fully utilised by the role-players in the market. The elements that guide a storer's decision of a substitute storage solution is dependent on the amount of the investment and the *rationale* thereof. Producers would generally elect a more permanent structure such as a steel/zinc, whilst traders prefer the more flexible option of silo bags. Processors, on the other hand, prefer on-site storage adjacent to its mill of crushing plant as to enable uninterrupted production.

It is submitted that the assumptions made in the *Senwes* case, that alternative storage options are not adequate substitutes for a traditional cement silo, are no longer relevant and could be refuted. The increasing growth trend of alternative storage options by different rivals act as a true constraint on traditional silo operators and should be included in the market definition to calculate market share and assessment of these operators' market power.

CHAPTER 3: NATIONAL GRAIN TRADING AND THE IMPACT OF COMPETITION BY INTERNATIONAL GRAIN TRADERS

1. Introduction

In this Chapter, some of the major trends that are influencing both international and domestic aspects of grain markets around the world are to be considered. Consequently, in this Chapter the extent of global competition is explained by referring to developments in the grain sectors of comparable countries in the grain trading environment that experienced liberalisation.

The strategies of these global integrated grain traders are explained to contribute to the discourse on the relatively small size of the South African grain market and lack of influence that the South African market has in this respect. In addition it is submitted that the importance of a level of protection of local grain storage and trading role-players against rising global competition as to ensure sustainable and affordable domestic food supply has become increasingly important.

This analysis is to be conducted against the realities of a highly competitive global grain trading market. The trends that are to be considered are the deepening globalisation as international traders extend activities into the domestic markets; the increasing consolidation of the industry; the increasing integration by the major grain trading firms across the entire supply chain as well as the increase role of financial actors in the food systems.[1]

Historically the grain markets have been characterised by relatively insulated and fragmented domestic markets. However, substantial changes have occurred in this industry over the past two decades.

First, there has been an increased reliance on imports to meet consumption requirements as supply-demand imbalances have increased around the world.

Second, this industry, similarly as with other industries, has become increasingly liberalised over time. This liberalisation has, in part, been characterised by the gradual lowering of trade barriers, particularly import tariffs, domestic subsidies and export subsidies.[2]

As explained in Chapter one as well as in this Chapter , liberalisation of grain markets has also extended to the internal deregulation of industries whereby state-controlled grain marketing boards have been privatised resulting in domestic and export grain

1 Robinson *Annual Review of Resource Economics: Globalization of Agriculture* Volume 10 145.

2 World Trade Organisation *Understanding the WTO: The Agreement. Agriculture: fairer markets for farmers* https://www.wto.org Anon date unknown [last accessed 24 July 2019].

activities being accessed by competition.[3] The reality is that South Africa in terms of the production of grain, especially maize for human and animal consumption are not a significant player in global terms.[4]

For purposes of this Chapter reference is made not only to maize (corn) but to other grain commodities, which include wheat and oilseeds as maize as a commodity is not traded in all the comparable jurisdictions. Soya beans and wheat are far more important for global trade than white maize.

On the list of rankings South Africa ranks tenth out of seventeen countries producing maize with USA, Argentina, Brazil and Ukraine being the top four. The USA produces on average 340 million[5] tons[6] of maize per season with South Africa producing on average 12 million tons.

Therefore, in global terms, South Africa does not play a substantial role as exporter unless experiencing a bumper harvest together with high carry-over stocks.

These "export" periods are reflected in the graph 3.1 below which shows that yields in excess of 12 million tons of maize are not a regular occurrence. South Africa is therefore generally only capable of ensuring enough production for own consumption.[7]

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3 Chapter 1 par 2 7; Doyer and others "S*trategic focus areas and emerging trade arrangements in the South African agricultural industry since the demise* of the marketing boards" 497. Marketing boards are state-controlled, or state-sanctioned entities legally granted control over the purchase or sale of agricultural commodities.

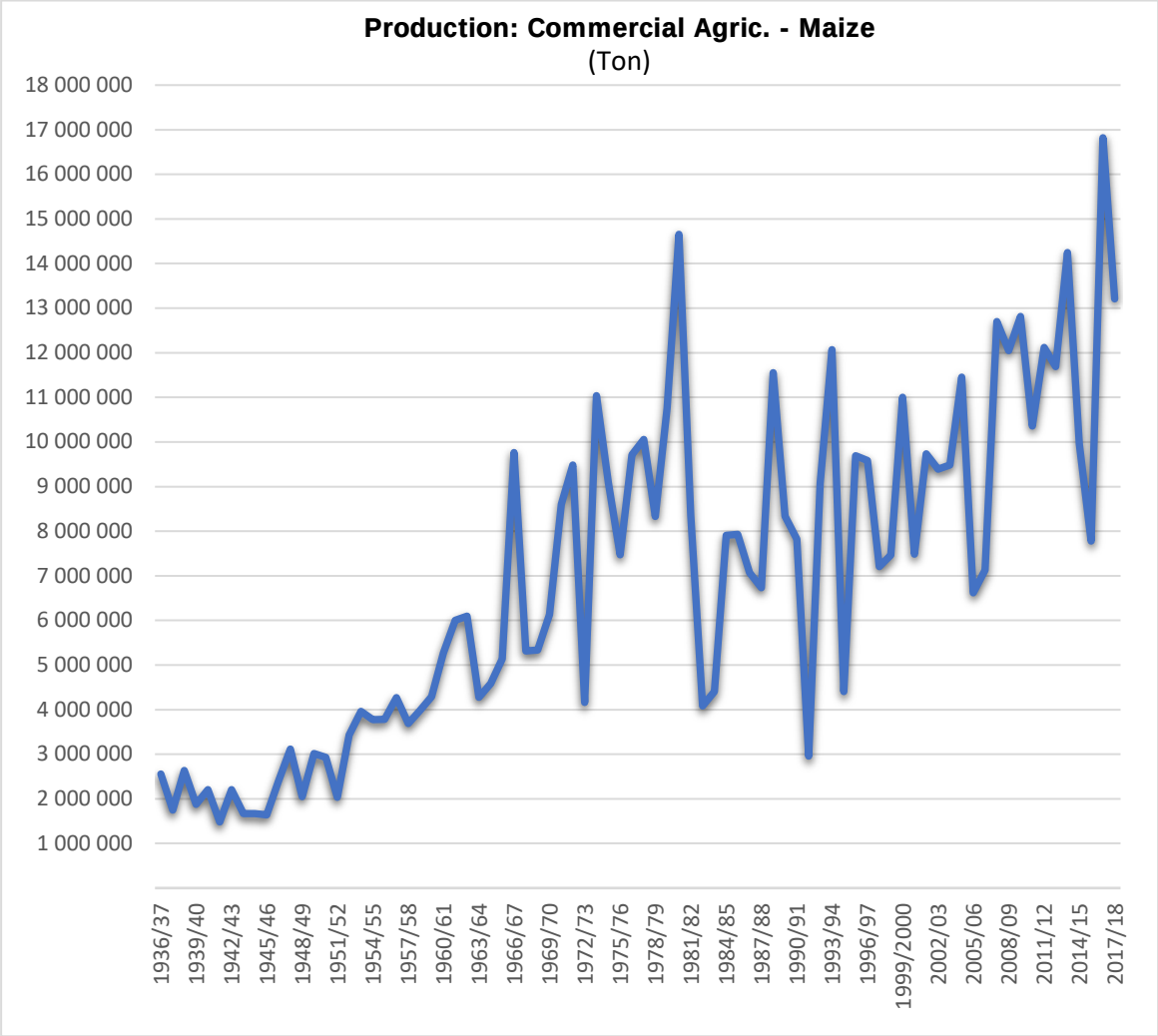
4 Keshrinandan Enterprise website Broken Maize, Corn Grits, Corn Feed Manufacturer 2017 http://www.keshrinandan.com/maize/top-10-largest-maize-producing-countries-in-the-world/.[last accessed 14 August 2019].

5 CNBC News Reuters Corn futures fall after USDA forecasts bigger-than-expected US cropAugust 2019 https://www.cnbc.com/2019/08/12/corn-futures-fall-after-usda-forecasts-bigger-than-expected-us-crop.html.[last accessed 20 August 2019].

6 Successful Farming website McGinnis M *U.S. Corn production, supplies fall, USDA says* June 2019 https://www.agriculture.com/news/crops/us-corn-production-supplies-fall-usda-says or 13,9 million bushels.[last accessed 6 August 2019]. One bushel equals 0,025 tons.

7 BFAP Baseline Report: Agricultural Outlook 2018-2027 https://www.bfap.co.za/[last accessed 5 August 2019].

Graph 3.1[8]



According to the United Nations, international trade accounts for only 12 percent of world maize production, it represents over one-third of total cereal trade. Global trade in maize has increased significantly over the past two decades, from 55 million tons to around 80 million tons per season, with the most rapid expansion taking place in more recent years. The structure of the world maize market can be characterized as one with a high level of concentration in terms of exports but very low concentration on the import side. The main reason for this development is the fact that those countries which usually have significant maize surpluses for exports are relatively few, while those relying on international markets to meet their needs for domestic consumption and animal feeding purposes by importing maize are many.[9]

8 SAGIS information. SAGIS is the South African Grain Information Services responsible for the collection and distribution of reliable information regarding the South African grain and oil seed market. See https://www.sagis.org.za/ [last accessed on 5 October 2019].

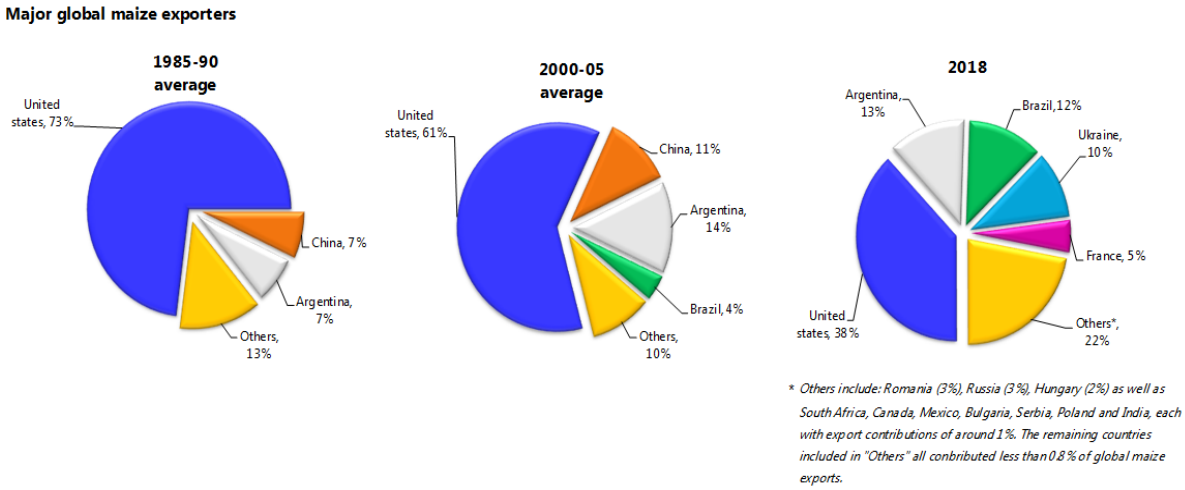
9 Food and Agriculture Organization of the United Nations Abbassian *Maize International Market Profile* 11, 21.

Figure 2.3 below displays the percentages of exports and trends over time. The United States is the world's largest maize exporter which accounts for roughly 40 percent of the global share, down from over 60 percent a decade ago, followed by Argentina and China.

Brazil and Ukraine are among a few other countries which often have surpluses for exports. In 2018 only 15 countries shipped 92.3% of global corn exports by value.[10] Among the top exporters, the fastest-growing corn exporters since 2014 were Poland (up 34.7%), Mexico (up 33.2%), Russia (up 22%) and Argentina (up 20.1%).

Countries that reported a decline in their exported corn sales were led by India (down -69.7%), Serbia (down -47.6%), Bulgaria (down -28.5%), South Africa (down -24.9%) and France (down -20.7%).[11]

Figure 3.2 The US global share declines and others increase



2. Deepening globalisation

Robinson[12] defines globalization as the *"interaction and integration among people, businesses, and governments across the world. It is a process driven by international trade and investment but closely associated with transformations in economies, societies, and politics linked with new information technologies that have enabled greater worldwide interconnectedness."*

Globalization has produced significant changes worldwide regarding *inter alia* knowledge, trade, finance and migration of human capital. The agri-food sector was

10 Corn equals maize which refer to both white and yellow.
11 Workman 2019 *Corn Exports by Country* http://www.worldstopexports.com/corn-exports-country/ [accessed 20 August 2019].
12 Robinson Annual Review of Resource Economics: Globalization of Agriculture Volume 10 133,134-160.

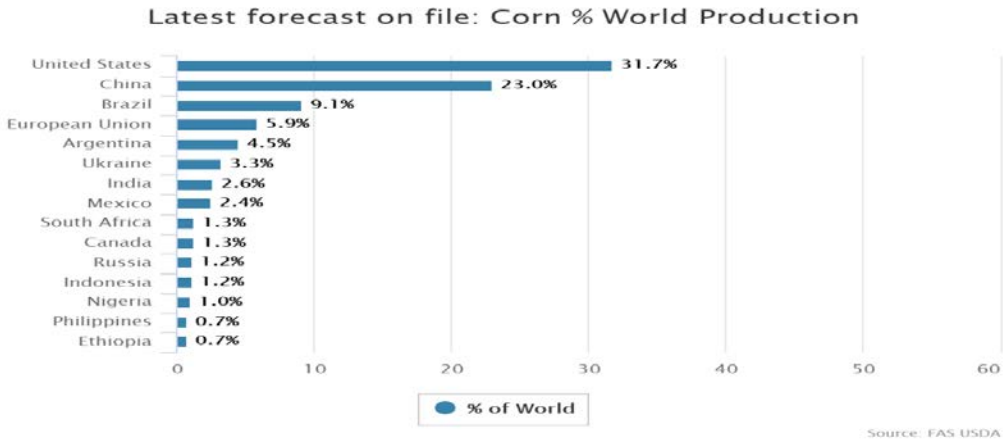
perhaps the least digitized global industry for a long time. Subsequently, this has changed dramatically, with global food and agriculture rapidly adopting digitalization and precision farming. Global trade has been promoted due to deregulation or liberalisation of grain trading as well as the integration of financial markets.[13]

Most of the global trade in the grain and oilseed industry relates to three crops: wheat, soybean and maize. These crops account for 90%[14] of all grain and oilseed traded globally (excluding rice).[15]

International trade of grain and oilseed is a prominent and increasingly important feature of the industry. This is evident in the figures 3.3 and 3.4 below which shows maize as a percentage of production per country in 2019 as well as consumption thereof per country.[16]

There is definite growth in exports of the major grain crops over time, both in terms of the volumes as well the proportion of global consumption that these exports account for. Volumes of exported grain and oilseed have increased by some 72% since 2000 while their share of global consumption has increased from 17% to 22% over the same period.

Figure 3.3: World production



13 Robinson *Annual Review of Resource Economics: Globalization of Agriculture* 135.

14 United States Department of Agriculture Foreign Agricultural Service (USDA) database on international grain trade https://apps.fas.usda.gov/psdonline/app/index.html#/app/topCountriesByCommodity [last accessed 9 August 2019].

15 Although technically rice could also be considered as a grain it is excluded from this analysis as it not a focus of the large international traders and is of little relevance within a South African context.

16 United States Department of Agriculture Foreign Agricultural Service (USDA) database on international grain trade. https://apps.fas.usda.gov/psdonline/app/index.html#/app/topCountriesByCommodity [last accessed 9 August 2019].

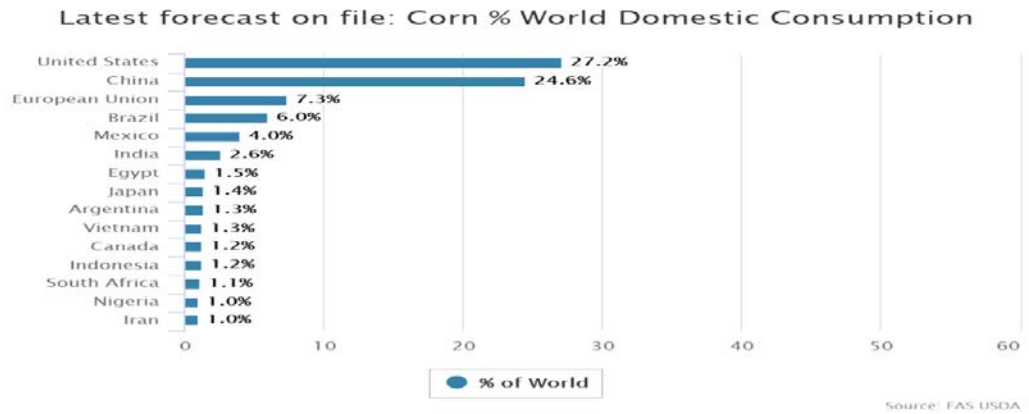


Figure 3.4: Consumption per country

The growth in global consumption and hence the trading of grains is estimated to keep on increasing from 2007 with 3 million tons to 2025. In the medium term, consumption of maize (and cereal grains) will grow at a slow rate (approximately 1.4% per year), mainly due to increased demand for grain in Asian and African countries.[17]

By 2025, maize consumption will increase to 1.32 billion tons. It is expected that maize for feed consumption will also grow due to the rapid livestock growth in developing countries.[18]

This growth of international trade in grain has been driven by more pronounced global supply imbalances between countries, as well the increased liberalisation of agriculture markets.

2.1 Global supply imbalances

Many countries in the world have insufficient production to satisfy their own domestic demand requirements with Asia, Africa and the Middle East typically being net importing regions.[19] In contrast the majority of global production and exports of grain is concentrated in a relatively small number of countries, primarily in the North American, South American and Oceania regions. These regional supply-demand imbalances are shown in Table 3.5 whilst the largest importers as well as the largest net exporters of maize, are presented in Table 3.6 below.

This global supply-demand imbalance has increased over time as the growth in demand for grain has been particularly strong in regions with relatively low

17 Alexandratos and Bruinsma *World Agriculture towards 2030/2050*.

18 Bizcommunity website https://www.bizcommunity.com/Article/1/358/177147.html: *Insight into the global grain market* May 2018 [accessed on 5 September 2019].

19 United States Department of Agriculture *USDA Agricultural Projections to 2027* Office of the Chief Economist February (2018). It is estimated that approximately 60% of all grain trading countries were net importers.

agricultural resources and traditionally low levels of grain production.[20] This trend of increasing dependence on international trade of grain is anticipated to continue into the future.[21]

Table 3.5

Top 10 maize importers[22]
2016/17-2018/19

	Average m tons 2016/2017 - 2018/2019	Forecast 2019/2020	% change
Mexico	15.6	17.4	1.8
European Union	17.5	17.0	-0.5
Japan	15.8	16.0	0.2
Korea Rep. of	9.8	10.3	0.4
Viet Nam	9.1	10.0	0.9
Egypt	9.3	9.7	0.4
Iran	8.5	9.5	1.0
Colombia	5.0	5.4	0.4
Saudi Arabia	4.1	5.1	1.0
Chinese prov. of Taiwan	4.5	5.0	0.5

Table 3.6. Top 10 maize exporters

2016/17-2018/19

	Average m tons 2016/2017 2018/2019	Forecast 2019/2020	% change
United States of America	60.7	58.2	-2.6
Brazil	23.3	29.5	6.2
Argentina	24.1	28.5	4.4
Ukraine	22.2	21.0	-1.2
Russian Federation	4.6	4.5	-0.1
European Union	2.2	2.5	0.3
Paraguay	1.9	2.0	0.1
Canada	1.7	1.8	0.0
South Africa	1.7	1.5	-0.2
Myanmar	1.2	1.3	0.1

20 Alexandratos and Bruinsma, *World Agriculture towards 2030/2050* 31.
21 Alexandratos and Bruinsma *World Agriculture towards 2030/2050* 9.
22 Food and Agricultural organisation of the United Nations Ben -Belhassen and Abbassian *Biannual Report on Global Food Markets* 2019 21.

It is also foreseen that trading of grains will expand, especially from and to developing countries.[23]

As reflected in Table 3.5 above, developing countries have traditionally been net importers of grains. Some of these countries are Mexico, Saudi Arabia, Korea, and Egypt. At the same time, net exporting developing countries have been increasing their exports such as Myanmar. Their role as net exporters of grains may be diminished in the future, but the traditional exporters as a group would increase further their exports, and countries like Brazil and the Ukraine have already become net exporters.

As explained above, developing countries as a group are projected to continue increasing their net imports of grains from the rest of the world. This will mirror increasing net exports of developed countries as a group. Countries such as the US, has increased sales only modestly in the last decade, while new entrants such as Russia and the Ukraine have been supplying a growing share of world exports. These trends are projected to continue, and the latter two countries will become of increasing importance as suppliers of especially wheat and grains.[24]

2.2 Increasing liberalisation of the grain industry

Agriculture markets in general have a long regulatory history with various forms of state support for farmers such as farming subsidies and tariff protection. Agriculture was one of the main discussion points as part of the World Trade Organisation's (WTO) Uruguay round (1986-1994)[25] where countries undertook in the Agriculture Agreement to reduce import tariffs and trade distorting policies such as production and export support thereby enhancing *inter alia* market access.

Since then there has been a world-wide decrease in trade barriers for agriculture in many markets.[26] However, strong elements of trade barriers for agriculture still remain in key exporting countries as the aims of the Agriculture Agreement were not in some instances achieved.[27] The grain industry has also historically been heavily

23 Alexandratos and Bruinsma *World Agriculture towards 2030/2050* 99.

24 Ibid 65.

25 World Trade Organisation date unknown https://www.wto.org/english/docs_e/legal_e/14-ag_01_e.htm [accessed on 11 August 2019]. The Agriculture Agreement aimed to established reforms and to equalise the trading environment for agricultural countries globally. It created a platform for market-oriented policies that lifted trade restrictions for imports, enhance domestic support for especially less developed countries and lessened export subsidies. Overall the objective was to enable global and less distorted free trade of agricultural commodities.

26 See footnote 23 and 25.

27 Agriculture tariffs have been reduced since the Uruguay Round but non-tariff support such as domestic production subsidies remains high in developing countries. Ingco and Nash

regulated within many countries with one channel marketing boards and agricultural co-operatives responsible for the purchase and export of all grains. The *rationale* for these centralised institutions has been in large part to try and achieve higher prices for the farmers' harvests, often in the international market.[28]

During the last decade a number of the primary producing countries, most notably Australia, Canada and Argentina, have moved to eliminate the centralised role of these marketing boards giving farmers and agriculture firms the freedom to trade grain with whom they wish, both within the country and in terms of exports from the country. These countries are therefore good examples of the development of the grain markets in a free trading environment.

Notably, a report on value chain management described marketing boards and observed as follows:" Marketing *boards have been criticized for hampering product and process innovation (Tamilia & Charlebois, 2007; Scrimgeour & Sheppard, 1998). They have even been termed "agriculture's albatross" (Kerr, 1996) through their role in limiting competitiveness by encouraging the production of "largely unimaginative, undifferentiated products, with a small number of high-ends goods competing with small amounts of high-end foods allowed to be imported at relatively steep prices."* [29]

For purposes of this research it is appropriate to explore the progress made and effects of the dismantling of these boards in various jurisdictions that produce and trade grains as the South Africa agricultural market undertook a similar journey.

2.2.1 Australia

Since 1935 the Australian wheat industry was characterised by 15 state-owned bulk handling companies and a single export desk, operated by the Australian Wheat Board (AWB).[30] The AWB was responsible for the marketing, domestic sale and exporting of all Australian wheat from 1935 to 1989.[31] The 15 state-owned grain enterprises and producer-owned marketing boards had exclusive territories from which to receive certain grains into their bulk handling facilities. In 1989, the domestic wheat market

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Agriculture and the WTO: Creating a trading system for development; The critique of the agreement by Actionaid: https://www.actionaid.org.uk › sites › default › files › doc_lib [accessed on 11 August 2019].

28 Wentzel LC 1997 *Origin, financing and ownership of grain silos in SA* https://agbizgrain.co.za/en/about-us/history/grain-industry-transformation [accessed 13 September 2019]; Statz 2012 *Organization, Objectives and Functions of Marketing Boards* https://eziniearticles.com/? [accessed 24 August 2019].

29 Gooch and Felfel, *Characterizing the Ideal Model of Value Chain Management and Barriers to its Implementation* (2008) 13 https://vcm-international.com › Effective-VCM-+-Barriers-to-VCM-Final [accessed on 9 August 2019].

30 The Productivity Commission *Wheat Export Marketing Arrangements Productivity Commission Inquiry Report* 49 [accessed 12 August 2019].

31 The Productivity Commission *Wheat Export Marketing Arrangements Productivity Commission Inquiry Report* 3-4 [accessed 12 August 2019].

was deregulated whereby the AWB's compulsory acquisition mandate of wheat was removed and the state-owned grain enterprises and producer-owned marketing boards lost their monopoly powers over the bulk handling and storing of grain. Farmers could now sell their harvests directly to domestic customers without having to store their crops in the state-owned bulk handling facilities. However, all wheat exports (bulk and non-bulk) were still monopolised by the AWB. Following deregulation of the domestic market several the state-owned grain enterprises were privatised and merged.[32]

The AWB was subsequently privatised in 1999, forming the farmer-owned AWB (International) Limited (AWBI), yet it still maintained its singe export desk status for bulk wheat until 2006.[33] From 2006 to 2008, exporters other than AWBI were allowed to export bulk wheat but this was subject to stringent government approval.[34] Subsequently the bulk wheat export industry has been fully deregulated and all trading companies could export bulk wheat from the Australian market through terminals owned by mainly CBH, GrainCorp and Viterra.[35]

2.2.2 Canada

The Canadian grain market was comprised of several farmer-owned co-operatives and the Canadian Wheat Board (CWB) since 1935. The CWB was a state owned entity with no storage and handling facilities but was responsible for all domestic sales and export of wheat from the Canadian market (i.e. a single export desk).[36] A number of the farmer-owned co-operatives were combined during this time to form government regulated wheat pools that were responsible for the handling and storing of grain.[37] Under this structure, Canadian farmers were only allowed to sell their harvests to the

32 This is discussed in more detail in the following paragraphs.

33 From 1999-2006 non-AWBI exporters could export wheat in bulk subject to approval by AWBI. During this time, AWBI only approved bulk exports of wheat by non-AWBI exporters on two occasions. However, other exporters were permitted to export non-bulk wheat subject to approval by the Wheat Exporting Authority (WEA). The principal requirement was that exports other than AWBI were to complement and not compete with the single desk marketing strategy 48.

34 Approval decision were transferred from AWBI to the Minister of Agriculture, Fisheries and Forestry. During this time 130 applications were received during this period of which only 9 were approved by the Minister. Thereby limiting the amount of bulk wheat exports.

35 USDA Foreign Agricultural Service *Grain Marketing in Australia* 2013 http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20Marketing%20in%20Australia_Canberra_Australia_5-1-2013.pdf and Australia's grain supply chains: Costs, risks and opportunities October 2018 23, 31[accessed on 10 August 2019].

36 Carter and Lyons *The Canadian Wheat Board: Its Role in North American State Trading 1998*.

37 The wheat pool had to submit annual storage tariffs to the Canadian Grain Commission which would approve tariffs to ensure non-discriminatory pricing. Park and Koo *U.S./Canada Grain Handling and Transportation Systems* Department of Agribusiness and Applied Economics 4 para 2, 8 10.

CWB at a fixed price after which the farmer would deliver the grain to its closest storage site.[38]

From 1990, the wheat pools moved away from the traditional farmer-owned model and converted to business corporations. The domestic sale and export of wheat however was still monopolised by the CWB. This position was maintained until 2012 when the Canadian wheat market was deregulated, and the single export desk was abolished. Farmers could sell their wheat through any channel of their choice; grain trading companies were able to deal directly with farmers and any company could export wheat from Canada.[39]

2.2.3 Argentina

The Argentinian National Grain Board (NGB) was established in 1933 to support domestic farmers during the wheat crisis of the 1930s.[40] The NGB had full ownership over all Argentinian storage and port facilities to ensure domestic farmers would have equitable access to a logistics system.[41] The domestic grain market industry was not heavily regulated as Argentinian farmers could choose to whom they wanted sell their crops (i.e. the NGB, domestic millers or international trading companies). Nevertheless, the exporting of wheat was indirectly controlled by the NGB with its monopoly control over storage and port facilities. The NGB would not allow other companies to construct grain elevators close to the main export facilities and thereby controlled the flow of grain out of Argentina.[42] In 1991, the NGB was disbanded as a result whereof access to the ports became unrestricted and storage facilities were transferred to new operators.[43]

3. Global grain trading

As global trade of grain has increased in significance, and as markets have become more liberalised, a handful of very large international agricultural companies have emerged that dominate global grain trade. According to Neves[44] these trading companies no longer act as brokers but can directly buy and sell grain from the producers. As they are vertically integrated and enabled with access to information,

38 Carter and Lyons *The Canadian Wheat Board: Its Role in North American State Trading 1998*.

39 Boaitey *Grain market deregulation: a case study of the Canadian and Australian wheat boards* 4.

40 The 1930s wheat crisis came about as traditional importing countries (mostly Europe) encouraged domestic production and implemented tariffs on wheat imports.

41 Crawford *Agricultural and Food Marketing Management* Chapter 6.

42 See footnote 38.

43 New York Times Editorial *Why Recreate the National Grain Board*? 2014 http://www.lanacion.com.ar/1670266-para-que-recrear-la-junta-nacional-de-granos [accessed on 9 August 2019].

44 Neves *The Future of Food Business* Kindle e-book.

capital and fleets, traders are able to expand and meet consumer demands rapidly, thereby pushing internationalisation of grain markets.[45]

These companies include four well-established agriculture firms namely, Archer Daniel Midlands (ADM), Bunge, Cargill and Louis Dreyfus. It is estimated that these four firms control 73% to 90% of the global grain trade.[46] Several well-resourced international firms such as Glencore have begun to diversify more intensely into the trading of grain and have been successful in gaining a significant global presence. A few Asian firms have also started to become significant global players, although they tend to have a focus on supplying demand in Asian region. These firms include the likes of China National Cereals, Oils and Foodstuffs Corporation ("COFCO") and Sumitomo.[47]

The rise of these international grain firms has largely been on the back of these firms spreading their global footprint and deepening their presence in the domestic markets of exporting countries. Exports of grains have traditionally occurred through domestic agriculture firms, and in many cases state-owned marketing boards, selling at arms lengths to international grain traders. Nevertheless, the phase of liberalisation has seen these large global traders actively increasing their investment and operations within domestic markets of exporting countries to access grain directly for global trading operations. The operations of each of these major global players and how they have expanded their global presence through links into domestic markets of exporting countries are described below.

3.1 Archer Daniels Midland Company ("ADM")

ADM based in the United States has approximately 40,000 employees serving customers in nearly 200 countries. It has a global value chain that includes approximately 450 crop procurement locations, more than 330 food and feed ingredient manufacturing facilities, 62 innovation centres and extensive crop transportation network. Net sales for the fiscal year 2018 were US$ 62.3 billion.[48]

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45 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 2012 9.

46 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 2012 9; Global AgInvesting 2014 *Mitsui Seeks to Challenge Cargill, Dreyfus in Global Grain Push* http://www.globalaginvesting.com/news/NewsListDetail?contentid=3829 [accessed 19 August 2019]; Morris N 2013 The big five companies that control the world's grain trade https://www.independent.co.uk/news/uk/home-news/the-big-five-companies-that-control-the-worlds-grain-trade-8462266.html [accessed 18 September 2019].

47 In 2014, Sumitomo acquired 100 per cent ownership of Emerald Grain. This listed Japanese firm dating back to the 17th century and employs 67,000 people at 132 offices in 66 countries. It provides clients access to a range of grain consumers throughout the world, particularly into rapidly growing marketing in East and South Asia www. http://emeraldgrain.com. [accessed on 9 August 2019].

48 ADM Corporate website

Some of ADM's key acquisitions, providing instant and substantial expansion of its footprint across the food value chain, include 5 elevators from the Olsen Brothers in the USA and Palma Group in Slovakia[49], Iowa Grain Co. (a US-based commodity futures trading company), Alfred C. Toepfer International ("Toepfer") and Elstar Oils in Poland. ADM's acquisition of Toepfer provided it with substantial new capacity in terms of storage, handling and export facilities globally.[50] The Elstar Oils acquisition included one of the largest integrated oil processing and manufacturing facilities in Poland.[51]

In 2018, ADM approached Bunge with a take-over bid[52] as to procure soy crushing facilities in Argentina and to provide support to Bunge, which has suffered declining results. Should the merger have been approved ADM would have obtained a 20% market share of the Argentinian Grain export market. The merger eventually did not occur but according to reports one of the main issues were the limited probability of success of the approval of the merger by the antitrust authorities.[53]

3.2 Bunge Limited

Bunge, a company founded in the Netherlands, has activities that include grain and oilseed origination, trading, oilseed processing, edible oils and specialty food products. Bunge's net sales for the fiscal year 2018 were US$ 46 billion.[54] In 1995,

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http://www.adm.com/en-US/news/Facts/Documents/ADM%20Corporate%20Fact%20Sheet.pdf [accessed on 4 August 2019].

49 Strategically important as ADM moved into Eastern Europe for the first time during 2012 acquiring 3 storage and train loading sites. https://www.allaboutfeed.net/Nutrition/Raw-Materials/2012/1/ADM-buys-Slovakian-grain-elevators-AAF012637W/[accessed on 9 August 2019].

50 Toepfer was a global grain trader and processor of agricultural commodities established in 1919 and acquired fully by AMD in 2014. It operated 37 offices worldwide also owned inland, river, and export facilities in Argentina, Bulgaria, Canada, Hungary, Romania, Ukraine, and the United States. AMD renamed Toepfer to AMD to AMD Germany. https://www.aa.com.tr/en/archive/adm-completes-acquisition-of-remaining-stake-of-toepfer-international/153192 [accessed on 26 August 2019].

51 Elstar added to the existing ADM portfolio in Eastern Europa in terms of established oilseed processing, food manufacturing and biodiesel capabilities. Also See footnote 49.

52 Bunge had a market value of about $9.8 billion and ADM's valuation was $22.6 billion. New York-based Bunge operates in more than 40 countries, while Chicago-based ADM is operating in 160 countries. ADM is the most U.S.-focused of the major grain companies and a takeover would help it grow in South America, where Bunge is a major agricultural force. ADM runs about 500 crop-buying facilities and 250 processing plants worldwide.

53 Miller Magazine website http://www.millermagazine.com/english/wsj-adms-takeover-talks-with-bunge-break-down/. [accessed on 9 August 2019]. Fears of high concentration created by the merger between ADM and Bunge in the United States regarding grain origination and oilseeds processing in the USA existed. It was foreseen that these companies would probably need to divest facilities in North America and potentially in Europe. Farmers were also concerned about more control over wheat, soybean and corn, which could affect prices paid to them.

54 Shahbandeh 2019 *Bunge Limited's net sales from 2006 to 2018 (in million U.S. dollars)* https://www.statista.com/statistics/274661/revenue-and-net-income-of-bunge-limited/nd

Bunge had business operations in 5 countries but has since expanded its network to over 40 countries with 32 000 employees. Bunge's prominent acquisitions include grain elevators from Riceland Foods in the USA, an export facility and grain elevators in the Ukraine, La Plata Cereol (a leading Argentinian Agribusiness)[55] and Grupo Altex in Mexico.[56] Bunge's acquisition of Cereol included oilseed processing and manufacturing facilities in Europe, North America and Brazil and the acquisition of Grupo Altex added six wheat milling facilities to Bunge's portfolio making it one of the largest wheat milling companies in Mexico. Bunge keeps on expanding into biofuels, bio energy and grain origination.[57]

3.3 Cargill Corporation

Cargill is a US-based international producer and marketer of food, agricultural, financial and industrial products and services with 155 000 employees across 70 countries.[58] Cargill declared sales and other revenues of US$113,4 billion in the 2019 fiscal year.[59] Cargill is responsible for approximately 25% of all US grain exports.[60] Cargill had operations in 20 countries in 1995 but by 2013 had expanded to more than 67 countries on six continents.[61] Cargill's key acquisitions include Continental Grains (one of the largest grain storage and trading companies in the USA), a leading Hungarian grain and oilseed trading company Agrograin, the commodity management business of the Australian Wheat Board (AWB), and Pagnan Commerciale (an Italian grain trading company).[62] The Agrograin acquisition included the company's extensive grain, oilseed and protein trading network as well as its river port facilities.

[accessed on 20 August 2019]; Bunge corporate website *Bunge Limited to Acquire La Plata Cereal* https://www.bunge.com/who-we-are/our-history accessed [21 August 2019] .

55 Business Wire (2001) Bunge Limited to Acquire La Plata Cereal http://www.thefreelibrary.com/Bunge+Limited+To+Acquire+La+Plata+Cereal%3B+Acquisition+Will+Make+Bunge...-a078956175; and https://www.reuters.com/article/us-bunge-m-a-archer-daniels-argentina/bunges-coveted-argentina-plants-lure-adm-takeover-approach-idUSKCN1GC0K [accessed on 11 August 2019]

56 World Grain website *Bunge completes acquisition of Grupo Altex* 2013 http://www.world-grain.com/articles/news_home/World_Grain_News/2013/12/Bunge_completes_acquisition_of.aspx?ID=%7B9DBB8F61-63DE-4BD1-87C6-A2043AC2BFF1%7D [accessed on 10 August 2019].

57 Bunge website https://www.bunge.com/news/bunge-announces-agreement-buy-30-agrofel-and-increases-its-origination-capacity-rio-grande-do [accessed on 17 September 2019].

58 Bunge website https://www.bunge.com/news/agribusinesses-seek-modernize-global-agricultural-commodity-trade-operations [accessed on 19 August 2019].

59 Cargill Corporate website Who is Cargill Inc.? http://www.cargill.com/company/glance/index.jsp [accessed 3 August 2019].

60 See footnote 59 above. http://www.cargill.com/wcm/groups/public/@ccom/documents/document/doc-cargill-history-timeline.pdf [accessed on 10 August 2019].

61 See footnote 59.

62 Cargill History http://www.cargill.com/wcm/groups/public/@ccom/documents/document/doc-cargill-history-timeline.pdf.and https://www.cargill.com/page/our-year-in-numbers [accessed on 3 August 2019].

Cargill's acquisition of AWB included the company's international grain trading businesses as well as all its grain distribution and storage assets.[63] Cargill also has offices in South Africa and supply and export grain to the local and international markets.[64]

As all its rivals, Cargill is integrated in the food chain and expansion is pursued throughout the chain.[65] In January 2016 Cargill started operations of a $100m wet corn milling plant in Karnataka, India with a capacity to process 800 tons of corn every day.[66]In February 2016, Cargill and MV Cargo entered into a share purchase agreement in February 2016 to build a $100m grain terminal in the port of Yuzhni, located in Ukraine's Black Sea.[67]

3.4 Louis Dreyfus Company ("Dreyfus")

This company, originally a French company, now located in the Netherlands, is one of the world's oldest and largest traders of grains and originates, processes and transports approximately 80 million tons of commodities per annum.[68] Net sales for the fiscal year 2018 were US$ 36.56 billion.[69] In 1995, Louis Dreyfus had operations in approximately 20 countries and by 2018 had extended its network to 100 countries on six continents with 18 000 employees. Dreyfus' prominent acquisitions include export elevators from ContiGroup in the USA, Bazhou (a large oilseed processing facility) in China and Ilomar Holdings (a global supply chain management company).[70] The acquisition of Ilomar Holdings provided Dreyfus with over 400 000 square metres storage capacity across Belgium, Spain, Vietnam and the US. In Southern Africa, the Company is a leading maize, wheat, oilseeds and rice trader. Dreyfus intends to grow

63 Cargill corporate website. Cargill to buy AWB Commodity Management Business from Agrium Inc. https://www.cargill.co.za/en/agriculture [accessed on 14 August 2019].

64 See footnote 62.

65 Food processing website https://www.foodprocessing-technology.com/features/featurean-appetite-for-industry-the-worlds-biggest-food-processing-companies-4914670/v [accessed on 10 August 2019].

66 Cargill corporate website Cargill in the Asian Pacific region fact sheet 2 https://www.cargill.com.cn/en/doc/1432109351465/about-apac-pdf_en.pdf [accessed on 1 September 2019].

66 UkrAgroConsult Black Sea port infrastructure news: Cargill expands its presence in the region July 2018 http://www.blackseagrain.net/novosti/black-sea-port-infrastructure-news-cargill-expands-its-presence-in-the-region [accessed on 2 September 2019].

68 Louis Dreyfuss corporate website https://www.ldc.com/global/en/about-us/glance/ [accessed on 7 September 2019].

69 Louis Dreyfus Annual Report 2013 9.

70 Louis Dreyfus Commodities *Louis Dreyfus Commodities announces acquisition of Ilomar Holding N.V* http://www.ldcom.com/investors-media/press-releases/louis-dreyfus-commodities-announces-acquisition-ilomar-holdi/] [accessed on 7 September 2019].

its portfolio of assets and already operates sun seed crushing plant, a rice packing plant and participates in two wheat mills.[71]

3.5 Glencore plc

Glencore, a British Swiss company, is one of the world's largest diversified natural resource companies and a major producer and marketer of over 90 commodities. The company is primarily focused in minerals and metals and is a relatively new player in the agriculture market with storage, handling and processing facilities on 5 continents. Founded in the 1970s as a trading company, Glencore has grown to become a major producer and marketer of commodities, employing 158,000 people around the world.[72]

Its operations comprise around 150 mining and metallurgical sites, oil production assets and agricultural facilities. Glencore sources and markets commodities to industrial consumers such as steel-makers, power companies and processors of oil and food etc.[73] Glencore Agriculture (Glencore Agri) is built around a network of high-quality origination and logistics assets, comprising over 200 storage facilities, 31 processing facilities and 23 ports in strategic locations around the world, Glencore Agri is well-positioned in key export regions and in the trade of major agricultural commodities including grains, oilseeds products, rice, sugar, pulses and cotton.[74]

Glencore recorded revenue of US$ 484 million for their agricultural division and sold 43,2 million tons of grain in 2018.[75] Glencore had a small presence in the agricultural sector until it acquired Viterra, Canada's largest grain handling company as well as a significant grain handler and bulk grain port operator in Australia.[76]

3.6 COFCO

China National Cereals Oils and Foodstuffs Corporation (COFCO) is China's state-owned food processing and grain trading company and is the largest supplier of products and services in agricultural products in China.

At present, COFCO has total assets of 560.6 billion RMB ($1,4 billion), an annual

71 Pietermaritzburg and Lichtenburg Louis Dreyfus website www.ldc.com and www.nwk.co.za. accessed on 2 August 2019].

72 Glencore corporate website https://www.glencore.com [accessed on 11 August 2019].

73 Glencore Agriculture website https://www.glencoreagriculture.com/[accessed on 11 August 2019].

74 Glencore Agri controls storage and handling facilities in all the main growing regions. It has 270+ storage facilities in 17 countries.

75 Glencore corporate website https://www.glencore.com/index/investors/reports-results/2018-annual-report [accessed on 10 August 2019].

76 Riseborough and Singh 2012 *Glencore Agrees $6.15 Billion Deal for Canada's Viterra* http://www.bloomberg.com/news/2012-03-20/glencore-will-buy-grain-handler-viterra-for-6-15-billion-1-.html [accessed on 10 August 2019].

revenue of 471.1 billion RMB ($1 148 billion), total annual turnover of 150 million tons, a global storage capacity of 31 million tons, an annual processing capacity of 90 million tons, and an annual port transit capacity of 65 million tons.

In China alone, COFCO has an integrated processing capacity of more than 60 million tons per annum. COFCO is China's largest food processing company, with products covering all the main categories of Chinese daily consumption, including rice, wheat, corn, oil and oilseeds, sugar, cotton, meat products, dairy products, wine, tea, and so on. COFCO has 2.3 million terminal sale points throughout China's 952 large and medium-sized cities and more than 10,000 counties and villages, capable of providing consumers with an enough supply of quality and safe food year-round. COFCO plays an important supporting role in the maintenance of China's grain and oil market stability.

COFCO has oilseed and wheat processing capacity in excess of 20 million tons per annum in China, more than 150 office and plant locations in 38 countries across five continents and recorded revenue of US$12.1 billion for its agricultural division.[77] COFCO predominantly focused its operations in China until its acquisition of controlling stakes in both Noble Agri (international grain and oilseed trading company) and Nidera (major international agribusiness) in 2013.[78] These acquisitions provided COFCO with global origination, trading and processing operations mainly aimed at securing supply to the growing Chinese market.[79] Noble Agri had origination, trading and processing operations across 140 locations in Europe, South America, Africa and North America whereas Nidera has storage and processing facilities in South America, grain elevators in North America and a distribution network across Europe. COFCO's strategy is to continue focusing on creating the world's leading grain trader and food producer, aiming to become a model for national food security strategy and food safety strategy implementation.[80]

In December 2015, COFCO acquired the remainder of the shares in Noble, making it the only shareholder of this company. This added sales of $14.9 billion, and delivered 46 million tons of products globally, with 45 asset locations and 9,500 employees in 29 countries, to the COFCO portfolio.[81]COFCO grains and cereals' business covers five

77 *COFCO Annual Financial Report 2013* 2-6. Total revenue assumes an exchange rate of HK$8.33 is equal to US$1.

78 Yun and Humber 2014 *Cofco Buys Noble Agri Unit Stake as China Seeks Food Supply* http://www.bloomberg.com/news/2014-04-01/cofco-to-pay-1-5-billion-for-stake-in-noble-s-agriculture-unit.html [accessed on 14 August 2019].

79 Reuters, *COFCO's Acquisitions Highlight Its Strategic Role in China* 2014 67 http://uk.mobile.reuters.com/article/ibmChannel1/idUKFit69585420140404 [accessed on 15 August 2019];
Cofco's global grain turnover in 2018 was 106m tons.

80 COFCO corporate website http://www.cofco.com/en/AboutCOFCO/ [accessed on 10 August 2019].

81 COFCO corporate website http://www.cofco.com/en/News/Allnews/2015/1223/46251.html [accessed on 10 August 2019].

major categories: rice, flour, noodles, bread, and brewing materials. The company has a relatively complete industrial layout in the major grain production areas in China and has full control over grain resources at home and abroad. The sales network of products covers the whole country.[82]

It also expanded its North American operations in August 2017 by forming a grain supply partnership with Growmark, the second largest farmers' co-operative in the US. This business operates a barge, truck, and rail terminal on the Mississippi River at Cahokia, Illinois. The operation has the capacity to receive 180,000 bushels (or 46 000 tons) of corn per hour and can load two river barges at the same time at a rate of 60,000 bushels (or 1 500 tons) per hour. The companies also structured a grain origination agreement through which Growmark provides grain market, risk management, and agronomy services to farmers in more than 40 U.S. states.[83]

In August 2018 is was reported that COFCO is leading grain exports from Argentina. According to an article in 2018, the Ministry of Agriculture reported that during 2017 COFCO shipped 17.1% of total Argentinian grains exports, which aggregated to 47.88 million tons. The second place was occupied by Cargill, with 15.3% of national exports. ADM, Bunge and Dreyfus were jointly responsible for the 30%. These five grain companies in the Argentina, is therefore responsible for 63% of the Argentina's grain exports.[84]

4. Dynamics in Global Grain Trade[85]

After World War II, the USA became the world's grain superpower by being the leader in corn and wheat production as well as exports. By the late 1990s, the US annually exported nearly a third of globally traded wheat and around 70 percent of corn. However, the emergence of new low-cost producers and exporters in the global wheat and corn markets reduced the US share of grain exports and transformed global grain trade. As indicated above, competition from especially Argentina, Brazil, and Ukraine are driving down the US corn export share.[86]

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82 COFCO corporate website http://www.cofco.com/en/BrandProduct/COFCOGrainsCereals/ [accessed on 10 August 2019].

83 Kiernan 2017 *Cofco, Growmark Announce North American Grain Supply Partnership* http://www.globalaginvesting.com/cofco-growmark-announce-north-american-grain-supply partnership/?utm_campaign=shareaholic&utm_medium=email_this&utm_source=email [accessed on 16 August 2019].

84 Patino 2018 *Chinese COFCO surpasses US companies as largest grain exporter from Argentina* https://efarmnewsar.com/2018-08-06/chinese-cofco-surpasess-us-companies-as-largest-grain-exporter-from-argentina.html [accessed 6 September 2019].

85 As export flows shift, U.S. loses grain export market share https://www.agupdate.com/markets/market_news/as-export-flows-shift-u-s-loses-grain-export-market/article_46324eea-c8b4-11e8-b216-7f296685fd6f.html[accessed on 24 August 2019].

86 Figure 3.2 67.

In addition, the barriers to trade are being significantly reduced with initiatives such as the conclusion of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) which is a free trade agreement between Canada and 10 other countries in the Asia-Pacific region (Australia, Brunei, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam). Upon implementation of this agreement these 11 countries will form a trading block representing 495 million consumers and 13.5% of global GDP. It contemplates the provision of unrestricted preferential treatment to the CPTPP members with duty free import arrangements and therefore little restrictions for market access for agricultural products.[87]

In December 2018 and January 2019, the agreement became effective between seven countries namely Canada, Australia, Japan, Mexico, New Zealand, Singapore and Vietnam.[88]

5. Increasing consolidation

The grain industry has therefore become truly globalized with high levels of competition. As to remain not only sustainable but also relevant, the industry role players must grow and consolidate. Unavoidable consolidation therefore occurred amongst many of the international trading firms over the past 30 years. It has been suggested that as market information has become more readily available it is also more difficult for agricultural firms to engage in arbitrage by taking advantage of market inefficiencies.[89] It would also seem that as agricultural markets have liberalised and global trade has become more important, trading firms that did not have the necessary scale, breadth of global operations and depth of integration have struggled to achieve the necessary efficiencies to effectively compete, and as a result have been taken over or exited the market.[90]

Examples of these consolidations are the acquisition by Cargill of Continental Grains (USA), Bunge acquired Ceval (Argentina) and, ADM acquired Toepfer (Germany)

87 Government of Canada 2019 *What is the CPTPP*? https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/index.aspx?lang=eng [accessed 9 September 2019].

88 See footnote 86.

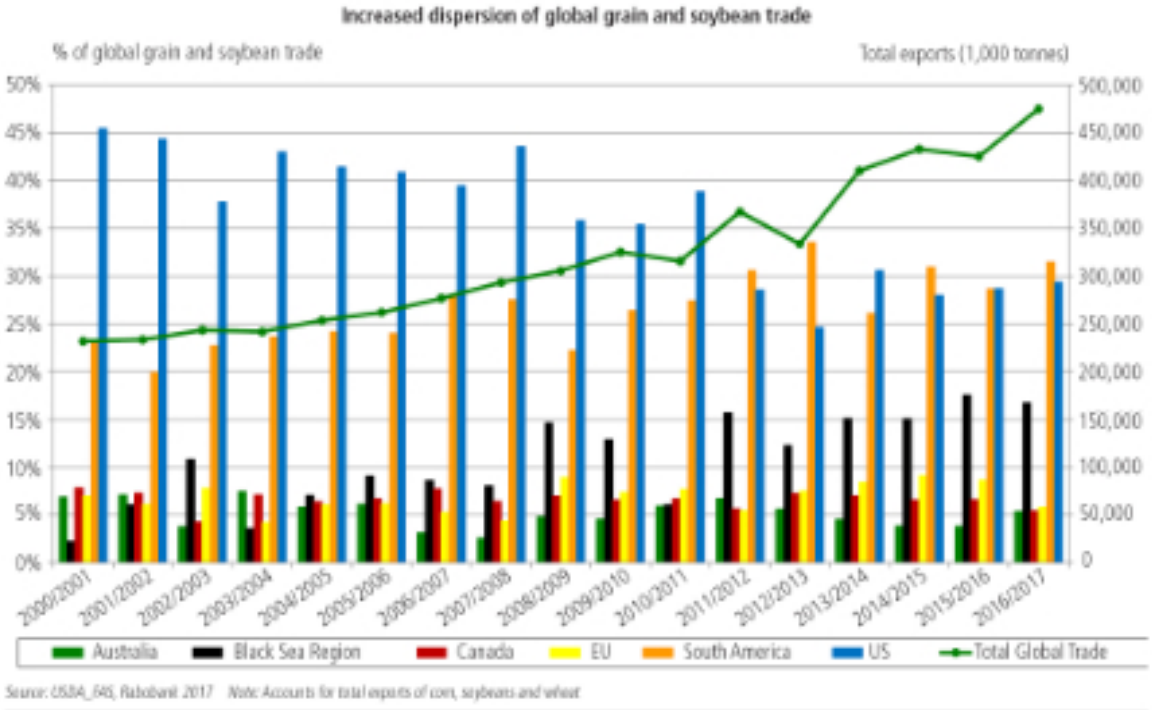
89 Salerno *Cargill's corporate growth in times of crises* 2016 215, 216. https://link.springer.com/article/10.1007/s10460-016-9681-8 [accessed on 10 August 2019]. Arbitrage is explained in the Cambridge on-line dictionary as the method on an exchange of buying something in one place and selling it in another place at the same time, in order to make a profit from the difference in price in the two places https://dictionary.cambridge.org/dictionary/english/arbitrage; [accessed on 10 August 2019]; Geyser *The Short and Long of Futures Markets* 6: This difference in price could also be between different commodities' instruments if the price of such an instrument does not reflect the intrinsic value thereof.

90 Puzt 2018 *The ABCD's and M&A putting 90% of the global grain supply in fewer hands* https://pitchbook.com/news/articles/the-abcds-and-ma-putting-90-of-the-global-food-supply-in-fewer-hands. [accessed 17 August 2019].

whilst COFCO finally acquired the remaining shareholding in Nidera (Netherlands) in 2017.[91]

Nicolson from Rabobank presented statistics at the Canadian Global Crops symposium in 2017 regarding the increased dispersion of the global grain and soybean trade for the previous 17 years supporting the trends as described above.[92] The spread of the trading is reflected in the graph 3.6 below:

Graph 3.6



The report explained that interest in the grain industry was intensifying and as a result growth opportunity are pursued. According to Rabobank grain origination assets have had high evaluations, but as grain prices have decreased over time due to *inter alia* oversupply in seasons, buyers have been more reluctant to make capital investments in such assets. Accordingly, strategic partnerships and joint ventures are alternatively preferred and pursued as grain companies endeavour to work together to achieve market access and a larger geographic footprint.

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91 Hayenga and others *Cargill's Acquisition of Continental Grain's Grain Merchandising Business* Iowa state university January 1999; Bunge and Ceval 1997 Bunge Corporate website: https://www.bunge.com/bicentennial/milestones [accessed 2 August 2019]; ADM Corporate website https://www.adm.com/adm-worldwide/europe/germany/gmbh; [accessed on 5 August 2019]. Schroeder 2017 *COFCO completes acquisition of Nidera* https://www.world-grain.com/articles/7793-cofco-completes-acquisition-of-nidera [accessed 10 August 2019].

92 Rabobank: Nicolson *Agricultural consolidation remains constant* Canadian Global Crops symposium Calgary April 2017.

Grain companies are attempting to increase their return on investments, take advantage of new supply chains and spread out their costs all while facing increased competition from exporters, ethanol producers and processors.[93] Aiming to achieve the aforesaid, companies adopted several strategies to deal with these factors, including acquisitions, strengthening their core businesses, upgrading current facilities, developing closed supply chains, and taking advantage of niche markets. Innovation as well as vertical integration across the food value chain are therefore pursued to ensure sustainability and growth.[94] As an example of integration and involvement in the chain, reference was made to Ingredion (previously Corn Product International) which migrated closer to the end user (but not becoming a retailer) and converted its business to branded ingredients instead of a being a processor.[95]

Nicolson further explained that "*Regional players are growing organically by adding assets within their area, whether its elevators, input locations or agronomy centres. "They're not big enough to be a dominant global grain company, but they can dominate an area*." Nicolson also presented the global supply chain trends as described by Neves[96] which are capable to be divided into structural and industry trends with different implications. The structural trends are, i*nter alia,* new sources of grain supply (Brazil and Black Sea Regions (Ukraine)), increases in populations and incomes that demand proteins instead of carbohydrates and ease of communication and access to information.

On the other hand, industry trends are *inter alia* economies of scale in terms of inputs and price, consolidation of customers as well as globalisation. These imply increased competition, selective pricing power, significant investment and vertical and horizontal integration across the entire food value chain.[97] Nicolson also highlighted the intensifying in competition as a result of the changing landscape and confirmed

93 The Biofuels industry has grown substantially in terms of the manufacture of ethanol from corn kernels. This industry diverts grain and soybean from the food value chain. The USA and Brazil are the largest manufactures and exporters of Biofuels. Beckman *Biofuel Use in International Markets: The Importance of Trad*e 144.

94 Gooch and Felfel, *Characterizing the Ideal Model of Value Chain Management and Barriers to its Implementation (2008)* 3,4 https://vcm-international.com › Effective-VCM-+-Barriers-to-VCM-Final describes a value chain and the management thereof as an approach that create value from the consumers' perspective. Its objective is to develop systems (resources, infrastructure, processes and relationships) required to satisfy or exceed consumers' expectations. The results of value chain management are often cost reduction, superior quality and competitiveness. Such a value chain often contains vertically and horizontally linked players such as farmer(s), processor(s), distributor(s), and retailer(s) [accessed on 10 August 2019].

95 Ingredion timeline https://www.ingredionincorporated.com/content/dam/ingredion/pdf-downloads/corporate/Ingredion%20Timeline_Jan2017.pdf [accessed on 16 August 2019].

96 Neves *The Future of Food Business* Kindle e-book.

97 Rabobank Nicolson *Agricultural consolidation remains constant* Canadian Global Crops symposium Calgary April 2017.

that regional grain companies are either targets for merger and acquisitions or must use their own merger activity as a defensive mechanism.[98]

In keeping with these trends, Bunge expressed its commitment to consolidation. In October 2012, the then Chief executive Officer, Alberto Weisser, indicated that consolidation is an imperative to mitigate against volatility and crop failures. He reiterated that Bunge strives for a strong global presence and control over key producing grain regions.[99] These comments were made by Bunge when asked for comments reading ADM's takeover bid for Graincorp. Bunge subsequently acquired a 30% stake in Agrofel Grains, a Brazilian grain sourcing business, which transaction was announced on 13 September 2019.[100] Agrofel annually sources over one million metric tons of grains, including soybeans, corn and wheat. This company has its origination strategy aimed at 15,000 farmers and is supported by warehouses and shops, with a combined static capacity of almost 450,000 metric tons, in addition to 470 employees.[101]

Consolidations are set to continue, and multiple mergers and acquisitions have been reported by the World Grain Council, during 2019.[102] These cut across countries as the USA, Sweden and Canada. The transactions include the acquisition of large grain and storage receiving facilities.[103]

6. Domestic Consolidation

Certain companies in the USA and Canada have adopted the same strategies and expand rapidly as to integrate their supply chains. Consolidation at domestic level is in fact unavoidable given the deepening globalisation and dispersion of the grain trade.

For several of the key exporting countries consolidation has occurred in two phases. During the first phase of consolidation domestic agribusinesses have reorganised themselves to be more competitive as their markets have become liberalised. For example, as the market was deregulated in Canada and Australia a few of the

98 See footnote 97.

99 Just Food news and comment Askew *On the money: Bunge expects consolidation in grain.*

100 Bunge corporate website https://www.bunge.com/news/bunge-announces-agreement-buy-30-agrofel-and-increases-its-origination-capacity-rio-grande-do[accessed on 10 August 2019].

101 See footnote 97.

102 World Grain Council website https://www.world-grain.com/topics/1026-mergers-and-acquisitions. World Grain.com reported 30+ transactions for 2019 alone.

103 World Grain website, Examples are Skyland Grain in Kansas in 36 locations, Parrish & Heimbecker Limited in Canada that acquired 10 Louis Dreyfus grain elevators; Bunge that acquired a 30% stake in the Brazilian-grain sourcing business, Agrofel Grains and Inputs Durell 2019 *Increasing Brazilian grain production: Bunge to acquire 30 percent of Agrofel* https://www.foodingredientsfirst.com/news/increasing-brazilian-grain-production-bunge-to-acquire-30-percent-of-agrofel.html [accessed 5 September 2019].

previous statutory marketing boards and co-operatives were consolidated to form part of larger agricultural firms.[104]

As a natural consequence of the deepening globalisation of the industry, a second phase of consolidation has also taken place with primary trading companies extending their operations into domestic markets through the acquisition of domestic agricultural firms. This is most clearly seen in Australia and Canada with several the newly corporatized and consolidated agricultural firms being acquired by global players, which is explained below. This trend of consolidation in some of the key grain exporting countries is discussed below.

6.1 Australia

This country harvests an annual average grain production in excess of 35 million tons worth more than $7.9 billion each year.[105]

As the various state linked marketing boards became privatised, they started to consolidate their positions throughout the 1990s and 2000s. In 1996, the state-linked grain enterprises and producer marketing boards in NSW, Victoria and Queensland merged to form GrainCorp Marketing. Listed on the Australian stock exchange in 1998, Graincorp as bulk handler of grain, has storage capacity of 20 million tons and seven grain export elevators that stores on average 5 million tons of grain annually. GrainCorp is represented in all major grain growing regions of Australia while international markets are served through global offices in North America, the UK, Europe, China and Singapore.[106]

Similarly, the Australian Wheat Board (AWB) was privatised and through multiple acquisitions ended up in the hands of other businesses as set out in Figure 3.7 below. In 2010, AWB accepted a takeover bid from Agrium and in 2011, Cargill Australia also acquired the AWB Commodity Management business from Agrium.[107]

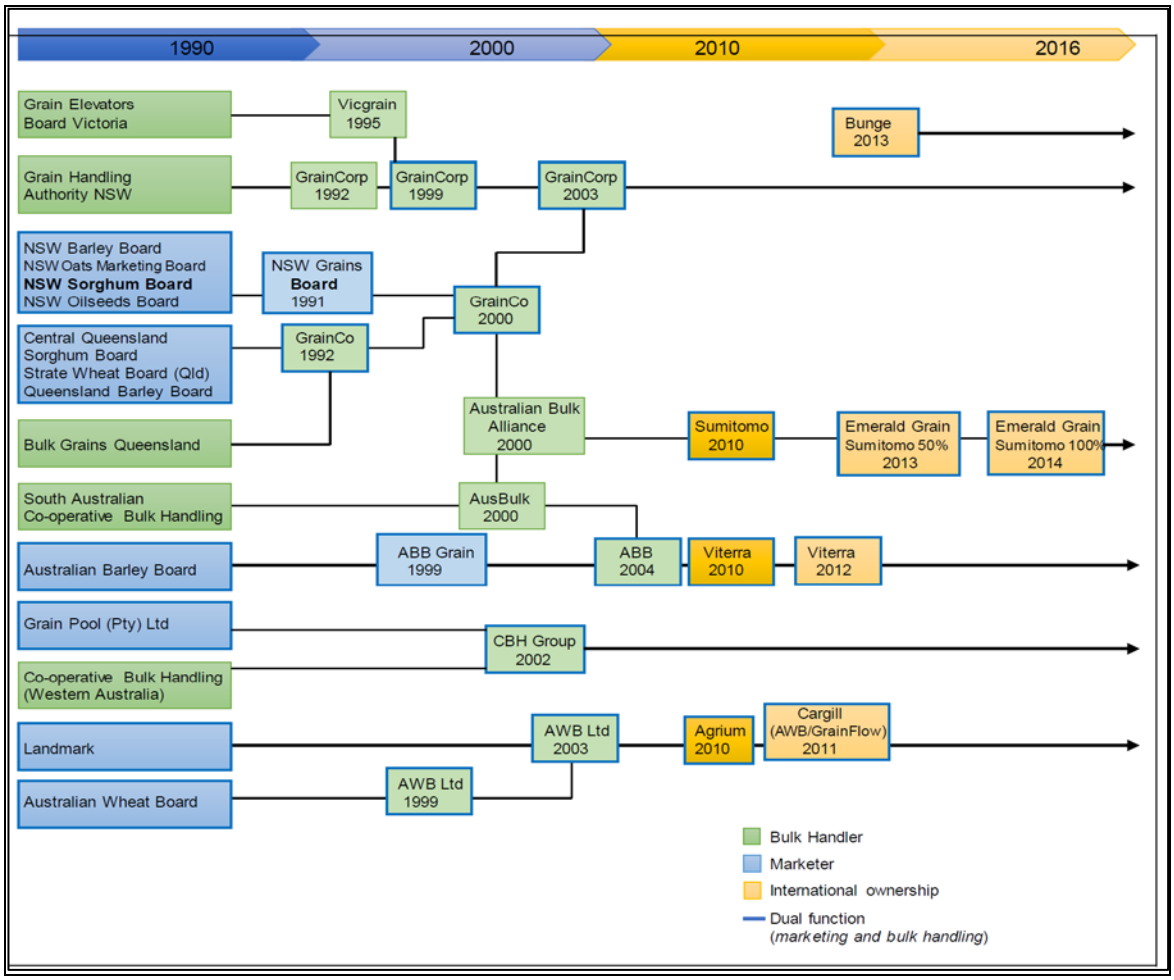
104 The Productivity Commission *Wheat Export Marketing Arrangements Productivity Commission Inquiry Report* 49 [accessed 12 August 2019]; Fulton *Challenges Facing the Grain Handling and Transportation System in Western Canada in a Post Canadian Wheat Board Environment* 29.

105 Australian Government 2019 *The Grain Industry* http://www.ausgrain.com.au/industry.html [accessed on 2 September 2019].

106 *GrainCorp our integrated business* http://www.graincorp.com.au/about-graincorp/company [accessed on 11 August 2019].

107 Reuters news *UPDATE 1-Australia clears Cargill to buy AWB grain business* [accessed 15 August 2019].

Figure 3.7 Timeline of the consolidation of Australian grain market [108]



The Commissioner of the Australian Competition and Consumer Commission (ACCC)[109] explained at a conference at the University of Western Australia's Institute of Agriculture held on 18 July 2017, that the implementation of the Australia's National Competition Policy (NCP) (known as the "*Hilmer reforms*") changed the Australian Agriculture fundamentally.[110] The NCP dismantled more than 50 marketing boards

108 Farley 2013 Analysis: *Who owns Australia's grain*? https://www.abc.net.au/news/rural/2013-05-01/grain-industry-amalgamation/4661664 [accessed 14 August 2019]; Australian Export Grains Innovation Centre *Grain Supply chains, costs, risks and opportunities* 33 and 34.

109 Keogh 2017 *Consolidation in agriculture: impacts to the farm, research and agribusiness* https://www.accc.gov.au/speech/consolidation-in-agriculture-impacts-to-the-farm-research-and-agribusiness [accessed on 7 August 2019].

110 Smith *Competition Policy - Implications of the Hilmer Report for the dairy industry* presentation made by the then Commissioner at the Australian Dairy Industry Council Annual General Meeting December 1996. In 1991 the Council of Australian Governments (COAG), agreed to examine a national approach to competition policy. The first step in this process was the establishment of the National Competition Policy Review Committee chaired by Professor Fred Hilmer. On completion of the Hilmer Committee's report in August 1993 the recommendations made by the committee were generally accepted by COAG in April 1995 and the processes culminated in June 1995 in the Competition Policy Reform Act 1995.These led *inter alia* to changes in the prevailing

for different commodities and exposed the domestic industry to internal and global competition. The liberation of the markets and high exposure to export markets have driven role-players to find scale efficiencies that allowed them to compete globally. This has also created the need for consolidation.

He also quoted USDA data that explained that similar levels of consolidation have occurred across the entire agricultural sector. He quoted the following from a report by McDonald:[111] "*A recent report by a senior USDA economist identified that the four-firm concentration ratio (the proportion of each market held by the four largest participants)*[112] *in a wide range of different pre and post farm sectors in the USA had increased from an average of 46% in 1977 to 69% in 2012, and in some sectors was now as high as 90* %."

6.2 Canada

In an article published in 2016, the history and dismantling of the Canadian Wheat Board (CWB) is explained as well as the consequences thereof. The CWB had been the only marketing agency since 1935 that on average attended to 60 million tons of grain in terms of procurement, transportation and market access. As a regulated market, the benefits of this single marketing channel were that producers shared in profits if the market prices increased and was shielded in the event of prices declining as the government absorbed all losses.[113]

At the turn of the 21st century the Canadian wheat industry was characterized by several farmer-owned co-operatives forming part of three prominent wheat pools.[114] Over the following ten years, these companies moved away from the co-operative model and converted to corporate entities. The reaction to disbanding of the CWB was swift and grain handlers currently handle approximately 75% of the grain exports.[115]

The CWB sold its assets in July 2015 to G3 Global Grain Group, owned by *inter alia* Bunge.[116] Since corporatization, there has been consolidation in the domestic market whereby the Alberta Wheat Pool and Manitoba Pool Elevators merged to form Agricore and soon afterwards merged with the Saskatchewan Wheat Pool that led to

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Australian Trade Practice Act making prohibited practices applicable to all businesses, lifting of protection of government institutions, providing a monitoring role to the ACC and allowances to grant exemptions upon application.

111 Carstensen Lianos Lombardi McDonald et al *Competition law and policy and the food value chain on topic* Competition Law Review Concurrences No. 1 2016.

112 The four global grain companies ADM, Cargill, Bunge and Dreyfus

113 Owram 2016 *A rich harvest: How the Canadian Wheat Board's demise unleashed a grain bonanza* https://business.financialpost.com/transportation/a-rich-harvest-how-the-canadian-wheat-boards-demise-unleashed-a-grain-bonanza [accessed 15 August 2019].

114 See footnote 113.

115 Ibid.

116 Chapter 3 Para 3.2.

the establishment of Viterra.[117] Three companies, namely Viterra (acquired by Glencore in 2012), Richardson International and Cargill came to the fore with significant investments in terminal capacity and new grain elevators in Canada. Nearly $500 million have been invested between Viterra and Richardson.[118]

This wave of domestic consolidation gave rise to the emergence of two dominant grain handling firms, namely Viterra and Richardson International. In 2013, Viterra[119] was the largest grain handling company with an estimated market share of 45%, Richardson International with 24%, Cargill with 13% and the balance provided for by several smaller firms.[120]

Viterra's was acquired by Glencore which has resulted in further domestic market consolidation. When Viterra was consolidated into Glencore, as part the acquisition, Glencore sold grain elevators and crop input centres to Richardson International, increasing Richardson's market share for grain storage to approximately 36%.[121] Viterra being part of Glencore became Glencore Agri.[122]

In 2019 Richardson International reported that it is Canada's largest agribusiness which is also acknowledged as a global leader in agriculture and food processing.[123] Based in Winnipeg, Richardson is a worldwide handler and merchandiser of all major Canadian-grown grains and a vertically-integrated processor and manufacturer of oats and canola-based products. It employs 2,900 people across Canada, the U.S. and the U.K.[124]

Another Canadian company, Parrish & Heimbecker is also rising to the fore as a grain company to be reckoned with in terms of consolidation and globalization. Parrish & Heimbecker Limited (P&H) describes itself as a diversified Canadian owned family company that was incorporated in 1909. With 40 local offices and trade links around the globe, P&H's grain business includes aspects such as trading, handling, and rail freight management to both domestic and export markets. Divisions of P&H include

117 Fulton *Challenges Facing the Grain Handling and Transportation System in Western Canada in a Post Canadian Wheat Board Environment* 2011.

118 Leshchenko 2013 *Richardson CF close deals for Viterra assets* http://www.agcanada.com/daily/richardson-cf-close-deals-for-viterra-assets [accessed 23 August 2019].

119 Chapter 3 Para 3.2.

120 Cattaneo 2012 *Ottawa caught in Viterra sale storm* https://business.financialpost.com/news/to-protect-canadian-champion-ottawa-unlikely-to-approve-viterra-sale [accessed on 10 August 2019].

121 AgCanada website. *Richardson, CF close deals for Viterra assets* May 2013 http://www.agcanada.com/daily/richardson-cf-close-deals-for-viterra-assets [accessed on 11 August 2019].

122 Glencore Corporate website https://www.glencore.ca/en/Who-we-are/Our-history [accessed on 11 August 2019].

123 Richard International Limited corporate website https://www.richardson.ca/.

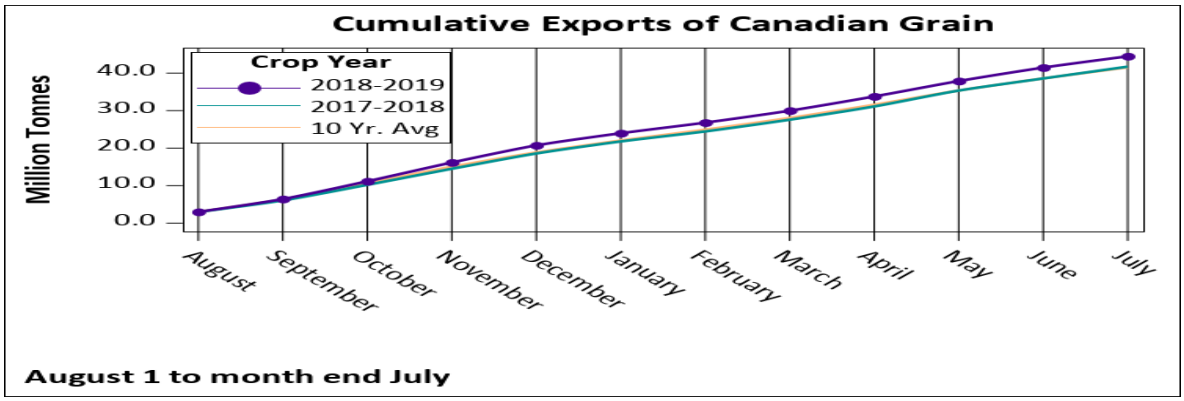
124 Ibid.

the largest Canadian owned flour milling business P&H Milling Group, and New Life-Feeds.[125]

In 2019, P&H announced the acquisition of 10 grain elevators from Louis Dreyfus. These acquisitions came shortly after P&H's plans to build a new crop input and grain facility in Dugald, Manitoba, Canada. This facility will include 25,000 tons of grain storage, facilities for continuous grain loading and movement as well as crop input facilities, such as a fertilizer plant, chemical warehouse and seed treatment facility. It employs 1 500 employees and with customers in 15 countries, P&H continues its evolution as a diversified and vertically integrated agribusiness.[126]

Canada produces on average 60 million tons of grain of which 40 million tons are exported annually as displayed in Figure 3.9.

Figure 3.9 Exports of Grain from Canada July 2019[127]



6.3 United States

Prior to 1990, the US grain industry was characterised by farmer-owned co-operatives that were significantly supported by government.[128] In the early 1990s, government support for agriculture declined that prompted co-operatives to introduce corporate structures in an attempt to become more efficient.[129] However, co-operatives still remained substantial role-players in the domestic agricultural sector of the US. The

125 P&H corporate website https://parrishandheimbecker.com/company/about-us/.
126 P&H Corporate website https://parrishandheimbecker.com/news/parrish-heimbecker-ldc-acquisition/[accessed on 10 August 2019].
127 Canadian Grain Commission 2019 *Exports of Canadian grain and wheat flour* https://www.grainscanada.gc.ca/en/grain-research/statistics/exports-grain-wheat-flour/ [accessed on 24 August 2019].
128 US Department of State *American Agriculture: Its changing significance* http://usa.usembassy.de/etexts/oecon/chap8.htm [accessed on 20 August 2019].
126 Demko *Trends in US Co-operatives* (1913- 2016) 9.
127 Ibid.

co-operatives were also affected by global trends and competition and consolidation by these co-operatives were unavoidable.

In September 2019, national trends were reported in research conducted by the Ohio State University.[130] This report identifies co-operatives' progression since 1913 with an emphasis on the 2000s. As the number of agricultural co-operatives in the U.S. has declined, their size, represented by business volume and the number of members, increased.

USDA Co-operative Programs data reported 2 080 cooperative mergers and acquisitions for the period from 1980 to 2012 at an average of 66 per year. The reasons for the consolidations revolved around support for farmers during the eighties farm financial crisis and low commodity prices and growth.[131] The co-operatives were required to grow as to enable survival as many also failed. From 1980 to 2012, 2 580 co-operatives closed at an average rate of 86 co-operatives per annum.[132]The report explained that in 2015, grain co-operatives represented 43% of all marketing co-operatives. Furthermore, every year at least two grain co-operatives closed or merged with another. However, the consolidations resulted in stronger businesses and it was reported that in 2016, the grain co-operatives owned total assets of over $21 billion, reflected equity of over $9.6 billion, and gross revenue of over $4.5 billion. The report listed various factors driving the consolidation such as lower commodity prices, the exchange rate and procurement of grain in global markets.[133]

The grain and oilseed industry within the United States was also significantly affected by the consolidation of international trading firms as many of these were already deeply active in the United States.[134] This consolidation culminated in Cargill's acquisition of Continental Grain in 1999. Further consolidation has also occurred more recently with Gavilon, the third largest US grain trader, being acquired by Japanese grain trading company Marubeni in 2013. Marubeni owns Gavilon Agriculture Investment, Inc. ("Gavilon"), Columbia Grain International, LLC ("Columbia Grain"),

130 Ibid.

131 Barnett *The U.S. Farm Financial Crisis of the 1980s*. *Agricultural History,* 74(2), 366-380 2000 www.jstor.org/stable/3744858. The financial crisis resulted mainly from unforeseen consequences in changes to the US monetary policy in the 1970 as an aftermath of inter alia trade deficits and the US Vietnam war. Attempts by the Federal Reserve were made to curb high inflation and unemployment. One of the measures implemented was tax deductions for interest expenses and to promote investments. Producers made huge investments in land and assets financed with debt during the late seventies. This led to an increase in production which in turn led to oversupply of commodities and substantial decrease in commodity prices in 1982- 1983 (50 to 60% lower than previous seasons.) When inflation increased (up to levels of 11%) interests rates increased. The farmers with highly leveraged balance sheets could not continue. A severe drought in 1983 exacerbated the farm crisis and many producers had to file for bankruptcy.

132 Demko *Trends in US Co-operatives (1913- 2016)* 21.

133 Demko *Trends in US Co-operatives (1913- 2016)* 32.

134 Chapter 3 par 3.

and Pacificor, LLC ("Pacificor") in the U.S. The grain is procured by Gavilon and Columbia Grain, and exported to Japan and other countries around the world through Pacificor's shipping facilities.[135] Notably these companies are all vertically and horizontally integrated. The current membership list of the North American Export Grain Association features ADM as the largest agricultural processor globally, with Bunge, Cargill and CHS Inc. (the leading co-operative), Gavilon and Louis Dreyfus as the main players in the grain handling and trading space.[136]

During 2018, Rabobank issued a report which explained that the grain production market in the USA has changed substantially. Commercial farmers are becoming much more integrated and established on farm storage facilities. This has changed the competitor dynamics as these farmers are cutting out the trading companies and supply directly to the processing market.[137]

6.4 Argentina and Brazil

Argentina and Brazil are the largest producers and exporters of grain and oilseeds in the South American region. The Argentinian and Brazilian grain and oilseed industries were significantly affected by the consolidation of international grain trading firms (discussed above) as these companies had already been actively involved in these markets.[138]

7. Rationale for consolidations

The increasing consolidation of agricultural companies, has in large part, been driven by the benefits that scale brings in terms of cost efficiencies, the ability to finance further investment (vertical and horizontal) and diversification of risk.[139] These benefits are more fully explained below.

135 Marubeni website https://www.marubeni.com/en/news/2013/release/00042.html [accessed 21 August 2019].

136 Chapter 3 par 3.1; The North American Export Grain Association http://naega.org/the-association-2/child-page [accessed 15 August 2019]. The North American Export Grain Association, Inc. (NAEGA) was established in 1912 and incorporated as an NGO the state of New York in 1920. NAEGA works to promote and sustain the development of the export trade from US of grains, oilseeds and primary products processed there from. Its members include private and publicly owned companies and farmer-owned co-operatives that operate in the bulk grain and oilseed exporting industry.

137 Reidy *Rabobank study outlines challenges to grain merchandising model.* https://www.world-grain.com/articles/11414-rabobank-study-outlines-challenges-to-grain-merchandising-model [accessed on 12 July 2019].

138 West *Bunge Limited and the Global Oilseed Industry* 8 Harvard Business School 2002; Louis Dreyfus corporate website http://www.ldcom.com/about-us/our-heritage/#1883-tab [last accessed on 12 August 2019].

139 See Chapter 2 par 5.

7.1 Cost efficiencies from increased scale

Grain entities can achieve greater efficiencies through increasing the scale of their operations. These entities reduce their average product cost by spreading fixed costs over higher output volumes.[140] This is often most relevant to activities such as the transportation and grain storage that have strong fixed cost components, as explained *inter alia* in Chapter two.[141] For example, increased scale allows for the reduction in costs by increasing the volume moving through the system without the equivalent increases in costs.[142] As discussed in the subsequent paragraphs below, this point is well recognised in commentary on the grain industry, particularly in Australia, as well as often a stated *rationale* for acquisitions which have already occurred.[143]

The Australian Department of Agriculture, Fisheries and Forestry issued a report in 2011 which recognised that agribusinesses benefited from increased economies of scale and efficiency gains as a result of the increased global expansion by international grain traders.[144] In addition, the Australian Grain Growers Association has called for greater consolidation of the Australian grain market as it deems that it will result in greater economies of scale and scope to improve competitiveness.145 As extensively explained in this chapter, with the liberalization of the grain markets came increasing open economic policies and investment in logistical capability and transparent market information which contributed sufficiently to the globalisation of agribusiness firms. The Department was in favour of foreign investment and consolidation as it viewed the influx of capital essential for growth, job creation and overall enhancement of food security.[146]

Firms have expanded to benefit from economies of scale and to gain efficiencies and stability by sourcing inputs from around the world. Global expansion also gives businesses access to new emerging markets and to foreign knowledge and expertise.

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140 Novkovicv *Cooperative Firms in Global Markets: Incidence, viability and economic performance, Advances in the economic analysis of participatory & labor-managed firms* 2007 69.

141 Chapter 2 par 5.1.

142 Economies of scale is described as the cost advantage gained by a firm when it increases its level of output. The benefit arises due to the inverse relationship between per-unit fixed cost and the quantity produced. The more is produced the less is the per-unit fixed cost. Economies of scale generally also leads in a decrease of average variable costs (average non-fixed costs) with an increase in output. This is brought about by operational efficiencies and synergies as a result of an increase in the scale of production or by consolidation. Corporate Finance Institute website https://corporatefinanceinstitute.com/resources/knowledge/economics/economies-of-scale/ [last accessed on 13 August 2019].

143 See Chapter 3 Figure 3.7.

144 Australian Department of Agriculture, Fisheries and Forestry Moir *Foreign Investment and Australian agriculture* 3, 47,48.

145 Lyon *Fewer, larger farms as consolidation continues in Australian grain industry* May 2017 Grain Central website https://www.graincentral.com/cropping/fewer-larger-farms-as-consolidation-continues-in-australian-grain-industry/[last accessed on 15 August 2019].

146 See Chapter 3 par 2.

In the merger between *Cargill/Continental Grains,* it was anticipated that the joint business would remove costs from the value chain, not only by reducing the number of employees but also through shorter barge turnaround times and larger volumes stored in the grain elevator.[147] As such, Cargill indicated that part of it reason for acquiring Continental Grains was to capture economies of scale, particularly in transport.[148]

Already in the late nineties, the changes in the agricultural sector were recognised in particular with the sector undergoing rapid consolidation in the previous 20 years.[149] Not only was production on farms migrating towards larger sophisticated operations but it was coupled with similar consolidation of volumes by less but, larger firms in the food value chain.

Globalisation, as explained, was also recognised as a developing trend with the international scope of the market for food and agricultural products that expanded quite substantially.[150] Global and domestic customers' demands and requirements have changed the way of doing including the competitive landscape and accordingly the need for different strategic approaches have arisen. The agricultural industry has rapidly adopted information- and biotechnology to achieve the efficiencies of scale and these technologies have become indispensable for this sector.[151]

In January 2018, it was announced that ADM was approaching Bunge with a potential merger proposal.[152] The Financial Times reported that ADM and rival Bunge were forced to reconsider their positions as the overall grain markets conditions were "tough." In was confirmed that ADM and Bunge are two of the world's four largest grain trading houses, using storage, transport and processing assets to convey crops from producers to processors. Accordingly, as a combined entity they would create a company with annual sales of almost $110bn, placing it on par with Cargill, the industry leader. The Times explained that: "*Both companies are feeling the pinch of acting as middlemen at a time when farmers have become more selective about when*

147 Hayenga and Wisner *Cargill's Acquisition of Continental Grain's Grain Merchandising Business* 1999. http://webcache.googleusercontent.com/search?q=cache:http://www2.econ.iastate.edu/outreach/agriculture/marketing/hayenga/ [last accessed on 15 August 2019].

148 See footnote 145.

149 West *Bunge Limited and the Global Oilseed Industry* 4,8 2002 *Harvard Business School* and Louis Dreyfus corporate website http://www.ldcom.com/about-us/our-heritage/#1883-tab [last accessed on 15 August 2019].

150 See Chapter 3 par 2.

151 Robinson *Annual Review of Resource Economics: Globalization of Agriculture* par 5 138, par 5.3 142.

152 Meyer and Hume 2018 *ADM and Bunge sow seeds for grain revival with tie-up talk Merchants under pressure from shrinking margins amid growing competition* https://www.ft.com/content/e2151858-ff63-11e7-9650-9c0ad2d7c5b5 [last accessed on 14 August 2019]; Polanesk and Nickel 2018 *ADM pursues big ag merger with grain trader Bunge* https://ru.reuters.com/article/idUSKBN1F82N4 [accessed 13 August 2019].

and at what price they will sell their crops. The democratisation of industry data has eroded the value of information once controlled by the big trading houses and used to exploit arbitrage opportunities. At the same time, a series of bumper harvests has weakened agricultural traders' bargaining power with customers in the food industry". The article also quoted an analyst's view from Credit Suisse *"The merger would make sense strategically for ADM because it would create significant scale in South American, European and Asian markets, eliminate excess capacity in regions where margins have compressed and reduce its cost to serve customers and farmers globally."*

By June 2018, the merger has not yet occurred and it was reported that Bunge's CEO Soren Schroder, said that a "structural shift" was occurring in global agricultural commodities markets and consolidation in the industry was inevitable.[153] However in January 2019, ADM indicated that the transaction was not to be pursued anymore, the reason being that the timing was not "appropriate".[154] It is submitted that ADM could not make the real reason for the failure to successfully conclude the transaction public. Perhaps, the limited success rate of approvals being granted by all of the competition authorities in the many jurisdictions that these firms operate in may have been a reason not to continue with the intended merger.

7.2 Ability to finance

Consolidation enables the parties to pool their assets together and increase the level of cash flow through the business. This gives the consolidated firm better access to capital markets as the assets can be used as collateral against which lending can be secured for further investments. This *rationale* for consolidation is well recognised in economic theory and has been highlighted as a key factor within the grain industry.[155]

For purposes of *inter alia* grain trading and hedging transactions against price movements, a firm must have the ability to carry physical stock into the future and the required operating capital is substantial. A good example of the extent of capital

153 Donley 2018 From the Editor: *Big grain traders caught in the middle* https://www.world-grain.com/articles/10506-from-the-editor-big-grain-traders-caught-in-the-middle [accessed 27 August 2019].

154 Strauffer 2019 Exclusive: *ADM CEO says wrong time for 'monster' acquisitions* https://www.reuters.com/article/us-adm-m-a-exclusive/exclusive-adm-ceo-says-wrong-time-for-monster-acquisitions-idUSKCN1PA2H1 [accessed 27 August 2019].

155 Small fragmented markets generally face a more expensive cost of capital as they could not gain access to public markets. Consolidation provides the necessary firm size which allows it to go public and thereby access well-resourced capital markets. This can only be achieved when firms are sufficiently large. Briesemeister and Fisher *The 5-Cs: A Modern Framework for Consolidation of Fragmented Industries*.

needed is COFCO International which concluded an agreement with a consortium of 20 banks for a $2.1 billion loan in July 2019 as the company's core financing facility.[156]

The Australian Productivity Commission[157] have found that the threat of entrance by international agriculture firms is aided by their ability to finance more easily than domestic firms.[158] Grain companies have to have strong finance capability in order to accumulate bulk grain for export purposes and as equity is much more expensive, have to rely on third party funding.[159]

7.3 Risk management by diversification

Risk management has become a well-known and imperative driver of strategy throughout entities across the globe. The focus is no longer purely on financial risks but on all risks that may materially affect the sustainability of every entity. Pro-active risks management in today's day and age are key for the survival of any business.[160]

Environmental, social and governance risks cannot be ignored and is generally at the forefront of any corporate entity strategy. Within the agricultural sector climate risks and mitigation against them is even more important.[161] In 2018, four of the top five risks were environmental or societal, including extreme weather events, water crises, natural disasters, and failure of climate change mitigation and adaptation.[162]

Consolidation is also driven by the spread of risk both in terms geographic location as well as commodity type. For example, having the ability to originate crops in different regions means that when there is a crop failure in one geographical region, origination can shift to other areas. Furthermore, different harvest times in different parts of the world also enable a more consistent source of grain for the trader throughout the year.[163] In a study done in July 2019 it was found that the weather severely impacts areas of production and is more related to failures across the globe. The study concluded that, on a global level, corn is the most susceptible to crop failures. It was

156 Demaree-Saddler 2019 *COFCO links sustainability performance to credit facility* https://www.world-grain.com/articles/12335-cofco-links-sustainability-performance-to-credit-facility [last accessed on 24 August 2019].

157 The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long-term interest of the Australian community.

158 Australia Productivity Commission *Wheat Export Marketing Arrangements* 202 [accessed 12 August 2019].

159 Ibid 12.

160 COSO's enterprise risk management (ERM) framework, *Enterprise Risk Management—Integrating with strategy and performance* 2018 1,2.

161 COSO's enterprise risk management (ERM) framework, *Enterprise Risk Management—Integrating with strategy and performance* Chapter 2, 23.

162 Ibid 2.

163 Bell and Shelman *Bunge: Poised for growth* Harvard Business School 10.

found that 18 percent of the year-to-year changes in corn production were as a direct result of climate variability.[164]

The need for traders to have a spread of global operations as a driver of consolidation is clearly expressed by the remark of Bunge's previous CEO, Albert Weisser that *"...grain crop failures around the world – notably in the US and areas of Eastern Europe – demonstrate the increasing importance of having a strong global presence. The need to have a broad global spread has meant that the process of consolidation in the sector has increased*."[165]

The deepening globalisation of the grain and oilseed industry has also resulted in the increasing vertical integration by global firms as they expand both backward and forward through the grain and oilseed supply chain.

7.3.1 Backward integration

The larger grain traders have sought to increase control over the supply of grain and oilseeds for international trading through the acquisition and development of local trading and storage infrastructure. This has enabled them to develop direct relationships with farmers and, in some cases, has even resulted in the global agricultural firms' backward integration into actual farm production.[166]

Bunge explained that backward integration maximizes results and create efficiencies that would otherwise not have been possible.[167] The firms are also investing directly in land as to ensure bulk supply. As originators, access to land is a key factor for the large grain traders.

They therefore pursue different models dependent on a range of factors such as domestic legislation regarding land ownership and control, labour issues, the cost of land, etc. The backward integration into production and, therefore access to land, occurs *inter alia* through contract farming, direct supply agreements with large-scale agricultural farmers, leasing for direct production or sub-contracting or ownership of the land, or any combination of the aforementioned.[168] An example of contract

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164 Study by researchers at Columbia University's International Research Institute for Climate and Society, the International Food Policy Research Institute and other partners regarding the El Niño-Southern Oscillation; Gawthrop 2019 *How Much Do Climate Fluctuations Matter for Global Crop Yields*? https://blogs.ei.columbia.edu/2019/07/09/climate-enso-simultaneous-crop-failure[last accessed on 10 August 2019].

165 Askew *On the money: Bunge expects consolidation in grain* 2012 http://www.just-food.com/analysis/bunge-expects-consolidation-in-grain_id120943.aspx [last accessed on 12 August 2019].

166 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 13 2012. Oxfam research papers.

167 https://www.bunge.com/our-businesses [last accessed on 15 August 2019].

168 See footnote 166

farming was ADM's involvement in the late nineties in contract wheat production in Mexico through its ownership of a 23 per cent share of a local company, Gruma.[169] ADM sold this investment in 2012 after a negotiated exit.[170]

Although most of this backward integration has been driven by global trading firms, in some instances large grain and oilseed processors and consumer food manufacturers – such as COFCO and Mitsubishi – have also initiated the integration.[171] According to Bunge one of the reasons for increasing integration is the mismatch between the locations of production *versus* consumption.[172]

7.3.2 Forward integration

Besides investing backwards as explained in the previous paragraph, global trading firms have also increasingly begun acquiring interests in agricultural processing and manufacturing facilities to secure greater certainty over the markets for their grain.[173]

There has also been a strong trend for grain companies to diversify into adjacent markets which make use of grain and oilseed. For example, ADM, Bunge, Cargill and Louis Dreyfus have several biodiesel and bioethanol production and distribution facilities predominantly located in South America. The main input commodities into these facilities are maize, sugar and soybeans which these companies can source from their current origination activities.[174] Furthermore, Cargill has also become a large player in the beef processing industry as well as poultry production with Heifer.[175]

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169 GRUMA is a producer of corn flour and tortillas and has a notable international presence that includes operations in America, Europe, Asia and Oceania with 79 plants and market access in 112 countries through its global brands Maseca and Mission and a large number of local leading brands such as Guerrero in the United States. Gruma corporate website https://www.gruma.com/es/somos-gruma/acerca-de-gruma.aspx?sec=1051[last accessed on 11 August 2019].

170 ADM corporate website https://www.adm.com/news/news-releases/adm-sells-interests-in-gruma-and-related-investments [last accessed on 11 August 2019].

171 For example, COFCO's recent acquisitions of Nidera and Noble Agri and Mitsubishi's acquisition of Olam Grains Australia. See: World-Grain, (2014). COFCO buys 51% of Nidera http://www.world-grain.com/articles/news_home/World_Grain_News/2014/03/COFCO_buys_51_of_Nidera.aspx?ID=%7BF703293A-EBE3-4333-8AF6-19D956BA0248%7D [last accessed on 12 August 2019]; World-Grain Olam, Mitsubishi partner on Australian grain business. https://www.world-grain.com/articles/4331-olam-mitsubishi-partner-on-australian-grain-business [last accessed on 25 August 2019].

172 Bunge corporate website https://www.bunge.com/our-businesses/grains [last accessed on 11 August 2019].

173 Nicolson, *Agriculture's consolidation remains a constant*. Rabobank presentation at the Canadian Global Crop Symposium April 2017 17, 19.

174 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 19; Louis Dreyfuss Company website: https://www.ldc.com/global/en/ [last accessed on 12 August 2019].

175 Cargill corporate website. Heifer provides livestock and sustainable agricultural training to improve farmers and rural communities' circumstances. Heifer currently works in 20 countries,

ADM reports in its 2018 Annual report[176] that operations are organised, managed, and classified into four reportable business segments: Origination, Oilseeds, Carbohydrate Solutions and Nutrition. It also reported nine processing initiatives ranging from soya oil crushing and soya meal in Egypt, human and animal nutrition, sweeteners and starch, animal probiotic, vanilla and citrus oils.

The global firms have also been active in integrating into enablers throughout the grain and oilseed supply chain. Examples of enablers are the provision of bulk inputs (i.e. seed, fuel and fertiliser) and finance to farmers, on farm storage and other trade logistics (on farm loading).

Apart from just securing certainty of the supply and demand for grain and oilseed, the trend of vertical integration has also been driven by the need for greater efficiencies throughout the supply chain. It is submitted that these efficiencies include the removal of double marginalisation which enables these firms to make no or little margins at certain levels of the value chain as long as a margin is made over the entire value chain.[177]

In addition, vertical integration has largely occurred through acquisitions, with the result that firms' assets are consolidated which in turn also facilitates greater access to capital markets and further investments.

For example, in 2014, Mitsubishi, an extensively diversified Japanese company, acquired a stake in Olam Grains Australia, an Australian origination, trading and marketing company. It was reported that part of the *rationale* for the transaction from the perspective of Olam Grains Australia was that it would enable Mitsubishi to further invest in Australian procurement and logistics infrastructure given the ability to leverage Mitsubishi's balance sheet and cash flow following the deal.[178]

Another example is Emerald Grain which is a global grain trading house established in 2004 including storage and handling with a footprint in each of Australia's key grain growing regions. In 2010, Emerald strengthened its alliance with Sumitomo Corporation when it purchased 50% equity in Emerald. Sumitomo is a Japanese conglomerate established in 1885 with various diverse business interests including Finance and Insurance, chemicals rubber, glass etc.[179] Subsequently, in February

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supporting communities to become self-supportive. https://www.cargill.com/2019/cargill-and-heifer-international-expand-hatching-hope-to-mexico [last accessed on 15 August 2019].

176 ADM Annual Report 2018, Item 7 notes by management 27 [accessed on 24 August 2019].

177 The Western Producer website *New titans taking over Brazilian grain trade* March 2016 https://www.producer.com/2016/03/new-titans-taking-over-brazilian-grain-trade/[accessed 8 September 2019]; Anon "Feeding the Dragon A Chinese state-backed giant's rapid rise in global trading of food Four-year-old" 2019 The Economist

178 Olam Corporate website https://www.olamgroup.com/investors/company-information/shareholding-structure.html [last accessed on 27 August 2019].

179 Sumitomo Corporation website https://www.sumitomo.gr.jp/english/[last accessed 12 August 2019].

2014, Sumitomo acquired 100% ownership of Emerald Grain providing the capital strength and balance sheet to fund future growth. It has 9 storage and handling facilities throughout the east coast of Australia and owns the Melbourne Port Terminal. Emerald exports to 35 countries around the globe.[180]

The increasing vertical integration by the global players in the grain and oilseed industry as explained above, also deepens the link between domestic production, global trade and processing. These global trading firms no longer only participate in the international trading of grain and oilseed but also have become increasingly active across the entire value chain, including the production of crops, supply of credit and agricultural requisites to producers, own handling and storage, logistics as well as processing (as explained extensively above).[181]

Table 3.10 below summarises the extent of vertical integration adopted by the major global players in this industry.

Table 3.10 Major activities of ADM, Bunge, Cargill and Louis Dreyfus[182]

Activity/firm	ADM	Bunge	Cargill	Louis Dreyfus
Commodities				
Soybeans/oilseeds	x	x	x	x
Palm oil	x	x	x	x
Maize	x	x	x	x
Wheat	x	x	x	x
Juice (citrus)	x		x	x
Cocoa[183]			x	
Coffee				x
Sugar	x	x	X	x
Cotton	x (cottonseed)		X	x
Rice		x		x

180 Emerald Grain Corporate website http://emeraldgrain.com [last accessed 13 August 2019].
181 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 8 Chapter 3 par 7 93.
182 Ibid.
183 Mason and Polensek 2015 *Cargill to buy ADM's chocolate business for $440 million* https://www.reuters.com/article/us-archer-daniels-m-a-cargill/cargill-to-buy-adms-chocolate-business-for-440-million-idUSKBN0GX1HL20140902 [accessed 27 August 2019].

Processing				
Activity/firm	**ADM**	**Bunge**	**Cargill**	**Louis Dreyfus**
Milling grains	x	x	X	x
Oil crushing	x	x	X	x
Processed foods	x	x	X	
Animal feed	x	x	X	x
Biofuels production	x	x	X	x
Industrial products derived from agricultural products (Bio Industrial and Pharmaceutical)	x	x	X	
Meat, poultry, eggs			X	
Farm products/services				
Fertilizer	x	x	X	x
Seed sales			X	x
Contract farming	x	x	X	x
Farmer advice services		x	X	x
Insurance	x		X	
Livestock farmer contracting			X	
Storage and transportation				
Elevator/storage	x	x	X	x
Transportation	x	x	X	x
Investment and risk management				
Financial services	x	x	X	x
Farmland acquisition	x	x	X	x

8. Impact on domestic markets of exporting countries

The deepening globalisation, with the concomitant increasing consolidation and vertical integration, by the primary global trading companies has changed the competitive dynamic within many of the grain exporting countries.

Some of the most important impacts on the domestic market of these countries are greater global influence on domestic price levels, the emergence of fairly concentrated domestic market structures, greater participation and even control by foreign firms, increased competitive pressure brought to bear on domestic firms as they are increasingly by-passed by their larger foreign counterparts and either rationalisation or expansion of storage and handling sites, as explained in more detail below:

8.1. Global influence on domestic price levels

Price determination of grain is determined by cash market prices. However, as grain is procured for longer periods it is hedged and sold in the future to mitigate against the risks of price fluctuations. Supply and demand influence the setting of commodity prices. Price setting by the futures market makes information available about the future cash market prices. The expected market price in future and the futures contract price therefore relate with one another, thus market participants can estimate the future price using the prevailing contact prices on a specific day. The futures market supports investment and consumption decisions and therefore creates more certainty in the markets.[184]

As both producers and role-players such as purchasers and traders avoid price risk movements, they hedge the grain price against negative movements. Hedging is described as the process where an investment is made in another asset to offer protection against a negative price change in the future of a commodity. The USA's Chicago Board of Trade (CBOT) and the South African exchange, Safex, are both derivative markets that play a significant economic role in the grain sectors. These markets operates on the following principles namely:[185] Prices on this market reflect the perception of the market participants about the future process of the underlying commodity, it therefore supports both the current and future price setting function; It transfers risk from participants who are risk averse to participants with a higher risk appetite; and speculative and hedging transactions are guaranteed against default risks.

Fundamental elements and analysis play a huge role in price determination. These fundamentals are the factors that determine supply and demand for a commodity. Some of these factors are import and exports, carry-over stocks, interest rates, exchange rates, weather conditions, global economic conditions and political stability.[186]

An explanation of the economic theory behind demand and supply is beyond the scope of this research. It is however necessary to record that demand for an agricultural commodity such as maize is for a finished product i.e. the maize meal.

184 Geyser *Short and Long of Futures markets* 5.

185 Geyser *Short and Long of Futures markets* 7; CBOT is part of the Chicago Mercantile Exchange (CME) Group. The CME Group is the world's leading and most diverse derivatives marketplace, made up of four exchanges: CME, CBOT, NYMEX, and COMEX. Each exchange offers a wide range of global benchmarks across major asset classes. https://www.cmegroup.com/trading/products/#pageNumber=1&sortAsc=false&sortField=oi [last accessed 10 September 2019].

186 Geyser *Short and Long of Futures markets* 11,147.

The free market economy is therefore driven by the demand by the consumers and not by producers. Producers are price takers and must produce what the consumer wants.[187]

Consequently, supply in the grain market depends on aggregate production and carry-over stocks. Supply is also affected by demands for grain for other uses, than only human and animal consumption, such as the manufacture of ethanol as crude oil prices increase.[188] As supply of a commodity reflects in the stock-to-use-ratio which may come under pressure, then the markets become very sensitive and prices trend to increase. The market deems that supply is under threat and respond accordingly. The global-stock-to-use ratio that triggers a response has been determined around 12% for maize and 10% for soya.[189]

The greater presence of large global trading companies in exporting countries has increased the influence of international grain prices on domestic grain price levels. As explained above local grain prices are influenced by the relative size of the domestic crop and carry-over stocks.

Conversely as these markets have become more globalised, international fundamentals such as exchange rates and global grain prices also influence domestic price levels.[190] In particular, global players have deepened their activities into the domestic markets of exporting countries by demonstrating their ability and willingness to invest in local infrastructure (in particular storage and transport facilities).[191] In doing so, these companies have increased their ability to take advantage of relative price differences across countries through an improved ability to move grain internationally. This includes the enhanced ability to export surplus volumes to other countries, but also to import from the cheapest source and supplying grain volumes to the domestic market in times of shortage.

The ability of global grain trading companies to move grain more easily through domestic investment in infrastructure has increased the domestic markets' exposure to international price movement. These global traders, by using alternative storage

187 Ibid.

188 Geyser *Short and Long of Futures markets* 12.

189 The U.S. Department of Agriculture's World Agricultural Supply and Demand Estimates reports https://www.usda.gov/oce/commodity/wasde/ [last accessed 13 August 2019].

190 The National Agricultural Marketing Council *The functioning of the agricultural futures market for grain and oilseeds in light of concerns expressed by Grain SA* 14 2009.

191 Australian Government Productivity Commission *Submission to the Agricultural Competitive Taskforce*; Australian Department of Agriculture, Fisheries and Forestry Moir *Foreign Investment and Australian agriculture* 3, 6, 27.

and traditional silos, have become significant role-players in domestic markets such as South Africa.[192]

The parity prices provide the price ranges between which prices move. The stock-to-use-ratio plays a material role in price movements. Domestic price levels for grains are constrained by two extreme price points known as import and export parity prices (see graph 3.11 below).[193]

Import parity price (IPP) refers to the price levels at which commodities have to be imported.[194] The price is determined by the cost of origination (plus a premium) and include variables such as all transport, freight insurance, finance costs, harbour costs, import tariffs and transport cost to Randfontein.[195] The price is converted into the domestic currency using the relevant exchange rate.[196] The import parity calculation uses the US white maize price as the reference point. The USA is not an exporter of white maize and therefore prices may be misrepresented. This is the price that a buyer pays for the imported commodity.[197]

The presence of global players in the domestic market means that there exists a strong ability to import considerable volumes into the domestic market at the cheapest prevailing global prices relatively quickly. As a result, domestic prices are unable to move above import parity levels as this will simply result in the global traders flooding the market with imported product at the IPP. The globalisation of the grain industry has therefore resulted in the import parity price acting as a "hard ceiling price constraint" on the domestic price of grains.[198]

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192 Department of Agriculture Forestry and Fisheries *Profile of the South African Maize value chain* 41. See NWK Ltd website www.nwk.co.za in terms of which Dreyfus acquired 50% shareholder in Epko Oil (sunflower oil press) with NWK Ltd in 2015. [last accessed 13 August 2019].

193 The National Agricultural Marketing Council *The functioning of the agricultural futures market for grain and oilseeds in light of concerns expressed by Grain SA* 15 2009 ;TIPS 2002 An evaluation of the influences on price and production in the maize market following liberalisation 8 http://www.tips.org.za/research-archive/annual-forum-papers/2002/item/219-an-evaluation-of-the-influences-on-price-and-production-in-the-maize-market-following-liberalisation [last accessed 13 August 2019].

194 *Harmony Gold (Pty) Ltd v Mittal Steel South Africa* 13/CR/Feb04par 38 and onwards 10,11. Import parity is explained and acted as the basis of flat steel pricing for Mittal.

195 Future contracts traded on Safex are standardized in terms of quality, quantity, delivery dates and location. "contracts are "traded at par" and therefore delivery points are all deemed to be the same in terms of location and logistical capability (to in and out load). The market elected Randfontein as single reference point because a high number of processors (such as millers) are located in this town with an integrated rail network. Consequently, location differentials from Randfontein standardize the locations; Geyser *Short and Long of Futures Market* 8,9.

196 TIPS 2002 An evaluation of the influences on price and production in the maize market following liberalisation 2, 3 http://www.tips.org.za/research-archive/annual-forum-papers/2002/item/219-an-evaluation-of-the-influences-on-price-and-production-in-the-maize-market-following-liberalisation [last accessed 14 August 2019].

197 Geyser *Short and Long of Futures Market* 14 to 16.

198 The National Agricultural Marketing Council *The functioning of the agricultural futures market for grain and oilseeds in light of concerns expressed by Grain SA* 15 2009.

The export parity price (EPP) on the other hand refers to the price at which domestic grain producers can sell their crops.[199] Thus the EPP represents the price levels at which grains are competitive enough, in terms of price levels in the rest of the world that other countries will be able to import commodities from South Africa.

The price expected by *inter alia* a producer from exports are also calculated by the reference price of Safex (using Randfontein as reference location) plus transport to the harbour, transport and cost of insurance to the country exported to, and landing costs.[200] Geyser explains that exports occur by deep sea and to Africa mainly by road and rail. In terms of exports South Africa is in direct competition with the USA, Argentina and China.[201]

Again, the strong presence of global traders in the domestic market means that there is perfect information as to the prices in other countries and the ability to move grain to those markets if the price in those markets is higher. As a result, the globalisation of the grain industry has meant that the EPP is a "hard floor price constraint" on domestic prices.[202]

The effect of IPP and EPP levels acting as hard constraints on the domestic price of grain is illustrated in graph 3.11 below.

Graph 3.11 tracks the domestic price as well as the EPP and IPP levels. It is evident that the domestic price consistently lies between these two hard constraints.[203]

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199 TIPS *An evaluation of the influences on price and production in the maize market following liberalisation* 8 2002.

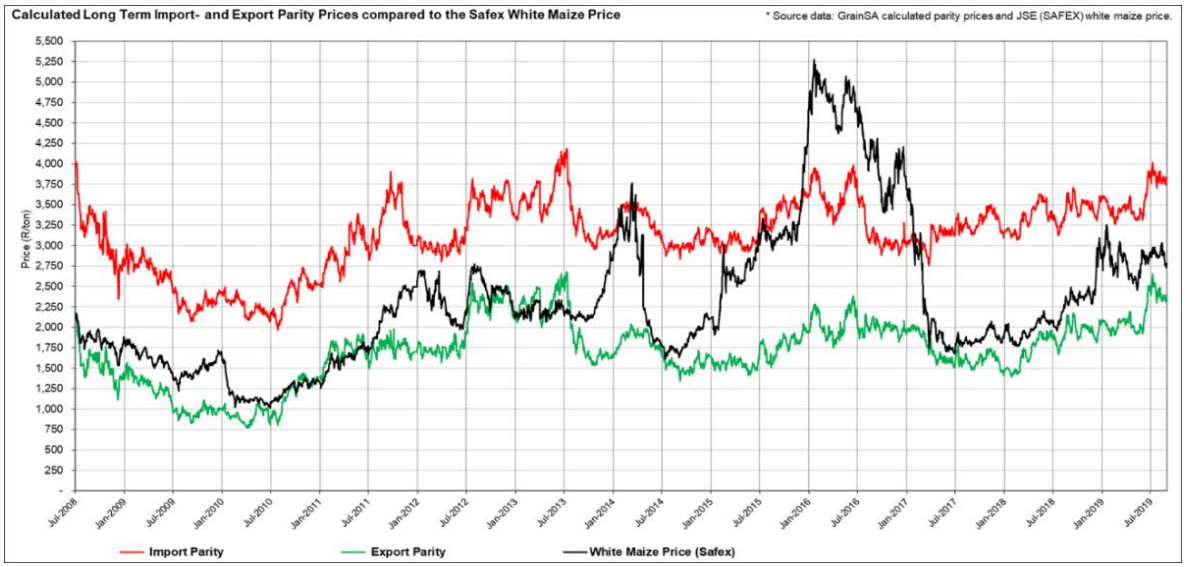
200 Geyser *Short and Long of Futures Market* 17 and 18.

201 Geyser *Short and Long of Futures Market* 14 to 16.

202 The National Agricultural Marketing Council *The functioning of the agricultural futures market for grain and oilseeds in light of concerns expressed by Grain SA* 14 2009.

203 The National Agricultural Marketing Council *The functioning of the agricultural futures market for grain and oilseeds in light of concerns expressed by Grain SA* 15 2009.In the report it is explained that: *"Prices fluctuate between 2 "extreme" points – import and export parity levels. For example, if grain millers can buy imported maize (including the cost of transport, insurance, the tariff, the exchange rate, etc.) cheaper than locally produced maize, they will do so until local producers are able to supply maize as cheaply. This is called the import parity price. The reverse situation is also true: if South African maize producers can sell their maize to foreign millers at a better price than local millers are prepared to pay, South African maize will be exported until local prices have decreased to the level of the export price. This is the export parity price*." The result is that, in theory, the price of maize on the domestic market can go no higher than the import parity price, as millers will merely increase imports at this point. Thus, the import parity price is a ceiling price. In the same manner, the export parity price is the lowest possible price (but the price can trade lower than the export parity price for short periods), i.e. it is a floor price. It follows that the domestic price of maize will fluctuate between these two levels. This is illustrated in Graph 3.11.

Graph 3.11: Long Term Import- and Export Parity Prices compared to the Safex White Maize Price[204]



Any movement of domestic prices between the two hard constraints is then primarily driven by the domestic grain supply, comprised of total annual production and any carry over stock from the previous marketing year.[205] If the domestic market is in surplus, prices will tend towards export parity levels as domestic prices will be suppressed due to the domestic oversupply of grain volumes relative to demand. While a shortage in the domestic supply, for example due to a drought, will push prices towards import parity levels as additional supply volumes will have to be imported at international prices. This can clearly be seen in Graph 3.11 from the period 2015 to 2017 summer crop seasons as South Africa suffered three consecutive drought conditions.[206]

The effect of the size of the carry over stock on the domestic price level is illustrated in Graph 3.12 below. As carry over stock influences the total supply available in the domestic market, domestic price levels will be relatively low during periods with high carry over stock (e.g. June 2005 – 2006) compared to periods with a low carry over stock volumes (e.g. June 2012 – 2014). In other words, domestic prices will more

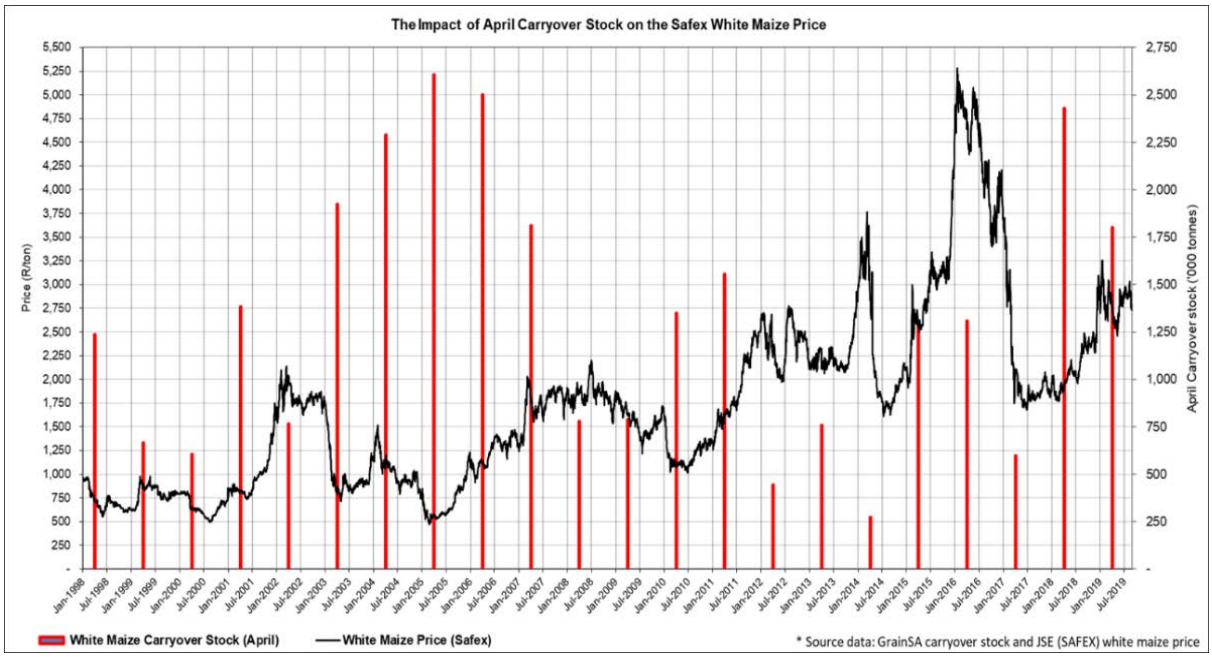
204 Senwes' risk management division calculations from GrainSA calculated parity prices and the Safex white maize price. Grain SA website https://www.grainsa.co.za/pages/industry-reports/safex-feeds [accessed 5 September 2019]; JSE website that publish all soft commodities' price history daily for every trading month. https://www.jse.co.za/downloadablefiles/commodityderivatives/pricehistory [last accessed 13 September 2019].

205 The National Agricultural Marketing Council 2009. *The functioning of the agricultural futures market for grain and oilseeds in light of concerns expressed by Grain SA* 16.

206 BFAP Baseline Report: Agricultural Outlook 2018 -2027 8.

likely move towards EPP in times of large stock carry overs and IPP in times of low stock carry overs.

Graph 3.12 The Impact of April Carryover Stock on the Safex White Maize Price[207]



8.2 Domestic markets and foreign control

The waves of consolidation that have occurred across the grain and oilseed industry have resulted in fairly concentrated market structures for many of the major exporting countries. This is evidenced by the fact that in these domestic markets the bulk of grain handling and trading activities is concentrated in the hands of a relatively small number of firms. Furthermore, the deepening of the global trading firms into the domestic markets of exporting countries has unavoidably given rise to more control of domestic grain supply and infrastructure in the hands of foreign owned grain companies.

8.2.1 Australia

Despite the existence of 15 distinct grain enterprises prior to 1990, industry consolidation has resulted in six sizable grain handling and trading firms which currently are responsible for approximately 80 per cent of the wheat exports from Australia. CBH is the largest, exporting about 30 per cent of Australia's wheat

207 Senwes' risk management division calculations from GrainSA calculated parity prices and the Safex white maize price. Grain SA website https://www.grainsa.co.za/pages/industry-reports/safex-feeds and the JSE website that publish all soft commodities' price history daily for ever trading month. https://www.jse.co.za/downloadablefiles/commodityderivatives/pricehistory[last accessed 13 September 2019].

followed by Glencore with a 17 per cent share.[208]

The dominant wheat exporters are also integrated marketing and bulk handling companies. Since the deregulation of wheat marketing in 2008, Australia's major bulk handlers are all now agribusiness companies offering integrated marketing and grain handling services.[209] Four of the six major integrated marketing and grain handling companies (representing nearly 60 per cent of total wheat exports) are foreign-owned.[210]

In the Grain Trade Australia Annual Report 2018[211] the chairman reported that Australia produced 37 million tons of grain of which 30 million tons were exported. Of the 200 members the main role-players are as follows:

Names	Million tons traded per annum
Co-operative Bulk Handling Limited Glencore Grain Pty Ltd	> 7
Graincorp Operations Ltd	5–7
ADM Trading Australia Pty Ltd Cargill Australia Limited	3–5
Bunge Agribusiness Australia Pty Ltd COFCO International Emerald Grain Pty Limited Plum Grove Pty Ltd	1.5–3
Arrow Commodities Pty Ltd Louis Dreyfus Company Australia Pty Ltd	1.0–1.5

Since the deregulation of the wheat market the major grain handling companies have been decreasing and are all integrated in terms of bulk handling and marketing.

Four of these are completely foreign owned and are responsible for approximately 60 per cent of total wheat exports. On a regional basis CBH is dominant in Western Australia with Glencore (Viterra) in Southern Australia. CBH owns all the bulk storage and port loading infrastructure and marketed 40% of the exported grains in 2015-2016.

Similarly, Glencore marketed 17% in the western areas with Bunge around 5%. Glencore in turn marketed 36% of all exports and controlled 90% of the export capacity in southern Australia.[212]

In the other regions of Australia ownership and control of grain export infrastructure is more diverse, where substantial new port facilities have been established and are

208 Australian Export Grains Innovation Centre *Grain Supply chains, costs, risks and opportunities* 11.
209 Chapter 3 par 6.1.
210 Australian Export Grains Innovation *Centre Grain Supply chains, costs, risks and opportunities* 33 and 34
211 Grain Trade Australia Annual Report 2018 34.
212 Australian Export Grains Innovation *Centre Grain Supply chains, costs, risks and opportunities* 33 and 34.

operating, but grain handling is still dominated by GrainCorp. In states such as Victoria, GrainCorp controls about 50–70% of the port and warehouse storage capacity and is also the largest marketer of grain (20-40%).[213] The report also deals extensively with the developing trends by producers to establish high quality on farm storage capacity such as steel and bunker structures as well as the revival of the silo infrastructure which consolidated from 925 sites in 1998 to 536 sites in 2017. Most of these belonging to the major grain traders.[214]

8.2.2 Canada

As a result of deregulation and consolidation, the Canadian grain industry has consolidated to the point where it is now dominated by Glencore, Richardson and (to a lesser degree) Cargill.[215] Glencore and Richardson are the two largest grain handling companies with equal shares between 34-36% and Cargill with 20-25% of grain handled.[216] As a result, these three players are responsible for over 88% of the grain handled across Canada and 87% of total capacity at West Coast export facilities.[217]

Richardson International is Canada's largest agribusiness[218] and is recognized as a global leader in agriculture and food processing. Richardson is a worldwide handler and merchandiser of all major Canadian-grown grains and oilseeds and a vertically integrated processor and manufacturer of oats and canola-based products and has locations across Canada and the US.[219]

Following Swiss-based Glencore's acquisition of Viterra in 2012, and the increasing presence of Cargill, approximately 50% of Canadian grain handling activities has been placed in the control of foreign firms. Furthermore, Glencore owns six port facilities and has 84 grain storage facilities and a total licensed grain storage capacity of 118.1

213 Ibid.

214 Australian Export Grains Innovation Centre *Grain Supply chains, costs, risks and opportunities* 38 to 41.

215 Chapter 3 par 6.2. Australian Export Grains Innovation Centre *Grain Supply chains, costs, risks and opportunities* 38 to 41;
Since 201, Australia produces on average 60m to 63m tons of grain with domestic consumption at about 14tons with the surplus being exported mainly to Asia.
South-East Asia, China and other North Asian countries are the main export destinations with about 75 per cent of grain being delivered there.

216 White 2018 *A Giant emerges* https://www.producer.com/2018/04/richardson-a-giant-emerges/ [accessed 7 September 2019].

217 Reuters Nickel 2013 *UPDATE 1-W.Canada grain sales going smoothly after monopoly – Cargill* https://www.reuters.com/article/cargill-canada-idUSL1N0AZCVY20130130 [accessed 3 October 2019].

218 Richardson International Corporate website https://www.richardson.ca/ [last accessed on 10 August 2019].

219 See footnote 216.

million tons.[220] In April 2016, Glencore sold 40% of Glencore Agri to the Canadian Pension Fund Investment Board as part of debt restructure with the option granted to acquire additional equity. This softened the foreign control in Canada over the grain assets but did not diminish Glencore's overall global presence.[221]

Another example of domestic consolidation is the transaction concluded in 2018 between Cargill and La Coop fédérée, an agri-food co-operative with establishments across Canada that has been in existence since 1922 and is listed as the 24th largest co-op globally.[222] The co-operative acquired grain and crop input assets from Cargill in Ontario. La Coop also bought 13 Cargill sites as part of its strategy to expand its local operations across Canada.[223]

8.2.3 United States

In May 2019, in an article appearing in the Centre of American Progress, it was explained that every element in the US food supply chain has grown more concentrated in the last 20 years. Ranging from the seed markets which are controlled by the four largest biotech companies with markets shares that has risen from 50.5 percent in 1988 to 85 percent in 2015 to the four largest wet corn millers and soybean processors which control on average 83% of national markets. The article pegged the control of grain traders over the movement and allocation of the world's grain at nearly 73%.[224]

8.2.4 Brazil and Argentina

An analysis of shipping data found that Asian trading houses, including China's state-owned COFCO, bought 45 percent of the Brazil's soybean, corn and soybean meal exports in 2015.[225] By comparison, the share bought by ADM, Bunge, Cargill and Louis

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220 Food Business Africa 2019 *Viterra opens new high throughput grain facility in Canada* https://www.foodbusinessafrica.com/2019/03/16/viterra-opens-new-high-throughput-grain-facility-in-canada/ and https://www.viterra.com/web/canada/about-viterra1 [last accessed 29 August 2019].

221 Sale of 40% stake in Glencore Agricultural Products and creation of long-term partnership with CPPIB April 2016 Glencore corporate website Https://www.Glencore.Com/En/Media-And-Insights/News/Sale-Of-40--Stake-In-Glencore-Agricultural [last accessed 30 August 2019].

222 Besset *La Coop Fédérée Completes Its Acquisition Of The Grain And Agricultural Input Assets Of Cargill In Ontario* *La Coop Fédérée completes its acquisition of the grain and agricultural input assets of Cargill in Ontario* November 2018 https://www.lacoop.coop/en/media/la-coop-federee-completes-its-acquisition-grain-and-agricultural-input-assets-cargill-ontario [last accessed 8 September 2019].

223 Chapter 3 par 3.3 76.

224 Centre of American Progress website. Willingham and Green 2019 *A Fair Deal for Farmers Raising Earnings and Rebalancing Power in Rural America* https://www.americanprogress.org/issues/economy/reports/2019/05/07/469385/fair-deal-farmers/[accessed 31 August 2019]. The writers argue that small farmers are becoming more and more vulnerable and are being exploited by large global integrated grain traders and firms. They argue and proposed that the USA should implement protection through Antitrust authorities against these firms that they view as oligopolies.

225 Chapter 3 par 3.6.

Dreyfus, was 37 percent. In 2014 these companies accounted for 46 percent, which reflect the increasing foothold being gained by COFCO. The Asian companies are prepared to invest in infrastructure such as port terminals and to purchase grains at zero margins as to procure grains.[226]

In 2018 the Australian Innovation Export Centre issued a comprehensive report on the Argentinian Grain sector and found that Argentina produces 125 million tons of grain or 5% of the world's grain production. Its share of world grains and by-products' trading is 15%, involving exports of 86 million tons of grains and oilseed products. In terms of is exports it is the leading exporter of soymeal, soy oil and the third-ranked country for corn and soybean exports, selling 27.5 million tons of corn and 8.5 million ton in 2017. It is also third in exports for soya oil diesel.[227]

As a price-competitive supplier of exportable surpluses of many grains, like soybean, corn and wheat, it is a very attractive source for grain traders. These traders also have established storage and port terminal facilities in Argentina.[228]The four global traders, ADM, Bunge. Cargill and Dreyfus are also responsible for most of the exports.[229]

Foreign ownership of grain operations in Argentina and Brazil (which mainly relate to soybeans) has increased to the point where the bulk of grain is handled, traded and processed by a small number of international firms. In Argentina foreign firms accounted for approximately 60% of total soybean oil exports in 2012 and it is estimated that most of the Brazilian soy crushing, and trade activities are undertaken by ADM, Bunge, Cargill and Louis Dreyfus.[230]

The rise of COFCO, the Chinese government owned company over the last 4 years has also changed the global grain origination and export scene dramatically. COFCO has become a serious competitor for the four global players. COFCO handles approximately 105 million tons of grain, oilseeds and sugar a year, a volume roughly equal to America's entire production of soybeans. China is not the taker of these

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226 The Western Producer website *New titans taking over Brazilian grain trade* March 2016 https://www.producer.com/2016/03/new-titans-taking-over-brazilian-grain-trade/[accessed 8 September 2019].

227 Australian Grain Innovation Centre Kingwell and White *Argentina's grains industry: Implications for Australian Export* 8, 28.

228 Ibid.

229 Mercopress website *Argentina grain* expo*rters ready to replace the US as main supplier of Mexico* June 2019*. https://en.mercopress.com/2019/06/12/argentina-grain-exporters-ready-to-replace-the-us-as-main-supplier-of-mexico* [accessed 25 August 2019];
Bronstein and Saul *Exclusive: Agribusiness Giant ADM made buyout approach to Argentina's Molinos* 2018 https://www.reuters.com/article/us-archer-daniels-argentina-molinos-agro/exclusive-agribusiness-giant-adm-made-buyout-approach-to-argentinas-molinos-sources-idUSKCN1NE0F2 [last accessed 10 September 2019].

230 Wilkinson *Globalisation of the Agribusiness and developing world food systems* 2009.

grains and only makes up half of its sales. COFCO is selling to more than 50 countries, focusing on Europe, the Black Sea Region and Latin America. It has also become fully integrated in the value chain by investing in massive silos, transport links and processing facilities. COFCO has become the fourth-largest soya exporter in Brazil. It leverages Latin America as one of the most important regions for origination, but it has also established export routes from North America (US and Canada) and the Black Sea.[231]

According to Rabbani[232] the competitive landscape is evolving far more quickly with the Asian demand overtaking the soya exports in Brazil and with Black Sea exports increasing significantly. China's consumption is exceeding local production of corn and therefore the access to other origination markets are critical to serve its growing demands.

8.3 Competition faced by domestic firms

The global grain traders' determination to deepen their links to domestic production and to integrate throughout the supply chain (especially backwards) means that there is an increased competitive pressure which has been brought to bear on domestic agricultural firms. Not only is this deepened globalisation by traders intended by its very nature to bypass the domestic firms, but the character of competition with these global players can also be of a more intense nature. The use of cheaper alternative storage options, as explained in Chapter two, have enabled the traders to effectively compete with traditional domestic storage operators at a completely different level.[233]

First, as the global players have deepened their activities into the domestic markets of exporting countries, they have tended to demonstrate their ability and willingness to invest in local infrastructure.[234] These investments have increased the supply chain efficiencies of the industry,[235] but have also increased the competitive pressure placed on the domestic firms that have remained in the market.

Secondly, the global players are often at a scale and level of integration which is hard for domestic firms to match.[236] As such, it has been postulated that the economies of

231 *A Chinese state-backed giant's rapid rise in global trading of food.*

232 Rabobank Valken *Traders Panel: Where is tomorrow's margins*? Global Grain Geneva symposium 9 November 2016.

233 Chapter 2 par 4 21.

234 NWK Ltd Corporate website www.nwk.co.za in terms of which Dreyfus acquired 50% shareholder in Epko Oil (sunflower oil press) together with NWK Ltd in 2015; Louis Dreyfus corporate website . https://www.ldc.com/za/en/ [last accessed 13 August 2019].

235 Australian Government Productivity Commission *Submission to the Agricultural Competitive Taskforce*; Australian Department of Agriculture, Fisheries and Forestry Moir *Foreign Investment and Australian agriculture* 3, 6, 27.

236 In November 2017 the Competition Authorities approved the acquisitions of two maize milling companies by a consortium comprising DH Brothers Industries (Pty) Limited trading as Willowton

scale enjoyed by the global firms enable them to reduce prices and margins, or fund trades, to the extent often not possible by domestic firms. [237] The degree of vertical integration associated with the global players may also enable them to price at levels that may be not be achievable for domestic firms who are not in a position to make up margins in other parts of the supply chain as are their more integrated competitors.[238] Dreyfus, present in South Africa since 1925, has added by means of the 2017 merger substantial assets to its existing asset base in the country, which already includes participation in sunflower seeds crushing plant, a rice packing plant and wheat mills.[239] Commenting on the merger approval, Thomas Couteaudier, Africa Head, said: "*For LDC Africa this investment is a step further into downstream value-adding activity*." [240]

Thirdly, the international spread of the global traders has been suggested to enable them to more easily weather market volatility in a specific region by using supply alternatives in other parts of the world. [241] For example, the effect of crop failures in one region can be diluted to some extent by their operations in other parts of the world. Domestic agricultural firms do not necessarily have this same degree of resilience and are more vulnerable to market volatility.

Fourthly, even where global trading firms have not invested heavily in domestic infrastructure relating to storage and handling, the terms of their procurement from farmers can often still result in the effective bypassing of domestic firms in these areas. This is most clearly evidenced in Australia where an increased competitive pressure on traditional storage activities has been attributed to a significant growth in on-farm storage capacity used by farmers.[242] This growth in on-farm storage would seem to flow from the liberalisation of the Australian grain industry.[243] But this growth in on-farm storage has also, at least in part, been facilitated by the deepening of the global players' operations in Australia as they have increasingly procured grain in a

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Group (Willowton) and Louis Dreyfus Company Africa (Pty) Ltd (LDC Africa. *K2014202010 (Proprietary) Limited and Noordfed (Proprietary) Limited* Case No.: LM081Jun17; *K2014202010 (Proprietary) Limited and AM Alberts (Proprietary) Limited (in business rescue) t/a Progress Milling* Case No.: LM191 Jan17.

237 Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 11.

238 This outcome was also suggested in Murphy Burch and Clapp *Cereal Secrets: The world's largest grain traders and global agriculture* 50 and 53 [last accessed 13 August 2019].

239 See footnote 234 and 236.

240 Biz community 2017 *SA Competition Tribunal approves acquisition of maize milling companies* https://www.bizcommunity.com/Article/196/742/171301.html [accessed 2 December 2019].

241 Rabobank Valken K *Traders Panel: Where is tomorrow's margins*? Global Grain Geneva symposium 9 November 2016 slide 4.

242 Australian Export Grains Innovation Centre *Grain Supply chains, costs, risks and opportunities* 38 to 41

243 The Productivity Commission *Wheat Export Marketing Arrangements Productivity Commission Inquiry Report*, 68, 259; Chapter 3 71,86 [accessed 12 August 2019].

manner that incentivises farmers to use on-farm storage as opposed to the traditional grain storage of incumbent agricultural firms.[244]

Fifthly, digitization[245] has played a significant role in the grain markets as data regarding global and domestic production, stocks, exports and consumption are freely available. Innovation and the ability to use technology and automation as to enable traceability, decrease costs and increase effectiveness across the chain from production through to processing are playing an increasing role to ensure sustainability and relevance in the grain markets.[246]

In October 2018 the four large trading companies announced co-operation in the digitisation of the execution of especially shipping of grains, including block chain and artificial intelligence options.[247] Louis Dreyfus simultaneously announced that it has already used the block chain platform as to limit time spent on paper based shipping transactions.[248] Recently, Glencore also joined these traders in the project as to design a technological platform for the benefit of the global grain trading industry.[249]

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244 The Productivity Commission *Wheat Export Marketing Arrangements Productivity Commission Inquiry Report* 282 [accessed 12 August 2019].

245 For example: In Logistics and Shipping optimization, the base use case for advanced analytics is to manage fleet voyages, taking into account weather patterns, port data and freight market intelligence. But this quickly extends to overlaying advanced analytics on large quantities of shipping and voyage data to develop a forward view of inventory levels of a specific commodity at a chosen port, giving traders additional market signals to make better trading decisions. Further, analytics can be used to identify correlations between ship and voyage data, and price movements on relevant marketplaces such as the Baltic Exchange. Dadachanji Trading Re-imagined – How Digitization is Reshaping the Commodity Trading Industry https://www.ctrmcenter.com/industry-voices/trading-re-imagined-how-digitization-is-reshaping-the-commodity-trading-industry/ [accessed 9 September 2019]; https://www.cargill.com/2019/adm-and-cargill-complete-agreement-launching-technology-joint [last accessed 13 August 2019].

246 Australian Export Grains Innovation Centre *Grain Supply chains, costs, risks and opportunities* 81.

247 Food Ingredients website *Digital technology for transparency: ADM, Bunge, Cargill and LDC investigate AI and blockchain data initiatives* October 2018. See footnote 245. https://www.foodingredientsfirst.com/news/digital-technology-driving-transparency-adm-bunge-cargill-and-ldc-investigate-ai-and-blockchain-data-initiatives.html [accessed 13 September 2019]. SAP, the German enterprise wide resource planning systems management global leader describes Blockchain as a reliable, difficult-to-hack record of transactions Blockchain ledgers can include land titles, loans, identities, logistics manifests – almost anything of value and reflect the owner thereof. SAP corporate website https://www.sap.com/africa/products/leonardo/blockchain/what-is-blockchain.html [last accessed 13 September 2019].

248 Bunge corporate website *Glencore Agriculture Limited joins ADM, Bunge, Cargill, COFCO International and LDC in industry-wide initiative to modernize global agriculture commodity trade operations* September 2019; Bunge corporate website announcing Glencore's involvement. https://www.bunge.com/news/glencore-agriculture-limited-joins-adm-bunge-cargill-cofco-international-and-ldc-industry-wide[last accessed 18 August 2019].

249 See footnote 248.

Lastly, there has been a huge growth in the sale and purchase of financial products linked to agricultural commodities by investment funds, banks and these agricultural trading firms. This is a trend adjacent to the "financialization" of the global economy that has led to financial markets to play and increasing role in in various sectors.[250] "Financialization" refers to the increasing importance of financial markets, financial motives and financial institutions in the operation of the economy and its governing structures both at domestic and global levels. The global agrifood companies use financial instruments to add to their dominance in the global markets. Besides the need to hedge against price risks, financial sector players and agricultural business, as indicated, speculate in the agricultural commodity futures markets. [251] This has led to liquidity in the financial markets but also to price trends no longer linked to the fundamentals that drive a market. This phenomenon of "financialization" has led to productive capital being replaced by financial capital and may create a separation between production and consumption decisions.[252]

With many different role-players or intermediaries in this commodity food chain across geographical and global markets with huge financial resources and larger bargaining power, the markets became less transparent and blurred the physical commodity food chains. The major banks developed commodity index funds and over-the-counter commodity derivative products. As these "paper" products are linked to the physical market, the banks then also had to hedge their risks against price movements and therefore they also purchase commodity futures contacts.[253]

Investment houses, pension funds and banks are heavily invested in *inter alia* agricultural firms. These firms have also accessed the investment realm created their own investment subsidiaries and funds.[254] The commodity food chains have therefore significantly changed over the last couple of decades with the banks and the four larger agricultural firms all active participants in speculation, arbitrage and equity positions. Accordingly, it is submitted that agriculture and finance have become intertwined and true ownership of agricultural assets (i.e. farmland, resources and firms alike) are not always known. There is a growing concern about the impact of financialization on food prices and that the volatility of prices are caused as a result thereof. The link to prove that rising grain prices is a result of the conduct of these financial sector role-players is difficult to prove.[255]

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250 See Chapter 1 16 footnote 78; Clapp *Financialization, distance and global food politics* 797.

251 Chapter 3 par 8.3.

252 Clapp *Financialization, distance and global food politic*s 797, 800, 801; Clapp *The rise of financial investment and common ownership in global agrifood firms* 1, 2, 4; Salerno *Gargill's corporate growth in time of crisis; how agro commodity traders are increasing profits in the midst of volatility* 211- 214.

253 See footnote 252.

254 Gargill's Black River asset management, Cargill Risk Management and Carval Investors.

255 Field *The financialization of food and the 2008–2011 food price spikes* 16.

8.4 Impact on regulatory views

The increasing depth of globalisation and the resultant increase in foreign control of domestic agriculture supply chains have started to impact how regulators and government authorities view domestic grain markets. In several countries there has been an increased concern over the extent of foreign control of key agricultural operations and assets. This has given rise to growing calls for the nurturing of so-called "national champions" in the grain industry as discussed below. [256]

Authorities have tended to recognise the increased intensity of competition that global players have brought into the domestic markets of exporting countries. Nevertheless, the significance of domestic agricultural assets and localised competitive dynamics remains important to regulators' view of grain and oilseed markets. Some of these regulatory views are explained in more detail below.

8.5. Concerns over increased foreign ownership

As indicated, direct implication of global grain firms deepening their operations in exporting countries has been an increased ownership and control by foreign firms of the grain and oilseed supply chain within these exporting countries.[257] This has prompted concerns in some countries over allowing further acquisitions of key domestic agricultural firms by foreign players as this would extend the foreign control over agricultural resources and infrastructure even further. This is most evident from recent developments in Australia and Canada.

8.5.1 Australia

On 1 May 2013, ADM put in a bid to acquire GrainCorp, one of the last remaining Australian-owned grain firms of significance with extensive operations and infrastructure in terms of grain trading, exporting and handling operations in eastern Australia.[258] Since ADM was a relatively smaller player in Australia, in June 2013, the Australian Competition and Consumer Commission (ACCC) found that the transaction did not raise any competition concerns and approved the transaction unconditionally.[259]

But, acquisitions of Australian firms by foreign companies can also be blocked by the Foreign Investment Review Board (FIRB) in accordance with the *Foreign Acquisitions*

256 Chapter 3 119 and onwards.

257 See above for detailed discussion of increased foreign ownership.

258 ADM held 19.85% of GrainCorp's shares prior to the bid. The deal offered was to acquire all outstanding GrainCorp shares and thereby gain full ownership of the company. *Australia blocks bid for Graincorp* https://dealbook.nytimes.com/2013/11/28/australia-blocks-a-d-m-bid-for-graincorp-2/[last accessed 2 August 2019].

259 Chapter 3 par 6.1.

and Takeovers Act 197 should it be found not to be in the country's best interest.[260] In a paper issued by the FIRB in 2011, foreign investment is generally viewed very positive for the country given the influx of capital, enhanced capabilities, creation of jobs and contribution overall to the creation of wealth.[261]

On 29 November 2013, the Treasure, exercised this right and prohibited the acquisition of GrainCorp by ADM on the grounds that it was not in the national interest of Australia.[262] In justifying this decision he emphasised that GrainCorp was a central player in the Australian grain industry owning over 280 storage sites as well as 7 of the 10 Australian bulk grain export terminals and that 85% of eastern Australia's bulk grain exports are handled through its network. The decision was met with surprise and elicited negative reactions from the market, as the rejection decision implied that the ports and grain market were not competitive enough.[263]

The Treasurer indicated in his decision that "g*iven that the transition towards more robust competition continues and a more competitive network is still emerging…now is not the right time for a 100% foreign acquisition of this key Australian business*."[264] It has also been reported that there was a perception among producers that ADM's global character meant that it would be more likely to restrict access to storage and port facilities.[265] The Chief Executive of Graincorp was quoted, pending the outcome by FIRB, to have commented that "` *It is pure fantasy to think it would somehow be worthwhile or even possible to pause or turn our backs on the process of globalisation that has delivered us such success."* She also added that it is a fantasy that assumes that the global environment will predictable and unchanged. She was of the view that change is the only constant, as both the domestic and international markets demonstrate.[266]

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260 The Foreign Investment Review Board http://www.firb.gov.au/ [accessed 2 August 2019]. Proposed direct interests in agribusiness require approval by the Treasurer of the FIRB, responsible for compliance to the Foreign Acquisitions and Takeovers Act 197, where the value of the investment is more than $58 million, with certain exceptions. The requirements are quite onerous and the FIRB issued certain guidelines on the prescriptions. FIRB guidelines https://firb.gov.au/guidance-resources/guidance-notes/gn18 [last accessed 21 August 2019].

261 Australian Department of Agriculture, Fisheries and Forestry Moir *Foreign Investment and Australian agriculture* par 1 27.

262 Botterill et al *Hockey kills GrainCorp takeover by ADM: experts react* November 2013 http://theconversation.com/hockey-kills-graincorp-takeover-by-adm-experts-react-20941 [accessed on 14 September 2019].

263 Ibid.

264 Taylor 2013 *Tony Abbott defends Joe Hockey on GrainCorp decision* https://www.theguardian.com/world/2013/dec/02/tony-abbott-defends-joe-hockey-on-graincorp-decision [accessed 13 August 2019].

265 Newsweekly Westmore *Foreign investment or foreign takeovers* 2013 http://www.newsweekly.com.au/article.php?id=56419 [last accessed 13 August 2019].

266 Farmonline website Watkins *Why we need ADM* November 2013 https://www.farmonline.com.au/story/3583724/why-we-need-adm-watkins/Watson [accessed 23 August 2019]; Plume 2013 GrainCorp boss ramps up foreign investment case

Subsequently in 2016 ADM sold its 19% shareholding in Graincorp to UBS, a Swiss bank, as it was obviously limited with its minority stake to influence GrainCorp's strategy and board in any direction.[267]

8.5.2 Canada

During 2012, Glencore acquired Viterra, before which time Glencore had no significant assets in Canada. Viterra was a Canadian business engaged in the handling, processing and marketing of grain, as well as the sale of crop inputs. The acquisition of Viterra by Glencore was ultimately approved by competition authorities in Canada as there was very little competitive overlap between the firms given that Glencore was not a significant player in the Canadian grain market at that stage.[268]

Nonetheless, like Australia, the Government of Canada also have the ability to prohibit foreign acquisitions on the basis that the proposed acquisition is unlikely to result in a net benefit for Canada.[269] The Investment Canada Act (ICA) provides a regulatory framework whereby the Government of Canada is mandated to review large-scale foreign investments in Canada which exceed a designated financial threshold.[270] Review of foreign investment at a lower financial threshold is required in financial services, transportation services (including pipelines), uranium and agriculture. Approval of the acquisition is granted when the Minister is satisfied that the investment is likely to be of "net benefit to Canada".[271]

In this case, the Canadian Government did not block the transaction but approved the acquisition by Glencore. However, there have been strong opinions expressed that the government should have prohibited the transaction given concerns over

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https://www.reuters.com/article/us-archer-daniels-graincorp/adm-sells-stake-in-australias-graincorp-idUSKBN13Q5ZL [accessed 26 August 2019].

267 Reuters Business News Plume *ADM sells stake in Australia's GrainCorp* December 2016 https://www.reuters.com/article/us-archer-daniels-graincorp/adm-sells-stake-in-aus tralias-graincorp-idUSKBN13Q5ZL [last accessed 19 August 2019].

268 For clarity it should be noted that as part of this transaction Glencore entered into a side-deal to sell several Viterra's grain elevators, retail stores and fertilizer business to traditional Canadian companies Richardson International and Agrium. Even though Canadian Competition authorities approved the foreign acquisition, this transaction of 210 Viterra's crop input retail stores to Agrium raised domestic competition concerns and ultimately required divestiture and behavioural remedies on the part of Agrium. For further details see Canada Competition Bureau, (2013) Competition Bureau Statement Regarding Sale of Agri-Products Business to Agrium https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03602.html [last accessed 20 August 2019].

269 No specific factors are identified that would indicate that a given transaction would produce a net benefit to the Canadian economy. Competition Policy Review Panel *Investment Policies* http://www.ic.gc.ca/eic/site/cprp-gepmc.nsf/eng/00014.html [Last accessed: 25 September 2019].

270 Government of Canada website. The Act may be cited as the Investment Canada Act. https://laws-lois.justice.gc.ca/eng/acts/I-21.8/page-1.html#h-278302 [last accessed 15 August 2019].

271 Government of Canada website https://www.ic.gc.ca/eic/site/ica-lic.nsf/eng/home [last accessed 17 August 2019].

foreign ownership of Viterra which was such a material player in the Canadian grain industry.[272] In March 2012 the Global and Mail newspaper expressed the following opinion through its editor, Eric Reguly : ..."W*hat a shame. Canada needs global corporate champions. It has, perhaps, three: Bombardier, the world's third-largest aerospace company, Barrick, the top gold player, and Potash Corp. of Saskatchewan. Potash Corp., the global fertilizer leader, would have disappeared too had the federal government not blocked its sale to Australian mining colossus BHP Billiton in 2010."* Further on the following was added: "*This industry has massive barriers to entry and that's why Glencore, led by the ever-savvy Ivan Glasenberg, pounced. For him, it was a once in a lifetime opportunity (and pocket change compared to Glencore's $45-billion market value). If he didn't nail Viterra, he knew it would have disappeared into the maw of Archer-Daniel-Midlands, Cargill, Bunge, Louis Dreyfus or any of the other agribusiness heavyweights who know that food isn't going out of style and that feeding another 2 billion people by 2050 just might translate into compelling growth story.*[273]

The Canadian government have in the past exercised their right to prohibit foreign ownership of strategically important Canadian agricultural firms. A case in point is the prohibition of BHP Billiton's proposed acquisition of Potash Corporation from Saskatchewan Incorporated (primarily a fertilizer company) as recorded in the quotation above.[274] It has been reported that part of the reason why concerns over foreign ownership may not have resulted in the blocking of the Viterra acquisition was that Glencore entered into a side-deal to sell a number of Viterra's grain elevators, retail stores and fertilizer businesses to traditional Canadian companies (i.e. Richardson International and Agrium).[275] It has been suggested that this transaction

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272 The Globe and Mail, "*Viterra another example of Canadian short-sightedness*", March 2012 https://www.theglobeandmail.com/report-on-business/rob-commentary/viterra-another-example-of-canadian-short-sightedness/article536452/ [last accessed 13 August 2019]; "*Competition Bureau won't challenge Glencore's $6.1B Viterra takeover*" 2012 Topcrop manager website https://www.topcropmanager.com/competition-bureau-wont-challenge-glencores-61b-viterra-takeover-11399/[accessed 9 September 2019]; Argitis and Singh S 2012 *Glencore Finds Viterra After BHP Billiton Miss: Corporate Canada*". https://www.bloomberg.com/news/articles/2012-03-21/glencore-finds-viterra-after-bhp-billiton-miss-corporate-canada [last accessed 17 August 2019].

273 Reguly 2012 *Viterra another example of Canadian short-sightedness* https://www.theglobeandmail.com/report-on-business/rob-commentary/viterra-another-example-of-canadian-short-sightedness/article536452/ [accessed 19 August 2019].

274 BHP is a global resource company (minerals, gas and oils) with head office in Melbourne Australia. Corporate website https://www.bhp.com/our-approach/our-company; Riley and Jones *Foreign Direct Investment Restriction in Canada* 2011 19. The Globe and Mail website: https://www.theglobeandmail.com/report-on-business/rob-commentary/viterra-another-example-of-canadian-short-sightedness/article536452/ [last accessed 19 August 2019].

275 See footnote 268.

on the side may have had the effect of softening any political concerns over foreign ownership.[276]

As of June 2017, the reviewable threshold for direct private sector investments involving foreign investors either as purchaser or seller was increased from C$800 million. It was subsequently adjusted and effective s from 1 January 2021the threshold will be C$1.5 billion in enterprise value.[277]

Increased scrutiny in recent years of foreign investment internationally has been driven by the rise of both national interest considerations, such as the importance of key infrastructure, and an increasing concern in various jurisdictions of national security considerations.[278] Notwithstanding this emerging trend, the election of the Liberal government with its leader Prime Minister Justin Trudeau in 2015 introduced a change regarding the policy of foreign investment in Canada.[279] The new government has placed significant emphasis on attracting foreign direct investment in infrastructure projects, and holding seminars aimed at encouraging investors to deploy capital in Canada. The government has also specifically welcomed investment from China, a different approach than some of the western countries. An example thereof as reported in an article by the Globe and Mail newspaper in 2015, was the approval by the Canadian government of the Chinese takeover of a Montreal high-tech firm, a deal that national-security agencies had warned Ottawa would undermine a technological edge that Western militaries have over China.[280]

The ownership of agricultural firms in these countries has not been fully articulated. However, much of the concern would appear to be based on the perception that the foreign-owned firms could have different incentives to the domestic firms in terms of how they would operate their grain business within the exporting country. This is likely to be driven by the global and vertically integrated character of these foreign firms which means they come with a global mind-set in which they may seek to co-ordinate supply and production across their international facilities and lines of

276 Investment Canada Act https://www.ic.gc.ca/eic/site/ica-lic.nsf/eng/home [last accessed 19 August 2019]. with the purpose of recognizing that increased capital and technology benefits Canada, and recognizing the importance of protecting national security, the purposes of this Act are *inter alia* to provide for the review of significant investments in Canada by non-Canadians and to provide for the review of investments in Canada by non-Canadians that could be injurious to national security.

277 Goldman and Koch *The Foreign Investment Regulation Review* 7th ed October 2019 44, 46, 54 https://thelawreviews.co.uk/edition/the-foreign-investment-regulation-review-edition-6/1174863/canada [last accessed 22 August 2019].

278 See footnote 269 and 277. During 2017/2018, the Canadian Government blocked 2 transactions on based on national interest concerns and 4 based on national security concerns.

279 Globe and Mail Chase *Liberals reverse course on Chinese takeover of Montreal high-tech firm*.

280 Canada Investment Tracker 2017 *China-based Hytera Project Corporation's bid to acquire Norsat International Inc* https://chinainstitute.ualberta.ca/investment-blog/2017/06/20/chinese-investment-high-tech-and-controversial-bid-acquire-canada%E2%80%99s [last accessed 25 August 2019].

operation. It is submitted that this may result in very different business decisions to those of a purely domestic firm, even though each could be profit maximising for the global and domestic firm respectively.

For example, global firms may not seek to invest in further processing in the production country, but rather choose to export the grain to a processing facility elsewhere in the world. Similarly, the global firm may seek to export grain early in a season only to import grain again later in the season to fill a supply gap.

9. A national champion

Calls to foster "national champions" are increasingly emerging from the general concern over increased foreign ownership. Underlying this argument appears to be the sentiment that it is preferable for a domestic firm to control key agriculture assets as they are deemed to be more focused on domestic development. It has been pointed out that in the face of the trends surrounding deepening globalisation, increasing foreign control of the grain in countries such as Australia is inevitable unless a deliberate decision is made to foster "national champions." [281]

It is submitted that this will unavoidably create tension between the protection of national interests and concentration of firms in a sector with concomitant potential abuses by these large global firms for antitrust authorities. One the one hand foreign investments carries huge benefits, especially for developing economies, whilst global integration and growth brings additional concerns.[282] The need to regulate foreign investment globally in a consistent fashion and the balance of national interests would remain a challenge.[283] It is also submitted that this should not be necessarily be within the mandate of Competition Authorities.

Appeals to develop a national champion in the agriculture space have been expressed in Canada, Australia as well as Russia, as explained below.

9.1 Canada

The Canadian Government's decision to allow foreign ownership of Viterra was met with strong criticism from certain quarters.[284] Much of the criticism was based on dismay that Canada had missed an opportunity to foster Viterra into a national

281 Riley and Jones *Foreign Direct Investment Restriction in Canada* 2011 19. https://www.theglobeandmail.com/report-on-business/rob-commentary/viterra-another-example-of-canadian-short-sightedness/article536452/[last accessed 22 August 2019].

282 For example, cybersecurity risks and job losses.

283 Goldman and Koch *The Foreign Investment Regulation Review* The Law Reviews 7th ed October 2019 Chapter 1 1 footnote 5, 79, 232. China aims to create national champions in high tech manufacturing by 2025. The USA has blocked many Chinese Foreign investments in a bid to aid protectionism and Germany was concerned about foreign investment in the technology sector by the Chinese.

284 See chapter 3 par 8.5.2.

champion who could have been a player of significance in the global grain and oilseed industry.[285] The idea of national champion also loomed large in the decision to prevent BHP Billiton from acquiring Potash from Saskatchewan Inc.[286]

9.2 Australia

Calls for a national champion in Australian grain have also emerged as the inevitable trend of increasing foreign ownership has become apparent.[287] Part of the decision to block ADM's acquisition of GrainCorp would seem to be an attempt to protect GrainCorp as a form of national champion who held a strategic role within the eastern Australian grain industry.[288]

9.3 Russia

With the Black Sea Regions and rise in especially wheat exports, Russia is also experiencing the global competition and in June 2019, the government was approached to review the domestic grain sector considering competition by traders. Reuters reported in the Moscow Times in August 2019, that Russian state-controlled bank VTB has asked President Vladimir Putin to provide government support and to restrict the role of foreign traders and give the state greater control over exports.[289] Together with domestic entities, global giants Glencore, Cargill, Louis Dreyfus and COFCO all trade Russian grain. VTB planned to establish a "national leader" being a vertically integrated operator that would be called 'United Grain Holding' (UGH), controlled by government. UGH already holds many assets for grain exports and storage. VTB through its trader Mirogroup, planned to double exports from the region and was increasingly becoming one of Russia's top three grain exporters, alongside

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285 The Globe and Mail, (2012). "*Viterra another example of Canadian short-sightedness*."http://www.theglobeandmail.com/report-on-business/rob-commentary/viterra-another-example-of-canadian-short-sightedness/article536452/ [last accessed 13 August 2019]; Cattaneo C *Ottawa caught in Viterra sale storm* 2012 https://business.financialpost.com/news/to-protect-canadian-champion-ottawa-unlikely-to-approve-viterra-sale [last accessed 23 August 2019].

286 Fitzgerald 2013 *Fertiliser growth opportunity as BHP ponders potash push* http://prosperitysaskatchewan.wordpress.com/2013/07/28/fertiliser-growth-opportunity-as-bhp-ponders-potash-push/ [last accessed 14August 2019].

287 The Financial Post Argitis and Singh *Glencore avoids BHP's Potash mistake with Viterra deal* March 2012. https://business.financialpost.com/investing/glencore-avoids-bhps-potash-mistake-with-viterra-deal [accessed 17 August 2019]. The decision to block ADM's bid for GrainCorp was cited as a move by the Australian government to support the importance of retaining a national champion.

288 Chapter 3 par 8.5.1; The Financial Post website. https://business.financialpost.com/investing/glencore-avoids-bhps-potash-mistake-with-viterra-deale decision to block ADM's bid for GrainCorp was cited as a move by the Australian government to support the importance of retaining a national champion. [last accessed 18 August 2019].

289 The Moscow Times Reuters 2019 *Dear Vladimir: VTB Asks for Putin's help to create Russian Grain Champion* https://www.themoscowtimes.com/2019/08/23/dear-vladimir-vtb-asks-for-putins-help-to-create-russian-grain-champion-a66996 [last accessed 23 August 2019].

local trader RIF and Glencore.[290] During August 2019, VTB acquired 70% of Mirogroup, as part of its strategy to become an integrated role-player in the Russian Grain market.[291]

Reuters[292] consequently reported that the government in Russia has called for control over grain exports and have established a "trader association" under the auspices of the state controlled UGH. The *rationale* according to the reports for the establishment of the Russian Union of Grain Exporters Association is "*to improve the regulatory framework, strengthen control over the quality and safety of grain, and increase the export potential of the industry and other areas*," Traders that wish to participative in exports are obliged to belong to this association and to be granted access to supply and demand information for grain.[293]

10. Intensified competition in domestic markets

As observed in the previous paragraphs, the changes in industry dynamics across the globe have impacted, to some extent, how competition authorities and other government agencies view their domestic grain industry. This is particularly true in Australia where there has been a general recognition of the intensification of competition that has occurred as a result of the global players deepening their activities into the domestic grain markets of that country. The intensified competition that has been observed has most directly related to the increase in investments made by the global players in Australia, particularly in relation to the supply chain for export wheat. Accordingly, the Australian Productivity Commission indicated in 2014 in a submission to the Agricultural Competitiveness Taskforce that in recent years *"there have been significant pro-competitive developments in grain supply chains, largely associated with foreign investment."* [294] The submission went further to point out that investment by (mostly) foreign companies in port terminals as well as storage and

290 Ibid; Mirogroup is an integrated grain trader in Krasnodor, Russia that originates, handle, store and export grains. Mirogroup website http://www.mgresources.ru/about/ [last accessed 24 August 2019].

291 Reuters reported the VTB Acquired 70% of Mirogroup for an undisclosed amount. https://www.reuters.com/article/russia-vtb-grains/update-1-russias-vtb-expands-grain-export-business-with-acquisition-of-trader-idUSL8N25B2IU [last accessed 23 August 2019].

292 Reuters April 2019 https://www.reuters.com/article/russia-grains-exports/update-2-russia-tightens-grip-over-grain-exports-with-state-led-association-idUSL5N225151 [last accessed 23 August 2019];Hellenic Shipping News April 2019 https://www.hellenicshippingnews.com/russia-tightens-grip-over-grain-exports-with-state-led-association; Devitt 2019 *UPDATE 2-Russia tightens grip over grain exports with state-led association* https://www.reuters.com/article/russia-grains-exports/update-2-russia-tightens-grip-over-grain-exports-with-state-led-association-idUSL5N225151 [accessed 22 August 2019].

293 See footnote 289.

294 Australian Government Productivity Commission *Submission to the Agricultural Competitive Taskforce* 15.

handling capacity had reduced concerns around the potential abuse of market power along the wheat export supply chain. [295]

The Australian Competition and Consumer Commission ("ACCC") recently lifted longstanding access requirements on GrainCorp's Newcastle grain export terminal due to increased levels of competition. [296] This decision was taken partly on the basis that recent investments by (mostly) foreign players in nearby export facilities had increased the competitive constraint faced by GrainCorp's Newcastle facility (and therefore the access requirements were no longer necessary).[297] Increasing competition by other rivals of GrainCorp in the upstream storage and handling markets, as well as the expanded activity from players such as Louis Dreyfus, Glencore and Cargill in Glencore's traditional supply areas were listed as the reasons for the lifting of the access requirements. The increasing of on-farm storage facilities[298] which are facilitated partly by the deepening of the global players activities also played a role in the decision.

However, despite such acknowledgement of the strong competitive force often brought to bear by the global players, competition authorities do consider local agriculture assets and infrastructure to be key elements of competition in the grain markets. This is evidenced by the fact that competition markets relating to grain handling and storage tend to be defined on a local or regional basis. In *Cargill/Continental* (United States)[299], *United Grain Growers/Agricore* (Canada)[300] and *Saskatchewan Wheat Pool/Agricore* (Canada)[301] the geographic market for storage was limited to a localised area around the silos. Although the Australian competition authorities have not found it necessary to formally define geographic markets, they would also seem to consistently consider the effects of grain mergers and port access requirements on a localised or regional basis.[302]

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295 Australian Government Productivity Commission *Submission to the Agricultural Competitive Taskforce* 17.

296 In this matter Graincorp made a submission to the ACCC to remove the access restriction on its Port of Newcastle export terminal. In its submission, GrainCorp cites that rival storage and export facilities have been constructed near to its terminal. CBH, Olam and Glencore operate the Newcastle Agri Terminal and Louis Dreyfus is offering storage services with elevation provided by Qube. The ACCC accepted that these new facilities were acting as a competitive constraint to GrainCorp and ultimately approved its application. The ACCC also found that GrainCorp was facing increasing competitive pressure upstream in their storage and handling activities. See ACCC, (2014). Decision to Accept: GrainCorp Operations Ltd.'s application to vary 2011 Port Terminal Service Access Undertakings.

297 Ibid.

298 ACCC, (2014). Decision to Accept: GrainCorp Operations Ltd.'s application to vary 2011 Port Terminal Service Access Undertakings 53,58.

299 *United States vs. Cargill Incorporated and Continental Grains*, Civil Action No. 99-1875.

300 *The Competition Commissioner vs. United Grain Growers*, Case: CT-2001/07 14.

301 *Competition Commissioner vs. Saskatchewan Wheat Pool, Case*: CT-2007-005 7.

302 For example see ACCC, Cargill/AWB, informal review, ref 44555, March 2011; ACCC, Summit/Emerald, informal review, ref 41621, June 2010; ACCC, Glencore/Viterra, informal review, ref 48469, June 2012; ACCC, ADM/GrainCorp, informal review, ref 50620, May 2013;

Consolidation and globalisation in the Southern African grain markets have been very slow, but notwithstanding that global players have accessed the sector.[303] Afgri has been taken over by a Canadian investment fund, Fairfax Financial Holdings through a new entity, AgriGroupe Holdings.[304] Afgri, the ex-agricultural co-operative that was known as OTK, which is one of the major South African agricultural intermediaries in terms of the provision of inputs, handling and storage, equipment, finance and crop insurance in Southern Africa and Western Australia (with the John Deere Agency) is becoming globalised.[305] The terms of the deal with Fairfax has not been disclosed but upon the assumption that there is not much protection, the assets, infrastructure and capacity in the eastern parts of South Africa, where mainly yellow maize is being produced, have been divested to the Canadians.[306]

According to third parties raising concerns during the merger proceedings, silos are strategic and essential facilities for food security in South Africa and since Afgri operates in the major grain producing regions in the country, it plays a vital role in the food value chain.[307] They submitted that AgriGroupe will have approximate 25% market share in the silo market in South Africa and was likely, post-merger, to increase grain storage costs in the KwaZulu-Natal, Mpumalanga and Gauteng regions as it will own the majority of silos in these provinces.[308]

In relation to grain trading, the concerns were also raised that, under new foreign ownership, Afgri may likely, post-merger, export grain to the USA, Canada and other countries which may led to an increase the price of grain in South Africa. Furthermore, it was argued that AgriGroupe would adopt a strategy of selling its grain to the market when the price is most favourable to it, thereby increasing food prices. Other concerns

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ACCC, Decision to Accept: GrainCorp Operations Ltd.'s application to vary 2011 Port Terminal Service Access Undertakings, 2014

303 *AgriGroupe Holdings (Pty) Ltd v Afgri Ltd* (017939) [2014] ZACT 1 (15 April 2014). The Tribunal explained the transaction in par 4 2 as follows: The primary acquiring firm is AgriGroupe, a newly incorporated company. AgriGroupe is controlled by Joseph Investment Holdings (JIH) a company incorporated in Mauritius. JIH is wholly owned by AgriGroupe Investments LP (Cayman Islands). AgriGroupe Investments is a limited partnership, in which Fairfax Financial Holdings Ltd will be the majority partner.

304 Fairfax Holdings Corporate website https://www.fairfax.ca/Corporate/company-profile/default.aspx [accessed 18 September 2019]; Fairfax Financial Holdings Limited is a holding company which, through its subsidiaries, is engaged in property and casualty insurance and reinsurance and the associated investment management. Fairfax's corporate objective is to achieve a high rate of return on invested capital and build long-term shareholder value.

305 *AgriGroupe Holdings* Case para 32.

306 Afgri Operations (Pty) Limited *AgriGroupe completes acquisition of AFGRI AFGRI to delist and go private* https://www.afgri.co.za/joint-press-statement-from-afgri-and-agrigroupe/ [accessed 22 November 2019].

307 *AgriGroupe Holdings* Case para 14 to 16. Four government departments, namely: The Department of Rural Development and Land Reform ("DRDLR"), the Department of Agriculture, Forestry and Fisheries ("DAFF"), the Department of Trade and Industry ("the DTI") and the Economic Development Department ("EDD") 4.

308 *AgriGroupe Holdings* Case para 17.

were that other market participants may be excluded from access to vital infrastructure such as the railway lines that is used to transport of grain to Afgri's silos.[309]

Despite these and other concerns the merger was approved with certain undisclosed conditions.[310]

11. Food security concerns

As explained in Chapters 1 and 2, grain is traded on the South African Futures Exchange ("Safex"). The Commission considered the way that Safex operates and how this platform could be affected by the proposed merger. The Commission correctly found that the price of grain is determined by the Safex price, which is subject to market forces. Price movements on Safex are driven by domestic demand and supply, regional demand and supply, international prices and exchange rates. Thus, Afgri and AgriGroupe have no ability to influence prices. That is indeed so.

It appeared that Afgri indicated that it does not export grain, nor is it able to influence whether and to which markets grain is exported. According to the Commission, even if Afgri becomes active in the grain trading market, it is not likely to have a significant influence on Safex pricing.

The Commission concluded that the merged entity would not have the ability or incentive to transfer grain to other countries to the detriment of food security. In relation to access to silos, the Commission considered whether Afgri would have an incentive to deny farmers access to its silo infrastructure. The Commission found that Afgri has excess storage capacity in each of the provinces considered i.e. the Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West and the Western Cape. The Commission further found that even during the harvest period, Afgri's storage capacity utilisation was significantly below capacity. The Commission therefore found it unlikely that Afgri would deny farmers access to its silos and was of the view that, in fact, Afgri had an incentive to increase the amount of grain passing through its storage facilities due to the revenue that it can earn from the grain management operations in South Africa.[311]

Correctly so, the Tribunal accepted that the price of grain is not determined by silo operators and that it was critical for enough grain volumes to be stored given that silos were on of the main forms of revenue for traditional silo operators. Afgri which has therefore procured substantial foreign capital from the new shareholders, had

309 See footnote 307.
310 *AgriGroupe Holdings* Case para 37 to 39.
311 Ibid.

expressed it plans and explained that the biggest chunk of the new capital raised will be focused on the expansion of its processing arm known as Philafrica Foods. The aforesaid company has capabilities that include grain and maize milling, soya crushing and oil and seed extraction processing as well as other processing activities to its repertoire.[312]

Afgri has therefore grown beyond domestic borders as an integrated business across the food value chain including origination of grains, oil processing, poultry and bakeries. In 2018, Afgri also concluded an agreement with Transnet as to take over and manage two of South Africa's significant ports.

There are many similar examples of mergers in the agricultural sector that occurred during the last decade to meet *inter alia* not only food consumption demands but also create scale and efficiencies across the food value chains. All of these with the aims by firms to remain both sustainable and profitable.[313]

12. Conclusion

As explained in this Chapter, the main trends in the international and domestic grain markets also impact the much smaller South African grain market.

Grain commodities are no longer a food source but is used for energy and investment options for several speculators in the financial markets. The prices of grain, especially maize, follow the USA maize price and depending on the domestic stock levels generally always trade within the import and export parity bands.

As comprehensively explained herein, the global integrated grain trading firms and processors have become dominant role players across every aspect in the food value chain. Smaller firms and countries do not have the ability to compete and it is argued that some form of protection be afforded to these firms as to ensure sustainable, secure and affordable primary food supply. As per the many examples, expounded in this chapter, with reference to other comparable jurisdictions it is submitted that local

312 The CFO South Africa 2018 https://cfo.co.za/article/afgri-group-holdings-creates-investment-holdings-company-agh [last accessed 25 August 2019].

313 Gullickson 2017 *10 Ag Mergers and Acquisitions for 2017* https://www.agriculture.com/news/business/10-mergers-and-acquisitions-for-2017 [accessed 15 September 2019]; Milco *SA (Pty) Limited and Clover Industries Limited* LM263Mar19: The merger was approved subject to conditions pertaining to employment, local procurement and information sharing. Employment conditions included, a three-year moratorium on retrenchments and an undertaking that the merged entity contribute to the reasonable relocation and training costs of those affected employees applying for new or vacant positions. The merged entity also agreed to continue to procure its required volumes of bulk juice concentrate from local suppliers for a period of three years; *Overberg Agri Limited and Acorn Agri (Pty) Limited* LM288Feb18; Prinsloo 2019 *PepsiCo and Pioneer Foods Merger* https://www.fin24.com/Companies/Industrial/pepsico-takes-africa-foothold-with-r244bn-pioneer-foods-deal-20190721 [last accessed 2 September 2019] (pending PepsiCo and Pioneer Foods merger).

firms should be allowed to grow and expand by means of consolidation within the South African region as to be able to meet competition by these global firms.

Government should be encouraged to adopt Investment policies that are able to allow for the fostering of “national champions” within such an important sector such as agriculture.[314]

314 *The Protection of Investment Act 22 of 2015* provides for a balance between foreign investment and the state but does not provide a process of a consolidated review by foreign investors and blocking of certain transactions. Section 18A of the *Competition Amendment Act*, contains provisions that aim protection against an acquisition by a foreign firm in certain circumstances in the event of threat to national security interest. The Minister may constitute a committee (of Minister and Officials appointed by the President) with powers to intervene. As at date of this dissertation, no information or regulations have been published that provides more guidance in this regard.

CHAPTER 4 CONCLUSION AND RECOMMENDATIONS

1. Conclusion and final remarks

As has been comprehensively explained in the previous chapters, the grain commodity industry across the world has undergone significant changes over the past two decades.

Firstly, as explained, the relevant South African product market has been delineated to be the market for the storage of grain, whilst the geographic market has been limited to a radius of 40 to 60 km around a traditional silo and hence automatically creates a dominant position in terms of the provisions of the Competition Act for a traditional silo storage operator.[1]

The current market definition, according to the *Senwes case*, ignores the various substitutes that also belong to the product market.[2] The geographical market with the clearly delineated market boundaries as articulated in *Senwes* unavoidably indicates a very high market share for any traditional South African grain storage operator.[3] Consequently it is submitted that, as market share is used as a proxy for market power, to ignore a proper analysis of substitutability and alternative storage options creates misconceptions. Moreover, the Act does not assist with guidelines of how markets are to be defined and relies mainly on the hypothetical monopolist test.[4] No guidelines for the determination of relevant markets have been issued by the Competition Commission either.

Clearly the changes and developments, since *the Senwes* case,[5] regarding the existence, availability and suitability of much cheaper alternative grain storage substitutes for traditional grain storage within the geographical market that enable a highly competitive trading environment have to be taken into account.[6] Although it was concluded in the *Senwe*s case that the geographic market is local or regional, it is submitted that the market should not be limited to the radius as determined by the competition authorities as the market share of approximately 60 to 70% in a particular radius may be unreliable in the determination of market power.[7]

This study proves that since suitable different alternative storage options, as described in Chapter two, are being used by the market, traditional silos can no longer

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1 Section 7 of the Act.
2 The *Senwes* case 16 par 59; Chapter 1 8,9.
3 Theron *Economic analysis of relevant markets and competitive effects in the compliant by CTH Trading (Pty) Ltd ("CTH") against Senwes (Ltd) ("Senwes")* as indicated in Chapter 2 6 estimated the market share at 75%; Chapter 2 22 footnote 41.
4 Boshoff Why define markets in competition cases? 7.
5 *Senwes* case para 47 to 49, 13.
6 Chapter 2 par 13 61.
7 Majumdar and Murgatroyd *Looking beyond market shares* 1.

be regarded as essential facilities, nor an essential input for the trading market.[8] The evidence over time confirms that grain is increasingly flowing around the traditional silos and these silo operators have to design and implement *inter alia* alternative strategies by using technological advancements and additional capital expenditure to attract grain for storage as attracting sufficient volumes is the only way that storage operators are able to remain sustainable.[9]

Since storage is only one element for those role-players that elect to carry physical grain in order to sell it over time to the market or to service the processors, traditional storage operators that are dependent on huge volumes cannot arbitrarily increase their handling and storage tariffs without losing volumes with the concomitant decrease in substantial loss of profits. In some instances, even becoming totally unprofitable.[10]

The constraint to adopt higher storage tariffs beyond average inflationary increases, and the critical loss calculation graphically explained in Chapter two prove the negative impact on profitability across different years.[11] The adverse effect of a price increase and the loss in volumes confirms that the market as applied in the *Senwes Case* is too narrow.[12]

It is furthermore submitted that the hypothetical monopolist test is a broad concept and the competition authorities have not been clear in exactly which factors should be taken into account for substitutability.[13]

In addition, according to Boshoff, certain of the economic models used to measure substitutability are also generally not very accurate.[14] Certain economists have critiqued the use of market definition exercises, although it currently remains the basis framework for any competition analysis.[15] It is submitted that the empirical research and the responses from the market itself regarding the appropriateness and availability of substitutes are much more reliable and should therefore be taken in consideration to review the definition of the storage market.[16] Also critics argue that dominance inferred from market share is not an appropriate measure of market power. Although it remains a useful tool to rank substitutes, it is argued that market share is only one factor to consider in defining a relevant market. It is submitted that the market definition exercise in competition analysis remains relevant but should be

8 Chapter 2 par 9.
9 Chapter 2 par 5.1 29.
10 Chapter 2 Graph 2.5 50.
11 Chapter 2 par 10 46.
12 Boshoff *Why define markets in competition cases?* 8.
13 Chapter 2 par 10 46.
14 See footnote 12.
15 Boshoff *Why define markets in competition cases?* 9.
16 Chapter 2 par 12.2 56 and onwards.

appropriately supplemented with the assessment of competitive constraints, barriers to entry and ranking of suitable alternatives, including competitive effects.[17]

Therefore, the consideration of and ranking of substitutes as adopted in the *Primedia Case*[18] was an important development in the realm of South African precedents in support of the aforesaid view. The Tribunal ranked the substitutes and by means of the ranking ended up with a market that has been properly and appropriately defined. In particular, the Tribunal did not approach the market definition as purely a "mechanistic exercise."[19]

The competitive constraints in terms of not only existing competition by other traditional storage operators that act as traders, potential competition and the threat of erection of own storage by both the producers and the traders constrain Senwes to increase tariffs beyond inflation.[20] Further constraints are the increasing actions by farmers, traders and processors (also expanding storage facilities) on Senwes to increase tariffs beyond inflation.[21] Consequently Senwes has no incentive to increase tariffs or reduce the availability of services because of these constraints. The continuous development of technological improvements to current alternative storage options i.e. automation equipment for silo bags, make these alternative substitutes even more attractive.[22]

The survey conducted as part of this study amongst producers, as users of storage, proves that producers will and have the ability in many instances to switch to an own zinc/steel storage facility in response to a price increase or even poor service and quality concerns. This evidence also corroborates the fact that traders have successfully established their own storage sites.[23]

As observed, the high fixed cost of maintenance of traditional silos as well as the developments in the market, including the widespread use of alternative storage solutions do constrain storage operators. Whilst simultaneously rival traders have become integrated businesses that are more than competent to compete. There are little barriers to entry to compete in the market given the various alternative storage options or delivery by means of "*plaaslaai"*.[24]

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17 Boshoff *Why define markets in competition cases?* 13.

18 *Primedia Ltd and others v the Competition Commission and African Media Entertainment Ltd Case no: 39/AM/May06 12,13.*

19 Boshoff *Why define markets in competition cases?* 18.

20 Chapter 2 Graphs 2.8- 2.10 53.

21 See footnote 20; Majumdar and Murgatroyd *Looking beyond market shares 2.*

22 Chapter 2 26,27. For example such as developments to store wet and dry grain in silo bags and to enable aeration http://www.grainsaver.com/images/stories/pdf/GRAIN%20SAVER_2015.pdf [accessed 11 August 2019].

23 Chapter 2 par 7.1 38.

24 Chapter 2 par 9 41, Chapter 2 Figure 2.4 42.

Concomitantly traders using flexible lower costs storage solutions are also generally able to pay much better premiums for the procurement of grain and book building.[25] The traditional silo, the locations of some of them, the lack of local authorities providing trustworthy utilities (water and power), poor road infrastructure, as well as lack of effective railway logistics are accumulating factors that create a burdensome structure to conduct business with.[26] Traditional silo operators are in many instances forced to attend to the maintenance of roads and railways themselves in order to ensure service delivery.[27] The traditional silo have in certain instances become an impediment, especially in areas where production have decreased or completely ceased as a result of *inter alia* water scarcity.[28]

The geographical market for storage should therefore be expanded to include all these elements and to enable agricultural firms such as Senwes to compete across the chain (from farm gate to mill door). The definition of the grain storage market in South Africa should thus be expanded to include the proliferation of all grain operators and traders, both national and international, as to even the playing field by viewing handling and storage as only one element of a package of goods and services provided to processors.[29]

Hence, it is submitted that the upstream market should be redefined to include all substitutes available for storage, albeit being producer storage or, traditional co-operative, trader or processor storage (a national supply chain) with the downstream market being a national trading market with most of the role players being equally able to compete. To distinguish and separate one input such as storage from this chain creates a skewed perception and thus a fake reality about the parameters of this market.

Secondly, as explained comprehensively in Chapter three, silo owners do not determine the market price of grain. The price is determined by Safex, which price is again dependent and derived from the international grain trading prices and all of the elements that impact that market.[30] The price of maize in both the physical as well

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25 Chapter 2 par 9 41.

26 Roberts *Recommendations for Commodity Futures Delivery on the Johannesburg Stock Exchange* 29. Roberts reports that between 2009 and 2019, the decline in commodities moving by rail has had a measurably negative impact on the livelihoods of farmers and the affordability of food for consumers. It is estimated that, the amount of grain transported by rail has declined from 60% in 2009 to 20% currently.

27 Chapter 2 footnotes 78, 80. The JSE general contract specifications provide that upon presentation of a Safex silo certificate, a storage operator of grain is obliged, subject to payment of the storage operator's storage costs, to deliver the grain under the certificate; Chapter 2 par 4 28. Facilities for out loading in all conditions should be available at all reasonable times.

28 BFAP Baseline Agricultural Outlook 2018-2027 5. The south west Free State Province areas (Brandfort, Petrusburg and De Brug, Dealesville, Boshof and Steynsrus).

29 The concept of a package of goods and services was accepted in The *Afgri* case, 2 para 6.

30 Chapter 3 par 8.1 100.

as the futures market is determined on Safex by *inter alia* the interpretation of fundamental information such as the global price for maize, the exchange rate, stock levels and the relative size of the domestic maize crop (including carry-over stock). Maize that is physically located in the United States does not have the same value to a South African buyer, as maize that is physically located in South Africa. Consequently, the price of maize on different markets must be adjusted to take account of the differences in transport costs, exchange rates, etc., in order to make comparisons possible. Such an adjusted price is called a reference price and is determined as per reference point.[31] In the case of grains in South Africa the commonly used reference point for commodities trading on Safex (excluding soybeans) is Randfontein.[32] The exchange rate influences the prices of grain substantially as it determines the import and export prices. If the rand weakens, it becomes more expensive to import grain and accordingly the price of grain increases. The Chicago Board of Trade is the measurement of grain prices and any factor impacting on the exchange rate seriously affect the domestic grain prices.[33]

As also explained, the price fluctuates between import and export parity. The spot price (which is used to determine the price of physical grain on the day) will trend towards the floor price if there are high stock levels and will trade closer towards import parity levels when the stock levels are low and/or a smaller crop is expected. [34] Safex therefore links the cash (spot) market and the futures market price to enable a fair and transparent grain price discovery mechanism. The futures prices are a forecast of what the cash price of grain will be for a given future month, based on current available information. The futures markets function on standardisation in terms of quantity, location (by means of a location differential), grade and maturity which enable all market players to participate equally in the price discovery process. This not only add to transparency but also increased participation and liquidity in these markets.

Traders of grain, including the traditional storage operators are therefore equal participants and no single firm can manipulate grain prices or determine the price of grain.[35] This principle has also been accepted by the Competition Tribunal.[36]

Thirdly, and most noteworthy amongst these changes have been a growing reliance on international trade to meet countries' consumption requirements and the

31 Chapter 3 par 8.1 100-102.
32 Roberts *Recommendations for Commodity Futures Delivery on the Johannesburg Stock Exchange; Geyser Short and Long of Futures Markets.*
33 Chapter 3 par 8.1 100; Chapter 3 par 11 124; Smit *Risikobestuur vir die nuwe seisoen* Landbouweekblad 18 October 2019 52.
34 Chapter 3 par 8.1 100.
35 The AgriGroupe Merger; Roberts *Recommendations for Commodity Futures Delivery on the Johannesburg Stock Exchange* 23.
36 Chapter 3 par 11 124; AgriGroupe Holdings Case para 37 to 39.

increasing liberalisation of agricultural markets as explained in Chapter 3[37] South Africa is a relatively small grains producer that is open to the trade in global markets. As such, commodity prices are highly volatile, owing to changes in global supply and demand, as well as changes in currency valuations. As explained, South Africa is generally a net importer of grain (especially wheat), but competes with global grain traders with maize exports.[38] These traders are also increasingly accessing the market and, being integrated, are able to buy grain directly from producers at premiums which are difficult to match and compete with.

As observed in Chapter 3, the changing dynamics and major trends in the global trading environment as per the examples provided, have created a changed industry.[39] These role-players are driven by a determination to secure certainty over the supply and ultimate the entire market and value chain for the grain, whilst achieving maximum operational efficiencies. Their vertical integration is continuously cementing the link between domestic production, global trade and food and feed processing.

A Rabobank study released in December 2018, explained that the grain merchandising models in the USA are under increasing pressure not only in terms of margins, but also in terms of relevance.[40] This report written by Nicolson explained that "*Contributing to a squeeze on margins are also the concentration of grain origination assets and storage capacity at the top grain companies, increased competition for grain in the country from many end users, sector players with different objectives and business models, increased competition for export business and more nimble players…. A smaller number of producers are controlling a large amount of grain and are effectively cutting out the elevator in the middle. As such, they control production, logistics and storage, the report said, and become a viable seller to processors and export facilities. In other words, they become a direct competitor to the ABCs."*

It was also highlighted that although major grain companies control large grain origination assets, they are experiencing profitability challenges. There is an increasing trend of competition for grain with processors, exporters, livestock

37 Chapter 3 par 1 63 par 2.1 69.

38 In the 2019/20 marketing year (May/April), supplies of maize are estimated to be enough to satisfy domestic consumption requirements, but exports are forecast at a below-average level of about 1.4 million tonnes. Normally, white maize accounts for about 40 percent of total maize exports, which are predominantly shipped to neighbouring Southern Africa countries. Yellow maize exports account for the other 60 percent and are mostly delivered to countries outside of the sub-region, primarily in Asia. Food and Agricultural Organisation of the United Nations *Farm structures in tropical climates* Chapter 9.

39 Chapter 3 para 7.3.1 7.3.32 95-98.

40 Chapter 3 par 6.4 90. Reidy 2018 https://www.world-grain.com/articles/11414-rabobank-study-outlines-challenges-to-grain-merchandising-model [accessed 12 July 2019].

operators and export terminals all competing for grain. This situation coupled with new entrants into the market can attract grain by paying higher prices to bypass the local elevator (silo). According to the Rabobank Report *"[T]hese facilities tend to be more flexible, nimble, opportunistic and they fill niche market needs*."

As explained in this dissertation, there are thus greater global influence on domestic price levels, greater participation and even control by strong foreign owned firms with increasing competitive pressure being felt by domestic firms as these domestic firms are increasingly by-passed by larger traders and processors with adequate and enough storage options to service each customer as per his specific needs.

Chapter 3 explained the rising concerns in countries such as Australia and Russia over the extent of foreign control of key agricultural operations and assets. This has given rise to growing calls for the nurturing of so-called "*national champions*" in the grain industry.[41] Authorities have also begun to recognise the increased intensity of competition that global players have brought into the domestic markets of exporting countries.

Given the increasing competition, firms such as Senwes, are to be encouraged to grow domestically by means of mergers and acquisitions with other players in the traditional grain storage market.[42] Fears of unilateral effects by raising storage tariffs in the event of merger activity between storage operators are unfounded.[43]

Domestic consolidation has become an increasing imperative for the agricultural ex co-operatives not only to ensure contribution to food security, but to remain sustainable and profitable with higher levels of cost efficiencies.[44] Most of these also have excess storage capacity and therefore need to attract high volumes of grain and consolidate storage in order to restrict operating and maintenance costs.[45]

As expounded in this dissertation, agricultural co-operatives conducting the business of traditional storage in silos have evolved to be able to compete with traders in the grain markets and given the market realities, such as other available storage options

41 Chapter 3 par 9 119.

42 Section 13 of the Competition Amendment Act, 2018 allows for the Minister to intervene in merger proceedings involving a foreign acquiring firm. This section provides for intervention in the event of an adverse effect on the national security interest of the Republic. The definition of national interest and the factors in section 18A(4) to be considered are not very clear. If these factors include for instance food security (i.e. supply of grain) are yet to be clarified.

43 *AgriGroupe* case; *MGK/Senwes Merger* application. During the MGK merger application process in June 2011, the Commission expressed concern over Battery (MGK), Middelvlei (Senwes) and Oberholzer (Senwes) silos that are closely located to each other and the overlap of the radii. Concerns related to the increase in tariffs and elimination of a competitor in the market.

44 A strategic analysis by Senwes done in February 2018 from market information (Annual reports) calculated head office costs for all agricultural comparator firms to be R1,43m.

45 Senwes has capacity of 4,8 m tonnes and generally only store on average around 2,2 m tonnes in a season. Similarly, the break-even is 1,5 m tonnes. SAGIS reported that nationally available storage by all storage facilities/ options are an aggregate capacity of 27,2 m tons.

that have been adopted, do not have any market power. The traditional silo operators' costs of operations, maintenance and lack of adequate rail infrastructure are increasingly becoming a handicap. Therefore, the limitation of costs and increase in investment in technology and similar solutions to increase efficiency and attract volumes are essential for the continued existence of this storage option. The evidence suggests that to switch to any of the alternatives is easy[46] and that significant business will be lost even with a small price increase as illustrated in Chapter 2.[47]

These businesses remain critical not only to ensure the sustainability of commercial and emerging producers through the provision of agricultural inputs, credit, logistics and storage but also contribute to stability and safe domestic food security. They are invested in the rural areas and contribute significantly to development, job creation and the sustainability of rural areas of South Africa.

Traditional storage operators, such as Senwes, should therefore be allowed to grow and truly become a "national champion" that is supported by state policies, competition frameworks and policies as well as proper infrastructure maintenance by local authorities coupled with a sound railway network. Aforesaid will not only ensure its own sustainability but will support primary food production and development in rural areas, as well as emerging and commercial farmer development, all of which would contribute significantly to food security.[48]

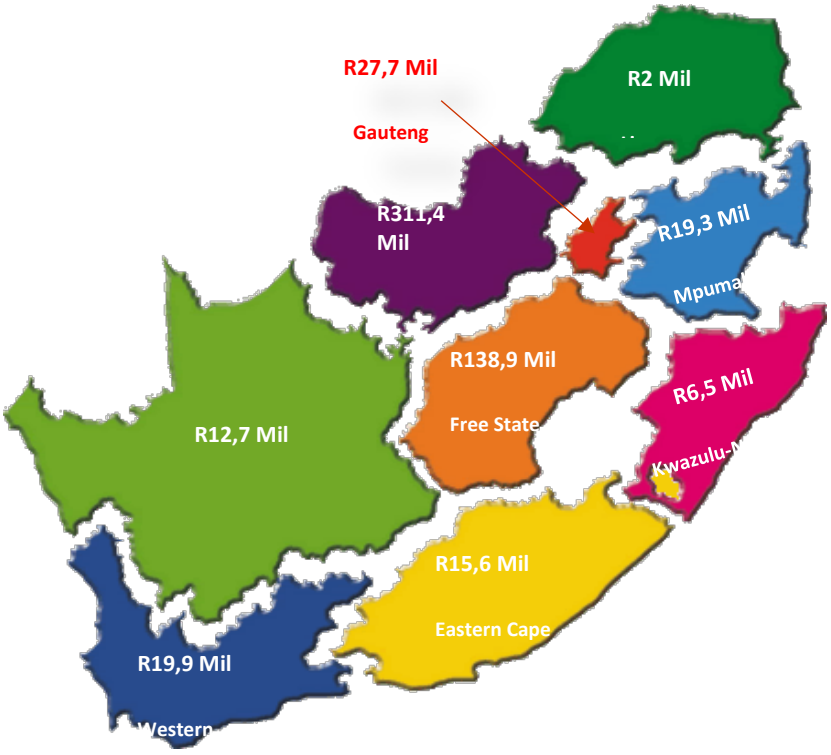
The Senwes Group operates across all nine provinces and expended on average R 500m per annum in terms of municipal costs (water, rates and taxes) as well as paying of salaries and providing skills training (direct employment costs). The actual spend is summarised below per province for the year ended 30 April 2018 in Figure 4.1.

46 Chapter 2 para 6 7 35-39 and Graph 2.4 42.

47 Chapter 2 Graph 2.5 50.

48 Maize Market value chain 1 estimates the number of commercial maize farmers to be 9 000 in aggregate across the country. These produce on average 12 m tonnes of maize of which 6 to 7 m tonnes is white maize for a domestic population of 57,2 million people. Consumption levels on average for white maize are generally 5m tonnes. BFAP Agricultural Outlook report 2018 - 2027 17, 32.

Figure 4.1: Total municipal and employee expenses



Provinces	2018
	R'000
Gauteng	27 668
Limpopo	2 077
KwaZulu-Natal	6 499
Mpumalanga	19 339
Northern Cape	12 660
North West	311 388
Eastern Cape	15 619
Free State	138 909
Western Cape	19 861
Total spend	**554 021**

The producers as customers of firms, such as Senwes, indicated in their survey responses as part of the survey questions for purposes of this dissertation, the important role that agricultural companies play in the country (as contained in Annexure 3) and many public interest concerns are at play and in danger if these businesses cannot thrive.

Accordingly, it is argued that the grain storage market as currently delineated by Competition Authorities, be reviewed as it is clear from the research that traditional silo storage operators are being constrained by substitutes and do not have market power as a result of the changed dynamics in this sector.

These operators must be supported to be able to meet the competition by many local and global traders as integrated firms with high levels of buying power.[49]

It is assumed that the other traditional silo operators in the country face the same realities and a more comprehensive study will be required as confirmation thereof.

49 Roberts *Recommendations for Commodity Futures Delivery on the Johannesburg Stock Exchange 23, 24.*

2. Recommendations

In summary, the recommendations of this study can therefore be listed as follows:

a) The definition of the storage market as defined in the *Senwes* case is no longer relevant and the many other existing storage facilities as substitutes should be included in the market definition. Storage is only one element of the grain market and should not be singled out as a separate market;

b) Grain commodity markets are highly competitive, and prices of grain is not determined by grain silo operators. Although a traditional silo operator may have a high market share, the substitutes as well as the number of other competitors, in the grain trading and storage markets act, act as constraints and accordingly these silo operators do not have any market power;

c) Domestic grain firms should be allowed to expand and successfully conclude mergers and acquisitions as to ensure its own sustainability and to meet large competition by global competitors and trading firms as a defensive mechanism. Part and parcel of the expansion strategy should be horizontal and vertical integration as most of the competitors already adopted integrated business models as to access the entire food value chain and create efficiencies; and

d) Competition and government policies and frameworks regarding foreign investments should be reviewed and redesigned to allow South African firms in the agricultural and food markets to expand. In certain instances, protection and critical government support should be afforded to sectors such as agriculture and food processing as to ensure affordable food supply to the Southern African regions as well as growth in exports. This in turn will ensure a balance between the benefits of foreign investment, growth of the economy as well as continues job creation, especially in rural areas of the country. It is submitted that “national champions” would contribute significantly to the overall food security and the economy.