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The Global Food Value Chain and Competition Law and Policy in BRICS countries: Insights from selected value chains in South Africa

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Abstract

This working paper forms part of South Africa's contributions to the BRICS Joint Working Group on Food and Agro-processing's overarching report on 'The Global Food Value Chain and Competition Law and Policy in BRICS countries'. Constituted by the competition authorities of the BRICS countries, in collaboration with universities and research centres, the Working Group's overarching report aims to first provide an overview of key developments in various segments of global food value chains in the BRICS countries and to then focus in more detail on the impact of the recent consolidation in plant protection and seeds segments of value chains.

This working paper contributes to the overarching report by providing an overview of developments and competition concerns in the following food and food-related segments in South Africa: 1) Seeds; 2) Fertilizers; 3) Animal feed and poultry; 4) Maize and wheat milling; 5) Dairy; and 6) Retail. These value chains were selected because of their importance as critical inputs into food production and given their significance as part of a typical food basket for consumers in southern Africa. These food products are increasingly retailed through supermarkets in the region. The selected value chains are also important because they have the potential to promote value addition and industrialisation in the region.

We employ a framework that allows for the evaluation of competition and regulatory dynamics in agro-processing value chains using a regional value chain (RVC) approach, alongside the global value chain (GVC) approach which has been employed for a range of products including agricultural commodities and cash crops.

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1. Introduction

This paper is South Africa's contribution to the BRICS Working Group on Food and Agro-processing's overarching report on '*The Global Food Value Chain and Competition Law and Policy in BRICS countries*'. The Working Group's overarching report aims to first provide an overview of key developments in various segments of global food value chains in the BRICS countries and to then focus in more detail on the impact of the recent consolidation in plant protection and seeds segments of value chains.

This paper contributes to the overarching report by providing an overview of developments and competition concerns in the following food and food-related segments in South Africa:

1. Seeds
2. Fertilizers
3. Animal feed and poultry
4. Maize and wheat milling
5. Dairy
6. Retail

These value chains were selected because of their importance as critical inputs into food production and given their significance as part of a typical food basket for consumers in southern Africa. These foods are increasingly retailed through supermarkets in the region. The selected value chains are also important because they have the potential to promote value addition and industrialisation in the region.

We employ a framework that allows for the evaluation of competition and regulatory dynamics in agro-processing value chains using a regional value chain approach, alongside the global value chain (GVC) approach which has been employed for a range of products including agricultural commodities and cash crops. The motivation for this approach is provided in **Section 2.**

This rest of this paper is structured as follows. **Section 3** provides a brief background of the history and evolution of the broader food sector in South Africa. This is important to understand some of the outcomes we see in food markets today, including the competition problems. This section also introduces more recent developments in food value chains in South Africa, such as rising levels of institutional shareholders, growth of agri-investment companies, increase in financialization and greater cross-ownerships within and across food value chains. It further highlights the growing internationalisation of food markets in South Africa. These developments have implications on the strategies of lead firms in food value chains and how they compete.

Sections 4 to 9 then assess each of the selected value chains focusing on mapping out the value chain; assessing ownership patterns, levels of concentration and performance in terms of production, trade and investments; and reviewing competition interventions and impacts thereof. While the key historic competition interventions in each sub-sector are discussed, the decisions over the past five years are tracked and implications on competitive rivalry, development and upgrading opportunities within the value chain are assessed. The implications of global mega-mergers and global cartels for South Africa are also considered.

2. A value chain approach in conjunction with industrial organisation principles

A GVC approach provides valuable insights into the interaction between producers, intermediate players and retailers in food value chains, the governance of these chains, as well as an understanding of the distribution of rents and power dynamics at each level. The governance includes a range of mechanisms for vertical control and coordination. Such analyses can then potentially set the foundation for designing appropriate tools for competition law interventions (Lianos and Lombardi, 2016 a, b; Davis et al, 2016). It is an area where competition authorities in developing countries are becoming increasingly interested in to foster conditions where markets can work better for investment, value added and a share of the rents for the producers in those countries.

Regional value chains?

While a GVC approach in evaluating dynamics in agro-processing markets provides useful insights, research in several value chains in southern Africa has shown that this approach has greater applicability when further refined to a regional value chain level, at least with regard to a number of important agro-processing activities through to retail.

Increasing regional integration and consolidation of global value chains has seen new patterns of trade and investment emerge. Multinational enterprises, in search of fewer, larger and more capable suppliers are likely to turn to more regional sourcing (Cattaneo et al. 2010; Gereffi and Fernandez-Stark, 2011) and are increasingly investing in regional operations. Emerging economies in southern Africa and an increase in regional trade agreements further promotes regional value chains.[1] This is evident in the recent increase in intra-regional trade in processed foods and diversified manufactured products. An assessment of value chains that is either too narrow in that it only looks at national dynamics or too wide in that it only looks at global dynamics leaves out a critical geographic area over which production is happening– the southern African region. This therefore has strong implications for growth and industrialisation of the region as a whole.

There are several reasons why assessing value chains, including agro-processing value chains, from a regional perspective in southern Africa is relevant.

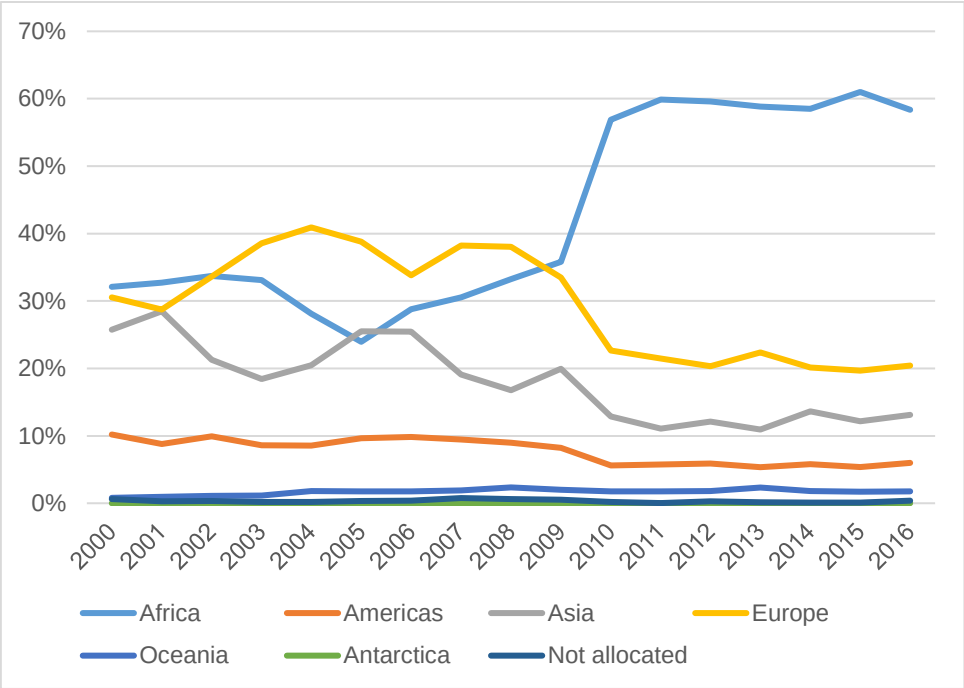
First, as highlighted, recent trade data from South Africa shows that exports of processed/prepared food products are increasingly going to the rest of Africa (Figure 1). We note however that the sharp spike in shares into the rest of Africa between 2009 and 2010 is likely to be an adjustment in reporting of exports to Southern African Customs Union (SACU) countries. This implies a considerable under-reporting of exports to Africa in earlier years.[2] In any case, it is clear that the rest of Africa is the most important 'market' for South African exports of processed/prepared foodstuffs. Further, this is being driven by exports to *southern* African countries (Figure 2). The southern African region as a whole therefore is an important market for South Africa. Other studies have also identified substantial gains from intra-regional trade in agro-processing products and South Africa has been identified as being a key driver

[1] Only a few studies have looked at regional value chains in southern Africa (see Keane, 2015, Farole, 2015 and Morris et al. 2012), and even fewer have looked at selected value-chains in depth (Fessehaie et al, 2015; 2016; Ncube et al, 2016).

[2] Prior to 2010 exports of food-stuffs by South Africa to other SACU countries were not recorded as exports.

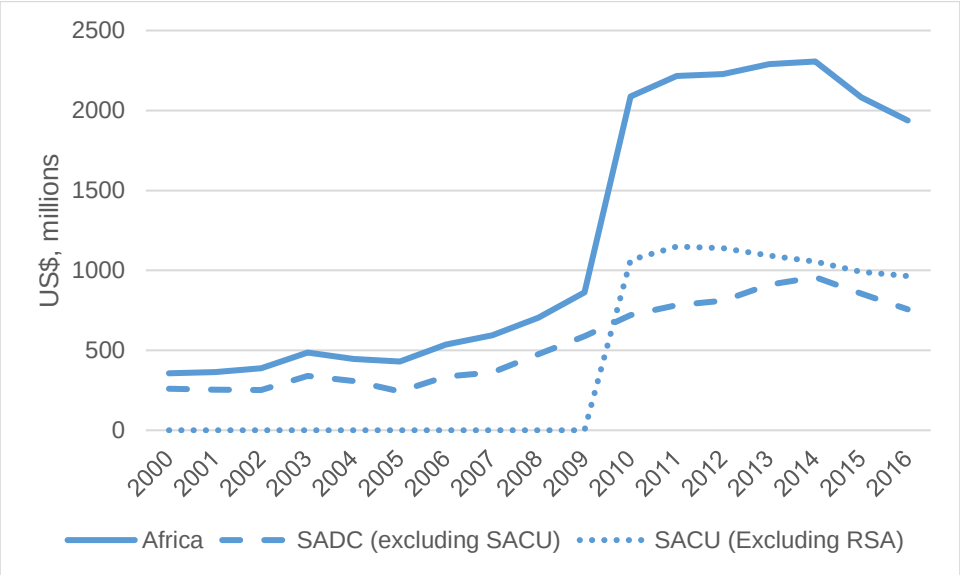
of regional value chains as a market and as a source of inputs (AfDB et al. 2014; Jensen and Sandrey, 2015).

Figure 1: Shares of South Africa's exports of processes/prepared foodstuffs by destination



Source: Calculations from Quantec data. The 2009-2010 jump is largely due to reporting adjustments for exports to SACU.

Figure 2: South Africa's exports of processes/prepared foodstuffs to Africa are driven by exports to SADC and SACU exports



Source and notes (as above)

There are obvious transport cost advantages for South African suppliers supplying the region as opposed to deep sea markets. In addition, the spread of supermarkets and the related

investments in logistics and distribution centres have lowered costs for supply within the region.

The movement of processed food in the region has been driven in the last two decades by the rapid expansion of South African supermarket chains. The two main South African supermarket chains, Shoprite and Pick n Pay jointly have almost 400 stores in 16 African countries, majority of which are in southern African countries. In most countries, a handful of supermarket chains dominate the formal retail sector. These chains target, through different formats, high-end affluent consumers in urban areas as well as lower income consumers in peri-urban and rural areas.

The processed and packaged food products sold in supermarket chains located outside of South Africa are largely imported from South Africa and deep-sea suppliers. For example, it is estimated that more than 80% of the products sold in supermarkets in Zambia are imported, mostly from South Africa (Ziba and Phiri, 2016). The region as a whole has a net trade deficit in food products, due in large part to the deficit of South Africa, meaning opportunities for suppliers in the southern African region to build scale, capabilities and competitiveness through supplying supermarkets in the region. There are also opportunities for South African suppliers to grow their exports into the region through the expanding network of supermarket chains. Supermarkets therefore can be a strong catalyst to stimulate food processing and light manufacturing industries in southern Africa. The development of such industries is squarely in line with the Southern African Development Community's 'Industrialisation Strategy and Roadmap, 2015–2063' (das Nair and Chisoro, 2016). The relationships and balance of power between retailers and suppliers in the region is therefore important for agro-processing value chains.

Second, there is potential for firms to build capabilities for global competitiveness through competing regionally (Fessehaie and Morris, 2013; Kaplinsky and Morris, 2015). Upgrading in regional value chains is likely to be easier than in global value chains as these chains are likely to be less tightly governed or controlled (Keane 2015). According to UNCTAD (2013:92): "*Regional value chains present opportunities for improving productivity…both for domestic firms with export potential and those that produce goods predominantly demanded at the national and regional levels. For domestic firms…regional value chains give them the opportunity to upgrade and achieve international competitiveness, thereby making it easier to connect with GVCs.*" (cited in Keane, 2015).

Third, given existing regional integration agreements and policies (in the case of southern Africa, the SADC free trade agreement, SACU etc.), there is greater scope for collaborative efforts, including by governments, in supporting upgrading and developing value chains. In this context, the political and economic realities and the respective country policies are important.

Finally, a few large regional players in agro-processing value chains dominate not just South African, but also regional markets in terms of ownership, production and investment. In the case of key processed food products for instance, South African multinationals like RCL Foods Limited, Country Bird Holdings Limited and Astral Foods Limited are key players across the region in poultry; Illovo Sugar and Tongaat Hullet dominate the region in sugar and Tiger Brands and Pioneer Foods lead in milling. These firms are also often vertically integrated. Understanding strategies, investment decisions and relationships in the value chain is important in evaluating relative bargaining power.

At the retail end, it is the same handful of South African supermarket chains that collectively dominate the formal retail sector in many southern African countries. This allows upgrading opportunities for suppliers as these supermarkets have a greater incentive to develop suppliers that can supply their stores throughout the region with products of the required quality, consistency and characteristics. But there are also clear concerns of abuse of buyer power that arise given the market power of large supermarket chains as this paper highlights.

Competition policy and links to industrial and other policies

Understanding strategies of the large lead firms that control regional food and agro-processing value chains is critical for formulating effective policy interventions. This requires mapping out the structure of each value chain beyond national borders where appropriate and evaluating the balance of power at each level. From a BRICS perspective, it is also useful to be able to compare the relative experiences of other BRICS countries to southern Africa's in similar value chains.

The overviews suggest that in agro-processing value chains the power often rests with firms that control key inputs (for instance, in poultry and sugar, but also in other sectors such as fertilizer); with firms that have economies of scale advantages (in animal feed and poultry, but also in sectors like dairy) and with firms that control important routes to market (the supermarket chains). This is not to suggest that there have been no competition concerns at other levels, for instance, at the processing level (e.g. in milling and baking, and in dairy). However even in these cases, the lead firms exert considerable control over the entire value chain including through substantial vertical integration.

Competition policy is only one of the tools available to improve competitiveness and to promote growth in these value chains. While it can be effective in curbing anti-competitive conduct and maintaining competitive rivalry between *existing* players, it cannot actively introduce new players into a value chain. In South Africa, inclusive participation in the economy is a key objective of several economic policies, including competition policy. This is where well-designed industrial and agricultural policies can help, in conjunction with competition policy. But this requires coordination between government departments and players in the value chain, nationally and regionally, to ensure 'optimal' competition at each level. Coordination is essential for investment in production capacity and development of capabilities and it includes supporting long-term competitiveness of the whole value chain. The coordination required extends to the governance of the value chain to ensure that large or lead firms do not continue to extract the maximum rent that they can, and that new entrants are allowed the opportunity to participate. Competition authorities and other relevant government departments in the southern African region can be part of supporting dynamic regional value chains, and improved global competitiveness of regional producers through, for example, coordinating on how competition concerns are collectively tackled in the region.

In the supermarket sector for instance, intervention can take the form of more organized, sustainable and regionally focused efforts to increase the participation of suppliers. These interventions could aim to, in addition to reducing bargaining power imbalances, build capabilities of suppliers. Successfully developing supplier capabilities requires a much larger, long-term and commercially-oriented approach by supermarkets in partnership with governments. This can be done through the creation of supplier development programmes like the Massmart/Walmart programme (discussed in section 9). Voluntary or mandatory codes of conduct between suppliers and supermarkets can also be a useful way to control the

exertion of buyer power, level the playing field and reduce information asymmetries between suppliers and supermarkets. Such codes of conduct can be encouraged by national governments, and harmonised across the region given that it is largely the same retailers that operate in the different countries in the region. There are initiatives underway currently to develop such a code of conduct (discussed in Section 9 and 10).

3. Brief background on the history and evolution of food sectors in South Africa

History of protection in the food sector

The history of the development of the food sector in South Africa is important to understand some of the outcomes we see today.

The former Union of South Africa established a comprehensive support system for white farmers through the Land and Agricultural Bank, and the passing of the Co-operative Societies Acts of 1922 and 1939. The support measures included the provision of agricultural finance, inputs, extended land tenure, and marketing services (Vink and Kirsten, 2000).

The Marketing Act of 1937 (consolidated in 1968) became the cornerstone of agricultural policy governing the marketing of the majority of agricultural production in South Africa. The main provisions of the Act included those giving powers to the Control Boards for the following functions: the imposition of levies; the authority to buy a product at determined prices or on such basis the Minister may approve ('surplus removal'); sales through a marketing board ('single channel marketing schemes'); and, fixing prices and margins (Kassier, 1992: 7-8). State intervention into the agricultural sector continued in much the same fashion over the next few decades, characterized by single marketing channels and tightened controls over prices and the movement of produce, as well increased subsidies to white farmers (Kirsten and van Zyl, 1996).

With regard to the main grain crops, the Maize and Wheat Boards were the intermediaries between the farm gate and the processing levels. The industry operated through a single marketing channel, with producer cooperatives providing for input procurement and marketing of produce. Over time cooperative activities extended to other production functions (such as financing and processing), importantly becoming a powerful collective bargaining tool for famers (Tregurtha et al., 2010). A key activity of the cooperatives included the operation and ownership of grain silos, constructed with massive state support extending to infrastructure, capacity payments, handling, debt relief and tax concessions (Amin and Bernstein, 1995; LAPC, 1994). These effectively became regional monopolies as they were appointed as agents by the respective boards (Vink, 2012). The cooperatives and the control boards were also exempted from competition law (Kassier, 1992).

The deregulation by the new Marketing Act of 1996 abolished the control boards and fully liberalized all markets except for sugar (Vink and Van Rooyen, 2009; Sandrey and Vink, 2007). The process included the establishment of the National Agricultural Marketing Council (NAMC), and followed trade liberalisation. The aim was to promote improved marketing of agricultural products and market access to all market participants (Vink and Kirsten, 2002).

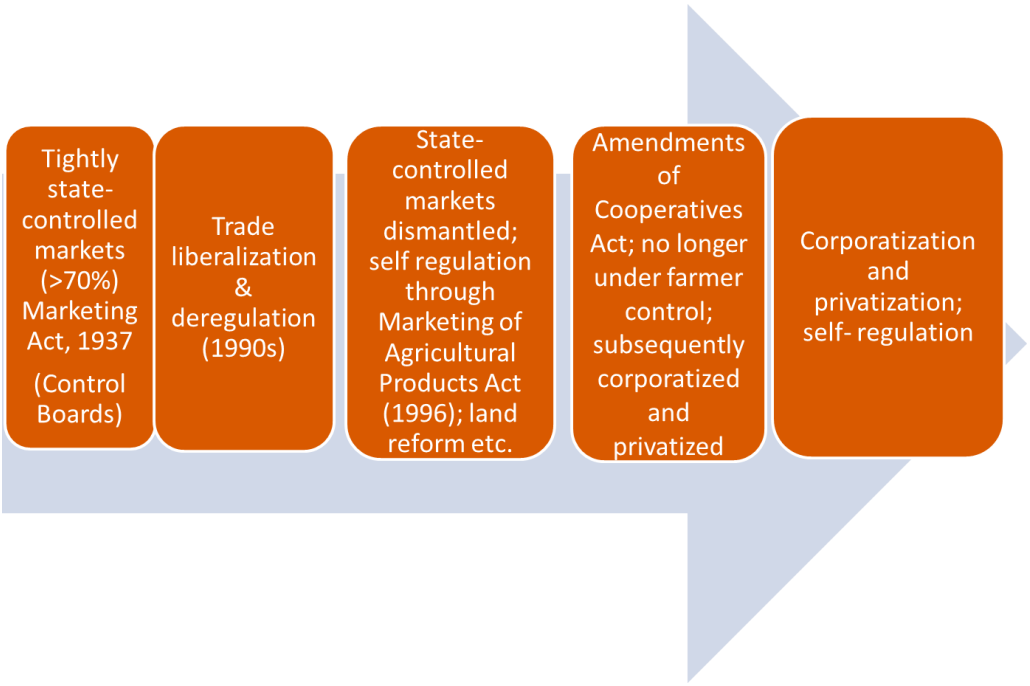
Liberalisation generally meant decreased support. There have been the expected changes in land use, with a declining area planted with maize, and changes in the composition of output (Tregurtha et al., 2010). Poultry production and horticulture, which had not been supported,

have both performed relatively well (Sandrey and Vink, 2007), although still with ongoing imports as we note in the case of poultry in Section 6.

However, several competition concerns that have arisen since liberalisation stem from conduct that has continued post liberalisation as illustrated by the maize and wheat cartel discussed in Section 8.

The main historic changes in the food sector over time is depicted in the Figure 3 below.

Figure 3: Key historic changes in the food sector in South Africa



Source: Authors' illustration

Recent developments in the food sector in South Africa

While the history is important in understanding some of the outcomes, more recent developments in the food sector also have implications on ownership, market power, control and incentives to compete. This sub-section provides a very brief overview of recent developments in food value chains in South Africa.

Increasing financialisation and growth of agri-investment companies

Along with rising corporatisation, which has resulted in powerful corporate players shaping the availability, affordability and acceptability of foods (Greenberg, 2017), there has been increasing financialisation of the food sector. The rise of controlling institutional shareholders has given significant power to financial actors in agri-food markets, of which principal institutional investors include insurance companies and pension funds (Clapp, 2012). Large food corporations, such as Tiger Brands, Pioneer Foods and Shoprite have institutions such as the Public Investment Corporation (PIC)[3] (the largest investment fund in South Africa) as

[3] The PIC has a key mandate to manage the pension funds of government employees.

their controlling shareholder giving the PIC effective control over investment decisions (Greenberg, 2017). Similarly, as noted in Section 5.5, the Government Employees Pension Fund (GEPF) recently acquired a key player in the fertilizer industry.

Agri-investment companies in South Africa have also been on the rise. JSE-listed investment company, Remgro, for example, holds shares in the agro-food system[4] with major interests in RCL Foods and Unilever, as well as in several other strategic economic sectors. This potentially weakens the influence of other actors over agro-food system outcomes and gives such conglomerates an opportunity to maintain or establish positions of power (Clapp, 2012).

Such agri-investment companies are typically large conglomerates with controlling and passive shareholdings in numerous sectors. This increasing web of cross-ownership can have an impact on incentives to effectively compete (for cross ownerships in seeds, for instance, see Section 4.4).

Rising internationalisation

There has also been increasing global ownership of previously local companies in the South African food sector. In the sugar industry, for instance, Illovo is now a subsidiary of Associated British Foods, while the largest agri-services and grain storage company in South Africa, Afgri, is now owned by Canadian investment group, AgriGroupe. US giant Walmart took over Massmart in the retail sector. This has implications on the strategies of the firms (such as procurement strategies and business models adopted from home countries) and their conduct.

Technology revolution

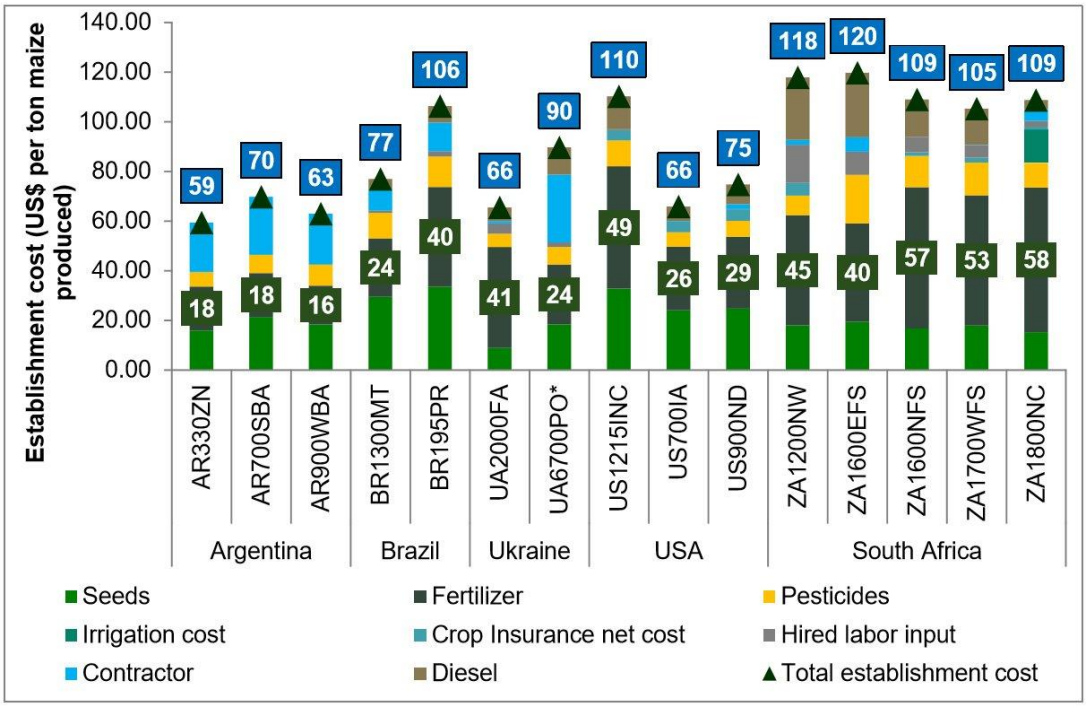
Advances in technology have eroded the sectoral boundaries that previously existed between manufacturing and agriculture (Page, 2014). The confines between agriculture and industry, and essentially processed and unprocessed agricultural products, are becoming less distinct - partly a result of the global agricultural sector employing more capital and sophisticated technology, giving scope to rising productivity, transforming global competition and the structure of production. The global agricultural value chain for horticultural crops provides a useful example of agro-industry activities that require technologies and complex industrial processes (keeping products fresh, packaging and innovation are all value adding activities). This means that industrial policies and agricultural policies of a country need to closely speak to each other.

[4] See Mondliwa, Nhundu, Paelo, Thosago, & Vilakazi (2017) for a detailed assement of Remgro's investment strategies

ASSESSMENT OF THE SELECTED VALUE CHAINS

A recent study by the Bureau for Food and Agricultural Policy (BFAP) in South Africa highlights the high input costs faced by maize farmers in South Africa relative to other maize producing countries, including Brazil. Figure 4 below shows the 'establishment costs' in South Africa to produce a tonne of maize compared to costs incurred by farmers in the US, Argentina, Brazil and Ukraine. As evident, South African farmers face higher input costs and a key contributor is fertilizer costs. This adds to food inflation given that maize meal is a staple food in South Africa and raises serious concerns about the affordability of basic foods for poor consumers. Sections 4 and 5 below evaluate two of these inputs in more detail - seeds and fertilisers.

Figure 4: BFAP estimation of maize establishment cost (US$ per ton maize produced)



Source: Reproduced from BFAP (2016) - Policy Brief on the 2015/2016 drought

4. Seeds Value Chain

4.1. A mapping of the key players and ownership structures

The seed market in South Africa is made up of three main categories of agricultural seeds: agronomical seeds, horticultural seeds and forage seeds (Table 1). As of 2014/2015, agronomical seeds made up about 74.5% of the total market retail value of the whole seed industry with horticultural crops accounting for 16% while forage and pasture seeds accounted for 9% (SANSOR, 2015).[5]

[5] Agronomical seeds include maize, soya bean, wheat, sunflower, barley, sorghum etc.; Horticultural crops largely consist of vegetables and fruit e.g. spinach, squash, sweet corn, tomato etc.

Table 1: Composition of seed markets in South Africa, 2014/15

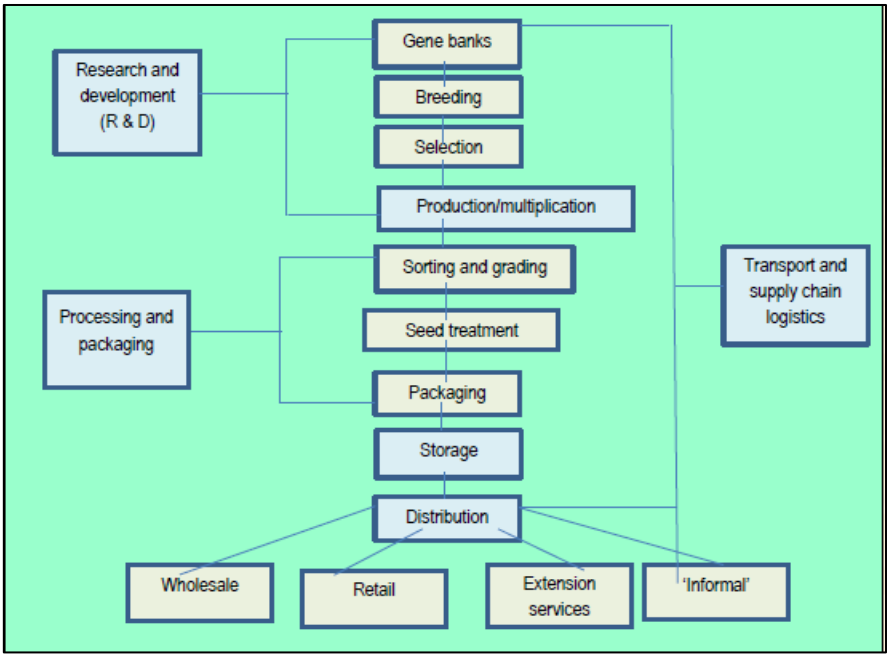
Seed type	Total Market value based on Retail Selling Price (R Millions)	% Share of seed market (2014/15)	% Share of seed market (2010)
Agronomical seeds	4 121.69	74.5%	73%
Horticultural seeds	887.64	16.1%	18.5%
Forage and pasture seeds	521.20	9.4%	7.5%
Total	**5530.53**	**100%**	**100%**

Source: SANSOR (2015) and DAFF (2015)

The seed value chain consists of three main levels: 1) Research and Development; 2) Production/multiplication of seeds; 3) Processing/ packaging and distribution (Figure 5). Research and development involves the innovation required to develop seeds with high yield rates and with resistance to disease, drought and other environmental stresses. Under research and development, there are three main components necessary: a diverse germplasm pool, advanced breeding technologies and trait selection or development. Germplasm contains the genetic material from which seed characteristics such as the amount of crop yield and reaction to the environment are determined (Competition Tribunal, 2010). The breeding technologies are the processes and technology used to improve the qualities of the seed. The biotech traits are specific genes taken from other organisms used to create additional improved qualities to the seed such as pesticide resistance.

Seed companies can be involved in at least one of these stages of the research, development and breeding of seeds. Once this process is complete and a viable seed has been created, the seeds then go into the production and multiplication stage of the value chain. The end products are then processed, packed, stored and distributed to consumers. Depending on the type of seeds developed, the seeds then go to the milling, fertiliser or animal feed sectors.

Figure 5: Value chain of the commercial seed market



Source: (DAFF, 2015)

The seed market globally and nationally is highly concentrated and has continued to consolidate over the last five years. Globally, only seven firms control about 71% of the global seed market (ETC Group, 2015). In South Africa, the seed market is even more concentrated with only two main players in the market: Monsanto and Pioneer Hi-Bred International.

Monsanto is the largest seed firm in South Africa. It has the highest amount of sales for maize seed and supplies 90% of commercially planted soybean in South Africa (African Centre for Biodiversity, 2017a). It began operations in South Africa in 1968 and is part of a global group involved in the research, manufacture, production and distribution of seeds, herbicides and vegetables (Who Owns Whom, 2017a). In the 1990s, it acquired Sensako and Carnia, two local seed companies, providing it with a major stake in the South African market. Sensako's acquisition alone gave Monsanto 45% of the agrochemical market for field crops. In 2005, Monsanto acquired Seminis, the world's largest fruit and vegetable seed company which gave it ownership of plant breeders' rights to a range of South African seed varieties (Pollack, 2005; African Centre for Biodiversity, 2017a). In May 2017, the Competition Commission conditionally approved a merger in which Bayer Aktiengesellschaft (Bayer) acquired Monsanto Corporation (Monsanto) (Competition Commission South Africa, 2017a) (see section 4.4) on discussion of mergers concerning Monsanto).

Pioneer Hi-Bred International Inc (Pioneer) is a subsidiary of E.I. DuPont De Nemours & Co (DuPont), a diversified bio-chemical company listed on the New York Stock Exchange. Its main activities include research, product development of commercial seeds as well as the production and distribution of seed varieties such as alfalfa, canola, corn, inoculants, mustard, pearl millet, rice, sorghum, soya beans, sunflower and wheat. In 2012, Pioneer acquired Pannar Seed, a South African company involved in research and development of seeds in South Africa. Pannar had been in operation since 1958. The acquisition gave the firm, a post-merger market share of 48% of the hybrid maize seed market.

In July 2017, the Competition Commission also conditionally approved **DowDuPont Inc**. (DowDuPont) acquisition of Dow Chemical Company (Dow) and E.I. du Pont de Nemours and Company (DuPont) (Competition Commission South Africa, 2017b). Dow is a global diversified chemicals company involved in the research, development, production and distribution of plastics and chemicals, agricultural sciences including seeds, hydrocarbon and energy products and services.

Bayer's merger with Monsanto would raise their combined market share to 29% while Dow's merger with DuPont (Pioneer) would give it a 25% market share (ETC Group, 2015). Together these companies would hold a 54% market share of the global seed market.

4.2. Regulation and barriers to entry

Several acts and regulation govern the seed industry. Some of the main regulations include: [6]

- The Plant Improvement Act, 1976 (Act No. 53 of 1976);
- The Plant Breeders' Rights Act, 1976 (Act No. 15 of 1976);
- The Agricultural Pests Act, 1983 (Act No. 36 of 1983);
- The Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997);
- Various secondary acts such as the Fertilizers, Farm Feeds, Agricultural Remedies, and Stock Remedies no. 36 of 1947 (as amended).

[6] SANSOR website.

Due to the high level of research and innovation involved in the seed industry, seed companies are given plant breeders rights or patents to enable them to gain returns from their investments. These Plant Breeders Rights (PBRs) and patents, may however, have the additional impact of raising barriers to entry. PBRs are often offered with regards to hybrid varieties and give the breeder a 20 year exclusive commercial production of the protected hybrid variety (Competition Tribunal, 2010). The rights protect the variety and not the method in which the seed is obtained which means that a farmer can save and reuse the seeds. There are certain requirements that need to be fulfilled in order for the breeder to gain a PBR over a seed variety which include distinctness, uniformity, stability and novelty (Competition Tribunal, 2010). Patents are offered with respect to GMs as genetic modifications is essentially the creation of a wholly new crop (Competition Tribunal, 2010). Patent protection can extend beyond the seed product to include the process as well. Under the patent, farmers are only permitted to use the seed to plant one crop and not reused. Companies often use contracts to enforce these conditions and have been known to make unannounced inspections of crop fields. PBRs and patents serve to bolster the market power held by the seed companies.

The extended periods required to develop the seed and to gain regulatory approval for seed development also acts as a significant barrier to entry (African Centre for Biodiversity, 2017a), As discussed above, there are three components of the breeding level of the value chain, a germplasm pool, advanced breeding technologies and biotech traits. With regards to the pool of germplasm, a number of years are required to develop competitive amounts of germplasm to enable breeding of seeds. Pannar took about 52 years to develop its pool of germplasm specifically suited for the South African region (Competition Tribunal, 2010). Prior to the merger between Pioneer and Pannar, Pioneer had been present in South Africa for 18 years but was yet to develop germplasm suited to the regions of South Africa or Africa (Competition Tribunal, 2010). Further, a Greenfields entrant would require at least eight years gain regulatory approval for trait development and then a further three to five years to get approval for the use of the traits within South Africa (Competition Tribunal, 2010). Given the time required for an entrant to develop and market a commercially viable seed, an entrant would struggle to compete effectively with the incumbents in the market. The costs of research can be prohibitive. The second component of advanced breeding technologies as well as the development of biotech traits requires substantial capital investment. While, both of these components can be accessed through contracts and licensing with large companies such as Monsanto, it also means that companies are forced to source essential inputs from their rivals which has its own competition concerns.

A combination of these barriers to entry means that there is unlikely to be a Greenfields entrant into the seed development market. The present structure of two seed companies with substantial market power raises a number of competitive concerns especially since seeds remain a key input in the food value chain.

4.3. Performance of the seed industry in South Africa

4.3.1. Production

An analysis of agronomic seed groups, which accounts for over 70% of the seed market, shows that maize makes the greatest share of the retail price value in the market with 88.63% (Table 2). This includes both white maize (generally used for human consumption) and yellow maize (generally used for animal consumption). Soya bean and wheat have next highest market value although together their share is less than 10%.

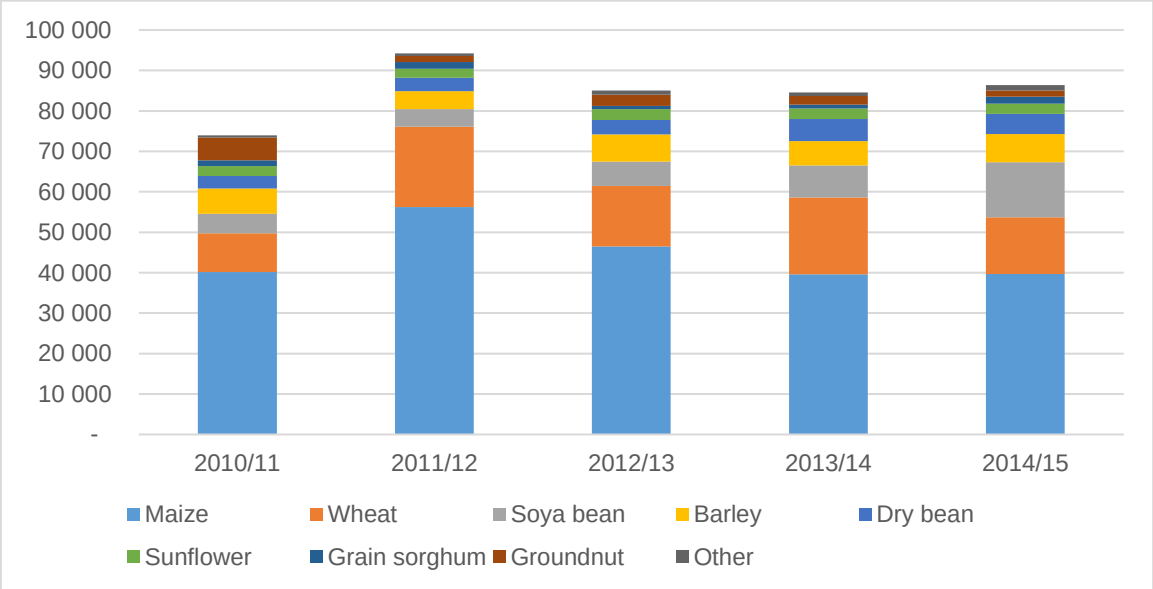
Table 2: Top 10 South African commercial agronomic seed crops by value, 2014/15

Crop	Value (R'000)	% of total market value
Total maize	56 655 954	88.63%
Soya bean	3 941 814	6.17%
Wheat	1 705 729	2.67%
Dry bean	761 219	1.19%
Sunflower	351 412	0.55%
Barley	310 194	0.49%
Grain sorghum	111 635	0.17%
Other	43 165	0.07%
Groundnut	39 456	0.06%
Total market	**63 920 578**	**100%**

Source: DAFF (2015)

In terms of production, growth has been inconsistent with an increase in the 2011/12 season before production dropped again (Figure 6).

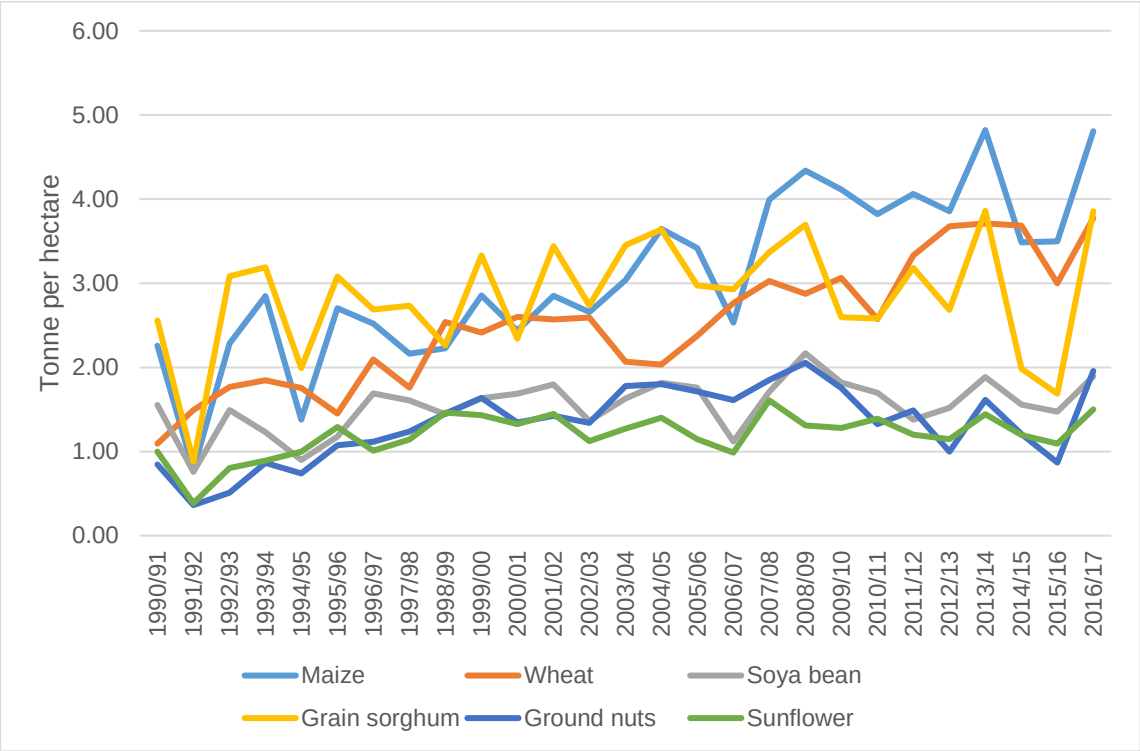
Figure 6: Total agronomic seed production (tons), 2010/11 - 2014/2015



Source: DAFF (2015)

Although production has dropped over the last five years, yield rates particularly for maize, wheat and grain sorghum have been rising over the last twenty years. By contrast, yield rates for groundnuts, soya bean and sunflower have remained largely constant over the same period of time (Figure 7). Perhaps unsurprisingly, the main seeds in which the large seed firms mentioned above are invested in are for maize, wheat and grain sorghum. Substantial investment has likely been made into the development of new varieties of these seeds resulting in higher yield rates.

Figure 7: Yield rates for main agronomical seeds (1990/91 -2016/17)

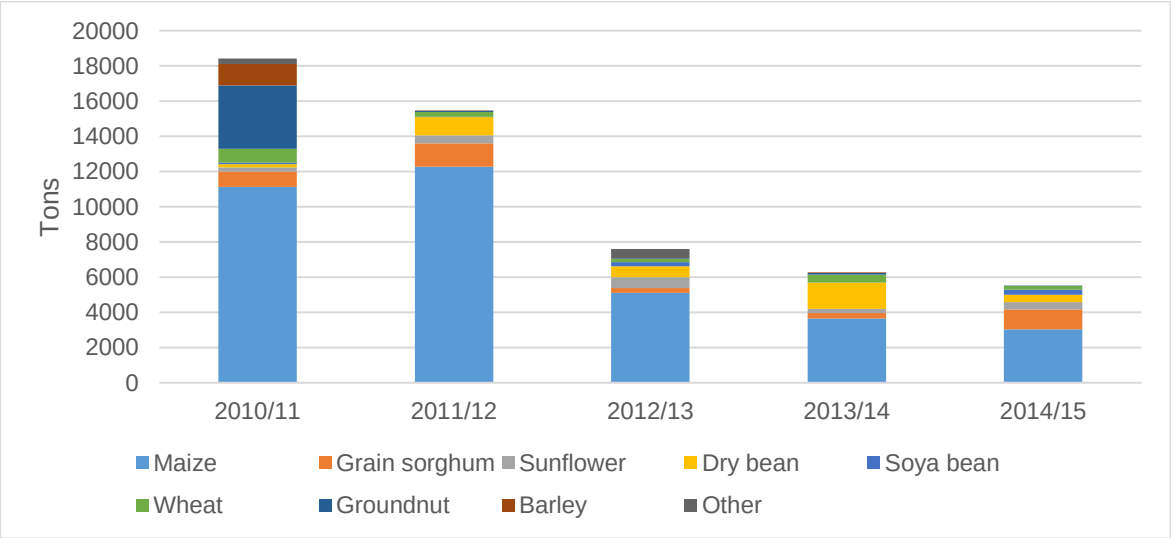


Source: DAFF (2017)

4.3.2. Exports and Imports

Exports of agronomic seeds have declined steadily between 2010/11 and 2014/15 largely due to the decline in maize seed which accounts for the bulk of agronomic seeds. (Figure 8). The decline was particularly sharp between 2011/12 and 2012/2013, likely due to drought conditions that persisted into the 2014/15 season.

Figure 8: South Africa's agronomic seeds exports, 2010/11-2014/15

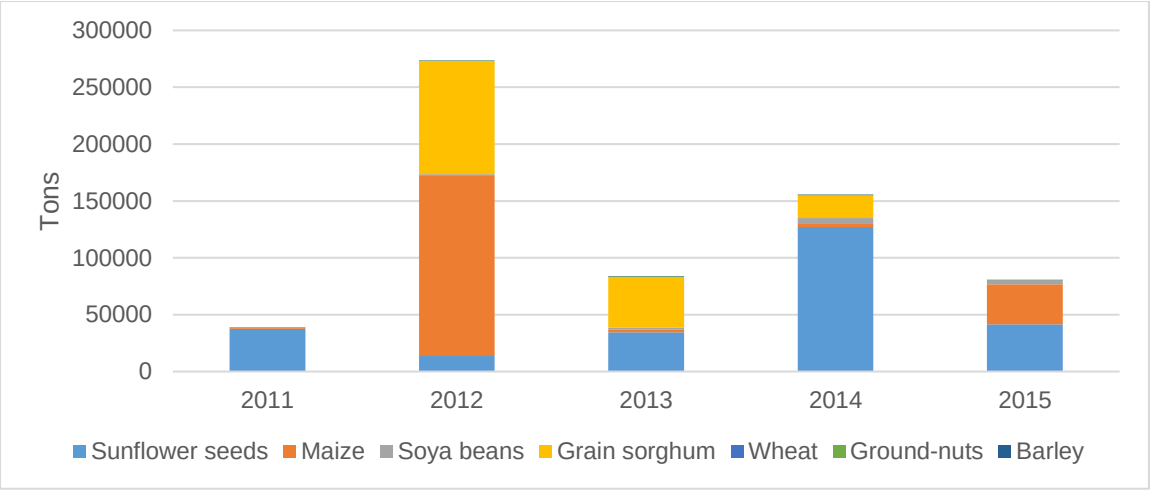


Source: DAFF (2015)

Maize seed exports dropped significantly from the 2011/2012 financial year coinciding with high increase in prices (Table 3). The high prices however may have been reflective of low supply of maize.

Imports of agronomic seeds into South Africa have also been inconsistent. There were significant imports in 2012 contributed largely by imports of maize seed and grain sorghum. This dropped the following year (Figure 9).

Figure 9: Imports volume of agronomic crops seeds, 2011-2015



Source: DAFF (2015)

4.3.3. Prices

Prices have generally been on the rise for the period 2013 – 2015. Except for the 60,000-kernel bag of yellow maize seeds, different varieties of agronomical seeds both GM and non-GM have experienced an increase in prices (Table 3). It is not yet clear why prices of the 80,000-kernel bag of yellow maize seeds have increased while that of the 60,000-kernel bag of yellow maize seeds have deceased. This will be investigated further.

There have been increases in prices for grain sorghum seed as well as the GM white maize seeds variety. These are the two product markets in which both Pioneer and Pannar were operating in and which were considered for purposes of the Pioneer/Pannar merger (Competition Tribunal, 2010). The conditions imposed on the merging parties upon approval of the merger included undertakings that prices for all Pannar maize hybrids and for Open-Pollinated Varieties (OPVs) were not to exceed inflation for a period of three sales season (see section 4.4.1). While the price increases for GM white maize seeds have not been substantially greater than inflation, the increase for grain sorghum seeds have been.

It is important to note however that average prices alone may provide an inaccurate picture of the trends in the market. In the hybrid maize market, in particular, due to high levels of innovation, there are new varieties of seed released regularly.[7] These seeds may have better characteristics including higher yield rates and faster rates of maturity. This in turn attracts greater demand and higher prices even as the prices of older varieties drop. In a market as concentrated as this, concerns arise as to whether the pricing of new varieties is competitive

[7] Telephonic Interview with the Agricultural Research Council, conducted on 21 September 2017.

or set to extract maximum rents. The same competition concerns arise as to the levels of innovation and new products released into the market.

Table 3: Average Rand price of agronomical seeds (2013-2015)

	Cultivars/weight	2013	2014	2015	% change (2013 – 15)
White maize seeds (60 000 kernels/bag)	Non-GM	1 233	1 310	1 350	9.5%
	GM	1 900	2 167	2 353	23.8%
Yellow maize seeds (60 000 kernels/bag)	Non-GM	1 488	1 653	1 755	17.9%
	GM	2 298	2 638	1 765	-23.1%
White maize seeds (80 000 kernels/bag)	Non-GM	2 042	2 151	2 266	10.9%
	GM	2 821	2 970	3 129	10.9%
Yellow maize seeds (80 000 kernels/bag)	Non-GM	2 014	2 156	2 364	17.3%
	GM	2 699	2 852	3 030	12.2%
Grain sorghum seeds	20Kg	1 150	1 336	1 476	28.3%
	25Kg	1 287	1 568	1 750	35.9%
Soya bean seeds	25Kg	594	659	690	16.1%
Sunflower seeds	150DP/bag	1 476	1 501	1 566	6.0%
	180DP/bag	1 499	1 681	1785	19.0%

Source: (DAFF, 2015)

4.4. Trends in concentration and outcomes of key competition cases

As mentioned above, the global seed industry is highly concentrated and continues to consolidate. The highly concentrated nature of the global market is replicated in the South African market. There are two main companies that own significant portions of the registered varieties. In the maize market, for both yellow and white GM maize seeds, Du Pont Pioneer and Monsanto own 80% of the seed varieties in the market (Table 4).

Table 4: Number of maize registered varieties owned by major seed companies in South Africa, November 2016

Maize variety		Du Pont Pioneer/Pannar %	Monsanto %	Total %
Yellow maize	GM	71.6	12.7	**84.8**
	Hybrid	56.4	5.8	**63.4**
	OPV	14.3	0	**14.3**
White maize	GM	80.3	8.6	**88.9**
	Hybrid	41.8	6.2	**48**
	OPV	6.9	3.4	**10.3**

Source: African Centre for Biodiversity (2017)

Three main types of seed systems exist in South Africa: Open-Pollinated Varieties (OPVs), hybrids and Genetically Modified (GM) seeds. OPVs refer to seeds that are a result of random cross-pollination (Grain SA, 2011). While the yield potential is less than other varieties, the costs are low and the seed can be recycled. They also have a broader genetic base and are resistant to environmental stresses. They are also not subject of Plant Breeders' Rights IPBRs) or other Intellectual Property (Competition Tribunal, 2010). Hybrid seeds are the result of cross-pollination and breeding between the first generation progeny of two unrelated plants of related species (Grain SA, 2011). These seeds usually have higher yields but are often

more expensive and cannot be recycled (Competition Tribunal, 2010). GMs are completely new strands of crops created by breeding a particular gene sequence taken from an unrelated species and combining it with the genes of the seed to be modified (Competition Tribunal, 2010).

Overall, OPVs account for the majority of the seed systems making up about 56% of the total seed market. However, in the maize seed market (which makes up at least 70% of total seed industry turnover), hybrid maize makes up 80% of the total maize seed sold and 56% of the value of the total seed market (Competition Tribunal, 2010; DAFF, 2015). This is important because it means that the firms involved in the production of maize seed and hybrid maize seed, in particular, are in the more profitable portion of the value chain. Commercial breeders often have little incentive to develop OPVs over hybrids because they are less profitable (Competition Tribunal, 2010). The average bag of hybrid seeds can be as much as five times more expensive than OPVs (Competition Tribunal, 2010).

For the hybrid varieties, the Du Pont Pioneer and Monsanto own 63.4% of the varieties of yellow maize and 48% of the varieties of white maize. Du Pont Pioneer and Monsanto, by contrast, own less than 15% of the OPV seeds of both yellow and white maize, giving credence to the fact that there may be less incentive to develop these seeds as they are less profitable.

Monsanto and Du Pont Pioneer also have ownership of a substantial portion of the other registered agronomic seed varieties. Their ownership stands out in particular for wheat as well as for GM and non-GM cotton seed varieties (Table 5). The three major players – Monsanto, Du Pont Pioneer Pannar, and Karoo Seed own nearly 70% of the top eight crop varieties (African Centre for Biodiversity, 2017a).

Table 5: Percentage of registered seed varieties owned by merging parties in South Africa, November 2016

Seed variety	Du Pont Pioneer %	Monsanto %	Total %
Soya GM	34.9	4.6	39.5
Soya non-GM	11.4	2.9	14.3
Wheat	19.0	54.3	73.3
Cotton GM		84.6	84.6
Cotton non-GM	-	66.7	66.7
Other agronomic	37.4	0.5	37.9

Source: (African Centre for Biodiversity, 2017b)

In terms of market shares calculated for antitrust purposes in 2010, the Competition Commission prior to the Pioneer/Pannar merger found that Monsanto, Pannar and Pioneer had 90% of maize, wheat and sorghum seed markets (Competition Tribunal, 2010). The firms' ownership of patents served to bolster their market shares in these markets. Prior to the merger, the market shares in the hybrid maize market which made the largest percentage of the seed market were 50% to Monsanto, 30% to Pioneer and 18% to Pannar (Competition Tribunal, 2010). Pannar's market share in the hybrid maize market had been declining steadily from about 60% in the 1990s to 51% in the 2000s to 18% in 2010. Smaller companies including Linkseed, K2 Agri and Agricol had a combined market share of less than 5% in 2010 (Competition Tribunal, 2010).

The concentration in the sector is underlined by the number of active breeders in South Africa. The maize market is dominated by the private sector with 26 active breeders out of 27 being

private entities (African Centre for Biodiversity, 2017a). The soya bean market has only seven active breeders, sunflower has ten and wheat, nine. Even in these markets, the private sector dominates with only two public sector breeders, sunflower and wheat markets combined had only 26 active breeders. Monsanto, Pannar and Dupont-Pioneer together employ 80% of private sector maize breeders, 100% of soybean and 100% of sunflower breeders in the country (African Centre for Biodiversity, 2017a).

A major concern with the continued consolidation of the sector is that Monsanto, DuPont Pioneer and Dow Chemicals, which recently merged with Du Pont Pioneer, share the same institutional investors (Lianos and Katalevsky, 2017). For instance:

- BlackRock Inc. controls 5.97% of Monsanto, 6.31% of Dupont and 6.58% of Dow Chemical;
- The Vanguard Group controls 6.82% of Monsanto, 6.99% of Dupont and 6.65% of Dow Chemicals;
- The State Street Corp. controls 4.59% of Monsanto, 4.91% of Dupont and 3.97% of Dow Chemicals.

The challenge with having the same investors in competing firms is the potential for collusion. The investors have access to information on all three companies that would not have been otherwise accessible that would enable them to take part in parallel exclusion or cumulative foreclose (Lianos and Katalevsky, 2017). Parallel exclusion refers to conduct by several firm that block entry by new participants in the sector while cumulative foreclosure effect arises as a result of a network of agreements, exclusive obligations and non-compete clauses. In a sector where firms depended on contracts to access GM seeds or biotech traits in research and development, foreclosure is possible and even facilitated by shared ownership of institutional investors (see also Seldeslachts et al., 2017).

4.4.1. Competition cases and historical interventions

In 2010, a merger between Pioneer Hi-Bred International (Pioneer), a US-based, vertically-integrated commercial seed company and Pannar Seed Limited (Pannar), a South African seed company was prohibited by the Competition Commission of South Africa. The merger would increase Pioneer's stake in Pannar from 20% to 80%. An appeal made by the parties at the Competition Tribunal was subsequently dismissed when the Tribunal upheld the Commission's decision to prohibit the merger. A further appeal to the Competition Appeal Court (CAC) resulted in an approval of the merger with conditions. An attempt by the Competition Commission to appeal the decision at the Supreme Court of Appeal (SCA) was dismissed in June 2012.

The Commission's case largely centred on the breeding and commercialisation of hybrid maize seed, a highly concentrated market in South Africa which made up a significant portion of the annual turnover of the South African seed industry. The market was made up of three main players: Monsanto with a 50% market share, Pioneer with around 30% and Pannar third with around 15%. Pannar's market share in the hybrid maize market had been declining steadily from about 60% in the 1990s to 51% in the 2000s to 18% in 2010.

Both Pioneer and Pannar are involved in the breeding and selling of hybrid maize seed. Three components are required for the breeding of hybrid seed varieties namely a diverse pool of local seed germplasm; advanced breeding technologies and biotech traits. The main reason

stated for Pannar's steady decline was the lack and inability to grow their advanced breeding technologies making them less able to compete with companies such as Monsanto. A merger with Pioneer would enable Pannar to access these advanced breeding technologies necessary to compete in the market. In turn, Pioneer could benefit from Pannar's deep and gains arguments.

The Competition Commission prohibited the merger on the basis that it would result in a duopoly and may result in price increases, incentivise collusive behaviour and raise barriers to entry. There were also public interest concerns in South Africa losing its sovereignty in the seed industry to foreign companies. GMOs were also likely to proliferate the market at the expense of non-GMOs that were cheaper, recyclable and preferred by smaller farmers. The Commission determined that the efficiency gains were insufficient to counteract the competitive concerns raised by the merger.

The Tribunal agreed with the approach by the Competition Commission. The Competition Appeal Court, however, took a different approach, accepting the parties' argument that the Competition Commission did not fully consider the counterfactual of what would happen should the merger not go ahead. The parties suggested that should the merger not take place, Pannar would eventually leave the market making obsolete the wide pool of germplasm Pannar holds. The Competition Commission's suggestion that Pannar merges with another international company other than Pioneer was found to be unfeasible as the international companies had to have capabilities in developing seed for a particular region. Other companies such as Syngenta and Dow were found to be incompatible in this regard.

The Appeal Court also criticised the approach that the Commission and Tribunal used in analysing the efficiencies argument presented by the merging parties. The Commission had focussed on quantification of the efficiencies but the Appeal Court argued that verification rather than the precise quantification of efficiencies should have been used, arguing that the Tribunal should have looked at long term efficiency gains rather than short term static gains. The merger was approved with a number of conditions:

- Prices for all Pannar maize hybrids and for OPVs were not to exceed inflation for a period of three sales seasons.
- For a period of three sales seasons, there would be no increase in prices of the Developing Farmer Products and thereafter, actual selling prices of the products would not increase beyond CPI on an annual basis for a further five sales seasons.
- Pannar customers will continue to receive discounts from the date of closing.
- Concerning employment, there would be no job losses or retrenchments for a period of two years.
- The parties committed to establishing an International Research and Technology Hub in South Africa by 2016.
- Establish and participate in community programs and partnerships in the interest of farmers.
- Maintain the same maize hybrids currently marketed and sold.

- Main developing farmer products in sufficient commercial quantities for developing farmer and to maintain breeding programs related to sunflower, grain sorghum, forage sorghum, wheat, dry beans and soybeans for five years.
- To licence the plant materials in the genetic material list to public institutions on a non-exclusive and perpetual basis.

The Competition Commission of South Africa is currently carrying out an ex-post assessment of the merger to determine its impact on markets. This will include an assessment of maize prices as well as levels of innovation. The assessment is important for understanding the impact of the continuing trends of concentration in the food value chain on food prices and accessibility.

4.4.2. Recent mergers and acquisitions

Four main mergers have taken place in the industry for the period under review (last 5 years). (Table 6). All four involved large companies with significant global market share signalling substantial consolidation of the sector. The mergers were all approved with conditions although the first merger, Pioneer/Pannar was prohibited twice as discussed above before it was approved following an appeal by the parties at the Competition Court of Appeal.

Table 6: Main mergers and acquisitions in the seed industry

Year	Primary Acquiring Firm	Primary Target Firm	Size	Status	Conditions
2012	Pioneer Hi-Bred International Inc.	Pannar Seed (Pty) Ltd	I	Approved with conditions	Discussed in section 4.4.1 above.
2016	China National Agrochemical Corporation	Syngenta AG	I	Approved with conditions	Merging parties are not to relocate their manufacturing plant from North West Province in South Africa for a certain period of time.
2017	DowDuPont Inc.	Dow Chemical Company and E.I. du Pont de Nemours and Company (DuPont)	L	Approved with conditions	Dow will make available 81 maize hybrids and 7 maize inbred lines to other third parties for licensing in South Africa. Dow is to register its PowerCore and Enlist biotechnology traits in South Africa within 2 years of approval of the merger.
2017	Bayer Aktiengesellschaft	Monsanto Corporation	I	Approved with conditions	The merged entity to divest and sell the entire global Liberty Link trait technology and the associated Liberty branded agro-chemicals business of Bayer. The potential buyer of the divested businesses has to commercialize the divested products in South Africa, or alternatively, license the

					divested business to a South African third party to commercialize anywhere in the world should the purchaser be unable to do so. Limit retrenchment and support emerging farmers.

Source: Competition Commission website.

China National Agrochemical Corporation and Syngenta AG

In June 2016, China National Agrochemical Corporation (CNAC), an international company based in China and involved in the development, manufacture and sale of agrochemicals notified the Competition Commission of its intention to merge with Syngenta, another international company with its headquarters in Switzerland. Syngenta is involved in seeds and crop products in over 90 countries. The companies' activities overlap in the market for the manufacture and supply of agrochemicals or crop protection products, namely fungicides, insecticides, herbicides (selective and nonselective) and seed treatment products (Competition Commission, 2017).

Although both companies are involved in seed production, they do not operate in the seed market in South Africa. The Competition Commission therefore assessed the effects in the following markets: insecticides, non-selective herbicides, selective herbicides, fungicides and seed treatment, finding that the merger was unlikely to substantially prevent or lessen competition in the mentioned markets as there were a number of other suppliers of the same products. The Commission did find that there were some public interest concerns with regards to employment, particularly if the parties were to import all its product rather than use the manufacturing plant in the North-West Province. The Commission therefore approved the merger on condition that the manufacturing plant in the North West not be moved for a certain period of years.

DowDuPont Inc. and Dow Chemical Company and E.I. du Pont de Nemours and Company (DuPont)

DowDuPont Inc. (DowDuPont) is an international company with its headquarters in the USA and involved in the research, development, production and distribution of plastics and chemicals, agricultural sciences including seeds, hydrocarbon and energy products and services received approval from the Competition Commission to merge with the DuPont Group. The group is involved in the research development, production distribution and sale of chemical products, polymers, agrochemicals, seeds, food ingredients amongst other products (Competition Commission South Africa, 2017b). The Commission found that there was no overlap in the commercialisation of hybrid and GM hybrid maize in South Africa but that the merger would likely result in the removal of potential competitor as Dow had had prior intentions to enter the South African commercial maize see market. To address this concern, the conditions placed by the commission involved Dow making available 81 maize hybrids and seven maize inbred lines to other third parties as well as registering its PowerCore and Enlist biotechnology traits in South Africa within two years of approval of the merger.

The Commission had also found that the merger was likely to lead to the substantial reduction of competition in the market and development of insecticides for certain fruits and vegetables. To remedy this, the Commission required DuPont to divest its global insecticide business

Liberty Link technology and the associated Liberty branded agro-chemicals business to a third party.

Bayer Aktiengesellschaft and Monsanto Corporation

In May 2017, the Commission conditionally approved the merger between Bayer Aktiengesellschaft (Bayer) and Monsanto Corporation (Monsanto) (Competition Commission South Africa, 2017a). The Commission found that there were competition concerns in the market for the supply of GM cottons seeds as Monsanto is already a monopoly in South Africa with regards to this market. It would also result in the removal of a potential competitor, not only in the development and production of seed traits but also in the development of herbicides. The cross-licensing agreements that characterised the market also made it conducive for coordinated conduct. The Commission therefore required the companies post-merger to divest of global Liberty Link trait technology and the associated Liberty branded agro-chemicals business of Bayer. The new buyer would be required to commercialise the divested products within South Africa or to license the business to a South African third party. Additional conditions related to maintain employment and providing support to emerging farmers.

While not all the mergers discussed above were in the same market they occurred in parallel or complementary product markets in the agricultural sector which raises concerns around a few firms dominating key segments of agricultural value chains. Such large-scale mergers are approved in South due to the limited competitive effects on a national level. However, there are long term anti-competitive effects of the increased concentration and consolidation of the sector on a global level including impacts on Research and Development (R & D), prices and innovation. There is a need, therefore, for such large-scale mergers in already concentrated sectors to be assessed more broadly. In this respect, there is a role for closer collaboration between the different BRICS authorities to ensure that approvals of mergers in certain jurisdictions do not have inadvertent long-term impacts on others and that conditions imposed are consistent across jurisdictions with regards to certain aspects, for instance, innovation and R & D.

5. Fertiliser Value Chain

5.1. A mapping of the value chain and key players[8]

Fertiliser is a key input into agricultural value chains. The estimated value of the overall fertiliser industry in South Africa was around R10bn in 2016.[9] The industry supplies around 2 million tons of fertiliser products to the local market, with the maize industry consuming between 40% and 50% of this. A major challenge for the industry is the changing weather patterns due to climate change. This is evident from the decrease in fertiliser usage due to the drought experienced in 2015 and 2016 in South Africa.

The fertiliser industry consists of three main segments: nitrogen (N); phosphate (P); and potash (K). In South Africa, manufacturing of inputs into fertilisers is dominated by Sasol, Foskor and Omnia. Sasol remains the largest producer of chemical inputs into fertiliser, and

[8] This section draws mostly from Grimbeek et al (2017) and the recent report by Who Owns Whom (2017), as well as Ncube et al (2017) and Vilakazi (2017).
[9] Who Owns Whom report (2017).

Foskor focuses on the mining of phosphate rock and the production of phosphoric acid and phosphate-based fertilisers. Another source of inputs is ArcelorMittal as several by-products (i.e. blast furnace slag and steelmaking slag) from the production of steel are sold into the fertiliser value chain. Thus, the individual markets for N, P and K are highly concentrated.

The location of input materials largely influences the manufacture of fertilisers. An important node of manufacturing activity is in Sasolburg where Sasol and Omnia production plants are situated. ArcelorMittal is also located close to these companies. Foskor mines and processes phosphate rock in Phalaborwa, Limpopo Province, which is then carried by rail to the production facility in Richards Bay in KwaZulu-Natal. The production facility is strategically located in Richards Bay since Foskor imports some raw materials to combine with mined products (i.e. phosphate rock) and then exports phosphoric acid.

Figure 10 shows the nitrogenous fertilisers value chain. We focus more on nitrogenous fertilisers due to their significant usage (67.9% consumed in 2015, Table 7) relative to the other fertilisers and given the competition concerns in this market. Nitrogenous fertilisers include Limestone Ammonium Nitrate (LAN), Ammonium Nitrate Solutions (ANS), and urea. Ammonia, which is produced by Sasol at its Secunda and Sasolburg plants, is the key input into the production of nitrogenous fertilisers. Other suppliers of imported ammonia in South Africa are Omnia, Foskor and Kynoch. However, Sasol remains the dominant supplier of ammonia in South Africa. Urea is largely imported given that it is made from ammonia in a different production process, one that is not undertaken in South Africa.

Table 7: Consumption by Fertiliser type

	Consumption (%)		
Year	Nitrogen	Phosphate	Potash
2011	69.8	13.5	16.7
2012	69.8	13.8	17.1
2013	69.7	13.3	16.8
2014	67.9	16.8	18.5
2015	67.9	15.1	16.6

Source: Who Owns Whom (2017b)

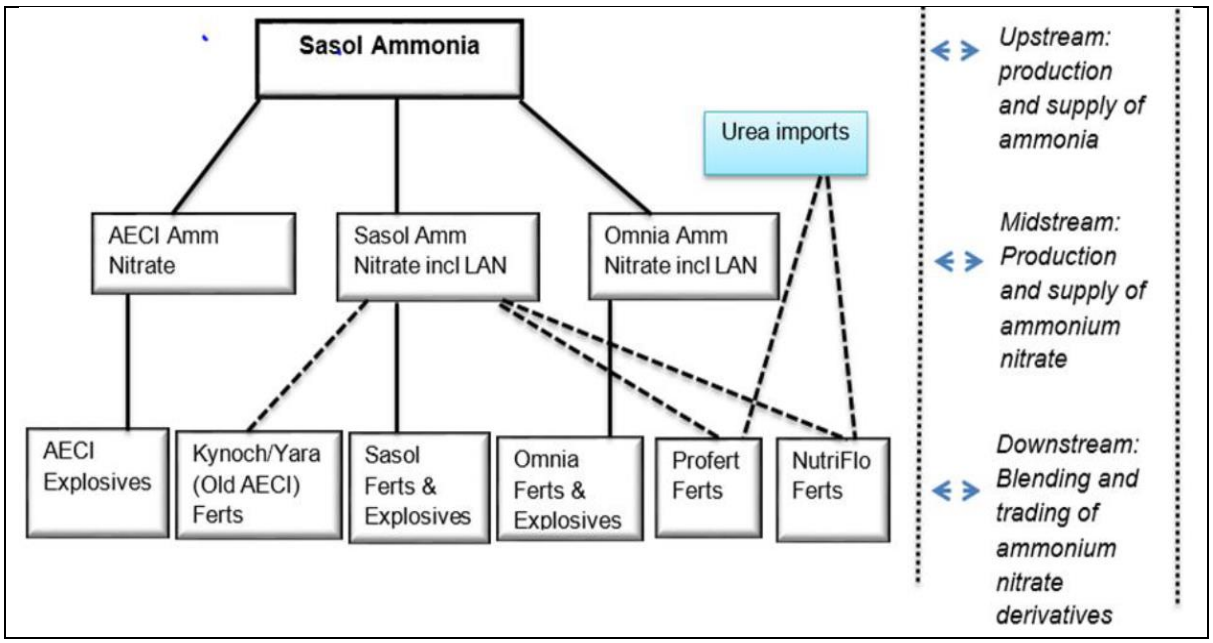
In the upstream level, as seen in the diagram, Sasol is the monopoly local producer of ammonia to independent manufacturers of fertilisers and is also active throughout the rest of the value chain. In fact, prior to 2009[10], Sasol was the sole supplier of ammonia in South Africa. Sasol became the monopoly supplier of ammonia in South Africa in 1999 following the closure of African Explosives and Chemical Industries (AECI)'s production facilities. Sasol's produces ammonia from its coal-to-liquid fuel processes, and from natural gas (about 50%) imported from Mozambique. Post 2009, Omnia has undertaken significant investments into the rail wagons required to transport imported ammonia, as well as investments into expansion of its nitric acid plants. However, Omnia's imports of ammonia are strictly for internal use in its own downstream operations and are not available for use by third parties.

The ammonia produced by Sasol (and that imported by Omnia, Foskor and Kynoch) is then used to produce ammonium nitrate, used in the production of fertilisers or explosives. Sasol, Omnia and AECI have the necessary infrastructure, in particular nitric acid plants, to produce

[10] The Competition Commission intervened in 2009 and 2010 leading to noticeable reconfigurations. This is described further in the section 5.5.1.

ANS. LAN production, which is produced by reacting ANS with limestone to stabilise it, forms solid fertilisers. LAN is produced by both Sasol and Omnia.

Figure 10: Nitrogenous Fertiliser Value Chain



Source: Grimbeek et al, 2017

The midstream segment of the value chain mainly involves the production of ammonium nitrate. This segment is also highly concentrated. Prior to 2009, Sasol, Omnia and AECI were the firms involved in the manufacture of ammonium nitrate, which all owned nitric acid and ammonium nitrate plants. In 2005 Sasol produced more than 40% of the country's ammonium nitrate. Omnia supplied very little ammonium nitrate to the open market due to its vertical integration. Furthermore, the collusive arrangement[11] between Sasol, Omnia and Kynoch, reduced Omnia's incentive to effectively utilise its ammonium nitrate plants. AECI produced ammonium nitrate under an agreement with Kynoch which ceased in 2004. Smaller players requiring ammonium nitrate were therefore effectively dependent on Sasol. Currently Sasol still remains the main supplier of ammonium nitrate in South Africa.

The downstream segment involves the blending and trading of ammonium nitrate derivatives. In general blending provides a means for growers to receive the correct ratio of nitrogen, phosphorus, potash, and micro nutrients. Ammonium nitrate in fertiliser production can either be mixed with water to form ANS or combined with limestone/ calcium to form LAN or Calcium Ammonium Nitrate (CAN). Apart from Kynoch and Omnia, other downstream players include Nutri-Flo and Profert Holdings. Omnia leads the downstream fertiliser market with a 45% market share for LAN, followed by Kynoch Fertiliser and Profert Holdings with an estimated 15% market share each.[12]

The industry value chain thus reflects a range of organisational forms, ranging from vertically integrated companies to companies involved in blending, distribution or retail only. Moreover, several smaller players have emerged since the Competition Commission's intervention in 2009, with some involved in retail and wholesale of fertiliser directly to farmers or co-

[11] See section 5.5.1 below
[12] Who Owns Whom report (2017)

operatives. Co-operatives have become an important source of fertiliser sales. They purchase, store and distribute fertiliser for their farmer members. Thus, farmers are able to collectively negotiate better prices for fertilisers. The fertiliser industry however still remains highly concentrated. And interestingly, government remains a significant shareholder in the fertiliser sector, specifically in Sasol and Foskor where the Industrial Development Corporation (IDC) held in 8.2% and 59% respectively in 2013.[13]

5.2. Regulatory framework

A range of legislation is used to regulate the fertiliser industry. These include;

- Fertilisers, Farm Feeds, Agricultural Remedies & Stock Remedies Act No. 36 of 1947
- Agricultural Products Standards Act No.119 of 1990
- National Regulations for Compulsory Specifications Act No. 5 of 2008
- Marketing of Agricultural Products Act No. 47 of 1996
- National Environmental Management Act No. 107 of 1998
- National Environmental Management: Air Quality Act No. 39 of 2004
- Environment Conservation Act No. 73 of 1989
- Foodstuffs, Cosmetics and Disinfectants Act No. 54 of 1972
- Medicines and Related Substances Control Amendment Act No. 101 of 1965

Additionally, the National Treasury is expected to release a revised Carbon Tax Bill in 2017. Furthermore, a revised regulation for the carbon offset allowance, which enables firms to reduce their carbon tax liability will be published by mid-2017. There are currently no import tariffs on imports of fertiliser.

5.3. Performance of the Fertiliser industry

5.3.1. Consumption

The domestic industry has an estimated value of about R10bn, a decline from R14bn in 2009. The decline since 2009 saw the value of the industry reaching R7.5bn in 2015, before picking up to R10bn in 2016 (Who Owns Whom, 2009; 2015; and 2017b). The consumption of fertiliser has also been declining since 2011 (Table 8). About 1.9 million tonnes of fertiliser were consumed in 2015, reduction from 2.1 million tonnes in 2014. The reduction in consumption is attributable to drought conditions in South Africa, and possibly due to pricing concerns as shown in the following sub-section.

Table 8: Fertiliser consumption (in tonnes)

Year	Consumption (tonnes)
2011	2,002,071
2012	2,052,858
2013	1,991,370
2014	2,198,230
2015	1,978,407

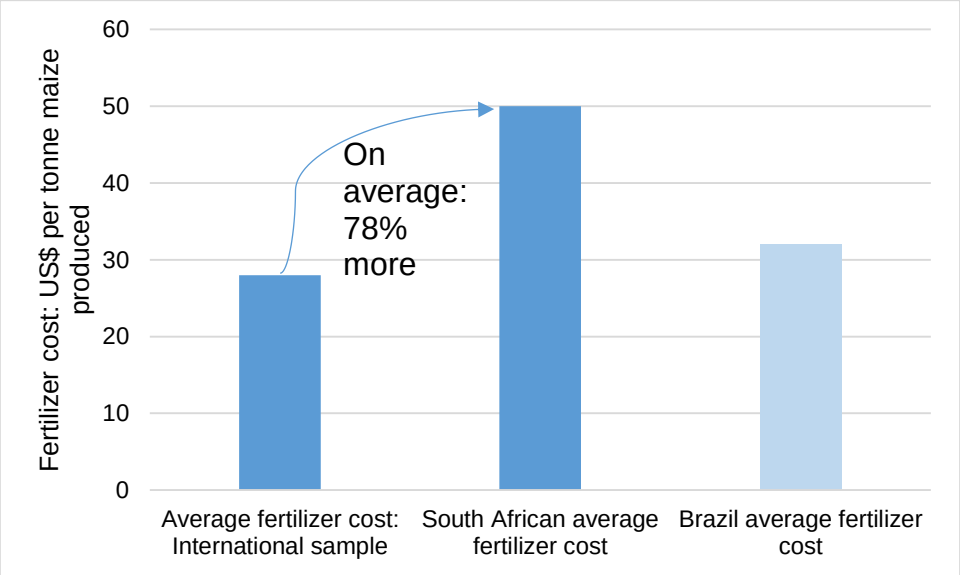
Source: FERTASA

[13] Who Owns Whom report (2017)

5.3.2. Prices

The prices of fertiliser in South Africa are substantially higher than the rest of the world. In 2015, the average cost of fertiliser used in the production of maize was 78% higher in South Africa than in other international maize producing countries (Figure 11). The maize industry consumes about 40% to 50% of total fertiliser consumption in South Africa. The high costs of fertiliser are partly a reflection of high concentration levels resulting in uncompetitive pricing of fertiliser products. As discussed in section 5.5.1 below, there have been a number of cases brought to the Competition Commission against Sasol in 2004. The cost of certain fertilisers is also however determined by the costs of importing, including all the related transport and distribution costs and the trader and agro-dealer margins. For instance, transport costs can account for 50% of the delivered price to farmers when including all the related costs and margins.[14] The other reason for high domestic prices is the difference in suitability and availability of natural resources like soil quality and climate when compared to countries such as Brazil, Argentina, the US and Ukraine.[15] For instance there is evidence of considerable acidification and nutrient depletion in South African soils, which means the country requires more fertilizers given the poorer quality of soil.

Figure 11: Fertiliser cost: International key maize producing countries vs. South Africa



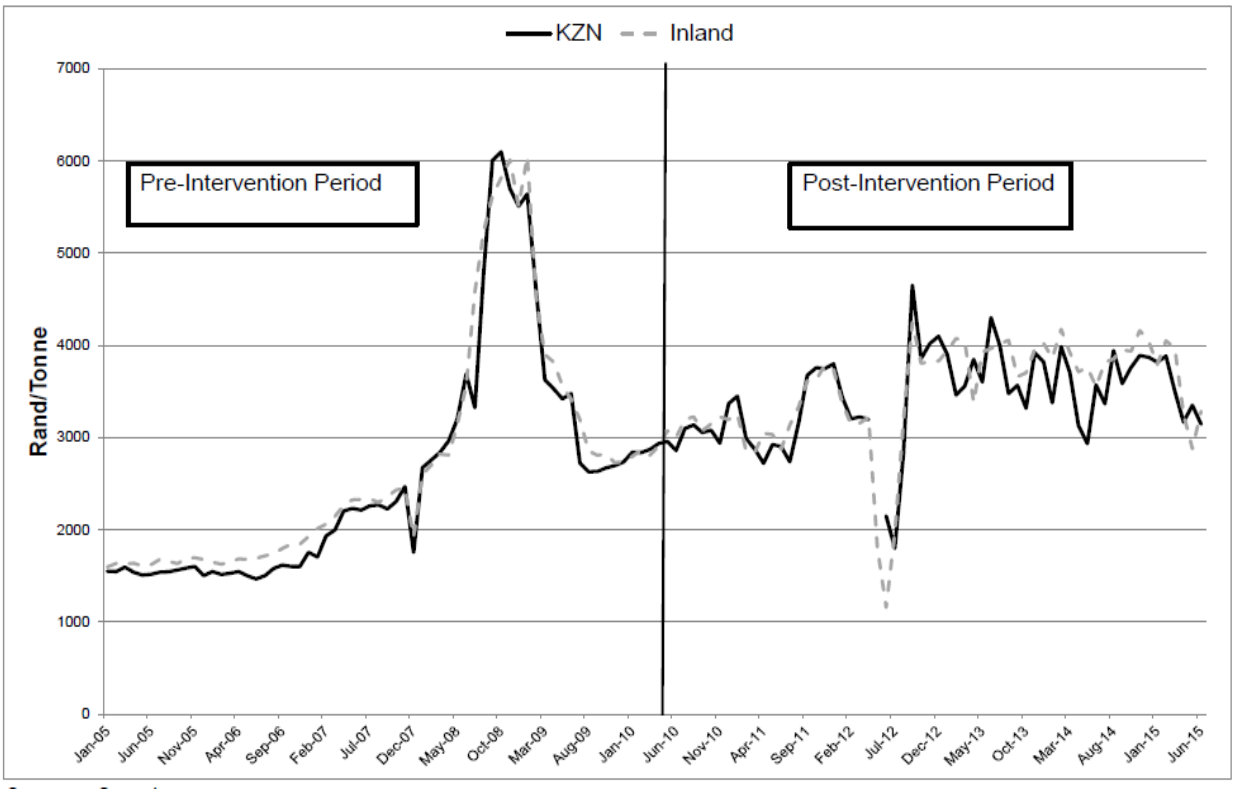
Source: Reproduced from BFAP & Agri Benchmark, 2015

Figure 12 below shows the overall inland and coastal monthly price trends for Sasol's Limestone Ammonium Nitrate between 2005 and 2015. Inland regions include North West, Northern Cape, Eastern Cape, Mpumalanga, Gauteng and Limpopo. Coastal region refers to KwaZulu Natal. Pre-intervention and post-intervention periods refer to periods in relation to the Competition Commission's intervention in the fertiliser industry cartel between Sasol, Omnia and Kynoch, discussed further in section 5.5.1. Overall prices comprise average prices to blenders, traders, and farmers. Notably, fertiliser prices rose dramatically in 2008 due to a combination of factors such as increased demand as a result of higher food prices and

[14] See Ncube, Roberts and Vilakazi (2016)
[15] BFAP (2015)

increased energy costs which are particularly important in producing nitrogenous fertilisers. The high price increases slowed down after 2009.

Figure 12: Overall Inland and Coastal Monthly Price Trends for LAN (Jan 2005-June 2015)



Source: Grimbeek et al, 2017

Generally, inland prices were higher than coastal prices in the pre-intervention period, driven by the cartel conduct. Under normal circumstances it would be expected of Sasol to charge higher prices for the inland region since inland customers are located much closer to Sasol's production facilities compared to coastal customers. Further, the cartel allowed Sasol to price lower in the coastal region where it faced competition from imports. In the post-intervention period, inland prices are generally relatively lower than coastal prices. Thus, the intervention by the Competition Commission which mandated no price discrimination across customers between inland and coastal regions appears to have yielded the desired effects. A more detailed analysis of the Commission's intervention is presented in section 5.5.1.

5.4. Key investments

There have been noticeable episodes of investment in the fertiliser sector. An important one being in the Free State where Westfert has created a facility to house 200,000 tons of fertiliser.[16] The facility is apparently the fourth-largest dome structure in the world and has significant capacity to improve the logistics of moving fertilisers to farms.

[16] Who Owns Whom report (2017)

The other important investment (worth R1.35bn) is that involving Kropz SA (Pty) Ltd through the continuation of the development of its Elandsfontein Phosphate Project[17]. Approximately 95% is being spent within the South Africa, with effort taken to maximise direct benefit to local businesses in the Saldanha Bay Municipality. Kropz is miner of fertilizer feed minerals that includes a Black Economic Empowerment partner, Africa Rainbow Minerals (ARM).

Post 2009 Omnia expanded its operations for the production of ammonium nitrate by undertaking a large investment in a new nitric acid plant. This facility has the capacity to produce 40% more nitric acid per annum compared to Omnia's first nitric acid plant's capacity of 73 000 tons which was in operation pre-2009.[18] Omnia has also invested in the new rail wagons to ensure more reliability and efficiency in the importation of ammonia.

Other investments in the downstream segment involved several acquisitions of Sasol's plants following Sasol's divesture of its blending businesses post-2009, as a result of the intervention by competition authorities. This is discussed further in section 5.5.1. Profert acquired Sasol's Potchefstroom and Bellville plants in Cape Town in March and August 2011 respectively. GWK, an agricultural cooperative that is also involved in the blending and distribution of granular and liquid fertiliser products, acquired Sasol's Durban plant in June 2011. Kynoch acquired both Sasol's Kimberley and Endicott plants.

5.5. Trends in concentration and outcomes of key mergers

As highlighted in previous sections, the fertiliser industry is highly concentrated. Moreover, there are signals of further consolidation and/or integration evidenced by recent merger activity in the sector. In 2016 for instance, South African fertiliser producer Omnia Holdings agreed to acquire an oil products and lubricants supplier as part of its strategy to expand its chemical business. Table 9 lists other mergers and acquisition between 2010 and 2017. (note: there have been mergers in the organic fertiliser segment which are not presented here). Of interest is the recent large acquisition by the Government Employees Pension Fund (GEPF) of ETG (Kynoch) which was unconditionally approved in 2017. This is an example of growing institutional investors in food value chains.

Table 9: **Mergers and Acquisitions (2010 – 2017)**

Date	Acquiring firm	Target firm
2010	Kynoch Fertiliser	Yara South Africa
2011	Profert	Sasol's Potchefstroom and Bellville plants
	GWK	Sasol's Durban plant
	Kynoch Fertiliser	Sasol's Kimberley and Endicott plants
2012	Gromor	National Plant Food
2013	Grinrod	NWK Ltd
2014	Export Trading Group (ETG)	Kynoch Fertiliser
2015	Rolfes	Ag-Chem
2017	Government Employees Pension Fund (GEPF)	ETG (Kynoch)

Source: Who Owns Whom (2017b); Grimbeek et al (2017)

[17] Kropz website
[18] Grimbeek et al (2017)

Several mergers and acquisitions also took place internationally. This suggests increased consolidation of global fertiliser markets. Key deals include the following:

- PotashCorp of Saskatchewan and Agrium which would create a new US$36bn player. The merger however occurs in a context where both companies have reported losses, and where the potash price has been lower.
- The US agrochemical company, Brandt, acquired the Spanish agrochemical and fertiliser company, Tratamientos Guadalquivir.
- Belgian specialty chemicals distributor Azelis acquired the Italian specialty chemical distributor for agrochemical and fertiliser formulations, Ametech.

Although it is not clear if these companies have operations in South Africa, some of them have footprint in Africa. Tratamientos Guadalquivir's website indicates that the company services the Middle East and African markets as well. Azelis has footprint in Ivory Coast and Morroco. Nonetheless, South Africa imports fertilisers from some of the countries in which these companies are based. For instance, the third largest source of South African phosphatic fertilizer imports is Spain, which hosts Tratamientos Guadalquivir, a producer of phosphatic fertilisers amongst a range of products.

5.5.1. Overview of competition interventions

The key competition cases in the South African fertiliser market include the abuse of dominance case brought against Sasol as well as the collusive case between Sasol, Omnia and Kynoch. In 2003 and 2004, Nutri-Flo and Profert filed complaints with the Commission alleging that Sasol, acting in concert with Omnia and Kynoch (Yara), engaged in a range of anticompetitive practices. The complainants alleged that the conduct negatively affected the ability to achieve a competitive outcome in the market for the blending and distribution of nitrogenous based fertilisers. The abuse of dominance practices by Sasol involved exclusionary pricing, excessive pricing and price discrimination. Nutri-Flo and Profert further submitted that the collusive relationship between Sasol, Omnia and Kynoch prevented them from expanding their businesses and competing effectively.

Subsequently Sasol admitted in 2009 to having acted in concert with Omnia and Kynoch (Yara) through agreements on various pricing formulae for, and discounts to, products manufactured or supplied by itself, Kynoch (Yara) and Omnia, thereby contravening section 4(1)(b) of the Act. Sasol paid an administrative penalty of approximately R250 million. Sasol reached an agreement with the Commission in respect other contraventions.

In order to limit Sasol's presence in the downstream market and reduce its ability to manipulate market conditions, agreements were reached between Sasol and the Commission that resulted in the imposition of a series of behavioural and structural conditions on Sasol. For instance, Sasol undertook to provide fertilisers on an ex-works basis and to further not discriminate across customer types (i.e. blenders, traders and end- users) and across geographic regions (i.e. inland and coastal regions). Moreover, with regards to the structural conditions, Sasol undertook to divest five of its blending plants.

In other important rulings, the Competition Commission entered into a consent agreement with Foskor, to end an agreement between Foskor and Sasol that reduced options for buyers of phosphates. A case of price fixing against the Fertiliser Association of Southern Africa (FERTASA) and five agricultural lime manufacturers was referred to the Competition Tribunal

in 2014, following an investigation that revealed that the manufacturers made use of FERTASA to fix commissions paid to agents. Furthermore, a group of 58 farmers won a case against Sasol in March 2015, where Sasol was accused of fixing fertiliser prices between 1996 and 2004. Following the Tribunal's intervention in 2009, the group of farmers affected by Sasol's actions lodged a private legal case seeking financial compensation from the company, resulting in a confidential settlement between Sasol and the farmers.[19]

5.5.2. Ex-post assessment of the Competition Commission's intervention in 2009[20]

There has not been any entry in the production of ammonia and Sasol remains the sole producer of ammonia in South Africa. This can be explained by the significant capital outlay required in building an ammonia plant. However, we note that there has been an increase in the importation of ammonia since 2010. Prior to the intervention, Omnia was restricted from importing Ammonia as per the agreement with Sasol. Post intervention, Omnia had to seek alternative sources of raw materials for their plants, in the form of imports. Omnia's entry into the market provides some competition to Sasol as it increases the number of competitors in the upstream market from one to two. However, the bulk of Omnia's production is dedicated towards internal consumption. The Commission's intervention has also resulted in increased supply of nitrogenous fertilisers. As mentioned above, Omnia's new ammonium nitrate facility has the capacity to produce 40% more nitric acid per annum compared to its first nitric acid plant's capacity of 73 000 tons.

One of the other impacts of the Competition Commission rulings is that there are now more blending and trading companies, particularly as a result of the divestiture of most of Sasol's blending facilities. Atlas Organic Fertilisers (Pty) Ltd and Aquasol Nutri are two examples of additional blending companies in the sector. Moreover, the firms that were previously reliant on Sasol input supplies have subsequently expanded and acquired their own blending plants. Further, the divestiture of Sasol's blending facilities implies increased competition along the nitrogenous fertiliser value chain, given that the level of Sasol's vertical integration along the value chain has been reduced. Sasol's operations at the retail level of the industry have also declined. The intervention also decreased the magnitude of price increases in the post-intervention period, thereby generating substantial customer savings of between R1 billion and R10.5 billion from 2010 to 2015[21]. That is, post-intervention prices increased by less than they would have increased absent the intervention by competition authorities.

This finding by the Commission is based on various assumptions and scenarios as follows. The first scenario assumes that post-intervention prices would have continued to increase at the pre-intervention annual average rate (excluding the years 2008 and 2009) had the authorities not intervened. Building on the first, the second scenario tries to smooth the prices in 2008 and 2009 to account for outliers observed due to economic crisis. In the third scenario, the calculation of average annual prices in the pre-intervention period includes 2008 and 2009. Scenario four applies the Producer Price Index (PPI) to calculate prices, starting from the year 2009. These scenarios result in four possible values of consumer savings ranging from R1 billion and R10.5 billion as mentioned above.

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[19] Farmer's Weekly. Available at: https://www.farmersweekly.co.za/agri-news/south-africa/sasol-settles-fertiliser-price-fixing-case-with-farmers/. See also Who Owns Whom (2017)

[20] Following the judgements on the abuse of dominance and cartel cases involving Sasol, Omnia and Kynoch.

[21] See Grimbeek et al (2017)

5.5.3. Regional and global collusive practices

The Sasol cartel in South Africa specifically had a structure known as 'The Export Club', which was used to share information on sales of fertiliser in order to coordinate bids to the southern Africa region. Thus, major importers of South African fertilisers such as Zambia, Zimbabwe, Namibia and Botswana were negatively impacted, effectively limiting the growth of agricultural sectors in these countries. This has reciprocal effects on South Africa since its growth linked to the growth of the region, mainly because the country supplies many of the agricultural input products (incl. capital equipment) to the region. This illustrates the importance of considering the regional dimension to competition enforcement, and a regional value chain approach to sector analyses. Moreover, cartel cases busted in South Africa present an opportunity to other competition authorities to investigate and establish impact in their respective jurisdictions. In Zambia for instance, Omnia Fertilisers Zambia Limited and Nyiombo Investments Limited were also found to have rigged government contracts for fertilizer supply between 2007 and 2011.

Globally there is prevalence of government sanctioned export cartels. The following examples are found in potash, phosphates and nitrogenous fertilisers. In potash, two dominant cartels account for 80% of reserves. These are Canpotex (includes North American PotashCorp, Agrium and Mosaic) and BPC (joint venture between Russian and Belarusian potash producers, Uralkali, Silvinit and Belaruskali). Uralkali has exited the cartel in 2013. Canpotex controls over a third of the global potash production capacity. In phosphates, there is PhosChem, a USA Webb-Pomerene export cartel (includes PotashCorp and Mosaic), and OCP of Morocco, a government owned monopoly over phosphate mining. There is also likely collusion in nitrogenous fertiliser market based on studies of observable pricing trends.

Global fertiliser cartels impact South Africa because the country is still a net importer of certain phosphatic, nitrogenous and potassium fertilisers. Other BRICS member-states including Brazil, India and China are directly affected since they are major destinations of Canpotex's potash.[22] Evidently, these cartels have significant global market shares and influence, which might prove challenging for national competition authorities to prosecute given political economy dynamics, especially since these cartels are sanctioned by governments in their countries of origin. In Canada for instance, a proposed acquisition of PotashCorp by BHP Billiton was blocked by government on the grounds that it would reduce government's revenues from the Canpotex cartel since BHP Billiton intended to exit the Canpotex partnership.[23] Again, collaborative efforts between competition authorities at regional and global levels remain crucial in this segment, particularly collaboration between the BRICS countries' competition authorities.

5.5.1. Barriers to entry

There are barriers to entry for manufacturing of fertilisers, significant amongst them being high levels of capital requirements. For instance, the manufacturing process for synthetic production of chemicals used in fertilisers is estimated to require about R200m working capital.[24] Other barriers, such as compliance with relevant legislation, are found in blending fertiliser variants. Thus, a relatively less sophisticated company may find regulatory

[22] Canpotex website
[23] See Krugel, Lauren (2010-08-19). "Small Sask. potash producers bask in glow of BHP bid for Potash Corp." Yahoo! Finance. Canadian Press
[24] Who Owns Whom report (2017)

requirements challenging to meet. Nonetheless, bio-fertilisers require a much lower capital investment and face lower regulatory barriers, providing an opportunity for smaller businesses in the sector to develop niche products.

6. Animal Feed to Poultry Value Chain[25]

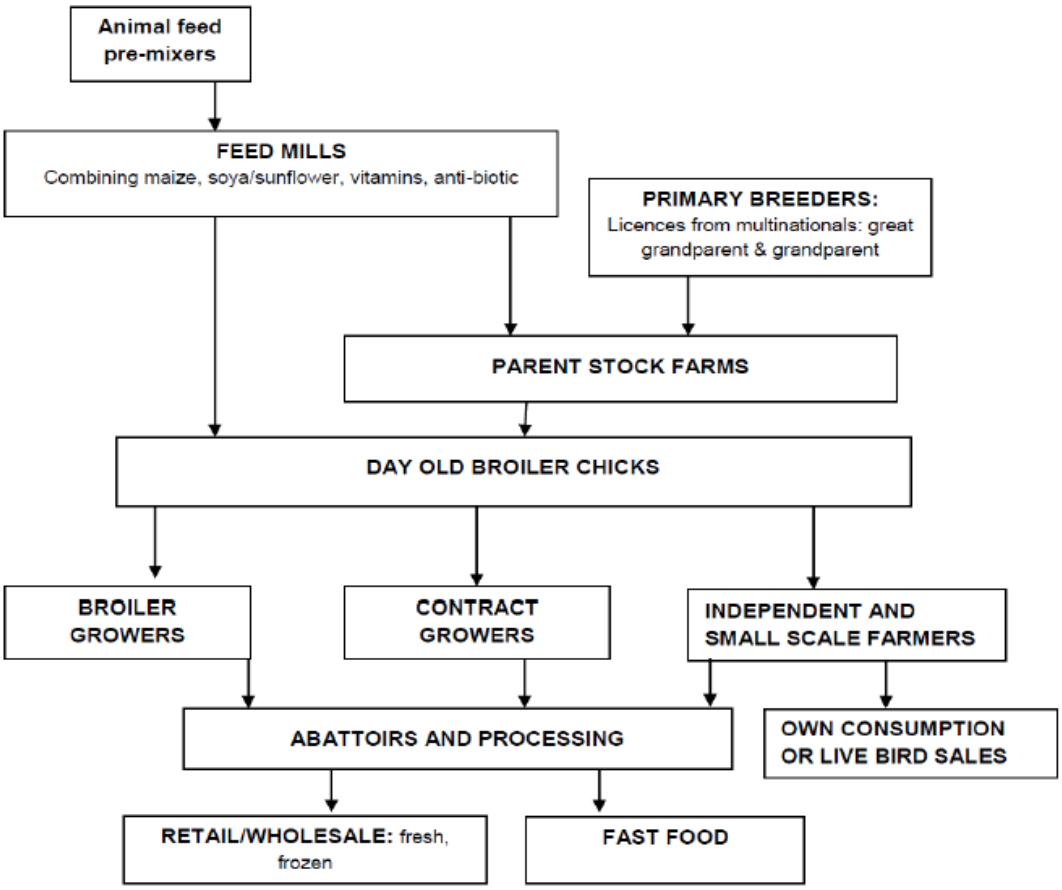
6.1. A mapping of the key players and ownership structures

The animal feed to poultry value chain is an important part of the agricultural sector in South Africa. In 2014, broiler production alone accounted for almost 15% of all agricultural production in terms of value and 33% of all animal products produced in South Africa (SAPA, 2014). In fact, the poultry industry provides 65% of all animal protein (excluding milk) consumed in South Africa. Poultry consumption reached almost 38kg per capita in 2014 with beef consumption a distant second at 18kg per capita (SAPA, 2014). Poultry meat has consistently been the lowest cost source of animal protein since 2009.

The poultry value chain has multiple levels - from the production and processing of agricultural commodities through to a quasi-industrial process of batch production of the rearing, processing, to the distribution of poultry in fresh and frozen form (McCleod et al. 2009). (Figure 13). The value chain approach is particularly important from a competition perspective when considering that many cases of anti-competitive behaviour emerged around the difficulty to accessing key inputs, and the existence of exclusive supply agreements along the value chain. The value chain starts with the two main inputs—animal feed and breeding stock (Figure 13). Animal feed, which is generally made from milled maize and soybean or sunflower, accounts for between 50 and 70 per cent of the total input costs (Bagopi et al. 2014). Animal feed production is carried out in the feed mills where the main ingredients (maize and soya), including vitamins and antibiotics, are combined to produce stock feed.

[25] This section draws largely from the research project conducted by CCRED in 2016 and titled "Competition, barriers to entry and inclusive growth: Agro-processing", as well as from the recent working papers (Ncube et al., 2017; Ncube et al., 2016; and Ncube and Zengeni, 2016)

Figure 13: Animal feed to poultry value chain



Source: Bagopi et al. (2014)

There are only two main firms providing poultry breeding stock to South Africa, Aviagen which is privately owned by German-based EW Group, and Cobb-Vantress Inc, a USA-based multinational. This highlights the global dimension of the poultry value chain. Typically, the holder of the intellectual property such as Aviagen and Cobb-Vantress would sell grandparent stock to a distributor (usually through a franchise arrangement) who will then breed parents to supply day-old parent stock. The customers of this parent stock are either fully integrated broiler producers who sell their product to the retail market or they are day-old broiler chick producers who in turn supply independent broiler producers. Once the day-old chicks are fully grown (between 32 and 42 days old) they are taken to slaughter at an abattoir and processed for sale in the retail market and fast food restaurants. In some cases, the chickens are sold live. This is normally the case with small-scale farmers. Vertical integration with key inputs such as animal feed is also a key characteristic in poultry value chain globally particularly for the larger players. This is important for the co-ordination of production, especially for those firms operating on a large scale.

In South Africa, the great majority of poultry is produced by large-scale commercial players who are also generally vertically integrated with key inputs such as animal feed, all the way to slaughtering operations (DAFF 2014). The two main producers are Rainbow Chicken and Astral. The poultry production of these two companies represents 46 per cent of total broiler meat production (Table 10). The other key producers are Country Bird Holdings Limited (CBH), Quantum, and Daybreak. Smaller players such as Sovereign Foods and new entrant Grain Field Chickens (GFC) make up the rest of the production.

Table 10: Market shares of leading poultry producers (2014 production volumes)

Company	Market share (%)
Rainbow Chicken	24
Astral	22
Country Bird Holdings	7
Tydstroom	6
Fouries	6
Daybreak	5
Others	25

Source: DAFF, 2014

Rainbow Chicken, Astral and CBH are the only holders of exclusive commercial genetic breeding licenses in South Africa. Astral holds a license for the Ross 308 breed, Rainbow Chicken for the Cobb 500, while CBH holds a license for Abor Acres breed (Quantum also holds a license for the Cobb breed but it is only for internal production and not for commercial sales like the other licenses held by Rainbow, Astral and CBH). All the three breeds are provided by multinationals Aviagen and Cobb-Vantress. That is, Ross 308 and Abor Acres are provided by Aviagen, while Cobb 500 is provided by Cobb-Vantress. As a result, any producer seeking to participate within the poultry value chain in South Africa would need to purchase breeding stock from Rainbow Chicken, Astral or CBH, whether for their own production or for commercial sales. The industry is thus characterised by high levels of concentration at the upstream level, and highlights the importance of scale in the poultry value chain.

Rainbow Chicken is the fully integrated poultry-producing subsidiary of RCL. RCL Foods is a diversified food company made up of four subsidiaries – Foodcorp, Rainbow, TSB Sugar and Vector Logistics. Rainbow Chicken manufactures its own feed through its feed division Epol. The company also has business interests in Zambia and Botswana.

Astral has poultry operations in South Africa, Mozambique, Swaziland and Zambia and feed mills in South Africa, Mozambique and Zambia. In Zambia, Astral has introduced a new broiler breed, Lohmann Meat, through its breeder farm and hatchery division, Tiger Chicks. Lohmann Meat is also owned by Aviagen. In Mozambique, Astral recently constructed a hatchery called Mozpintos and is currently constructing a breeder farm. Astral has also been engaged in expansion activities in South Africa through the purchase of other poultry operations.

Quantum is a former subsidiary of Pioneer and consists of three integrated business units, Tydstroom (broiler business), Nulaid (eggs and commercial laying hens), and Nova Feeds (animal feed). The company recently disposed of the abattoirs of its Tydstroom unit, effectively exiting from the broiler meat production business. It is now in an agreement with Astral to supply it with 550,000 live birds per week to its Western Cape abattoir and another agreement with Sovereign Foods to supply 250,000 live birds per week to its Gauteng abattoir. Quantum also has broiler and layer breeding operations in Zambia and Uganda and acquired a commercial egg business in Zambia in 2013.

Country Bird Holdings (CBH) is a holding company formed in 2005 incorporating integrated poultry and stock feed business operations in South Africa, operating as Supreme Poultry (Pty) Ltd and Nutri Feeds, and poultry breeding operations in the region operating as Ross Africa Limited. CBH currently operates in South Africa, Botswana, Zambia, Namibia, Zimbabwe, and Mozambique. The company's poultry breeding operations in Botswana and Zambia operate under the Ross subsidiaries and the animal feed production operates under

the Master Farmer subsidiary. CBH's Mozambique operations are still to be incorporated but they will include a fully integrated poultry business. In Zimbabwe, CBH operates the Kentucky Fried Chicken franchise.

Grain Field Chicken (GFC) is a fully integrated division of the Vrystaat Koöperasie Beperk (Pty) Ltd (VKB) which is based in the eastern Free State, established in 2010. VKB is a farmer-owned agricultural company which specialises in the storage and marketing of agricultural products. GFC sources its maize and soybean from VKB. This has given it a unique competitive advantage, ensuring that GFC has not had to import maize or soybean for their animal feed needs so far. Thus, VKB has created an almost fully self-sufficient business in GFC. They buy maize from VKB farmers, have a stake in a soya oil crushing plant, and also own an abattoir. The GFC abattoir currently slaughters approximately 750 000 chickens per week. This is half of the production of Daybreak, one of the smaller vertically integrated players. VBK also has 22 VKB retail outlets and 41 NTK outlets through which they market their agricultural produce, including the broilers. It also supplies the Boxer Group of supermarkets and there are prospects of supplying SPAR supermarkets (Coleman, 2013). Through a contract with Eagle's Pride, GFC uses both Cobb and Ross birds, with Cobb making up 85% of the day-old chicks that they purchase. The main markets of GFC are in Gauteng and KZN.

As can be seen, all these producers are integrated with feed and broiler production, and processing, which includes abattoirs (Table 11). It is also important to note that the animal feed companies that are vertically integrated with the poultry companies shown in Table 2—Nutri Feeds (Pty) Limited, Epol, Meadow Feeds, and Nova Feeds—along with Daybreak are the top five producers of animal feed in South Africa (Louw et al. 2013).

However, the recent restructuring indicates that non-vertically integrated companies can also be competitive. The changes in Pioneer to form Quantum involved the closure of their abattoir and an agreement with Astral for supply of live birds (Magwaza, 2014). In the case of Grain Field Chickens, the breeding stock is sourced from specialised breeding business Eagle's Pride, and independent out-growers are used for broiler rearing. Apart from Quantum, all the producers shown in Table 11 also have breeding facilities. Moreover, a number of the players, especially large South African poultry companies, have operations in more than one country in the region. This emphasises the important regional dimensions of the value chain.

Table 11: Company structure of main integrated poultry firms in South Africa

Country Bird Holdings (CBH) Limited		RCL Foods Limited		Astral Foods Limited		Quantum Foods (formerly, subsidiary of Pioneer Foods)	
Breed		Breed		Breed			
Ross Africa Limited		Cobb 500		Ross 308			
Feed	DOC	Feed	DOC	Feed	DOC	Feed	DOC
Nutri Feeds (Pty) Limited	Ross	Epol	Rainbow Chicken	Meadow Feeds	National Chicks	Nova Feeds	Bergvlei Chicks
Broiler processing		Broiler processing		Broiler processing			

Supreme Poultry (Pty) Limited	Rainbow	Astral	
RETAIL/FAST FOOD MARKET			

Source: Ncube, Roberts and Zengeni (2016)
DOC: Day Old Chicks

6.2. Regulatory framework

As with the rest of the agro-processing sector, the poultry industry in South Africa is subject to domestic regulation specific to food, which at times has an effect of creating structural barriers to entry. Aside from market conduct/economic regulation governed by the Competition Act, regulations affecting the sub-sector include licensing, food safety, quality and environmental laws (Banda, et al, 2015). Non-economic regulations include the Department of Agriculture Forestry and Fisheries' regulation of animal feed. The department's regulation is concerned with monitoring quality and assessing whether the feed formulation matches the need of the animals. The feed is regulated by the Fertilizers, Farm feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947, Act 37. The registration of feed involves a four-stage process, namely, verification, technical screening, assessment and approval.

Though feed manufacturers acknowledge that a registration process is necessary to ensure the quality of feed produced, it may be restrictive to new entrants. Small animal feed producers find it costly to test feed in laboratories. This restricts smaller firms from producing feed for sale in the open market. However, these costs are not prohibitive for a feed manufacturer or poultry producer who plans to enter at significant scale.

Other non-economic regulations include[26]:

- Labelling and Advertising of Foods (R429 of 29 May 2014)
- Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No.54 of 1972)
- Agricultural Product Standards Act 1990, (Act No.119 of 1990)
- Good Manufacturing Practice
- South African National Standards SANS 885:2011
- South African Poultry Association (SAPA) Code of Practice for Broiler Production[27]

6.3. Performance of the South African poultry industry

6.3.1. Production

The animal feed to poultry value chain in South Africa has seen high levels of growth over the last decade. The production of broiler meat has increased from 928 000 tons in 2004 to 1.7 million tons in 2014 (Table 12). This growth has been driven in large part by increases in the scale of production of the larger poultry producers, together with the growth in local consumption from 23kg per capita in 2003 to almost 38kg per capita in 2014. For example, Astral increased broiler production from 2.1 million birds per week in 2006 to 4.4 million birds per week in 2014 (Astral Foods 2006, 2014). CBH's production has increased from 1.2 million birds per week in 2008 (CBH, 2008) to 1.5 million birds per week in 2014. Interestingly, the production of the largest producer – Rainbow Chickens – has not increased as much as that of Astral, increasing from 4 million birds per week in 2004 to just 4.5 million birds per week in

[26] Government gazette (2014, vol. 587, No. 37695).
[27] SAPA website

2015 (Rainbow Chicken, 2005). As previously noted, Rainbow Chicken and Astral account for 46% of total broiler meat production (DAFF, 2014).

One of these major producers – CBH – is a relatively new entrant into the poultry industry. The story behind CBH's entry and growth highlights how competition law can open access to markets (see section 6.5 below).

Table 12: Broiler meat production and consumption in South Africa (thousands of tonnes)

Year	Production	Consumption
2004	928	1 082
2005	1 019	1 204
2006	1 143	1 383
2007	1 200	1 470
2008	1 276	1 508
2009	1 358	1 558
2010	1 430	1 645
2011	1 478	1 753
2012	1 499	1 836
2013	1 529	1 899
2014	1 711	2 023
2015	1 726	2 170
2016	1 677	2 199

Source: DAFF (2014); Lovell (2012); SAPA (2015, 2017)

While entry by vertically integrated players has grown the number of independent players in the market, growth has also been driven by the increase in the number of contract growers. Broiler production by contract growers has increased over the years and is currently at approximately 60-80% of total broiler production. The shift towards a greater reliance on contract growing has largely been as a result of an increasing desire by the major poultry producers to shift costs associated with owning large pieces of farm land from themselves to the contract growers.

The entry of contract growers has been partly facilitated by the sale of the poultry farms by the major poultry producers to new contract farmers, like in the case of Daybreak Farms which sold off seven of its farms to black poultry producers. The current Daybreak Farms is the result of the divestiture of Afgri Poultry from the Afgri group of companies. Afgri Poultry was sold to the AFPO Consortium, through a transaction which was funded by the Public Investment Corporation (PIC). The divestiture was in line with Afgri's strategic decision to focus on its core grain businesses.[28]

Contract growing also creates more opportunities for entry given the low cost of capital required to start up in comparison with other stages of the value chain which require a significantly higher level of expertise. The increasing prevalence of contract growers is also important in the context of inclusive growth. Ease of entry means more people can become contract growers thereby creating employment. However, while there has been entry at the contract growing level, the entry of CBH and the GFC illustrate that in order for entry to result in large scale production and to be considered a serious competitor in the poultry industry, it has to be at multiple levels of the value chain. Thus, while contract growing is an important means by which potential poultry farmers can enter the poultry value chain, the recent

[28] See http://www.afgri.co.za/afgri-strengthens-focus-on-grain-business-through-sale-of-poultry-business-and-pic-provides-funding-for-transaction/

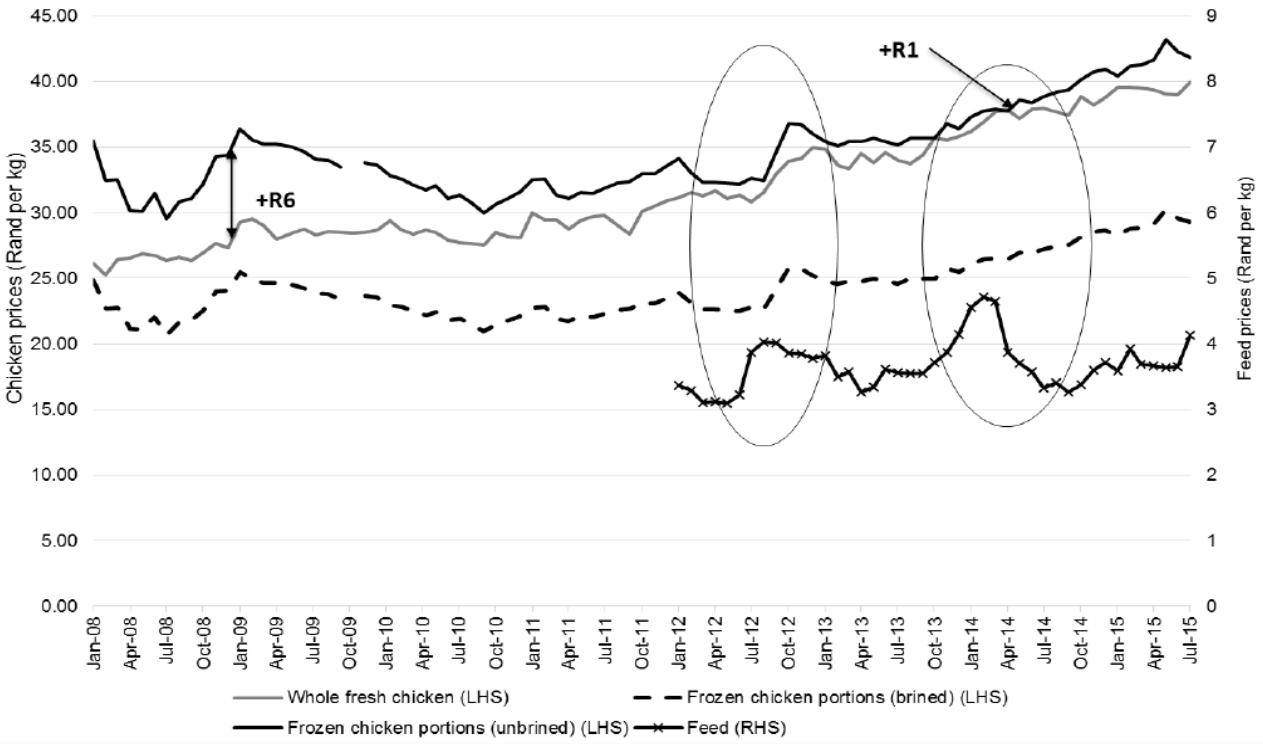
episodes of entry raise important questions about its effectiveness as a possible avenue of inclusive growth, particularly in the context of the Department of Trade and Industry's vision of creating Black Industrialists.

6.3.2. Prices of poultry

Fresh chicken prices are generally higher than prices of frozen chicken, however the latter are higher after accounting for brining (Figure 14). Frozen chicken (after accounting for brining) is more expensive than fresh chicken but only by a very small amount after 2011. The reduction in frozen chicken prices of about 20% (R5) in early 2008, occurred around about the same time that Country Bird exited from the Elite joint venture with Astral and introduced a new breed, Arbor Acres.[29] The introduction of the breed not only led to increased production but it also increased rivalry in the provision of breeds.[30] It is likely that this rivalry affected the pricing of frozen chicken (which is the largest consumed category locally), resulting in the dip in chicken prices in 2008 and the price moderation between 2008 and 2011.

Poultry prices started increasing following the spike in feed prices in 2012 (Figure 14). Interestingly, a similar spike in the price of feed in 2014 did not result in an associated increase in chicken prices. This is likely due to increased import penetration in 2014 (Figure 15) which squeezed local poultry producer margins as feed cost increases could not be passed onto consumers. A similar fluctuation in imports in the last quarter of 2012 saw a concurrent decline in local poultry prices. Notably, frozen chicken prices are mostly affected by imports than fresh chicken prices, as imports come in frozen form, making them compete directly with frozen chicken produced locally.

Figure 14: South African Quarterly Feed and Poultry Prices (2008 – 2015)



Source: Ncube et al., 2016

[29] See section 6.5 below
[30] Ncube et al, 2016.

6.3.3. Import and exports

There was a significant spike in the South African poultry imports in the third quarter of 2012 (Figure 15). The end of 2012 saw imports increasing from US$80 million to US$140 million, a 75 per cent increase from one quarter to the next. These led to applications for anti-dumping duties against Brazil in 2013 (ITAC, 2013), which was the major source of South African imports prior 2012.

After the imposition of anti-dumping duties on Brazilian imports, there was a decline—albeit with fluctuations—in the value of imports (Figure 15). The anti-dumping tariffs—ranging from 12 to 82 per cent—were imposed on whole birds, boneless cuts, bone-in portions, and offal imported from Brazil (ITAC 2013). Thereafter, there was a switch towards imports from the EU, where the dumping duties did not apply as a result of the free trade agreements with South Africa (Kwaramba and Tregenna 2014).

Figure 15: South Africa poultry trade flows (2010Q1 – 2016Q4)

Source: Trade Map (ITC 2010–2016)

A smaller spike at the beginning of 2014 was due to an increase in imports from Europe, even though only increasing to the levels at the end of 2011. This increase led to another bid for an anti-dumping investigation being submitted by SAPA to ITAC in 2014. ITAC made a final determination on 27 February 2015, recommending the imposition of anti-dumping duties of 31.30–73.33 per cent on Germany, 3.86–22.81 per cent on the Netherlands, and 12.07–30.99 per cent on the United Kingdom (ITAC 2015). In its determination on this matter, ITAC indicated that though the poultry industry suffered material injury from dumping, other factors also contributed to its performance such as rising production costs related to feed, fuel, electricity and labour costs (ITAC 2015).

South Africa also has a combination of anti-dumping duties, tariffs, and a quota for imports from the United States. Recently, there has been a battle between South Africa poultry producers and American poultry producers as the latter threatened to have benefits of the African Growth and Opportunity Act (AGOA) repealed if access is not granted to American poultry farmers (Mnyandu, 2015). The resultant solution was a duty-free quota of poultry imports from the USA of 65 000 tons available on a twelve-month basis from 1 April 2016 (DTI, 2016).

The issue of imports is important to South African producers because it reflects different chicken consumption patterns found in North American and EU countries when compared to South Africa. In the South African market, bone-in portions are the most widely consumed, generally in the form of IQF portions (SAPA, 2014). In contrast, high-income overseas markets mostly consume fillets such as breast portions that are sold at a premium. Since bone-in portions are not in high demand in overseas markets, they are then sold in other markets, such as South Africa, for a lower price. It is alleged that overseas players, including Brazilian producers, make their margins on fillet meat and sell bone-in portions at costs that allow them to cover the tariffs and logistical costs of shipping the meat to South Africa.

Other important imports in the poultry value chain include animal feed imports. Feed is the largest cost of producing chicken, accounting for 50–70 per cent of the cost of producing a chicken[31], with maize and soybean being the two key inputs in the production of feed. South Africa is less competitive in the cost of both day-old chicks and animal feed, when compared with countries such as Brazil and Netherlands (Table 13). Brazil price of feed is 45% cheaper than South Africa.

Table 13: Prices of feed and day-old chicks in selected countries in US$ per kilogram of live weight

	South Africa	Netherlands	United Kingdom	Brazil
Day-old chicks	0.21	0.19	0.23	0.14
Feed	0.89	0.84	0.92	0.66

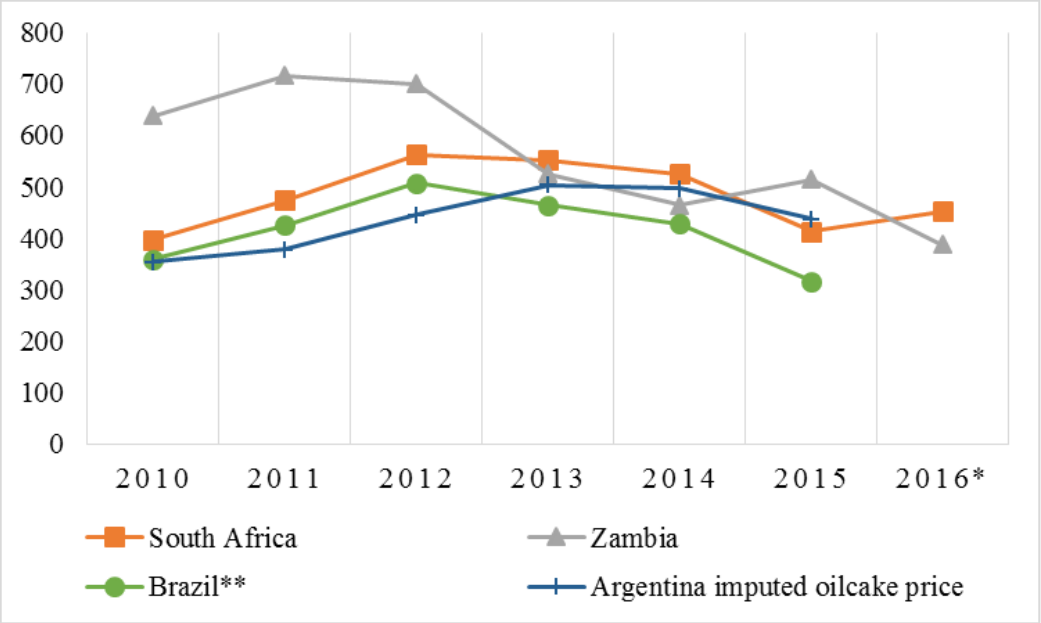
The data above is for 2013 for Netherlands, United Kingdom and Brazil. It was converted to US$ using an exchange of £1=US$1.32. South Africa data is for 2012.
Source: Zengeni, 2017

South African imports of oilcakes used in the production of animal feed, mostly made up of soybean oilcake, are larger than the imports of poultry. Argentina is the main source of South Africa's imports, accounting for 54 per cent of the total share of oilcake imports in 2014. However, the implementation of Department of Trade and Industry's soybean strategy (DTI, 2012) has meant investment in processing capacity and has reduced imports of soybean meal from 2012.[32] Through this strategy and financing from the Industrial Development Corporation in 2013, South African soybean crushing capacity has been substantially expanded to approximately 2.1 million tons per year.

South Africa is still constrained in soya production albeit being a surplus producer of maize. The country is generally reliant on imported soya with Argentina being the main source of South African soya cake (Ncube et al, 2016). Figure 16 below compares soya bean prices per ton in South Africa, Argentina, Brazil and Zambia. South African soya prices generally reflect the Argentina and Brazil prices which are the main sources of imports. The Zambian prices have been on a downward trend since 2010 reflecting the increase in production that the country is currently experiencing. Moreover, the Zambian prices are below the South African prices in 2013, 2014 and 2016, thus showing the increasing competitiveness of Zambia as a soya producing country.

[31] Ncube et al, 2017
[32] Ncube et al, 2016

Figure 16: Soya prices per ton U$



**The 2016 prices are up to September and July 2016 for Zambia and South Africa.*

Source: Zengeni, 2017

Despite the decrease in Zambian prices, these are still at times higher than the imputed price of the processed product imported from Argentina (Figure 16), raising important questions about the conditions that would be necessary for Zambia to reach the scale and cost structure to enable import-substitution from deep-sea sources for both soybeans and oilcake. Necessary conditions include, amongst others, investment to support agriculture production and storage facilities. The need to invest in storage facilities is important, given that one of the largest feed producers in Botswana indicated the poor quality of soybeans from Zambia was due to a lack of storage (Ncube et al., 2017). The potential to replace deep-sea soya imports from South America into South Africa's poultry feed sector by imports from Zambia is recognised in the latest iteration of the Department of Trade and Industry's Industrial Policy Action Plan (IPAP), reinforcing the importance of developing regional value chains. "A team is now working with the regional soya and poultry industry and logistics providers to focus on the price points required to enable processed soya to be landed at prices that are competitive with or better than deep-sea imports" (IPAP, 2017/18 – 2019/20).

South Africa's exports of poultry have been substantially lower, mainly to the Southern African Customs Union (SACU). At the beginning of 2013, poultry exports increased from US$4.7 million in the fourth quarter of 2012 to US$22 million in the first quarter of 2013 and remained at around these levels thereafter (Figure 15 above). The increase was largely due to a sharp recorded increase in exports to Lesotho and Namibia as a result of the improvement in the recording of intra-SACU trade from 2013 and under-reporting before that point (Ncube et al, 2016).

6.3.4. Key investments

Due to high levels of integration, investments in the poultry value chain are very costly and typically require huge capital outlays to sustain the high working capital requirements. Importing grandparent stock can cost up to R8 million a flock (Grimbeek and Lekezwa, 2013), and it can take anything from 15 to 24 months from receipt of grandparent stock to produce the first commercial-level day old chick (Bagopi et al., 2014; SAPA, 2014i). Due to this lengthy production cycle, new poultry producers require up to two years' worth of capital to sustain their business before they earn revenue from the sale of their first commercial broilers.

Notwithstanding, the South African poultry industry has experienced investments in different stages of the value chain, evidenced by the expansion of operations by existing firms as well as the entry of new firms. For instance, in 2014, CBH had acquired a loan of $25 million from the International Finance Corporation (IFC) for the installation of soya deactivation plants at two of its feed mills, and increasing its broiler processing capacity in South Africa (IFC, 2013). The loans were also for increasing day-old chick production in Botswana and Zambia.

The entry of Grain Fields Chicken (GFC) saw a total investment of R350 million, with the abattoir alone costing R200 million to construct. The establishment of GFC occurred through a joint venture between VBK and the Industrial Development Corporation (IDC). VKB borrowed approximately R88 million from the IDC which the IDC sourced from the Department of Labour's Unemployment Insurance Fund as well as from the Agro Processing Competitiveness Scheme (IDC, 2014). The role of development finance from the IDC has played a crucial role, however the 'patient' nature of the total capital expenditure contributed even more to GFC's successful entry. For instance, GFC had four successive years of significant losses before making a profit in its fifth year of operation. The diverse operations of its parent company, VKB, assisted in sustaining the business owners during this time.

Other investments involve the 2006 acquisition of Daybreak Farms at a cost of R120 million, which marked Afgri's re-entry into the broiler business. At the time, Daybreak was a fully integrated broiler producer, processor and distributor of poultry products in South Africa. Afgri saw its participation in the broiler business as a strategic investment to ensure the growth of its animal feed business. Accordingly, the acquisition of Daybreak saw Afgri embark on a significant drive to increase the production capacity of its new broiler business. Afgri undertook an estimated expenditure of R410 million to expand their broiler business. The expansion increased weekly production capacity from approximately 325 000 birds to 650 000 birds per week in 2009. Afgri's expansion of its broiler business continued in 2010 with the acquisitions of Midway Chix, a Limpopo-based hatchery with capacity to produce 875 000 chicks per week as well as the acquisition of another broiler producer, Rossgro Chickens, with a capacity of 350 000 chickens per week. It also secured broiler supply from local growers located near the old Daybreak farm in Delmas, Mpumalanga. The overall production capacity of Afgri Poultry increased rapidly to over 1 million birds per week.

There have also been significant investments by South African firms in the region. For instance, in Mozambique, Astral recently constructed a hatchery called Mozpintos and is currently investing in a breeder farm. In Zambia, it has introduced a new broiler breed, the Lohmann Meat. CBH has also been expanding into the rest of the southern African region and other parts of Africa. It has expanded its operations in Ghana, Nigeria, Zambia, Mozambique, Botswana and Swaziland. It has also recently received conditional competition approval from

the Botswana Competition Authority to acquire the KFC business in Botswana (Botswana Competition Authority, 2015).

6.4. Trends in concentration and outcomes of key cases in South Africa

To reiterate, the poultry value chain is highly concentrated, typically at each stage of the value chain. At the feed stock level, the five major producers —Nutri Feeds (Pty) Limited, Epol, Meadow Feeds, Nova Feeds and Daybreak— account for almost 50 per cent of the total animal feed production in South Africa. The breeding stock level is also highly concentrated, with only three players— Rainbow Chicken, Astral and CBH. These companies hold exclusive commercial genetic breeding licenses. As a result, any producer seeking to participate within the poultry value chain in South Africa would need to purchase breeding stock from Rainbow Chicken, Astral and CBH, whether for their own production or for commercial sales.

In the early 2000s, the breeding stock market was effectively a duopoly. Astral had a market share of 69% of breeding stock, while its main competitor, Rainbow Chicken, had a market share of 26% of the great grandparent market. This changed around 2007 due to the introduction of a new breed by CBH (discussed in section 4.5 below). At the downstream level, the two major poultry producers— Rainbow Chicken and Astral—produce 46 per cent of total broiler meat production (DAFF 2014).

The poultry industry has continued to consolidate, as well as vertically integrate, increasing concentration levels, as evidenced by mergers and acquisition activity in the past 7 years (Table 14). Table 15 outlines the mergers which were approved conditionally. The overall competitive effect of these mergers is mixed. On one hand, there has been rationalisation and acquisitions to ensure security of supply to manage processing costs (Pioneer). On the other hand, there have been acquisitions as part of expansion into new geographic markets (Astral and Rainbow). While these mergers may not immediately raise competition concerns, concerns about market power in local and regional markets arise should the trend of acquisitions continue.

Table 14: Merger Activity in the Poultry Sector (2010 – 2016)

Case No.	Primary Acquiring Firm	Primary Target Firm	Size	Status
2010May5134	Country Fair Foods, a division of Astral Operations Limited	Vredebest (Pty) Ltd and Byways Poultry Farm (Pty) Ltd	S	Approved
2010Sep5336	Daybreak Farms (Pty) Ltd	Rossgro Chickens (Pty) Ltd	L	Approved
2011Apr0016	Astral Operations Ltd	The Abbatoir business operated by Corpclo 2410 (Pty) Ltd	I	Approved*
2011Jun0102	Afgri Operations Limited	Pride Milling Company (Pty) Ltd	L	Approved
2011Nov0375	Rainbow Farms (Pty) Ltd and Vector Logistics (Pty) Ltd	Bushvalley Chickens Partnership and Rodev Chickens (Pty) Ltd	I	Approved
2012Jun0356	Pioneer Foods (Pty) Ltd	Lohmann Breeding SA (Pty) Ltd and Avichick (Pty) Ltd	I	Approved
2012Jul0370	Pioneer Foods (Pty) Ltd	DFC Breeder Farm (Pty) Ltd and DFC Broiler Farm (Pty) Ltd	I	Approved
2012Nov0653	Pioneer Foods (Pty) Ltd	Amaqanda Farms (Pty) Ltd	S	Approved
2013Oct0481	AgriGroupe Holdings (Pty) Ltd	AFGRI Limited	L	Approved
2015Jun0312	VKB Agriculture Proprietary Limited, Louis Dreyfus	The Kromdraai Group of Companies	L	Approved*
2015Jul0435	Sovereign Foods	Quantum Foods Proprietary Limited	I	Approved

2015Nov0647	Quantum Foods Proprietary Limited	Olifantskop Feeds Proprietary Limited	I	Approved
2016Feb0052	AFGRI Operations Limited	Pride Milling Company (Proprietary) Limited	L	Pending
2016Aug0411	VKB Landbou (Pty) Limited	Lomina Vyf (Pty) Ltd trading as Farmpak	I	Approved
2016Aug0410	Country Bird Holdings Proprietary Limited	Sovereign Food Investments Limited	I	Approved*
2016DEC0004	The Humansdorp Co-Operative Limited and Friendshelf 1722 (Pty) Ltd	Umtiza Farmers Corp Limited and the business of UFC Trust	I	Approved

**Approved with conditions (outlined in Table 15 below)*
Source: Competition Commission website

Table 15: Mergers approved with conditions

Merger (Case No.)	**Conditions**
Astral vs Corpclo (2011Apr0016)	• The Corpclo shareholders shall continue to source, on average over a period of 6 months, no less than 90,000 day-old chicks per week from Stonor. • Transparent prices and terms and conditions for each for dealings between Astral and Corpclo. • All discounts and incentive schemes offered by the Astral Group will be communicated separately from the day-old chick and broiler feed prices, and will not be designed so as to compel the Corpclo shareholders to source broiler feed and day-old chicks from the Astral Group to the exclusion of competitors. • The Corpclo shareholders will report to the Commission every three months on their obligation to procure from Stonor.
VKB vs Kromdaai (2015Jun0312)	• Merging parties shall not retrench any employees at the merged entity as a result of the merger • VKB shall give first preference to the affected employees should positions arise at VKB for a period of 12 months after the approval of the merger
CBH vs Sorereign (2016Aug0410)	• no merger-specific job losses for an indefinite period; • the introduction of a 4% B-BBEE shareholding in Sovereign Foods within 2 years of CBH acquiring substantial shareholding in Sovereign Foods.

Source: Competition Commission website

Adding County Fair as part of Astral together with Astral's acquisition of National Chicken (Natchix) in 2002 and Earlybird Farms in 2004 increased the total Astral's group broiler production to just below that of Rainbow. Rainbow has also expanded their operations through strategic acquisitions of Vector Logistics in 2004 which resulted in the company becoming even more vertically integrated in the poultry supply chain[33].

[33] See cases 113/LM/Nov05, 74/LM/Sep04, 57/LM/Aug04 ,69/AM/Dec01

There have been further 9 cases of notified mergers and acquisitions in animal feed and poultry between 2010 and 2015. Pioneer made two acquisitions in 2012, both of which included broiler breeding and layer operations. Pioneer's primary rationale for these acquisitions was the need to ensure increased throughput for its existing abattoirs. Pioneer also acquired Amaqanda farms, which appears to have been a previous contract egg producer for Pioneer.

Astral's acquisition in early-2011 of broiler breeding farms and abattoir facilities in the KwaZulu-Natal region was done primarily to expand its footprint into a new geographic area. Astral Foods (County Fair) also acquired three broiler farms in the Western Cape, near Paarl. The Commission held that the transaction will not lessen competition significantly, as these farms previously provided most of their production to the Astral group. Rainbow's acquisition of a processing facility in the Tzaneen area in September 2011 was also aimed at entering a new geographic market.

Large poultry mergers reported in the 2010-2015 period involved the acquisitions by Afgri of Midway Chix, a Limpopo-based hatchery with capacity to produce 875 000 chicks per week, and Rossgro Chickens, with a capacity of 350 000 chickens per week. However, on 1 April 2015, Afgri divested its poultry operations together with the Kinross Animal Feeds Mill to AFPO Consortium (Pty) Ltd; a transaction funded by the Public Investment Corporation (PIC). Following this transaction, Agfri Poultry was renamed Daybreak Farms. Daybreak Farms is the first fully black-owned vertically integrated poultry firm with the scale (at broiler production and feed level) to potentially compete against the larger incumbents.

The features of the poultry business thus mean that the sector is dominated by a small number of large vertically integrated businesses. The businesses also generally have strategic linkages into related areas of agricultural value chain such as maize and soya production, milling and storage, and logistics. The concentrated nature of the sector means there is likely to be scope for the exertion of market power, whether unilaterally or through coordinated arrangements. The behaviour of the large producers influences the space for smaller entrepreneurial producers and the spread of activities.

6.5. Overview of other competition interventions

Despite the highlighted episodes of entry, the South African poultry industry is still highly concentrated, with significant barriers to entry. Furthermore, local producers and suppliers of parent stock have exclusive supply agreements with overseas suppliers. For instance, as a result of the high barriers to entry and limited countervailing power due to lack of alternatives, the duopoly of Rainbow Farms (Rainbow) and Astral dominated the market in South Africa for many years due to the fact that they were the only commercial suppliers of parent breeding stock.

Several competition cases in the poultry sector illustrate the potential for incumbents to raise entry barriers and exclude smaller rivals. The case brought by CBH against Astral demonstrates the importance of obtaining a high performing breed, and highlights how competition law can open access to markets[34]. CBH was a major poultry producer in Zimbabwe and Botswana before entering South African poultry market in 1992, through a joint venture with Astral and National Chick Limited (Natchix) known as the Elite Joint Venture.

[34] Competition Tribunal (2011, 2013).

One of the terms of the joint venture was obliging CBH to source at least 90% of its breeding stock from Elite, effectively preventing CBH from trading with Astral's rivals. CBH lodged a complaint of exclusionary abuse with the Competition Commission in 2007, following which CBH exited the Elite joint venture shortly thereafter to establish a rival breeding business with the new breed known as Arbor Acres, also sourced from Aviagen. This saw the entry of a third breed into the South Africa market to challenge the Astral/RCL duopoly. Astral has since settled the allegations with the Commission, admitting to the contravention of section 8(c) and 4(1) (b) (i) for which it was fined R16.7.3 million.

Incumbents can thus foreclose downstream rivals from inputs, and this might require rivals to enter at both upstream and downstream levels, substantially increasing the entry costs. In the Elite case, the fact that Rainbow was vertically integrated effectively meant there were no good competitors to Astral and its Ross breed. Similarly, there could be customer foreclosure where incumbents control abattoirs which are required to buy and process the birds from independents. Nonetheless, it does not appear as if there have been cases reported in this regard.

There have also been cases of collusive conduct penalised across the animal feed to poultry value chain between 2010 and 2016 (Table 16).[35] In 2013 Astral, through its subsidiary County Fair, admitted to entering into an agreement with a competitor (Pioneer through its division known as Tydstroom Poultry) to fix the prices of fresh poultry in the Western Cape for a period between 2003 and 2007. Astral was subsequently charged an administrative penalty of over R16 million. There were also several cases in grain storage, which will be discussed in section 5 below.

Table 16: Cartels in the Animal to Poultry Value Chain (2010 – 2016[36])

Cartel	Firms involved	Date	Case No.	Penalty
Animal feed	Wes Enterprises, MGK Operating Company	2013	017517/017509	R 34355.43
Poultry	Astral Operations, Tydstroom	2013	015891	R 16 732 894.47
Poultry	Astral Operations, Country Bird	2013	No.74/CR/JUN08	No penalty

Source: Competition Tribunal

The Commission has also investigated a case of market allocation, exclusive supply agreements and information exchange against all members of the South African Poultry Association (SAPA) under a single case (no. 2009Apr4389). The Commission's investigation focused on the largest players which are all integrated up to the feed level, namely Rainbow Chickens, Astral, Pioneer and CBH. The allegations included market allocation by Pioneer and Rainbow; exclusive supply agreements involving all broiler producers; tying allegations against certain breeding stock suppliers; and information exchange against all the companies. However, following undertakings by the respondents, the Commission took a decision not to refer the exclusive supply agreement as well as information exchange allegations. Thus, the Commission did not prosecute Astral for the above-mentioned conducts.

[35] This only shows cases that were successfully penalized. There several other cases that were not referred and penalized by the Competition Tribunal.
[36] There is no record of other cartels penalized beyond 2013

At the feed level, the Commission uncovered collusive conduct and penalised two companies - Wes Enterprises and MGK Operating Company – for fixing the prices of animal feed. The Commission's investigation revealed that Wes Enterprises entered into an agreement with MGK's retail division to supply MGK with its products which MGK would then sell in its retail stores to farmers countrywide. Wes also issued its distributors with the price list that indicated the price at which distributors can obtain the products from Wes as well as the suggested prices to farmers.

A post-intervention assessment of the competition concerns highlighted above indicates some positive results. The Astral/CBH ruling has led to the introduction of a new breed in the South African poultry value chain, effectively increasing rivalry in the supply of breeding stock. This saw increase in production volumes accompanied by the decline in margins of major producers from around the time restrictions on CBH ended in 2007 (Ncube et al, 2016). Further, following the unearthing of the animal feed cartel, there is clear decline in feed prices from late 2013/early 2014 (Figure 14 above). On the other hand, the conditions imposed on some of the mergers have mainly aimed at addressing public interest concerns only, particularly the potential loss of employment. While these have helped in safeguarding jobs that would have otherwise been lost as a result of the mergers, they trend towards increasing concentration and vertical integration remains a concern.

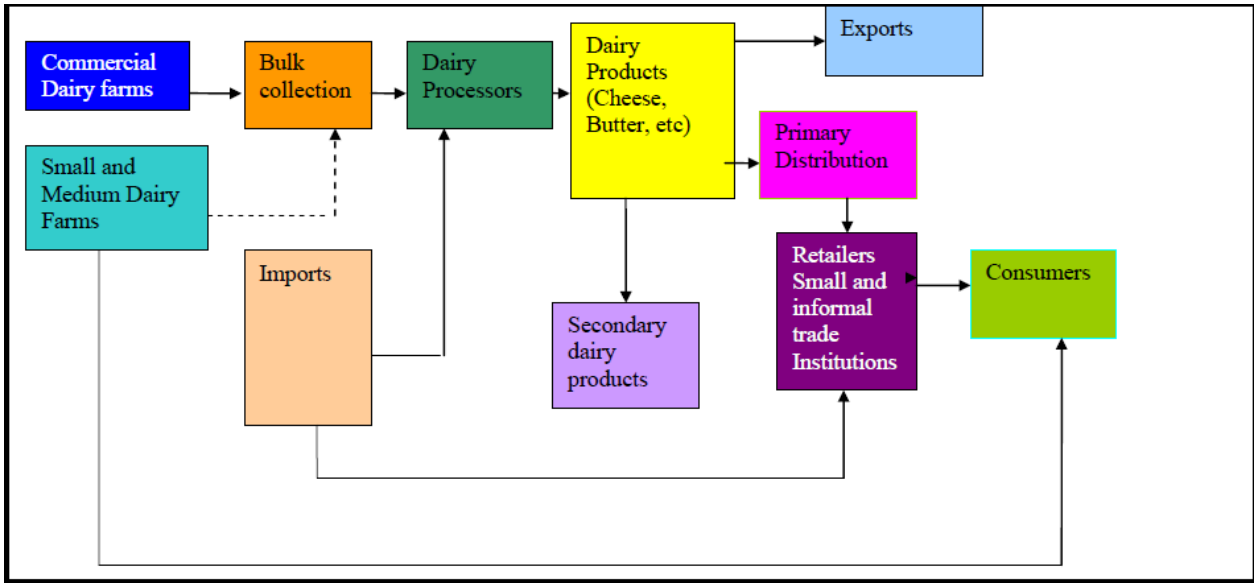
However, in the Astral/Corpclo merger, the Commission did find the potential for the merged entity to foreclose rivals in the supply of day old chicks and animal feed. The undertakings by the merging parties to ensure transparent prices and the agreement that discounts and incentives would not be designed so as to compel Corpclo to source feed and day-old chicks from Astral to the exclusion of competitors, have helped to alleviate the foreclosure concerns.

7. Dairy Value Chain

7.1. A mapping of the key players and ownership structure

The dairy value chain (Figure 17) involves a number of activities including the production and marketing of raw milk, pasteurized milk and cream, fermented milk, long-life milk and cream, yoghurt, cheese and its by-product whey, milk powder, sweetened and unsweetened concentrated milk, butter and butter oil (ghee).

Figure 17: Dairy industry marketing channels



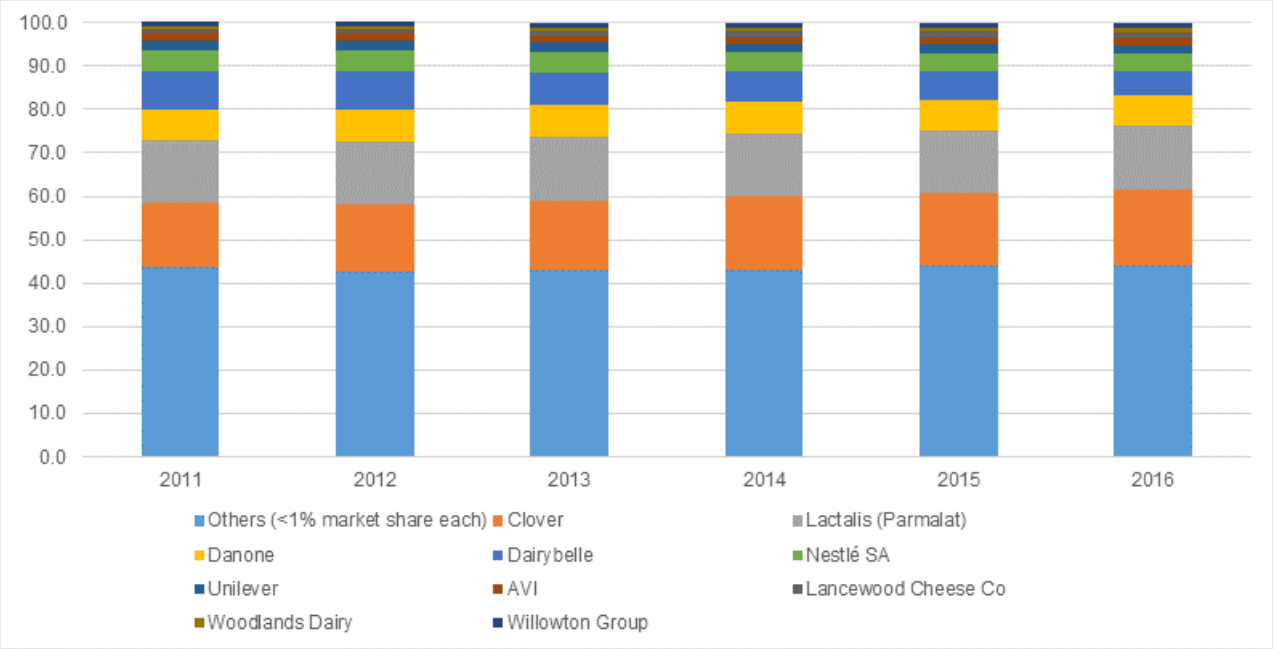
Source: Department of Agriculture Forestry and Fisheries (2012a)

There are two main sources of raw milk for processing: commercial dairy farms and small and medium dairy farms. Milk from commercial dairy farms usually goes straight into bulk collection for dairy processors who then produce dairy products such as cheese, butter and yoghurt. The products are then either exported or channelled into primary distribution which goes to retailers and smaller in formal trade institutions which then goes to consumers. Small and medium dairy farms either supply consumers (producer-distributors) or contribute to the bulk collection of milk (Midgley, 2016). Dairy processors can also import raw milk to use in their production processes.

The dairy sector in South Africa consists of a number of large players. Figure 18 below contains the market shares of different companies in the dairy sector based on retail value. In 2016, the firms with the highest market shares in terms of retail value were Clover (17.5%), Lactalis the maker of popular Parmalat brand (14.6%) and Dairybelle[37] with 5.4%. What stands out about the sector is the presence of multinational company with operations in a number of countries within and outside Africa at various levels of the value chain including in the packaging and transport logistics of dairy products.

[37] DairyBelle was liquidated in May 2017, See: http://www.iol.co.za/capetimes/news/dairybelles-assets-to-be-auctioned-off-9456293

Figure 18: Company market shares of dairy products based on retail value, 2011 -2016



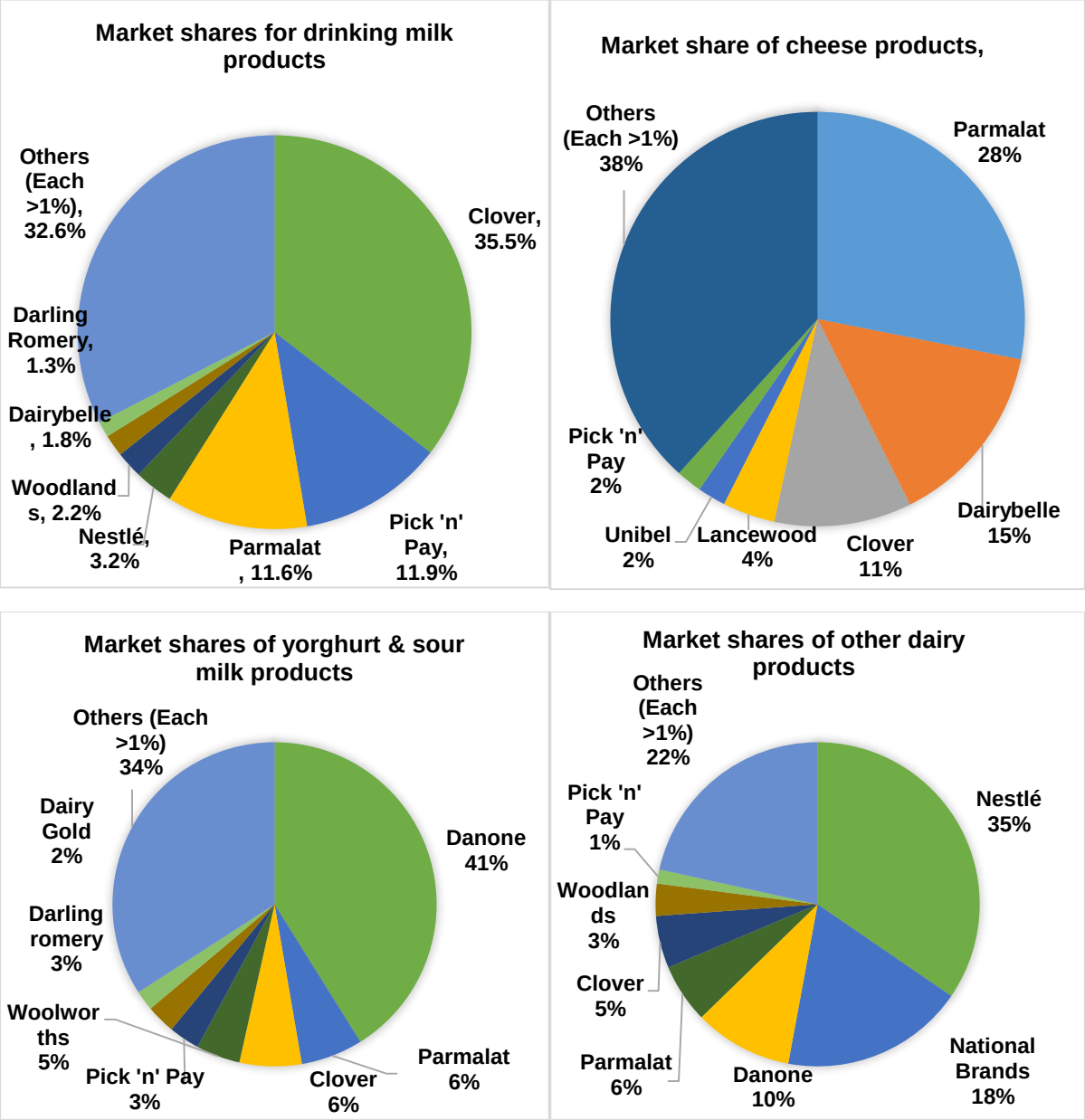
Source: Euromonitor (2017)

An analysis of market shares at an aggregate dairy product level gives the appearance of a very competitive sector with several players. However, an analysis by type of dairy products provides a different picture with one or two companies having significant market shares. Euromonitor (2017) provides markets shares by different type of dairy products: Cheese; drinking milk products; yogurt and sour milk products and other products.

For drinking milk products, Clover has the highest market share in terms of retail value with 35.5%, more than twice the market share of its next competitor. Pick 'n' Pay and Parmalat follows with 11.9% and 11.6% respectively (Figure 19). Together these three companies hold 59% of the market share. In terms of cheese products, Parmalat has the highest market share of 28%. Dairybelle and Clover follow with market shares of 15% and 11% respectively. These three again hold a combined market share of 54% of the market. However, the market shares held by the incumbents may be underestimated because they most likely produce the house brand milk products sold by Pick n Pay and other retail supermarkets.

For yoghurt and sour milk products, Danone is the dominant player, holding 41% of the market share, several times the market share of its closest competitors Parmalat and Clover each with 6% market share. For other milk products including chilled desserts and coffee whiteners, Nestlé leads with a 35% market share followed by National Brands with 18% and Danone with 10%. Clover continues to lead drinking milk products and accounted for 36% value share in 2016, a share three times that of its closest competitor. Clover, Parmalat, Danone and Dairybelle make repeated appearances in terms of high market share of the different types of products.

Figure 19: Market shares of various dairy products, 2016



Source: Euromonitor (2017)

Note: Drinking milk products include flavoured milk drinks, milk, powder milk and milk alternative while other dairy products include Chilled and shelf desserts, chilled snacks, coffee whiteners, condensed milk, cream and fromage frais and quark.

Clover SA (Pty) was established in1994 but originated from a butter factory formed as early as 1898 in KwaZulu-Natal Midlands (Ncube *et al.*, 2016). The company produces a number of dairy products including milk, cheese, cream, condensed milk, flavoured milk drinks, juice and bottled water (Euromonitor, 2017). In 1998, Clover and Danone formed the joint-venture Danone Clover (Pty) Ltd in which Clover supplied Danone with a number of service the production of yoghurt and other sour milk products. The joint venture came to an end in 2010 when Danone Clover became Danone Southern Africa (Pty Ltd taking over the Danone brand in yoghurt and sour milk drinks (Euromonitor, 2017). Clover maintained an agreement with Danone in which Clover would continue to produce Danone's yoghurt products which expired

in December 2014. In 2003 the company listed on the Johannesburg Stock Exchange (JSE). Clover diversified its product offering by acquiring Real Juice Co Holdings (Pty) Ltd from AVI Ltd in 2012 and acquiring the yoghurt and long-life/UHT milk business of Dairybelle in 2014 for ZAR 200 million (Clover, 2014). Clover also provides distribution and logistics services which incidentally contributes 50% of the company's revenue despite making up about 30% of Clover's operations (Ncube *et al.*, 2016).

Parmalat began operations in South Africa in 1998 and is a subsidiary of Lactalis, a French dairy company, the largest in the world by turnover (Ncube *et al.*, 2016). Some of its products include Parmalat Everfresh UHT milk, Steri Stumpie flavoured drinking milk, milk powder, cheeses under the brand names Simonsberg, Melrose and Bonnita brands, Bonnita-branded butter, yoghurt. maas, and custard, and Aylesbury ice cream. It also produces a range of fruit juices under the PureJoy brand. Parmalat operates a UHT milk processing plant and UHT warehouse in Parow (Western Cape) and in Port Elizabeth (Eastern Cape). Its annual milk demand amounts to approximately 400 million litres (Ncube *et al.*, 2016).

Nestlé South Africa was first established in South Arica in 1866 although it was only formally registered in 1916. It has eight manufacturing facilities and three distribution centres across the country. Nestlé's dairy segment comprises concentrated dairy products such as KLIM, Nespray and Nido instant milk powder, evaporated milk, and condensed milk. It also produces dairy-based powdered beverages such as Milo, Nesquik and Nestlé Hot Chocolate. Nestlé does not produce fresh or UHT milk in South Africa. Nestlé procures its own raw milk, but outsources the conversion of raw milk into milk powder to other processors including Clover and Parmalat. They pay a conversion cost to these processors and use the milk powder in the production of their dairy-based beverages (Ncube *et al.*, 2016).

Danone entered the South African market when it created a joint venture with Clover SA.[38] In 2010, Danone acquired 100% of the joint-venture creating Danone Southern Africa which also operates in Botswana, Namibia, Angola, Lesotho, Swaziland and Mozambique. The company specializes in the production of fresh dairy products and desserts. Some of its brands include Nutriday, Ultra Mel, Yogi Sip, Inkomazi and Activia. The company has two manufacturing facilities based in Gauteng which makes use of 5% of all milk produced in South Africa.

Woodlands Dairy first began operations in 1995 when it packaged milk from the Woodlands Farm. They now manufacture a range of concentrated dairy products including cheese, butter, cream, amazi, flavoured milk, and extended shelf-life fresh milk in addition to packaging private label UHT milk for Spar and Woolworths (Ncube *et al.*, 2016).[39] It is based in Humansdorp in the Eastern Cape. Its majority-shareholder, with a 75% stake in the company, is Gutsche Family Investments (GFI). The remaining 25% of Woodlands Dairy is held by African Pioneer Limited and Nozala Investments (Pty) Ltd.

7.2. Regulatory framework

The South African dairy industry is regulated primarily by the Department of Agriculture, Forestry and Fisheries (DAFF) although certain regulation pertaining to the dairy industry is regulated by other government departments including the Department of Trade and Industry

[38] Danone website.
[39] Woodlands Dairy website. Available at http://www.woodlandsdairy.co.za/

(DTI) and Department of Health (DOH). Some of the main legislation governing the sector include the following (Dairy Standard Agency, 2016):

- Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) – governing most the health-related aspects in the industry
- The Animal Diseases Act, 1984, Act 35 of 1984
- Export: Veterinary procedural Notice 20/2010-01 Standards for the registration of a veterinary approved dairy establishment for export.
- Agricultural Product Standard Act, 1990, Act 119 of 1990
- South African Bureau of Standards compulsory and non-compulsory standards relating to Food safety and Quality
- International Standards Organisation requirements and guidelines
- Codex standards relating to production of various products and processes along the value chain

Other than the above legislation, there are also guidelines for the operation of the sector. These include[40]:

- Code of Practice for Milk Producers
- Code of Practice for the Secondary Industry
- Documentation Development
- Guidelines for the interpretation of quality problems in milk
- Guide to Dairy Product Labelling
- International Dairy Federation/Food Agriculture Organisation (IDF/FAO) Guideline Documentation on: Animal Production and Health; Guide to Good Farming Practice 2004

New dairy regulation R260 was introduced by the Department of Agriculture, Forestry and Fisheries and implemented in March 2016. The regulation requires firms to indicate ingredients lists, batch codes and best by/use by/sell by dates on packaging. It further added restrictions with fat content categorization (Euromonitor, 2017). Products with 4.5% fat are considered high fat products, 3.3-4.5% fat as full fat, 1.5%-3.3% as medium fat, 1.5-3.3% fat as low fat and products containing 0.5-1.5% fat as fat-free (Euromonitor, 2017). These appear not to be prohibitive. While strict, it just requires companies to change their labelling. Few companies changed their recipes to fit the new categories.

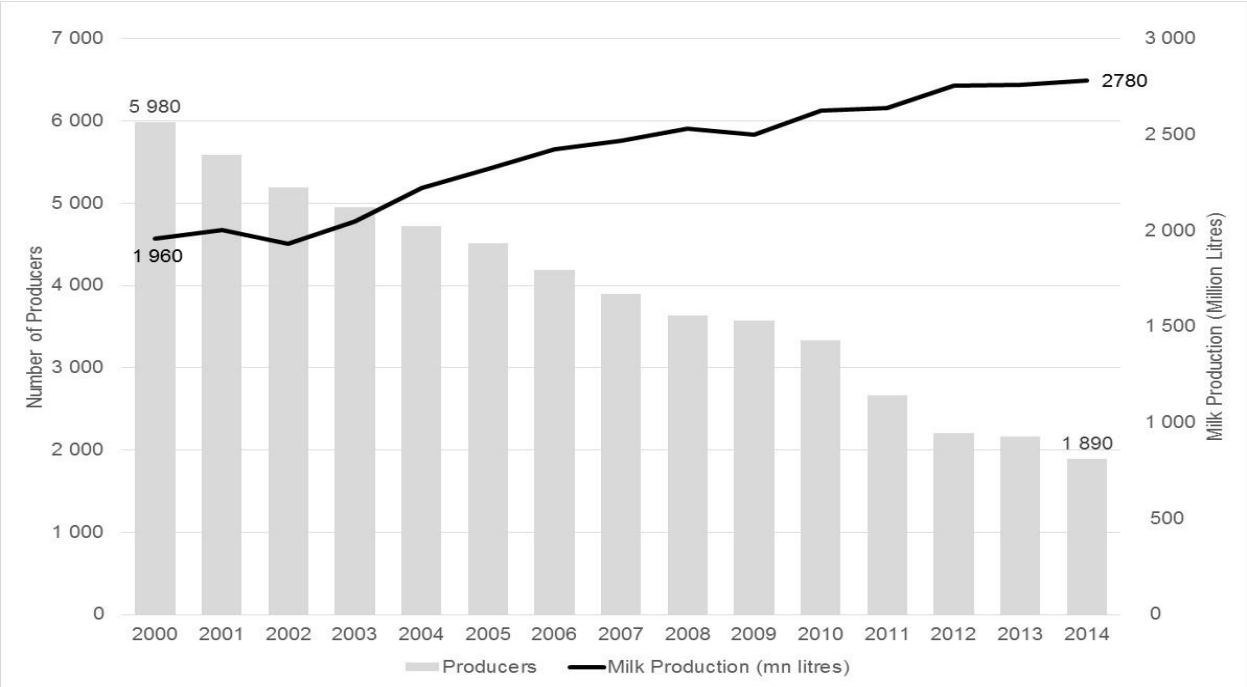
7.3. Performance of the South African dairy sector

7.3.1. Production and trade in the dairy sector

As of 2014, whole fresh cow milk was the third largest agricultural product in terms of tonnage and fifth highest in terms of value (Midgley, 2016). Milk production has grown consistently over the years with an average annual growth rate of just over 2% from 1960 million litres in 2000 to 2780 litres in 2014 (Figure 20). The number of producers has by contrast dropped, from 5980 in 2000 to 1890 in 2014, pointing towards a trend of fewer farms with larger herds and production capacity.

[40] Dairy Standard Agency website.

Figure 20: Milk Production in South Africa (2000 - 2014)



Source: Milk Producers' Organisation

The emergence of these large commercial farms also points towards the growing consolidation and concentration of the sector discussed further in section 7.4. The large farms producing more than 5000 litres of milk per day currently supply about 80% of the total milk production in South Africa (Ncube *et al.*, 2016). The economies of scale characterised by such large production can raise the barriers to entry for smaller entrants into the sector.

7.3.2. Prices in the Dairy sector

Average prices for dairy products have been consistently increasing between 2011 and 2016 for different dairy products particularly for fresh and long-life milk (Table 17). Prices for Fresh milk rose by 9% and 10% on average for full cream and low fat milk respectively for the period under review.

Table 17: Average Domestic Prices for Dairy Products, 2011 - 2016

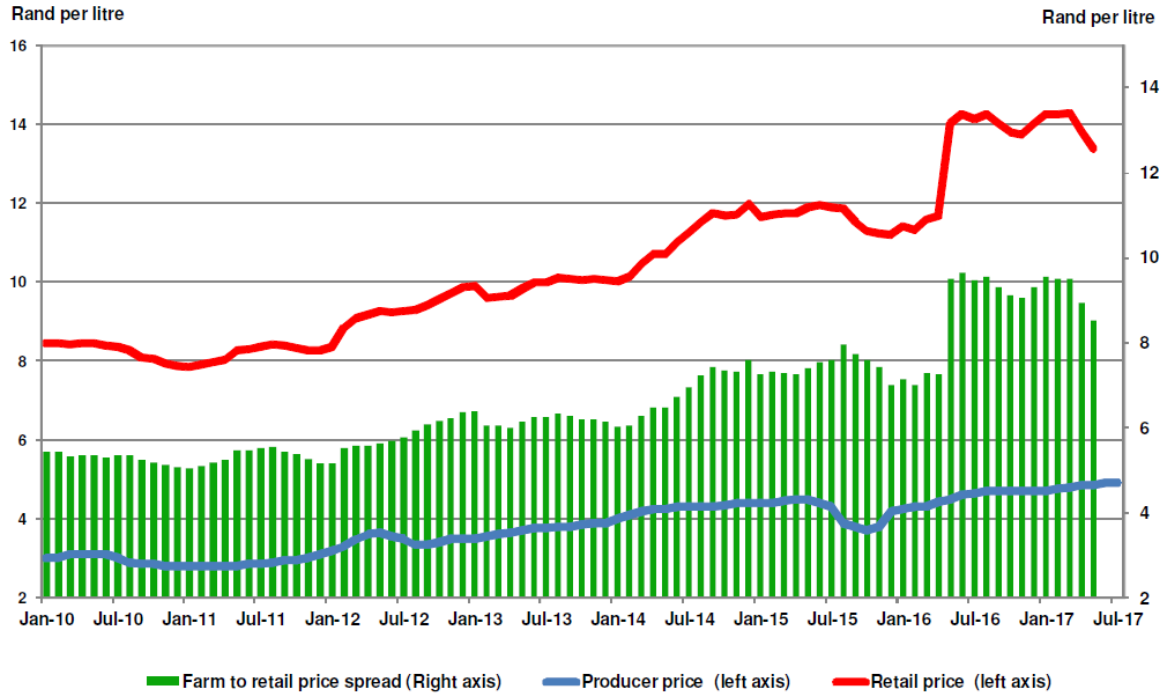
Product	Unit	2011	2012	2013	2014	2015	2016	CAGR
Fresh Full Cream Milk	1 Litre	8.53	9.38	10.09	11.35	12.13	12.96	9%
Long Life Full Cream Milk	1 Litre	9.55	10.22	10.87	11.98	12.77	13.43	7%
Fresh Low Fat Milk	1 Litre	8.74	9.79	10.78	12.48	13.38	14.36	10%
Long Life Low Fat Milk	1 Litre	9.61	10.41	11.00	12.06	12.68	13.30	7%
Plain Yoghurt	500 Gram	12.81	13.58	14.08	14.84	15.54	15.80	4%
Flavoured Yoghurt	500 Gram	12.40	11.94	13.88	14.59	15.38	16.08	5%
Cheddar Cheese	Per Kilogram	87.37	94.32	103.49	111.87	119.52	98.75	2%
Sour Milk	1 Litre	10.91	12.00	12.72	13.26	13.76	15.26	7%

Custard	1 Litre	21.44	22.07	22.71	23.93	24.67	25.55	4%

Source: Stats SA (Statistics South Africa). (n.d)

The difference between retail and producer prices (farm to retail price spread) displayed in Figure 21 below rose from R5.44 per litre in January 2010 to R8.95 in July 2017. In 2015, retail prices dropped following a fall in producer prices in previous months. This was likely due to the drought that affected milk produced. Retail prices in 2016 rose significantly and disproportionately from the growth in producer prices.

Figure 21: Monthly milk producer and retail prices, 2010 - 2016[41]



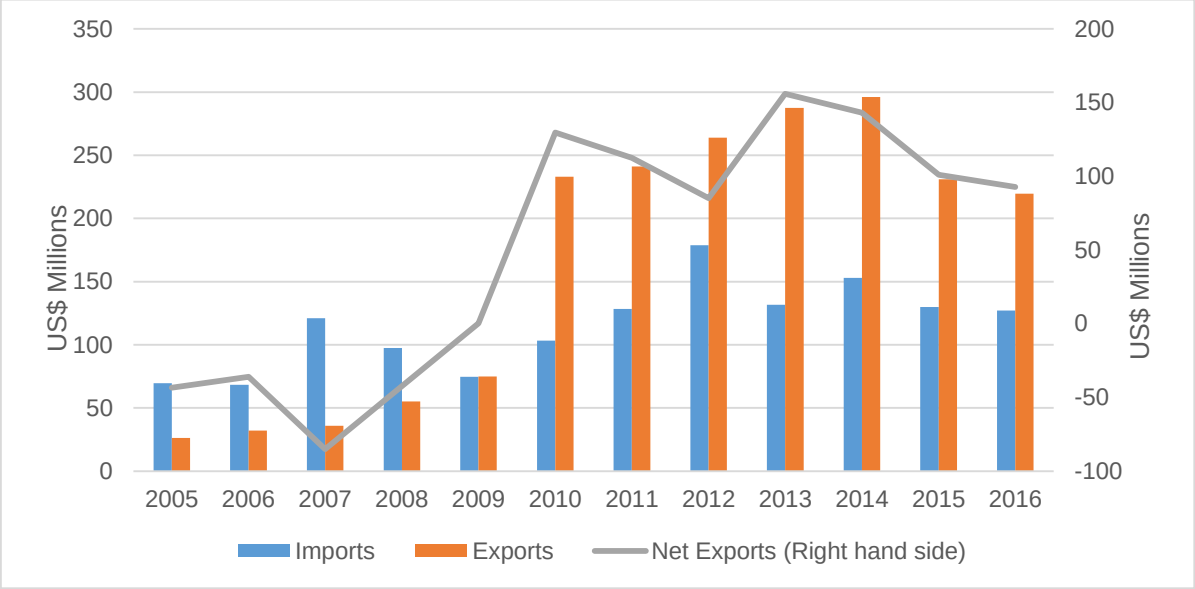
Source: (MPO, 2017)

7.3.3. Imports and exports

In terms of trade data, exports have grown with a CAGR of 21% while the CAGR for imports was 6%. Exports experienced particularly strong growth in 2010. This dropped in 2015. Between 2009 and 2012, imports were experiencing consistent growth but the value of imports began to drop in 2013 (Figure 22).

[41] The retail prices reflected in the figure are of fresh milk per litre for milk packaged in 2-litre plastic containers and are compared to producer prices.

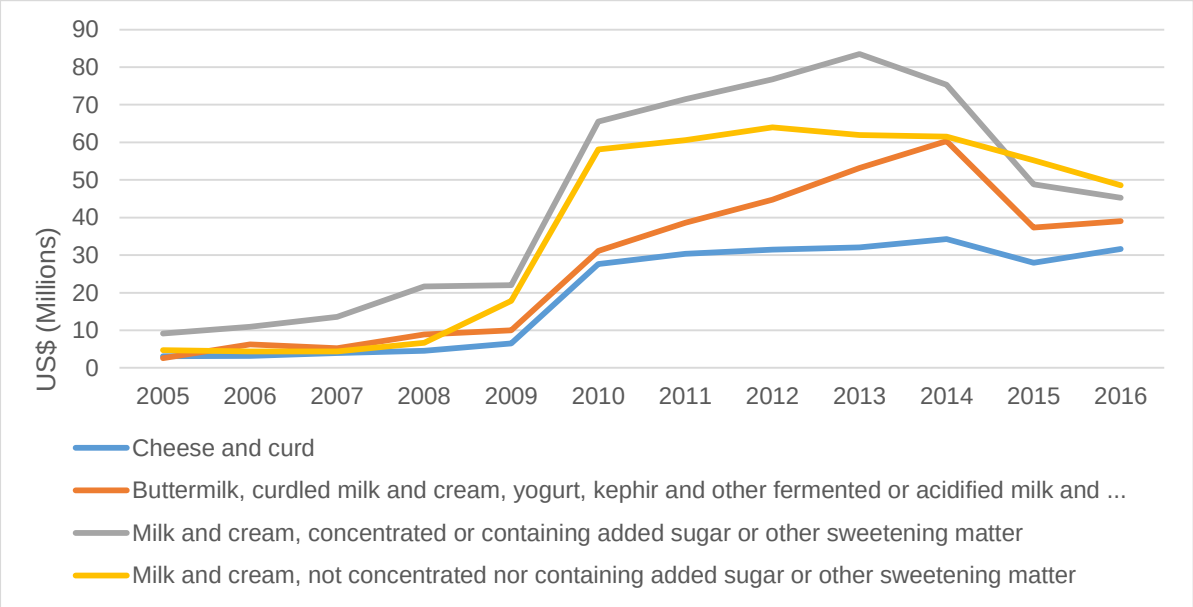
Figure 22: Total South African Imports and Exports of Dairy products, 2006 - 2016



Source: UN Comtrade data. Note: net exports are on the RHS axis

From 2010 onwards, exports of dairy products have been significantly higher than imports in to the region. A large proportion of these exports have been to the SADC region (Figure 23). In 2009, while there is a large spike in exports of the main categories of dairy products, as previously noted, this spike is exacerbated by SACU exports now being included in SA's export data figures. There is growth of exports into the SADC region nonetheless, and this is likely due to the growing trend of expansion of South African retail chains into southern Africa (das Nair and Chisoro, 2016).

Figure 23: Dairy Exports form SA to SADC (2005 – 2016)



Source: UN Comtrade data

7.4. Trends in concentration and outcomes of key competition cases

7.4.1. Overview of competition interventions

At the lower levels of the value chain, there has been considerable consolidation. At the primary level, as of January 2016, there were 1683 milk producers, a decline of 54% from 3665 in January 2008 (Milk Producers' Organisation, 2016). The reduction in the number of milk producers, however did not result in a similar decline in milk production but rather coincided with increased productivity by large scale farmers (Figure 20). At the secondary level, the number of producer-distributors dropped from 178 in September 2008 to 115 in April 2016 while the number of milk buyers dropped from 163 to 150 during the same period (Milk Producers' Organisation, 2016). While there are about 150 milk buyers in the country, the four largest milk buyers (which are also the main processors, (Clover, Nestlé, Parmalat, and Woodlands) purchase more than 50% of the total milk production (Ncube *et al.*, 2016).

The continued concentration in the sector particularly amongst the milk buyers has resulted in the substantial bargaining power being held by a small number of buyers. It is perhaps in response to this that the South African Milk Co-operative (Samilco) made up of dairy farmers applied for an exemption from the Competition Commission in August 2013 to enable their members to participate in collective price negotiations with milk processors. The exemption was to allow for the possible sharing of sensitive information during the collective negotiations.[42] The exemption was amended in October 2014 to include an "equalization mechanism". Under the equalization mechanism, a farmer who produced milk in excess of the amount required in a stipulated contract would re-distribute the milk to farmers who had been unable to meet their contract volumes enabling them to satisfy their contracts. Before this mechanism was implemented, the farmer who produced excess milk would generally sell it to the processors at lower prices than the contract price. In this way, the farmers could meet their volumes at the higher contract prices. The exemption highlights the existence of the asymmetric bargaining power in the industry and is also reflected in the complaint the MPO brought against the major retail chains in 2009, alleging that the supermarkets used their bargaining power to suppress prices at the farm.[43]

Concentrated sectors such as this one are often characterized by concerns of collusive and anti-competitive conduct. At least four cases have been brought against the dairy industry since the early 2000s and include most of the main players identified above.

In 2006, the Competition Commission of South Africa brought four main charges against Clover South Africa, Parmalat, Ladismith Cheese, Woodlands Dairy, Nestlé, Lancewood and Milkwood Dairy for collusive conduct, the price fixing and the use of exclusive supply agreements between 1 January 2002 and 30 March 2006. The charges concerned the following:

- The information exchange between the processors which allowed them to agree on the purchase price of raw milk.
- Milk supply and exchange agreements between Clover, Parmalat, Woodlands and Nestlé in which they agreed to sell their surplus milk to one another, rather than to sell it to end users at lower prices which kept retail prices high.

[42] The initial exemption application was published in the Government Gazette, No. 36760. http://www.gov.za/sites/www.gov.za/files/36760_gen856.pdf
[43] https://mg.co.za/article/2009-07-04-supermarket-chains-investigated

- Exclusive agreements between Clover and Parmalat and milk producers in which the producers were compelled to supply their total milk production exclusively to Clover and Parmalat and not to rivals. This prevented the producers from accessing more competitive prices from third parties or for smaller processors to access milk supplies.
- Price-fixing of UHT milk by Clover and Woodlands, and by Woodlands and Milkwood. Woodlands and Milkwood were also alleged to have engaged in market division

The case, however, was dismissed in 2011 on procedural grounds. There were apparent irregularities in the way in which the Competition Commission had initiated and investigated the case. The Commission withdrew the case in late 2011.

A more recent competition case has involved an investigation into alleged abuse of dominance by Parmalat. The case was initiated in November 2014 and concerns a bonus scheme Parmalat implement with the aim to reward milk producers in the Eastern and Western Cape for continuous uninterrupted 12 months' supply of milk to Parmalat. In August 2016 however, the Commission decided to drop the complaint against Parmalat finding that there was insufficient evidence to illustrate that competition between milk processors had been substantially lessened as a result of Parmalat's bonus scheme (Competition Commission South Africa, 2016).

7.4.2. Recent cases (2011- 2016)

At least six mergers took place in the sector for the period under review, the majority of which involved Clover, the largest dairy processor in South Africa (Table 18). The mergers involved Clover's attempt to expand into new or niche markets: In all four cases, Clover is expanding into new or niche markets; an expansion into juice in June 2012, into yogurt distribution in November 2014, and an expansion into Ayrshire milk production in December 2014 via the acquisition of Nkunzi Milkway. Acquisition of businesses in adjacent or niche segments appears to be the main means by which firms can obtain access to new and niche markets cost effectively (Ncube *et al.*, 2016).

Table 18: Mergers and Acquisitions in the Dairy Sector (2011 - 2016)

Year	Primary Acquiring Firm	Primary Target Firm	Size	Status	Conditions
2012	Clover SA (Pty) Ltd	Real Juice Co. Holdings (Pty) Ltd	I	Approved conditionally	Extension of agreements with independent distributors
2014	Clover S.A. (Pty) Ltd	Dairybelle's Yoghurt/UHT Milk Businesses	L	Approved conditionally	Continue to provide Danone with secondary distribution services until June 2015 No retrenchments should result from this merger. Clover to create an employee grant of R30 000 to fund business opportunities in the

					event of retrenchments.
2014	Clover S.A. (Pty) Ltd	Nkunzi Milkyway (Pty) Ltd	I	Approved conditionally	Clover will invest in production capacity and facility upgrades
2016	Bongicel Proprietary Ltd	Lusitania Food Products Proprietary Ltd	L	Approved	
2016	Nestle S.A. (Nestle)	P&R Ice Cream Public Ltd Co.	L	Approved	

Source: Competition Commission website.

The Competition Commission's efforts to address competition concerns are illustrated clearly in the merger between Clover and Dairybelle. Clover issued a notice to terminate its provision of secondary distribution services of Danone yoghurt products.[44] Prior to the merger, Clover was not in the yoghurt business, the issuance of the termination notice could be considered anti-competitive as Clover, now a rival would refuse Danone access to essential distribution services. The CCSA's condition in this regard ensured that Clover continued to provide this essential service.

The other conditions related to the above mergers appear to mostly concern public interest issues such as employment. In the Clover/Real Juice merger, the condition related to the continued use of independent suppliers particularly with regards to distribution of its juice products rather than Clover's use of its own distribution network, largely to maintain employment. Similarly the condition in the Clover/Nkunzi case relating to improved production capacity was a commitment that Clover would not shift production from Nkunzi's Silverton facility in Pretoria to its Clayville facility in Johannesburg thereby resulting in retrenchments (Hancock, 2015). Nkunzi was one of only six suppliers of Ayrshire milk, a niche product with only one buyer in Woolworths SA.

7.4.3. Barriers to entry

One of the major barriers to entry in the industry is the significance of logistics in the sector. In addition to producing milk, entrants must be able to transport highly perishable raw milk to the processing plant. This is costly especially because raw milk is low in value relative to the volume. Furthermore, daily output of milk is uncertain and fluctuates daily, as a result, tanker routes must be planned daily in order to ensure that the largest volume of milk is collected over the shortest possible distance to enable efficiency. The fact that there is no return load further increases the price. This challenge exists further down the value chain during transport of finished products from the processor to distribution centres and to stores. Managing this logistics process efficiently is often a significant challenge for entrants.

Another important part of the value chain is packaging and labelling of the processed products. Packaging costs represent approximately 17% of the cost of finished products. The packaging used for fresh and UHT milk is either imported or priced at import parity prices which contribute to the significant costs. Due to the absence of supply of this product and high levels of

[44] Competition Commission Media Release 16 October 2014. Available here: http://www.compcom.co.za/wp-content/uploads/2014/09/Commission-recommends-approval-of-the-acquisition-of-Dairybelles-businesses-by-Clover-with-conditions.pdf

concentration in the packaging market, this cost can form a significant barrier to entry for new processing firms.

The lack of capital is another barrier especially considering the costs required to take a product from its raw milk state to processing, packaging and finally distribution. While incentive programmes such as the Department of Trade and Industry's Manufacturing Competitiveness Enhancement Programme (MCEP) were available, many of the applicants complained about the lengthy and burdensome process involved in acquiring the funding. In many cases, consultants had to be hired to guide the firms through the process which further added to their costs.

Mode of entry

The main means of entry into the sector appears to be through the acquisition of smaller firms in new or niche markets as illustrated by Clover in the section below. However, dairy firms appear to be entering the processing level of the value chain through the establishment of their own milk processing plants. For instance, in 2015, the acquisition of Honeydew Dairies in KwaZulu-Natal by Dairy Day. Farmers in the Port-Elizabeth region in the Eastern Cape also established Coega Dairy in 2015.

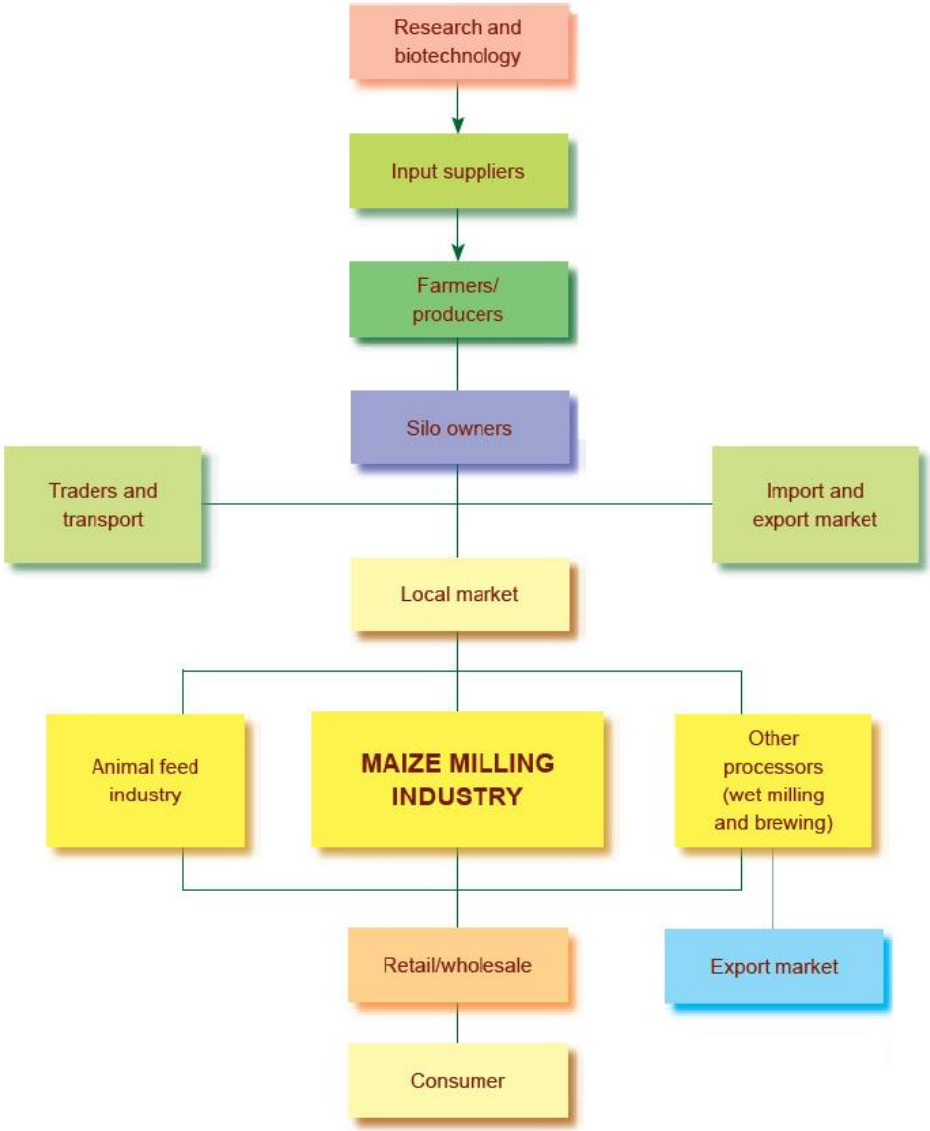
8. Milling Value Chain

8.1. A mapping of the key players and ownership structures

The maize and wheat value chains form an important part of the food processing sector as main sources of food for the economy. It is also a sector that has been characterized by cartel conduct from established incumbents after the liberalisation of the sector. Anti-competitive conduct has been present from storage and trading through processing (milling) to collusion in final product prices of bread and white maize products.

The figure below illustrates the main areas of the maize value chain (Figure 24). Farmers and producers source their seeds from input suppliers. Their harvest is then transported to silo owners of which there is a limited number due to the expense required to construct a silo. There have in fact been no new constructions of silos since before the 1990s. From the silos, the products are then transported to traders, to exporters or to the local market for sale. At the local market, the products are sold to the animal feed industry, to maize millers or to other millers such as wet milling and brewing. The products are then exported or sold to the wholesale/retail market where it is accessed by the final consumer.

Figure 24: Maize Market Value Chain



Source: Louw et al. (2010)

There are four main players in the maize meal and wheat value chains: Tiger Brands Ltd, Pioneer Foods, Foodcorp (now RCL Foods) and Premier (Ncube *et al.*, 2016).

Tiger Consumer Brands Ltd was founded in 1921 and listed on the Johannesburg Stock exchange in 1925. The company manufactures and distributes products in several FMCG products including packaged food, home and personal care products, baby care products and soft drinks (Euromonitor 2017; Ncube et al. 2016). It also has substantial market share in a number of food segments including baked goods (25.3%), Breakfast cereals (23.1%), Confectionery (23.2%).

Pioneer Foods is a result of a merger between Bokomo (a milling company formed in 1920) and Sasko (a wheat producer formed in 1929). It was listed on the Johannesburg Stock

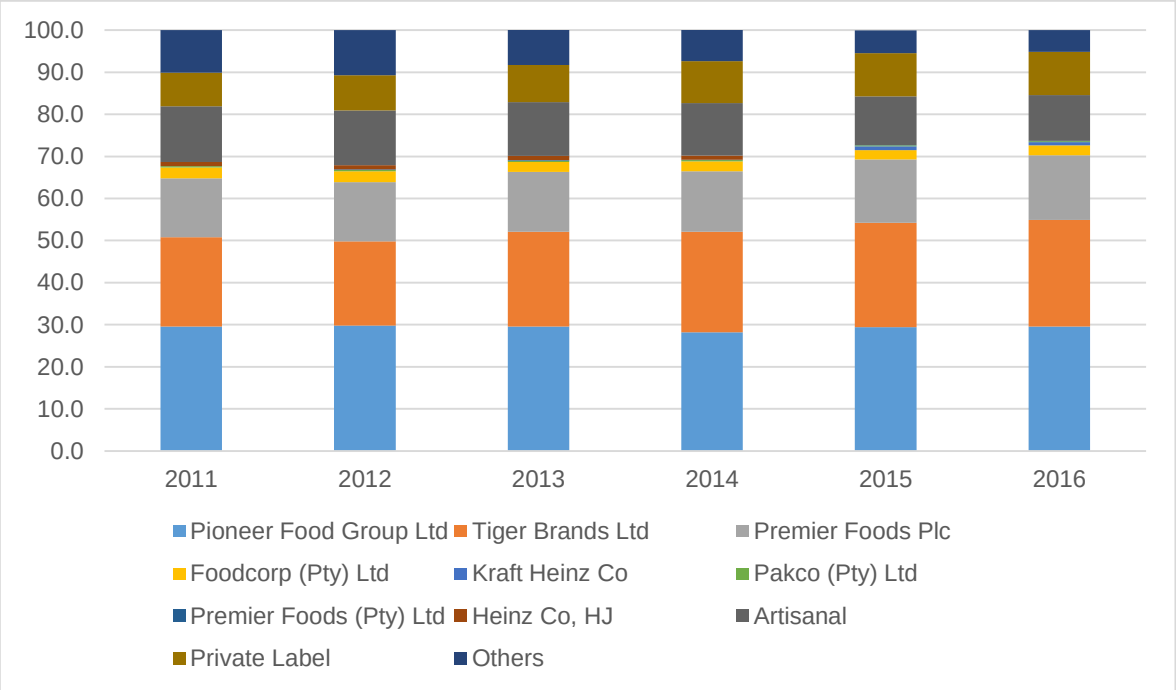
Exchange in 2008. It is one of the largest manufacturers and distributors of packaged food, non- alcoholic drinks, and related products in South Africa (Euromonitor, 2017).

RCL Foods (previously Foodcorp (Pty) Ltd) is one of the largest food producers in South Africa. It made up of four subsidiaries Foodcorp, Rainbow Chicken, TSB and Vector which involve poultry production, sugar production, milling and baking as well as a logistics division among other consumer products.[45] Its product range includes peanut butter, pet food, mayonnaise, edible oils, bread and bakery products, canned pilchards as well traditional South African products such as rusks and white maize meal (Euromonitor 2017; Ncube et al. 2016).

Premier Foods was founded in 1882 in Port Elizabeth as a fast-moving consumer goods company. It operates 16 bakeries, 5 wheat mills, 2 maize mills, a sugar confectionery plant and 24 distribution depots in South Africa, Swaziland and Lesotho. It also has a home and personal operation based in the United Kingdom.[46]

An analysis of company market shares of baked goods by retail value, Pioneer Foods and Tiger Brands have the highest shares with a 30% and 25% respectively. Company market shares have been maintained over the last six years (Figure 25).

Figure 25: Company market shares for baked goods by retail sales value, 2011 - 2016



Source: Euromonitor (2017)
Note: The baked goods category includes bread, cakes, dessert mixes, frozen baked goods and pastries

[45] RCL Foods website.
[46] Premier website.

8.2. Regulatory framework

Some of the main regulations governing the milling sector are as follows[47]:

- Consumer Protection Act – Labelling of GMO's
- Act 36 of 1947 Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies. Proposed Repeal of Regulation R2054 (% moisture on Hominy Chop).
- Act No. 119 of 1990 Agricultural Products Standards Act as amended by Act No. 129 of 1993 and Act N. 63 of 1998 – Maize Product Standards Act
- Draft wheat grading regulations (noting the removal of the Cultivar list)
- Act 47 of 1996 Marketing of Agricultural Products Act as amended by Act No. 59 of 197 and Act No. 52 of 2001.
- Act No. 54 of 1972 Foodstuffs, Cosmetics and Disinfectants - No. R 2003 Regulations relating to the Fortification of certain food stuffs.

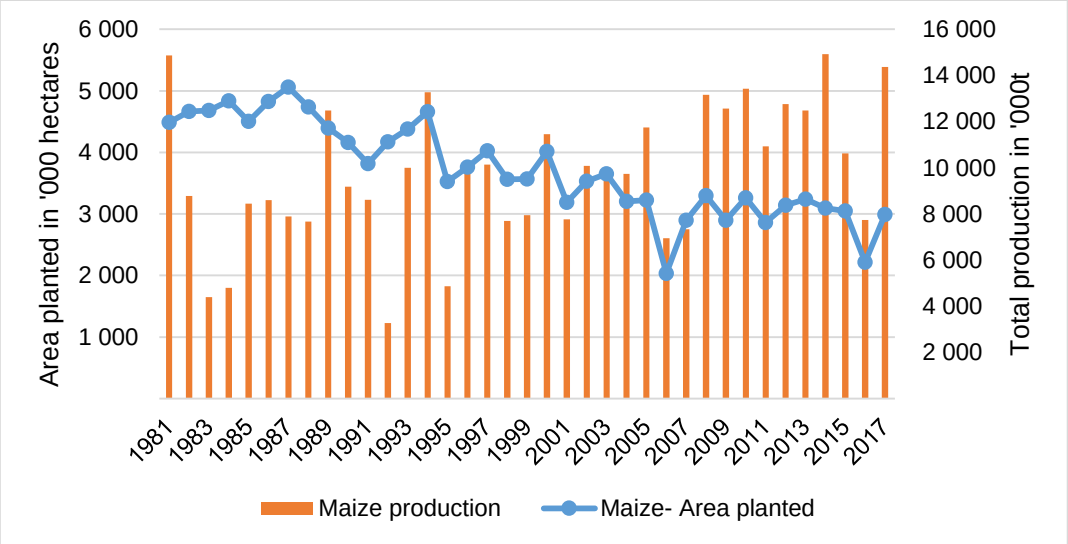
Most of the regulation has to do with correct labelling of GMO products, health fortifications grading of the milling products as well as food safety concerns.

8.3. Performance of the South African Milling sector

8.3.1. Production

Maize production has generally been growing over the last 30 years although there has been a decline in the area of land on which maize is grown (Figure 26). Between 1994 and 2017, there was a 36% decline in the size of area on which maize was planted. Part of this was due to the withdrawal of government subsidies that resulted in higher costs of production for farmers (Kirsten, Edwards and Vink, 2009). However, maize production grew by 8% during the same period, likely due to an increase in crop yields from 2.8tons/ha to 4.8tons/ha. The dip in production in 2015 was likely a result of the drought experienced in 2015.

Figure 26: Maize Production in South Africa (1981 - 2017)[48]

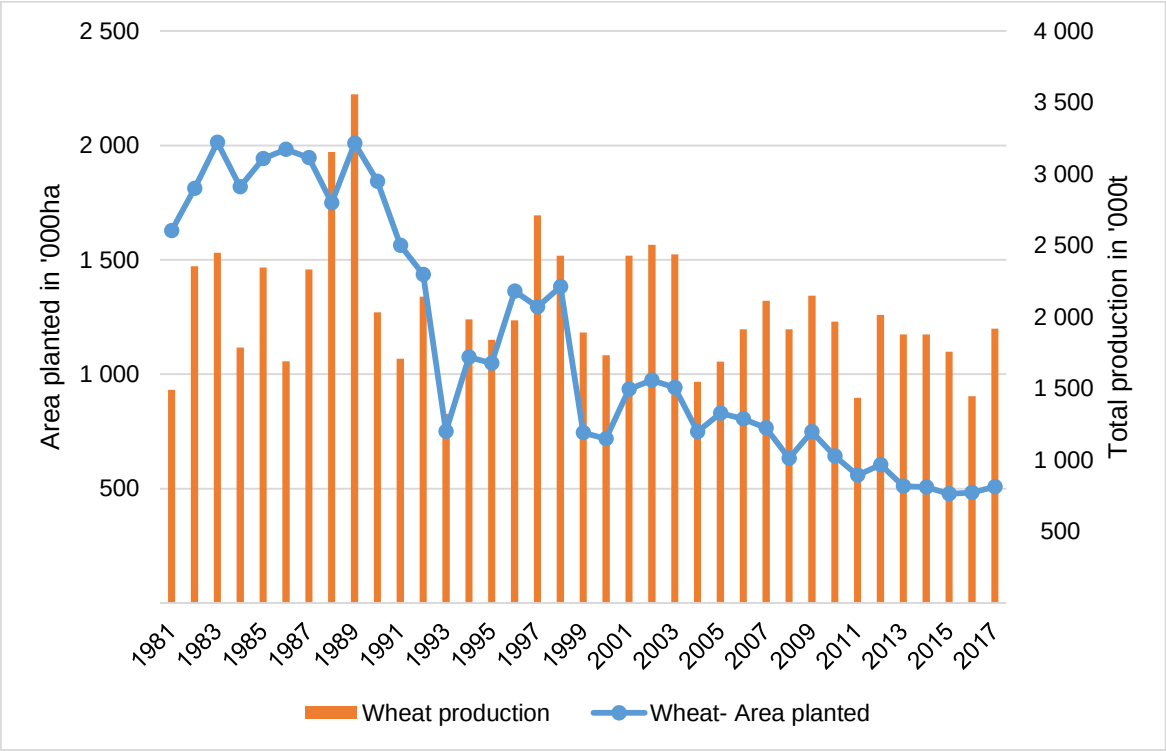


Source: Authors' illustration based on data from DAFF (Department of Agriculture, Forestry and Fisheries) (n.d.)

[47] National Chamber of Milling website.
[48] The DAFF Marketing year of May to April is used.

There appears to be some reduction in wheat production. Between 1994 and 2017, wheat production declined by 3% while wheat land use dropped by 53% (Figure 27).

Figure 27: Wheat Production in South Africa (1981 - 2017)[49]



Source: Authors' illustration based on data from DAFF (Department of Agriculture, Forestry and Fisheries) (n.d.)

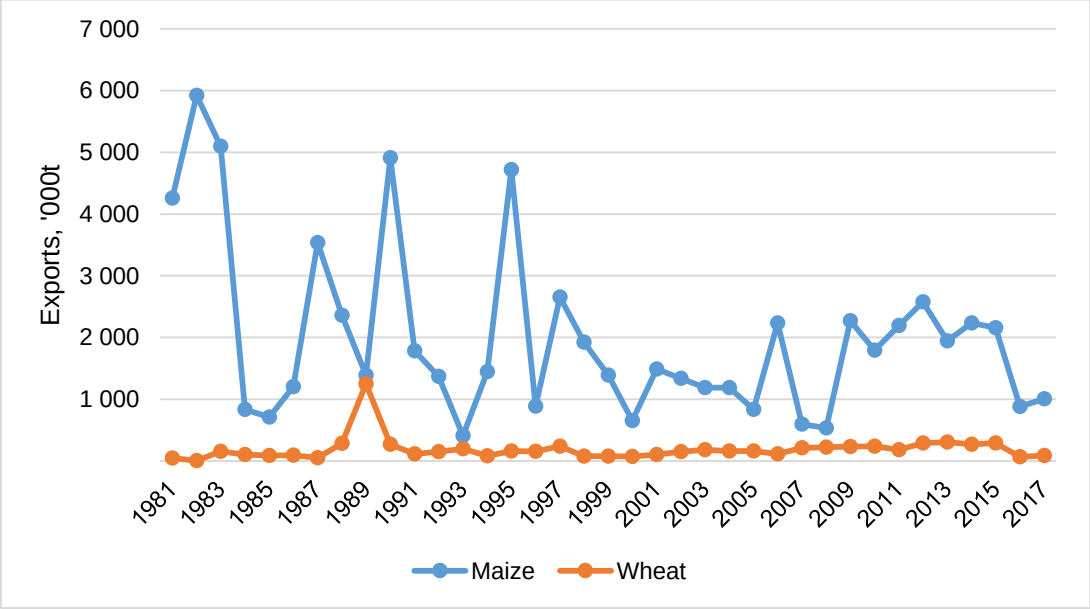
The reduction in the area planted seems to point to the emergence of a small number of large farms as was the case in the dairy sector. It supports the notion of the increasing consolidation and concentration of different agricultural value chains. Where these farms are vertically integrated with upstream and downstream activities such as the development of seeds, their production wholesale and retail trading, this can be problematic in terms of raising barriers to entry and creating dominant players.

8.3.2. Imports and exports

Volumes of export of maize have fluctuated erratically between 1981 and 2017. Wheat, however, has remained relatively stable. Low wheat exports are likely due to the low wheat production in the country (Figure 28).

[49] The DAFF Marketing year of May to April is used.

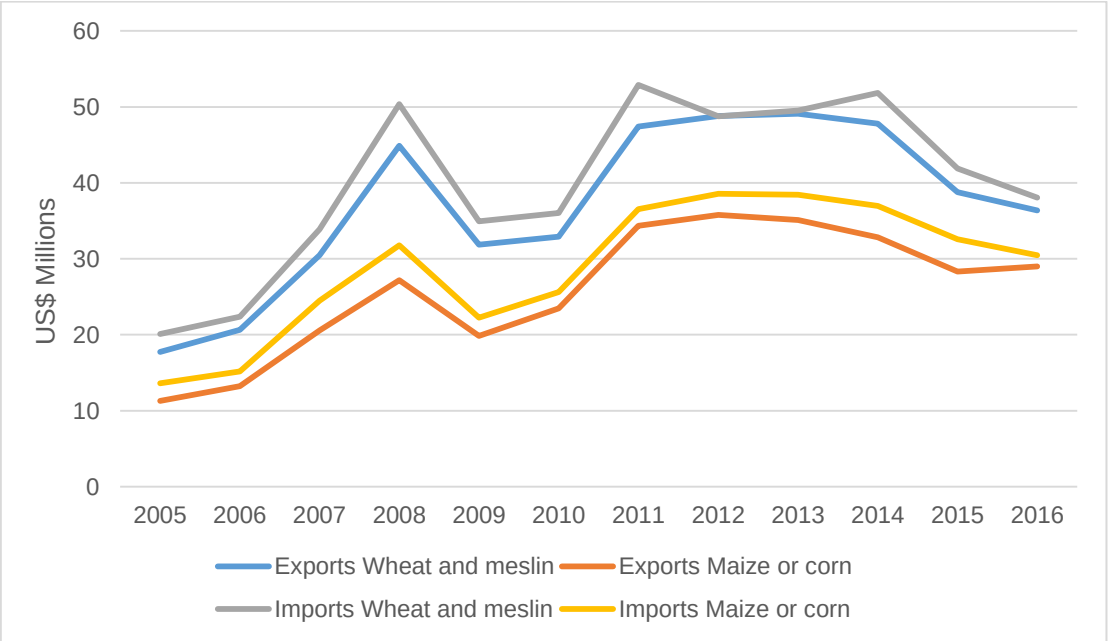
Figure 28: Volume of Maize and Wheat Exports



Source: Authors' illustration based on data from DAFF (Department of Agriculture, Forestry and Fisheries) (n.d.)

In value, wheat has the highest value in terms of imports and exports. There was a dip in trade for both wheat and maize in 2009, likely due to the financial crisis. The market recovered in 2010 before experiencing another dip in 2015 likely due to drought conditions (Figure 29).

Figure 29: Value of Exports and Imports (2005 - 2016)

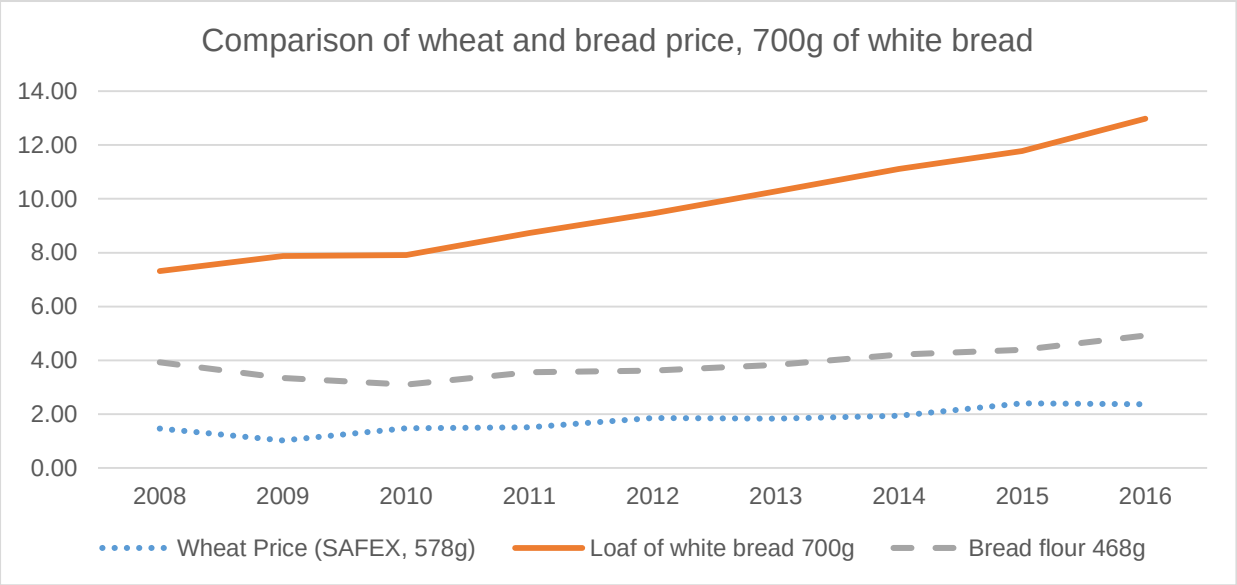


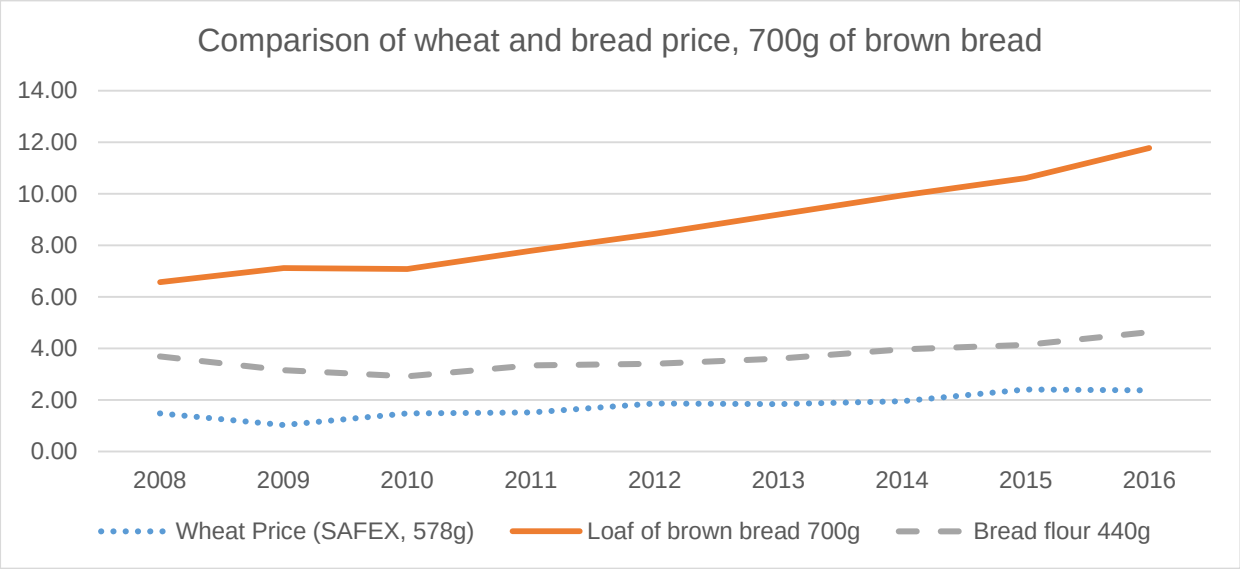
Source: UN Comtrade data

8.3.3. Prices

Retail prices for both white and brown bread prices have steadily risen between 2008 and 2016 (Figure 30).[50] This price increase has been disproportionate to the price of wheat which accounts for on average 18% of production costs of white bread and 20% for brown bread. Retail flour prices (since producer prices were unavailable as a time series), on average accounted for 41% of the price of white bread and 42% for the price of brown bread.

Figure 30: Bread and wheat prices (2008-2016)





Source: Authors' illustration based on data from NAMC (National Agricultural Marketing Council) (n.d.)

[50] The 2009 NAMC Input Cost Monitor reports that 468g of flour is required to produce 1 loaf of white bread and 439.6g of flour produces 1 loaf of brown bread. The wheat to flour conversion ratio for is 76% for white bread flour and 81% for brown bread flour (i.e. 1 ton of wheat produces 760kg of white flour and 810kg of brown flour).

Notably, the wheat price dropped between 2009 and 2010 coinciding with signing of agreements by the milling companies implicated in the bread and milling cartels (Mncube, 2014b). However, bread prices soon rose and remain high despite the limited growth of input prices perhaps reflecting the market power at the baking level of the value chain. It could also be due to the low price elasticity of demand for bread although there are a number of other costs involved that make up the retail price including marketing to build brand awareness (Ncube *et al.*, 2016). The large vertically integrated firms such as Pioneer foods are able to benefit from flour price and retail price spread as well as from their brand power making entry difficult.

8.3.4. Key investments

In terms of storage, the control boards in partnership with the state managed the storage infrastructure by determining on their establishment, location and capacity. A total of 266 silos were constructed, 220 in the northern parts of the country with a total capacity of around 15.5 million tons and 46 silos were constructed in the Western Cape with a capacity of just under 1 million tons (NAMC, 2004). The silos were operated as local monopolies and owned by farmers in their vicinity. The cooperatives were not to compete with each other.[51] Once the sector was deregulated the silos, they were transferred to newly privatized agro-conglomerates. It costs about R10m to construct a silo with a capacity of 8000 tons which has acted as a disincentive. In the last 20 years, no new silos have been constructed. The history of control and information exchanged in the sector has contributed to the collusion cases that have been investigated in the sector.

A number of new investments have been made in the sector. Some of them include:

In 2013, Oos Vrystaat Kaap Operations Limited (OVK), an agricultural cooperative located in Ladybrand (Free State), commissioned a new state-of-the-art wheat mill in 2013. The mill has a capacity of 150t per day and was built at a cost of R40 million. The facility produces white bread flour, brown bread flour, and brown bread flour mix for the “Power” and “Super Bake” brands (Booysen, 2013). Also in 2013, Afgri constructed a wheat milling plant in Harrismith in the Free State. The mill produces cake flour, bread flour, and specialised products used in the baking, pizza, and pasta industries (Ncube *et al.*, 2016).

In 2014, Lethabo Milling commissioned a new maize mill in Ventersburg with a throughput of about 3000 tons per month. The funding used to construct the new mill was from the Massmart Supplier Development Fund, one of the conditions the Competition Commission placed on the approval of the Walmart/Massmart merger. Bakhresa, a diversified Tanzanian firm involved in food products, beverages, and transport and packaging obtained a $25mn loan from the International Finance Corporation in June 2014 to refurbish the Union Mill in Durban and build a plant with a capacity to mill 750 tons of wheat per day. Another wheat mill, Westra owned by agricultural co-operative GWK due to start operating late in 2015 (Ncube *et al.*, 2016).

[51] For a description of the silo industry, see Competition Commission vs Senwes, Competition Tribunal Case
Number 110/CR/Dec06

8.4. Trends in concentration and outcomes of key competition cases

8.4.1. Overview of competition interventions

Stemming from the history of collusion in the sector, there have been a number of cartels related to the milling sector. A brief description of these cartels is provided below.

The storage cartel

There were two competition cases that the Competition Commission dealt with in relation to storage. The first involved Senwes Limited, a 106-year old entity and former cooperative with physical silo operations in the Free State, Northern Cape, North West and Gauteng. Senwes controls about 25% of the country's storage capacity and handles about 30% of the country's summer grain production.[52] Senwes also traded grain alongside commodity traders and farmers. Early in 2003, Senwes changed its storage policy in a way that raised competing traders' costs relative to Senwes' own traders and essentially made it unviable for competitors to trade grain in competition with Senwes. The Tribunal confirmed that this conduct constituted a margin squeeze in contravention of section 8 (c) of the Competition Act and that Senwes had abused its unilateral market power in grain storage to exclude competing traders. It however, did not receive a penalty as this was its first offence.

The second case involved collusion amongst private silo owners who had continued to collectively agree on dairy storage tariffs for grain within the silo industry. The sixteen silo owners implicated and the silo industry association, the then Grain Silo Industry (Pty) Ltd (now Agbiz Grain), entered into a consent agreement with the Commission in 2011, admitting to the collusive determination of silo tariffs.[53]

The maize and wheat milling cartels

In 2006, the Commission uncovered cartel conduct in the wheat and milling levels of the value chain. The cartel involved collusive agreements at the milling level and into the downstream markets for wheat flour, maize meal and bread.

The regional cartels were coordinated nationally by large vertically integrated miller that collected information through the National Chamber of mining. At the baking level, pricing, trading conditions and even maximum allowable discounts were coordinated by large vertically integrated bakers and facilitated by the Camber of baking that enable them to monitor each other's market shares, pack size by category level, customer channel at provincial level. (Kalicharan, 2010).

The bread cartel

The bread cartel, as mentioned above, was an extension of the cartel at the milling level. It involved four of the four major bread producers: Premier, Tiger Brands, Foodcorp and Pioneer. Premier Foods provided assistance to the Commission during the investigation and was granted leniency. Tiger Brands and Foodcorp entered into consent agreements in 2007 and 2009 respectively, paying administrative penalties while Pioneer initially disputed the extent of its involvement, eventually entering into a consent agreement with the Competition Commission in 2010 (Grimbeek and Lekezwa, 2013).

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[52] Senwes website. Available at http://www.senwes.co.za/

[53] Tribunal Case Number 43/CR/Jun11

Pioneer also admitted to taking part in anticompetitive and exclusionary conduct in the Western Cape (Mncube, 2014a). An independent bakery in Mossel Bay (Mossel Bay Bakery) laid a complaint that alleged that Pioneer had threatened to initiate a price war unless the bakery raised the price of its bread. Pioneer was also at the time selling its bread at predatory prices especially since the bread it sold in Mossel Bay was transported from Worcester and yet was cheaper in Mossel Bay than in Worcester. Pioneer also admitted to having acted anti-competitively at various point by launching "fighting brands" through which it sold bread at very low prices to deter new entrants or persuade competitors to increase the price of their bread. Pioneer's behaviour served to create a reputation of a fierce competitor in order to discourage entry or influence its rivals to maintain high prices.

8.4.2. Recent cases (2011- 2016)

For the period under review, there were four large mergers that took place, in addition to other smaller cases (Table 19). In the grain value chain, two of the transactions involved acquisitions by Afgri, namely the 2011 acquisition of a yellow maize milling plant (Pride Milling) and the November 2013 acquisition of four grain storage silos to extend Afgri's storage capacity in Limpopo, Gauteng, and the North West. The third transaction involves the acquisition of various Eastern Cape-based bakeries by the Premier Group which extended Premier's footprint into a new province alongside the intermediate mergers described above.

The fourth grain-related merger involved the acquisition of the Kromdraai Group of companies, which are involved in the wheat–to–bread value chain, by global commodity illustrating the trend of further consolidation. Here global commodity traders are integrating into processing and storage levels of the grain value chain.

A number of entrants in maize and wheat milling have attempted to participate at small (micro), medium, and large scale with varying degrees of success. Entry at the medium and larger scale appears to mostly be driven by agricultural cooperatives or firms that are already involved in milling elsewhere in the country.

Table 19: Mergers in the Milling Sector (2011 -2016)

Case Number	Primary Acquiring Firm	Primary Target Firm	Size	Status
2011Mar5685	Tiger Brands Limited	Davita Trading (Pty) Ltd	L	Approved
2011Jun0081	Tiger Consumer Brands Limited and Tiger Food Brands Intellectual Property Holding Company (Pty) Ltd	Unilever plc and Unilever South Africa (Pty) Ltd	I	Approved
2012Dec0721	Tiger Consumer Brands Limited and Tiger Food Brands Intellectual Property Holding Company (Pty) Ltd	The Mrs H.S. Ball's Chutney Business, which Is a part of Unilever Plc. and Unilever South Africa (Pty) Ltd	I	Approved
017434	Premier Group Limited	Eastern Cape Bakeries	L	Approved
2014Nov0682	Premier Group (Pty) Ltd	Mister Bread Milling (Pty) Ltd	I	Approved
2015Apr0205	Pioneer Foods Proprietary Limited	Future Life Health Products Proprietary Limited	L	Approved

2016Jan0022	Acorn Agri (Pty) Ltd	Conafex Cape Holdings Ltd and Grassroots Group Holdings (Pty) Ltd	I	Pending
2016Feb0052	AFGRI Operations Limited	Pride Milling Company (Proprietary) Limited	L	Pending
2016Feb0058	Africum Limited	Agrifriend Equipment Proprietary Limited	I	Approved
2016Sep0499	Sun Village Supermarket (Pty) Ltd Ltd	Alpha Bakery Confectionary (Pty) Ltd, in respect of the businesses known as Sun Village SUPERSPAR	I	Approved
2016Nov0629	K2016491554 (Proprietary) Limited	Awesome Snacks (Proprietary) Limited	I	Approved
2016DEC0015	Puratos Group NV	Bidvest Bakery Solutions Proprietary Limited	I	Approved with conditions

8.4.3. Barriers to entry

The main barriers to this entry are access to capital, access to markets and the barriers that resulted from high levels of vertical integration in the sector. Using a case study of an entrant into the sector, Nkhonjera, et al (2016) showed the difficulty in accessing funding for entry and expansion in the sector. Lethabo Milling took about four years to get funding and required about ZAR 9.8 million to refurbish the facility and purchase inputs. The funding was obtained through the programme set up following the Walmart/Massmart merger. Massmart provided additional support which included training, waiving of listing fees and assisting with the pricing model.

In addition to the capital, an entrant requires access to markets and branding. Even if an entrant is able to access funding and produce an item, they need access to good shelf space in retail chains in order for consumers to see and access their product. However, there are certain costs attached to acquiring such shelf space which as explained in the retail section (Section 9) can be restrictive. The market is also highly contested due to customer loyalty to particular brands. An entrant, therefore, has to invest significantly in advertising and promotions. Here again, Lethabo Milling was able to benefit from access to good shelf space from Massmart.

Small millers have found alternative ways to access the markets by supplying their products to local municipal market and informal shops such as spazas. Buyers also travel to the mills to purchase the flour ensuring that the millers have lower operational costs and that there is a better cash flow. Because they eliminate transport costs, these millers are able to sell a 20kg bag of flour for as much as 20% less than traditional suppliers.

Furthermore, entrants are likely to be competing with companies that are vertically integrated across the value chain and therefore have access to inputs and more efficient processes than entrants. New firms will likely be competing against their suppliers. They also do not benefit from the economies of scale and scope that the vertically integrated agro-conglomerates are able to enjoy.

9. The role of retail in food value chains

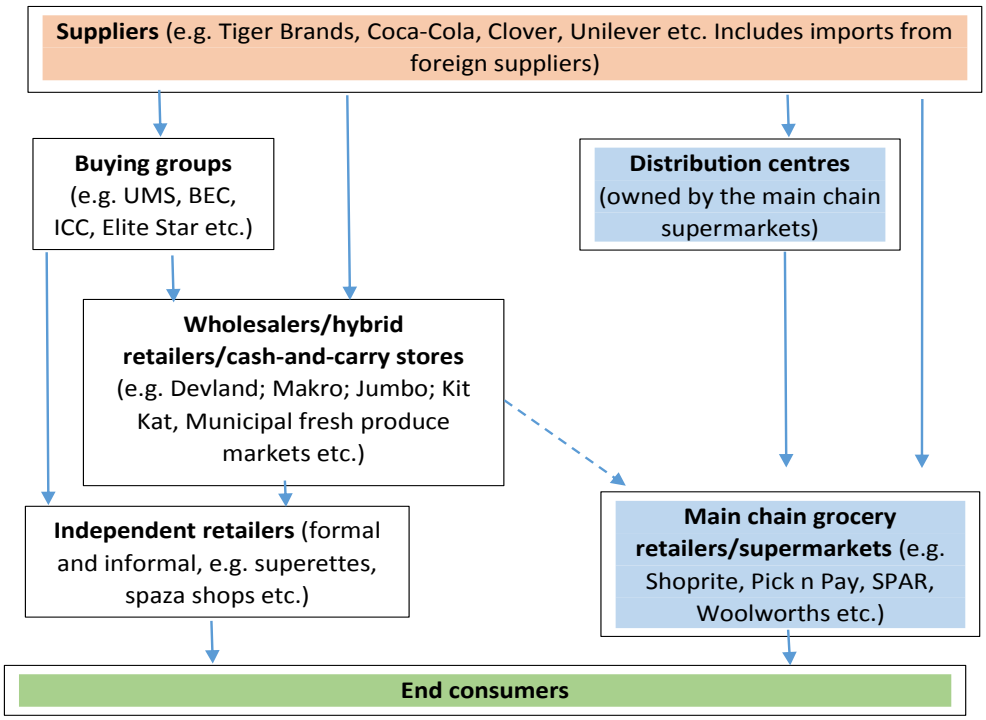
9.1. Mapping the retail landscape

The value chain for food products in South Africa is depicted in Figure 31 below. Suppliers can access consumers through the formal supermarket value chain, where products flow from supplier to distribution centre or directly through supermarkets to the end consumer. Alternatively, suppliers can sell via independent retailers who are typically small businesses, targeting lower income customers in peri-urban, township, industrial and central business district areas of cities. They include cash and carrys that have both wholesale and retail offerings (hybrid format) as well as numerous informal spaza shops, spazarettes and superettes. Suppliers typically sell to wholesalers or buying groups, who in turn sell to independent retailers. Around 30-40% of grocery retail market is served by independent retailers while the balance is served by a handful of large multinational supermarket chains (discussed in Section 9.3).

Buying groups in South Africa are separate, independent entities that play an important role in supporting independent retailers. While each independent retailer that is part of a buying group is owned by an individual, the stores may be branded under a common name. Buying group-led independent retailing is an important alternative model in South Africa. These groups have reduced certain barriers to entry faced by independent retailers (see Section 9.5.5). They assist in lowering costs given that they buy large volumes from suppliers for the group, they advertise and promote on behalf of independent retailers and they offer important skills development and training to retailers in their group. The main buying groups in South Africa are Unitrade Management Services, Buying Exchange Company, Independent Buying Consortium, Independent Cash & Carry Group and Elite Star Trading. They also provide an alternative route to market for suppliers.

The modernisation of supermarkets in South Africa has seen significant investments in distribution centres (DCs). All supermarket chains have multiple DCs and invest annually in the upkeep and expansion of these centres. The centres serve not only their South African stores, but also their regional stores in southern Africa.

Figure 31: Role of retail in food value chains in South Africa

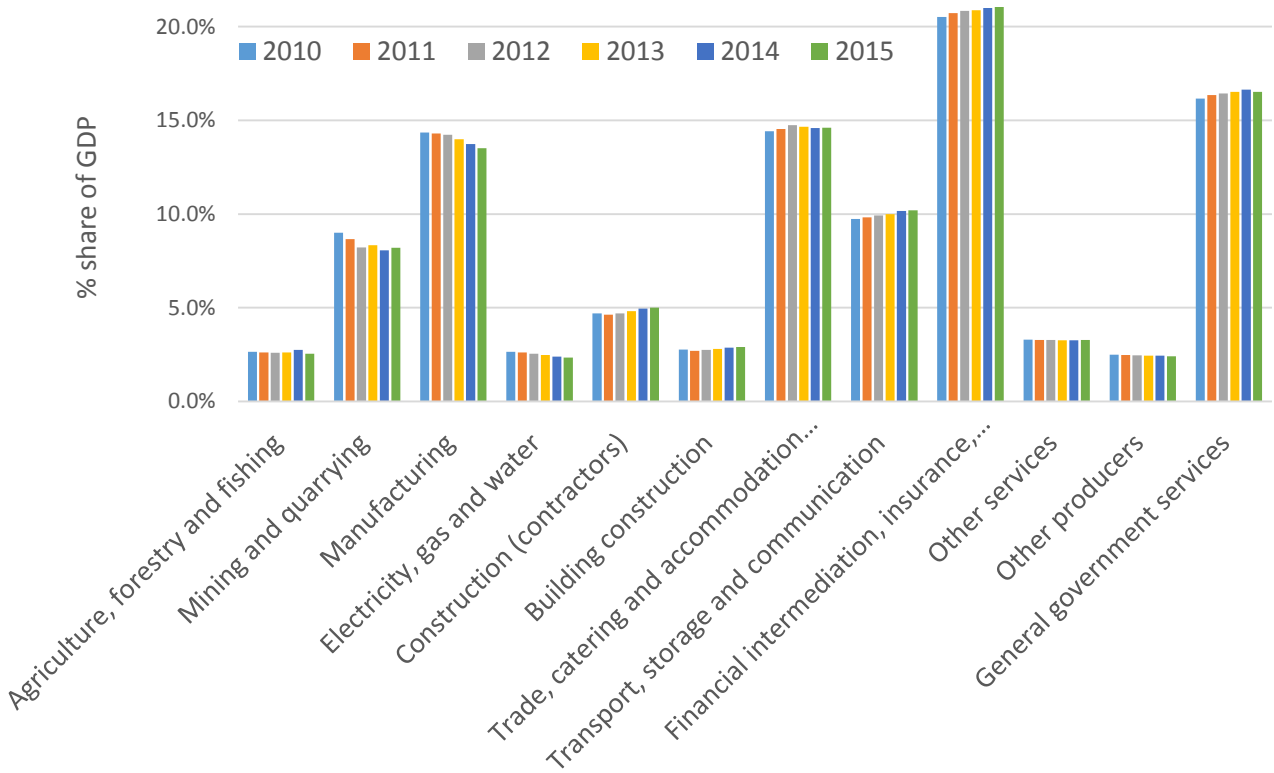


Source: das Nair and Chisoro (2016)

9.2. Significance of retail in South Africa

In terms of the contribution to GDP in South Africa, wholesale and retail trade fall under the broad 'Trade, catering and accommodation services' category. This broad sector has remained fairly constant in terms of percentage contribution to actual GDP (at 2010 constant prices) at around 14-15%, and is the third largest contributor to GDP (Figure 32).

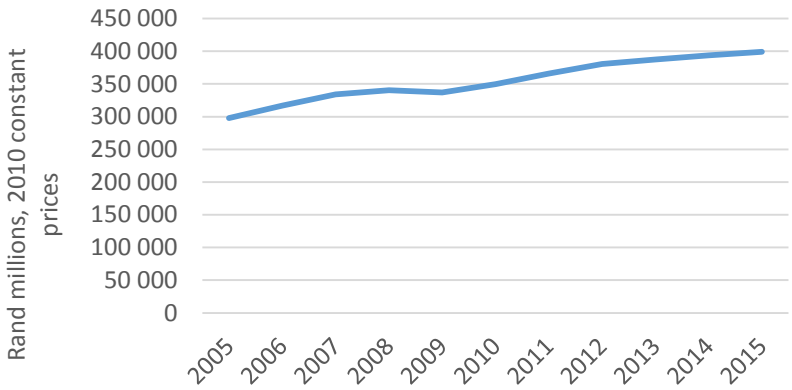
Figure 32: Contribution of trade (including retail), catering and accommodation sector to GDP in South Africa



Source: Quantec, % shares based on Rand millions at constant 2010 prices

Within this broad category however, wholesale and retail trade has grown by around 34% between 2005 and 2015 (Figure 33).

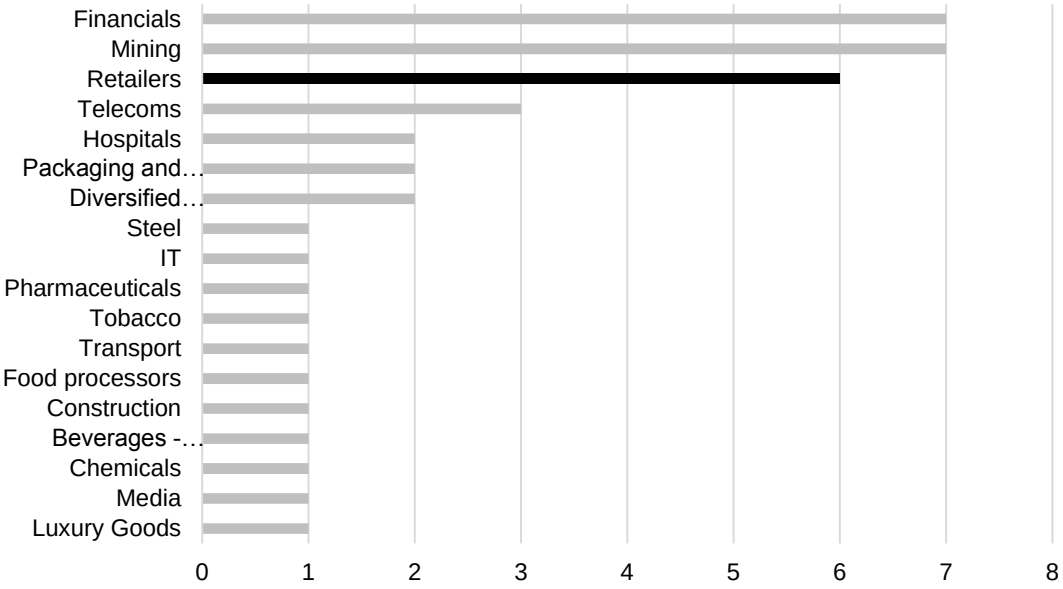
Figure 33: Growth of wholesale and retail trade sector, Rand millions at constant 2010 prices



Source: Quantec, Easy Data

Figure 34 shows that retailers, which include supermarkets, are the third largest sector in terms of number of listed firms in the Johannesburg Stock Exchange (JSE) Top 40 ranked by turnover, with six firms featuring in the Top 40.

Figure 34: Number of firms by sector in JSE Top 40 (turnover), 2015



Source: I-Net BFA. Note: 2016 data is only available for some companies

Five of the six retailers in the JSE TOP 40 by revenue are supermarkets (the sixth being Steinhoff, a furniture retailer). Turnover for the listed supermarkets has increased significantly between 2010 and 2015 highlighting the growth of supermarkets (Table 20).

Table 20: JSE Top 40 by turnover (R billion), 2010 and 2015

	Company	Sector	2015 Turnover	2010 Turnover
1.	Glencore Plc	Mining	2653	1813
2.	BHP Billiton Plc	Mining	636	404
3.	Anglo American Plc	Mining	318	184
4.	British American Tobacco Plc	Tobacco	299	153
5.	SABMiller Plc	Beverages - Brewers	269	131
6.	Sanlam	Financials	239	123
7.	The Bidvest Group	Diversified industrials	205	110
8.	Sasol	Chemicals	185	122
9.	MTN Group	Telecoms	147	115
10.	Old Mutual Plc	Financials	145	70
11.	Steinhoff International N.V.	Retailers	137	48
12.	Richemont SA	Luxury Goods	136	51
13.	Mondi Limited	Packaging and paper	115	55
14.	Shoprite Holdings	Retailers (supermarket)	114	67
15.	Imperial Holdings	Transport	110	54
16.	Massmart Holdings	Retailers (includes supermarkets)	85	47
17.	Vodacom Group	Telecoms	77	59
18.	Datatec	IT	75	29
19.	Sappi	Packaging and paper	75	46
20.	The SPAR Group	Retailers (supermarket)	73	35

21.	Naspers	Media	73	28
22.	Anglogold Ashanti	Mining	67	262
23.	Pick n Pay Stores	Retailers (supermarket)	67	55
24.	Standard Bank Group	Financials	65	38
25.	Barloworld	Diversified industrials	63	42
26.	Anglo American Platinum	Mining	60	46
27.	Woolworths Holdings	Retailers (supermarket)	57	26
28.	Liberty Holdings	Financials	54	22
29.	Aveng	Construction	44	34
30.	FirstRand	Financials	40	18
31.	Barclays Africa Group	Financials	39	23
32.	Kumba Iron Ore	Mining	36	39
33.	Aspen Pharmacare Holdings	Pharmaceuticals	36	10
34.	MMI Holdings	Financials	35	10
35.	Mediclinic International	Hospitals	35	17
36.	Netcare	Hospitals	34	22
37.	Impala Platinum Holdings	Mining	32	25
38.	Telkom SA SOC	Telecoms	32	37
39.	Tiger Brands Limited	Food processors	32	19
40.	ArcelorMittal SA	Steel	31	30

Source: INET BFA. Note: 2016 data is only available for some companies so has not been reported

In terms of their JSE market capitalisation in 2015/2016, Woolworths and Shoprite are the largest supermarket chains in the retail industry in South Africa (Table 21). The relative market shares of key retailers are discussed below.

Table 21: Supermarket groups ranked by JSE market capitalization, March 2016

	Market capitalisation as reported in annual reports (ZAR billions)
Woolworths Holdings	74.2
Shoprite Holdings	109.9
SPAR Group	34.5
Pick n Pay Stores	34.4
Massmart Holdings	32.6
Choppies Limited	4.3

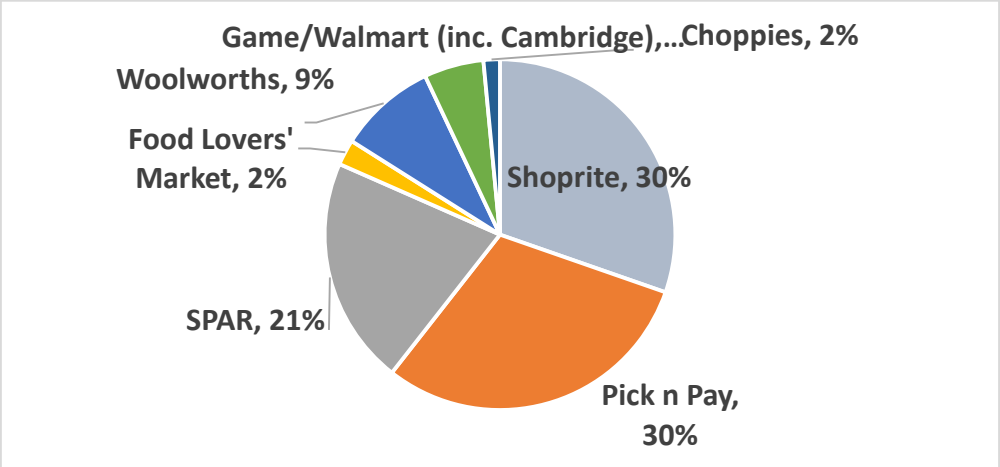
Source: INETBFA

9.3. Key players and market shares

Shoprite and Pick n Pay are the largest supermarket chains in South Africa, with around 30% of the national market each (in terms of store numbers), while SPAR is the next largest with around 20% of the market. This is followed by Woolworths, with the rest mainly held by Fruit and Veg City, and new entrants in food - Game through Foodco (which following the Walmart acquisition diversified into grocery retail offerings) and Cambridge Foods (also Walmart), and Botswana-owned Choppies[54] (Figure 35).

[54] For descriptions of these players, see das Nair and Chisoro 2015 and 2016.

Figure 35: Market Share of Grocery Retailer in South Africa, 2016 based on store numbers



Source: Annual Reports and interviews

Note: Only the grocery retail stores are counted. Revenue or sales data by country for each supermarket is a better measure of relative size in each country. This data is however not consistently publicly available per country for all supermarkets.

9.4. Policy and regulatory frameworks

There is currently no specific policy for the retail sector in South Africa. While subject to regulation on health and safety, standards etc., there is no regulator for market conduct other than the competition authorities and the Consumer Protection Commission. This has led to concerns about behaviour that the narrow tools available in competition law have been unable to address (discussed below), although the CCSA is trying to address some of these concerns through the **Grocery Retail Market Inquiry**.

The Department of Trade and Industry (DTI) has however in its latest Industrial Policy Action Plan (IPAP) (2017/2018) iteration identified the need to intervene in the retail sector to increase the participation of small farmers and suppliers.[55] IPAP 2017/2018 notes the need to get commitments from the main retailers to develop a procurement charter, to facilitate supplier development programmes and to facilitate easier access to outlets. This is yet to be implemented.

9.5. Nature of competitive rivalry and a review of competition concerns in South Africa

9.5.1. Nature of competition

A supermarket offering today is much more than a 'basket of goods' at a specific price. Supermarkets offer consumers a wide selection of products under one roof that is convenient, easily accessible, has secure parking options, is open for long hours in addition to a range of other ancillary services.[56] Modern retailers are thus said to offer a "Price-Quality-Range-Service" (PQRS) package (Dobson, 2015). This can greatly reduce overall costs for consumers, including transport, time, search, information and storage costs. The offering includes an 'overall customer experience', which brings in elements of accessibility, ambiance,

[55] http://www.thedti.gov.za/DownloadFileAction?id=1171
[56] Money transfer, credit, mobile telephony, pharmaceutical and delivery services etc.

range and variety (Nooteboom, 1980; Betancourt, 2006; Basker and Noel, 2013). In providing these offerings, modern retailers differentiate between themselves through **store formats** (González-Benito et al. 2005) such as supermarkets, hypermarkets, convenience stores, cash and carrys, discount stores etc.

Competition within same format supermarkets ('**intra-format**') depends on how similar the offerings of supermarkets are in terms of product and service range; and how prepared consumers are to substitute between offerings ('**closeness of competition'**). The competitive reaction to lost market share between same format stores can be through increasing promotional activity and price discounting (Dobson, 2015; Ellickson and Misra, 2008). All the supermarket chains in South Africa, except for Woolworths, have extended their offering to target customers across the full range of income groups. Woolworths has a single format offering that targets high income consumers. For the other supermarkets, there has been a focus on increasingly targeting low-income consumers, either by opening new stores (like Shoprite's Usave) or by acquiring existing stores (like Pick n Pay's Boxer and Spar's SaveMor) in peri-urban, township and rural areas. Most of the supermarket chains have also diversified their formats to include hypermarkets, convenience stores, express stores at fuel forecourts and fast food offerings. On the upper-income end, Shoprite competes with Pick n Pay and Food Lovers' Market and is increasingly targeting Woolworths' clientele through its Checkers offering. Supermarkets thus compete to offer a full suite of formats, where similar formats compete more vigourously.

Intra-format competition is especially seen in the offering of lower-priced house brands (das Nair and Chisoro, 2016; 2017). There is also a degree of inter-format competition with vertically integrated wholesalers and retailers, buying group led-independent retailers and general independent retailers. There is also a degree of inter-format competition with vertically-integrated wholesalers and retailers, buying group-led independent retailers and general independent retailers.

Whilst there may be some competition between existing supermarket chains, there has been limited entry of new supermarket chains with formats that compete directly with the incumbents in the region. The South African supermarket industry remains concentrated with the top 4 - Shoprite, Pick n Pay, SPAR and Woolworths - collectively dominating markets. It was several years before FVC gained traction to become an effective rival. The other significant new players, Choppies and Game, only entered almost two decades after FVC. This is reflective of the high barriers to entry into the industry.

From an IO perspective, supermarkets have been characterised as natural oligopolies, where a few powerful chains offer quality products and low prices (Ellickson, 2013). This stems from Sutton's (1991) endogenous sunk cost model of competition. In this model, market structure is determined by competition to provide higher quality and wider service offerings. In turn, as the market grows, existing firms expand sunk cost investments to remain competitive. Such investments limit the number of firms that can profitably enter even large or fast-growing markets. There may be a small but vibrant set of fringe players that grow alongside large supermarket chains, but these do not compete on quality and variety in the same way that large chains do, and can grow without investing in large sunk investments as demand grows (Ellickson, 2013). This ties in with the observation in South Africa of a few large supermarket chains collectively dominating markets, with limited competition from a fringe of independent retailers.

Modern supermarket chains do indeed heavily invest in infrastructure. Investments include those in supply chains, centralised distribution centres (DCs), IT systems and transport fleets to get a wide range of products on shelves at the lowest possible costs (Harvey, 2000). Supermarkets in South Africa are increasingly moving towards centralised DCs instead of store-to-store procurement as they modernise. While offering numerous cost saving benefits, including scale and scope economies, investing in DCs also substantially raises barriers to entry (Basker and Noel, 2013). Given high entry barriers and sunk costs, supermarkets can be characterised as having become increasingly oligopolistic over time where there are a few large, powerful chains. These chains tend to have both significant market power (oligopoly) and buyer power (oligopsony), with a consequent high degree of control over entire value chains (Dobson, 2015).

9.5.2. Competition concerns at a horizontal level

The strategic behaviour of incumbents with market power further creates barriers to entry. A historic concern in South Africa is the practice of supermarkets entering lease agreements with property owners in shopping centres that contain exclusivity clauses ('**exclusive leases'**). This prevents new retailers and specialist stores like butcheries and bakeries from locating in lucrative spaces, limiting their ability to grow. Physical location and attractive store sites are important if an entrant is to become an effective competitor. Property developers provide supermarkets with these sites, with the most desirable sites being located inside shopping centres where customer traffic is dense. Exclusive leases signed between property developers and anchor tenants, which are often supermarkets, grant them rights to operate as the sole supermarket in the mall.

From the property owners' point of view, incumbent supermarkets are 'must have' anchor tenants to secure financing from banks given the high footfall they attract. Although banks do not necessarily insist on exclusivity clauses in leases, they do require anchor tenants before they approve finance to guarantee returns. The typical argument by anchor supermarkets for exclusive leases is that they are crucial for the development of the mall and property developers would not construct a mall without commitments from the supermarket. This highlights their strong bargaining position.

In practice, leases in South Africa typically last ten years, but anchor tenants have several options for renewal resulting in exclusivity that spans decades. While exclusive leases might arguably be justified in the initial phases of investment to allow anchor supermarkets to recoup investments, gain footfall and establish markets, it is hard to see how they can be reasonable for extended periods of time. It also appears that small property developers, particularly in rural areas, who do not have bargaining power against major supermarkets are more inclined to succumb to exclusive leases to kick-start developments. Lack of competition has far-reaching consequences in rural areas where pricing is a key factor for low-income consumers and where the nearest alternative supermarket is further away than in urban areas, increasing transport and search costs.

The CCSA has received complaints about exclusive leases over the years (including from FVC and Walmart), and in 2015 announced a market inquiry into the retail sector considering this issue amongst others (the Grocery Retail Market Inquiry). The inquiry is on-going.[57]

[57] The transcripts of the Gauteng hearings are available at http://www.compcom.co.za/transcripts-3/. Transcripts from the Cape Town hearings are available at http://www.compcom.co.za/transcripts-2/.

Internationally, the UK Competition Commission required phasing out exclusive leases in its Groceries Market Investigation Order of 2010 following recommendations from the former Office of Fair Trading. In Australia, following an inquiry by the competition authority, the major supermarket chains voluntarily provided court-enforceable undertakings which phased out exclusive leases.

Interviews in South Africa revealed that such leases are still prevalent.[58] This was also strongly highlighted in the recent Gauteng leg of hearings of the retail inquiry in June 2017, where both buying groups and independent specialist retailers gave submissions on how difficult it is to get mall space from property developers/owners on competitive terms to the big supermarket chains. The hearings revealed how before the construction of the mall even commenced, space was already allocated to the bigger players, and that existing businesses in the area were often not even notified of the construction. Their inability to locate in the mall and the rental terms they are faced with often puts them on a back foot in terms of participating and growing.[59]

Some of the South African supermarkets appear to have 'exported' the practice of entering into exclusive leases to the countries to which they have internationalised. In Botswana, the competition authority has reached a settlement with a supermarket that required exclusive leases, resulting in the removal of the clause and an undertaking that it would not continue with this practice. In Zambia, some supermarkets attested to having exclusive leases with shopping malls. Others claimed that these leases no longer exist but did so prior to the CCPC discouraging such conduct.

Another avenue in which competition between supermarkets may be dampened is when a dominant supermarket uses its buyer power to enter into **exclusive supply agreements** with key suppliers, preventing them from supplying 'must-have' products to rival supermarkets. In South Africa, suppliers interviewed generally noted that supermarkets did not impose exclusivity conditions in their trading terms (where, if on the supermarket's supplier list, they are prevented from supplying rival supermarkets). This bears out in practice in that most suppliers usually sell to multiple supermarkets. The exception to this is in the supply of house brands. Certain suppliers are developed exclusively by supermarkets to supply house brands and these suppliers are typically not permitted to sell the brand to other supermarkets. There were no major concerns raised about this in the four countries.[60] Aside from a few instances in the supply of house brands, suppliers were free to supply any supermarket chain, new entrant chain, or independent retailer. However, even if suppliers are free to supply independent retailers, the various costs imposed on them by large supermarkets may negatively affect the trading terms with independent retailers as compensation for these higher costs (**the waterbed effect**). In South Africa, it is often difficult for independent retailers, wholesalers, or buying groups to get similar trading terms to what the large supermarket chains get for seemingly equivalent transactions.

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[58] A range of factors affect whether exclusive leases are insisted upon in South Africa. These include shopping centre size, whether the centre is a new or existing centre, whether the centre is in a rural or urban area, or whether it is a corporate or franchise store.

[59] The transcripts where these issues were raised are available at http://www.compcom.co.za/transcripts-3/.

[60] There are other ad hoc instances where supermarkets require exclusive commitments from suppliers. For instance, in Zimbabwe, when supermarkets are running promotions, they may require a temporary exclusive commitment from a supplier for certain products.

The extent that this 'waterbed effect' has a negative impact on independent retailers in South Africa was clearly highlighted by buying groups, UMS and Elite Star Trading, at the Gauteng leg of the CCSA's retail inquiry hearings. These buying groups made submissions to the panel on the entrenched commercial relationship between suppliers and the big supermarket chains resulted in highly skewed trading terms in favour of the supermarket chains, even for the same volumes of product bought. These buying groups highlighted that they could not secure equal rebates and volume discounts as the big supermarkets could from suppliers, and that there could be up to a 20-25% price difference from what the buying groups had to pay versus what the big supermarkets pay. This immediately places the buying group supported independent retailers on an unlevel playing field and makes them less competitive.[61]

9.5.3. Implications on suppliers – main vertical competition concerns

Given the market power of the large supermarket chains, suppliers, particularly small- and medium-sized suppliers, are often not able to secure attractive **trading terms** to enable long-term participation in supermarket value chains, investment and growth. Over and above demanding lower costs and higher standards from suppliers, supermarkets in South Africa often impose a range of other costs through trading terms. Large supermarket chains in many cases are able to control pricing in their trading terms by controlling elements such as listing fees, rebates, advertising and slotting allowances, promotion fees, payment period terms, settlement discounts, and new store openings fees (Reardon and Gulati 2008). This unilateral control of trading terms is reflective of the buyer power of large supermarket chains globally (Clarke et al. 2002).

Supplier interviews revealed that the large supermarket chains generally dominate the negotiations of trading terms. Contracts between suppliers and supermarkets are usually evergreen, with the trading terms typically renegotiated on an annual basis. Given that majority of the same retailers that operate in South Africa also operate in the other countries, the practices in the different countries in the region are generally similar.

The South African supermarkets often require suppliers to pay **listing fees** to be listed in their books. According to supermarkets, given vigorous competition for shelf space, payment of listing fees shows the supplier's commitment and confidence in their ability to supply supermarkets and in the quality of their product. Examples of listing fees in South Africa range from USD 350 to USD 3,500 for a single product line for a limited time period, or 12–15 per cent off the list price, to as high as USD 17,000 to USD 20,000 for till positions for a limited time period.

Access to good shelf space (including in gondola ends during promotions) is critical for suppliers to successfully sell their products. For new entrants and small suppliers, it is a constant battle to access prime shelf space that is usually taken up by dominant suppliers. Similarly, access to cooler/refrigeration space is important for suppliers of cold products (such as soft drinks, ice creams, and frozen products). There have been numerous competition cases globally that have recognized the harm to competition of dominant suppliers imposing exclusivity on cooler space.[62] Recently in South Africa, a settlement was reached in the SAB

[61] http://www.compcom.co.za/wp-content/uploads/2017/06/6-June-Competition-Commission-Retail-Enquiry-Transcript-1-1.pdf

[62] European Commission Decision Case COMP/39.116/B-2 Coca-Cola. Available at http://ec.europa.eu/competition/antitrust/cases/dec_docs/39116/39116_258_4.pdf; Competition Commission of Mauritius (2013). Investigation into the supply of coolers to retailers by Phoenix Beverages Limited and Quality Beverages Limited CCM/INV/019. Non-confidential report. Available at

Miller/Coca-Cola bottlers merger which included, among other things, an undertaking to allow 10 per cent of Coca-Cola fridge space in small retail outlets to stock competitors' carbonated soft drink products.

Settlement discounts are also given to supermarkets for paying the supplier within the number of days stipulated in the trade agreement, which varies depending on the supplier. In South Africa, it is commonly 15–30 days from statement and the discount for paying within this period is usually in the range of 2.5–5 per cent off the list price.

Long payment periods put considerable pressure on suppliers' cash flow and working capital, which is problematic for small suppliers. There are allegations suggesting that suppliers are subsidising supermarkets with these long payment periods and that this money was a cheaper way for supermarkets to replenish stock rather than to seek other sources of finance (such as bank loans) to do so. These remain unsubstantiated however and requires further investigation.

Supermarkets sometimes require **advertising discounts** off the purchase price for indirectly advertising on behalf of suppliers when they advertise the supermarket chain generally. However, not all suppliers are required to pay such fees, especially those that heavily invest in advertising their own brands. Suppliers pay supermarkets to participate in different **promotions** and to get special shelf space for these promotions.[63] Promotion fees can range from USD 2,500 to USD 7,000 in South Africa, depending on the scale of the promotion and the size of the outlet. Suppliers can also run promotions at their own cost in the supermarket premises.

An important factor in supplying supermarkets is the ability to supply products at the lowest cost, to supply at the required quality, and to consistently supply the **required volumes** across all outlets. This is difficult for small and medium suppliers, or new entrants, who have not yet gained scale.[64] However, for franchise stores such as SPAR, small suppliers with limited scale are able to participate in the value chain as there is less of a requirement to have consistency across all the franchises given individual ownership of stores. A supplier can just supply a single SPAR store. The Fruit and Veg City model of procurement, which is predominantly from municipal fresh produce markets, also allows small farmers who cannot get into formal supermarket supply chains a chance to participate in retail markets. Similarly, buying group-led independent retailers also offer small to medium sized suppliers an alternative to supplying formal supermarket chains and usually impose far less stringent terms on them. This highlights the importance of **alternative and diverse models** of retail.

Other costs that suppliers occur include the basic legal standards that suppliers have to adhere to, such as South African Bureau of Standards (SABS). Further, there is a range of food safety, health and safety, environmental, packaging, and labelling standards.

Over and above these basic legal requirements, supermarkets impose **private standards** on suppliers. In South Africa, supermarkets sometimes insist that suppliers have Hazard Analysis

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http://www.ccm.mu/English/Documents/Investigations/INV019-Final%20Report%20of%20Undertaking-NC.pdf; Competition Commission of Singapore (2013). 'Coca-Cola Singapore Beverages changes business practices in local soft drinks market following enquiry by CCS', Media Release (accessed on 21/04/16).

[63] In South Africa, these include Back to School, Hey Days, Easter, and Christmas promotions.

[64] This may be addressed through the DTI's recent policy objectives in its 2017/2018 IPAP to increase procurement from small suppliers.

and Critical Control Point (HACCP) accreditation. HACCP is an internationally recognized system for reducing the risk of safety hazards in food. The HACCP system requires that potential hazards are identified and controlled at specific points in the process including biological, chemical, or physical hazards.

In some cases, supermarkets impose higher accreditation standards than HACCP, such as Food Safety System Certification (FSSC 22000) which is also an international accreditation. In other cases, suppliers are taking it upon themselves to get higher accreditations to have a competitive edge over rivals. Regardless of accreditation, it appears that retailers typically send their own auditors to audit the supplier at the supplier's cost. Estimates from suppliers are that HACCP can cost as much as USD 5,500 and FSSC 22000 can cost up to USD 13,800 per annum, with additional USD 6,900 annual fees for maintenance.

Other private standards include sustainability requirements. For instance, Woolworths requires that its food suppliers farm sustainably under its 'Farming for the Future' initiative in addition to other sustainability requirements. Shoprite's fresh produce arm, Freshmark, has its Good Manufacturing Practices standard for all pack-house facilities. Most supermarkets require Halaal and Kosher certifications in South Africa. In the poultry industry, almost all producers are Halaal approved, and abattoirs need to be approved by the government. Supermarkets also impose private standards on house brands for many of these products. In addition, supermarkets are increasingly requiring barcoding on the packaging of products in the countries assessed. Other global initiatives, such as GlobalG.A.P. (Good Agricultural Practice), also have implications for local suppliers trying to export to international markets (see das Nair and Chisoro 2016).

The costs of adhering to all these standards and audits are borne entirely by the supplier, making it increasingly costly to supply formal supermarket chains. Independent retailers on the other hand often have lower, if any, private standards. Independent retailers therefore provide an avenue through which new suppliers can start building scale

There has been growth in **private label products** in supermarket shelves in South Africa recently. Every major supermarket chain has a range of own brand/private label products.[65] Many suppliers of branded products also manufacture and sell private labels to supermarkets. Supplying house brands is a way in which suppliers can get their products on supermarket shelves. Suppliers can use this as a stepping stone to get onto supermarkets' preferred supplier lists especially for suppliers that have not yet built a brand name. House brands also confer some bargaining power to supermarkets over large, multinational suppliers. However, concerns were highlighted around suppliers being 'forced' into supplying house brands at lower margins than their own branded products and this was used as a tool to negotiate down prices for branded products.

9.5.4. Outcomes of key competition cases

There have been very few major competition cases in the retail sector, other than mergers. In 2007, the Competition Commission recommended that the Competition Tribunal prohibit the

[65] Majority of Woolworths' products are private labels. Shoprite has its 'Ritebrand' and 'Housebrand' ranges in Checkers, which covers around 300 products. Pick n Pay has its 'No Name' brand and is looking to further expand the private label range. Food Lover's Market produces its own house brands 'Freshers' and 'Food Lover's Signature'. SPAR also has its own branded products. SPAR does not allow major suppliers to manufacture its own private label products, thus allowing new and small suppliers to enter the supermarket supply chain.

large merger between Pick n Pay and FVC on grounds that the merger would result in the removal of an effective competitor in the retail market for fresh food. The Commission found that FVC was a growing effective competitor to Pick n Pay and the other major retailers, and would provide an even greater product offering in the future. Allowing the merger would therefore stifle both current and future competition. It appears that the Commission was correct in its prediction of FVC's future growth. FVC subsequently showed impressive growth. Turnover has grown steeply from R1.6 billion in 2006 to R15 billion in 2015, with a growth rate well ahead of the major listed food retailers.[66] FVC's turnover grew by approximately 21% per year, compared to the 15% growth rate of the other major supermarkets.[67] The number of stores has also grown particularly between 2006 and 2012.[68]

The second key retail merger involved the take-over of Massmart by Walmart. The merger between Walmart and Massmart was ultimately approved with several conditions. Created as part of the conditions imposed by the Competition Appeal Court, the merged firm had to set up a Supplier Development Fund (SDF) and make available ZAR 240 million over a period of five years to develop suppliers. This stemmed from concerns that Walmart would divert its sourcing away from local suppliers and to its massive global supplier base. This raised public interest concerns around local supplier participation and development. The other key conditions involved employment.

The SDF has been operating for approximately 4 years. Massmart worked with TechnoServe, a non-profit organisation, to upskill and train farmers to supply fresh produce to its stores, in addition to providing preferential finance terms and inputs. The retailer invested R40 million in smallholder farming to support Massmart's move into fresh produce and grocery market. However, this programme was relatively unsuccessful and has been discontinued due to several setbacks:

- Small farmers were vulnerable to crop disease and weather and could not afford insurance leading to huge crop losses. Massmart ended up covering their costs and purchasing seeds for new crop;
- Massmart entered into pricing agreements with farmers but did not require exclusivity arrangements. The result was that farmers would supply other retailers who offered better prices than Massmart. In the end, Massmart only received suppliers' produce when the market price was low (below the contract price) thereby incurring losses.
- Massmart was required to provide support in terms of farming equipment, logistics, pack houses, extension services (soil science and fertilizers) and carry out significant investment in attaining food safety requirements. Massmart underestimated the cost of these investments and they were not financially prepared to carry out such investments.

[66] Growth rates of the major listed supermarket chains were reported at about 15% per year between 2006 and 2012, while that of FVC was 20% per year. http://www.financialmail.co.za/business/2012/07/18/fruit-veg-city-grows-market-share, accessed 15/01/2015.
[67] http://www.financialmail.co.za/moneyinvesting/2013/10/31/woolworths-rides-high-in-sa-food-sector, accessed 25 August 2015
[68] See also http://www.entrepreneurmag.co.za/advice/success-stories/entrepreneur-profiles/fruit-and-veg-city-michael-and-brian-coppin/, accessed 25/08/2015

There were however some successful initiatives on the manufacturing/processing side of the initiative (e.g. Lethabo Milling, The Noodle Factory, Thistle Bakery and Marble Gold). The Noodle Factory based in Cape Town has been listed with Makro for 13 years supplying an Indonesian noodle brand called Alhami. The firm has started supplying other retail chains such as Fruit & Veg City and Shoprite Checkers. Thistle Bakery based in Kempton Park is a baked goods manufacturer receiving financial assistance from the SDF. Thistle Bakery supplies baked goods under Massmart's Marketside private branding to 32 Game stores.[69]

Lethabo Milling, a maize milling company based in Free Sate received financial assistance as part of the programme. Lethabo received a R1.6 million grant from Massmart towards refurbishing its plant. The support extended to an offtake agreement with Massmart which helped Lethabo further secure a loan from a commercial bank. Lethabo has a guaranteed route to market through supplying Massmart stores in South Africa and has received additional support for training, waived listing fees, fast-track payments (7-day payment period as opposed to 30-day payment terms), and assistance with pricing models. Lethabo Milling is still receiving assistance from the SDF following the challenges brought about by the drought resulting is escalating grain prices. The programme is assisting by providing revolving credit for the miller's operations and assisting with negotiations to secure access to grain supply with Farmwise Grains.

Massmart discontinued investment in direct farming projects given the difficulties faced and because it was not a market leader in the category of fresh produce. Therefore, it could not influence the end selling price of fresh produce, resulting in a squeeze in profits for products produced by farmers under the programme. Massmart has since shifted its supplier development programmes to focus on building supplies category where it is regarded as a market leader. The current Massmart model focuses on established business that can be up-scaled quickly in FMCG, General Merchandise, DIY and Building, where it makes mutual commercial sense for both Massmart and the supplier.[70]

A brief look at the recent merger activity involving supermarkets in the past three years shows that the large supermarket chains have been buying up smaller independent retailers (Table 22). This is consistent with the concerns around the growing market share of chain supermarkets and increasing market power. All these mergers were approved by the Commission without any conditions, except for the merger involving Shoprite and Stone Acres SuperSpar. The conditions were however on employment issues under public interest criteria.[71]

[69] Supplier Development Programme Massmart Report (2015).
[70] Supplier Development Programme Massmart Report (2015).
[71] http://www.gov.za/sites/www.gov.za/files/37912_gen658.pdf

Table 22: Merger cases involving grocery retail in South Africa

Year	Acquiring firm	Target firm	Status
2014	Shoprite Checkers (Pty) Ltd	The assets and liquor license of the Stone Acres SuperSpar and Tops, Mafikeng of Klipakkers (Pty) Ltd	Approved with conditions
2015	Cambridge Foods Gree State (Proprietary) Limited	Powersave Wholesalers CC t/a Powersave Cash & Carry and as Reezas Supermarket CC t/a Savemore Supermarket	Approved
2015	The Spar Group Ltd	Florida Foodliner (Pty) Ltd, Florida Junction Superspar and Florida Junction Tops@Spar, and Memoire Trading 130 Pty Ltd, Gordon Road Superspar and Gordon Road Tops@Spar	Abandoned
2015	The Spar Group Limited	Florida Foodliner (Pty) Ltd, in respect of the business known as Florida Junction SUPERSPAR and Florida JunctionTops@Spar and Memoire Trading 130 (Pty) Ltd, in respect of the business known as Gordon Road SUPERSPAR and Gordon RoadTops@Spar	Approved
2015	The Spar Group Ltd	Mqanduli Traiding Store CC, In respect of the business known as Nozukile SUPERSPAR and Nozukile Tops at Spar	Approved
2015	The Spar Group Ltd	Kwankcenke Trading cc known as Engcobo SUPERSPAR and Ndu's Spar CC	Approved
2015	Pick 'n Pay Retailers (Pty) Ltd	Trio Belville (Pty) Ltd	Approved
2016	The Spar Group Ltd	Kayur Superstore (Pty) Ltd in respect of the business knows as Gateway SuperSpar and Gateway Tops at Spar	Approved
2016	Choppies Supermarkets South Africa (Pty) Ltd	Retail Business of Jwayelani Retail Proprietary Limited	Approved
2016	Sun Village Supermarket (Pty) Ltd Ltd	Alpha Bakery Confectionary (Pty) Ltd, in respect of the businesses known as Sun Village SUPERSPAR	Approved
2016	The Spar Group Ltd	Algoa Supermarket (Pty) Ltd, in respect of the businesses known as Algoa SPAR and Tops and Aspen SPAR and Tops	Approved
2016	The Spar Group Ltd	Andramaria Supermarket CC, in respect of the business known as Rant en Dal SUPERSPAR and Tops at SPAR	Approved

Source: Competition Commission website

In terms of abuse of dominance and cartel cases in the retail sector, there have been no major historic or recent finalised cases, but the grocery retail inquiry could potentially recommend further investigations to be initiated.[72] Unlike the Kenyan Competition Act for instance which has been amended to include abuse of buyer power specifically, the South African competition law is a blunt instrument to deal directly with issues of buyer power (hence there is an inquiry in this area). The dominance threshold for a single supermarket is often not met and the burden of proof for small retailers to show a substantial lessening of competition is prohibitively

[72] There have only been two failures to notify merger transactions by Fruit and Veg City that were considered in 2016.

high. Therefore only a few cases are successfully prosecuted. This may call for an amendment of the Act, which is something that is being considered currently and/or other measures, such as codes of conduct that govern the behaviour or retailers specifically, something that DTI is currently considering.

9.5.5. Barriers to entry

The main structural barriers to entry in this sector are a function of the inherent characteristics of supermarket chains. Some of the biggest barriers are the substantial investments required in distribution centres and logistics networks as part of the supply chain of supermarkets, as well as scale and scope economies in having multiple stores. Investments in distribution centres by the largest supermarkets Shoprite and Pick n Pay have been significant and give an indication of the orders of magnitude involved. Shoprite invests annually in distribution centres, related equipment and vehicles. It invested around R400mill in 2014 and over R650mill in 2015 (an increase of 63%). In 2015, this was around 14% of total capital expenditure. Pick n Pay invested R628 million in 2010 in one of its largest distribution centres in Longmeadow, as well as another similar investment in its Philippi distribution centre in 2012.

The lack of access to distribution centres and logistics networks places independent retailers and new entrants at a considerable competitive disadvantage. Suppliers often provide additional discounts for sales to distribution centres even for the same volumes of product. These include distribution, warehouse and pallet discounts, which could amount to up to 10% off the price of products. Investments in distribution centres therefore can contribute to levelling the playing fields with respect to sourcing for smaller players who have access to them (das Nair and Chisoro, 2015).

Advertising costs are also a significant barrier to expansion for supermarkets and independent retailers. Independent retailers have found ways of partially overcoming this through the buying groups they are affiliated with. These groups undertake advertising and promotions, including through the use of knock-and-drop advertising and direct marketing on behalf of independent retailers. Other major barriers for small players include lack of business management skills, retail capabilities and access to finance.

Access to finance and lack of retail skills were also key barriers identified in the southern African countries. Other areas where government assistance was sought include rehabilitation of infrastructure (such as rail, road, and energy infrastructure), better access to agricultural extension services, greater protection from imports, regularly reviewed ‘sensitive product’ industries, and facilitation of access to export markets.

10. Conclusions and recommendations

This paper, through a RVC lens, has assessed developments in the following selected key food value chains in southern Africa:

1. Seeds
2. Fertilizers
3. Animal feed and poultry
4. Maize and wheat milling
5. Dairy
6. Retail

An RVC approach is strongly advocated for in evaluating market outcomes as a complementary tool to traditional industrial organisation approaches to competition matters. In many of the value chains assessed, it is the same multinational players that operate across countries and the conduct of these firms with market power tends to be similar in the different countries. A RVC approach further provides useful insights into bottlenecks in the value chain that can span across countries in the region, and provides insights into opportunities for upgrading. Bilateral or multilateral efforts by competition authorities and other government departments of the respective countries may be required to address these. Understanding the governance role of large lead firms in value chains also adds to assessments of market power that competition authorities can benefit from.

The cooperation of competition authorities within the region is therefore vital to successfully detect and prosecute anticompetitive behaviour. This requires constant monitoring of trends and market outcomes through, for instance, a 'market observatory' platform, coordinated and shared between national and regional competition authorities.

The history of development of food markets in South Africa has resulted in many legacy competition concerns, but the paper has highlighted more recent trends that affect competitive dynamics that should not be ignored. The increased financialisation, cross-ownerships and internationalisation of large lead local firms in the food sector affects the strategies and incentives to effectively compete. Mergers that involve institutional players may not, on the face of it, present direct competition concerns, but in the long run may result in diminished incentives to compete. These trends in food markets are not unique to South Africa. Again, there is a role for competition authorities globally, especially BRICS countries' authorities, to cooperate and collaborate on matters that have global impacts.

The role of the retail level of the value chain for the development of food markets cannot be underestimated. Large retail chains with significant market power (as is the case in southern Africa) influence the participation and development of suppliers. Effective competition at this level is important to reduce effects of abuse of buyer power on suppliers. It is therefore important to foster a competitive environment for a diversity of retail models and to keep retail spaces open to entrants to allow them to gain a foothold in the market. Competition authorities need to engage with local government/municipalities to ensure that urban planning policies open up retail space. This should include planning and licence conditions that ban exclusive leases or limit the duration of these to no more than 5 years on exceptional grounds.

To further curb abuses of buyer power may require a multi-pronged approach. Amending the Competition Act to more effectively address abuses of buyer power by including lessening, preventing or distorting competition as tests for anticompetitive effects under the abuse of dominance provisions is one approach. Initiatives to amend the Act are currently underway and the experiences in the retail sector can provide useful insights to this process on the limitations of the Act as it currently stands. Powers can also be given to the Grocery Retail Market Inquiry undertaken by the Competition Commission to make orders based on its findings. A complementary approach involves setting up a code of conduct that governs the relationship between supermarkets and suppliers.[73] Given the multinational nature of supermarkets in the region, such a code can be harmonised across the region. Policy can also

[73] In the UK for example, the Groceries Supply Code of Practice was set up specifically to oversee the relationship between supermarkets and their suppliers following an inquiry by the former Office of Fair Trading.

require that supermarkets support local small and medium sized suppliers through investing in formal supplier development programmes. Both a code of conduct and supplier development initiatives are currently being considered by the Department of Trade and Industry in its industrial policy going forwards.

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