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Competition, barriers to entry and inclusive growth:

Agro-processing

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Abstract

This study is part of the broader barriers to entry project undertaken for the National Treasury and it assesses barriers to entry and expansion into the agro processing sector. It focuses on three agro-processing subsectors; poultry, milling and dairy. The paper draws on interviews conducted with new entrants and existing firms in each sector, supported by a review of secondary data on prices, costs, and profits. The analysis identifies the barriers to entry and expansion in each sub-sector, assesses the competitive dynamics within each sub-sector, and identifies the impact of interventions by the competition authorities in these sub-sectors. The research shows that in order to understand barriers to entry and the growth of smaller firms in agro-processing, it is crucial to appreciate that these are value chains characterised by successive levels of processing and value addition. Linkages between the levels and different types of vertical integration are important to coordinate access to inputs and investments at the different levels. The ability to participate depends on fitting into a value chain and how the overall chain is governed, typically by lead firms. There are also substantial scale effects and time required to build production capabilities. These characteristics imply that addressing barriers to entry in the sector require a deep understanding of the specific challenges that new entrants would face in a particular value chain, the historical evolution of the sector, and the scope for strategic behaviour by incumbents at all levels of the value chain. Focusing on facilitating entry at one discrete level of the value chain will likely fail as it will miss the binding competition bottlenecks elsewhere.

JEL classification

L1, L5, L66

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1. Introduction

The role of the agricultural sector in the development process is the subject of much debate in development literature. Theoretical and empirical studies of structural economic change often report a declining share of primary agriculture in total gross domestic product as a country's economy grows. This leads to a tendency to see agricultural output as distinct from 'industry' and to view agriculture as a first, and passing, phase of economic development that will be gradually displaced by increasing industrialisation as a country develops (Goulet, 2003). However, the distinction between primary agricultural production and manufacturing is narrowing as we see increasing vertical integration from primary agriculture into agro-processing industries.¹

In South Africa, agro-processing and, in particular, food processing has grown more rapidly than the economy, and more rapidly than manufacturing as a whole. The food processing value-add (in constant prices) in 2014 was 34% higher than in 2004, more than double the 15% increase in real value added by the manufacturing sector as a whole over the same period.² Food processing is seemingly playing an increasingly important role in building manufacturing capabilities and driving growth.

South Africa has also rapidly grown the exports of processed food products to neighbouring countries over the past decade, with a compound annual growth of exports to SADC countries (excluding SACU) of 13% per annum in dollar terms, from \$484mn in 2004 to \$1642mn in 2014.³

As is well recognised, manufacturing (including agro-processing industries) has the potential to drive economic growth through the potential for higher productivity, scale economies and linkages (Thirlwall, 2015). The 'linkage hypothesis', which emphasises the importance of 'forward' and 'backward' linkages in driving aggregate growth, postulates that the best development path lies in selecting those activities where expansion will induce further progress in other industries (FAO, 1997).

Agro-processing activities have strong potential linkages with other industries. These include backward linkages extending to primary agriculture, the manufacture of capital equipment, and chemicals inputs, and forward linkages extending to packaging industries, chemicals industries, and services such as transport, marketing and retail. As one of manufacturing's largest sub sectors, agro-processing holds significant capacity and potential to generate inclusive growth.

In recognition of the potential for agro-processing to drive growth, the National Development Plan (NDP), New Growth Path (NGP) and Industrial Policy Action Plans (IPAPs) all identify agro-processing as a critical driver of GDP growth, employment, and new business formation. The NDP identifies agriculture and agro-processing as key to increasing exports, increasing employment, and growing small and medium enterprises. Agro-processing has been

¹ Agro-processing is defined as the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector, forestry and fisheries (FAO, 1997). It encompasses both food and non-food products, including leather, textiles, and paper and pulp. The most significant difference between agro-processing and other industrial subsectors is the perishable nature of the raw material, which affects location, transport, and storage decisions.

² Based on Gross Value Add in constant 2010 prices.

³ Figures exclude beverages and tobacco products. Exports to other SACU countries not included as trade with SACU member states is not reported for the period 2004 to 2009 (inclusive). For completeness, we note that trade with other SACU states has declined slightly at a CAGR of -0.2% between 2010 to 2014.

highlighted as a focus area of intervention in the Industrial Policy Action Plan (IPAP) since 2009 and continues to be a key sector on the IPAP agenda (DTI, 2014). The latest iteration of the Industrial Policy Action Plan, IPAP6, again reiterates the strong backward and forward linkages of the agro-processing sector, its strong employment multipliers, and the possibilities it offers for new business formation.

The policies all acknowledge that the agro-processing sector is concentrated and characterised by significant barriers to entry and expansion. As discussed in the background papers for these studies (Banda, Robb, Roberts, 2015; Banda, Robb, Roberts and Vilakazi, 2015), barriers to entry may take many forms including scale economies, vertical integration and obstacles in accessing routes to market, information problems and strategic behaviour by incumbents. The concentration in agro-processing in South Africa has further been associated with anti-competitive conduct and supra-competitive pricing to the detriment of consumers. The NDP identifies historically high levels of concentration in agricultural value chains, high and increasing levels of vertical integration between agriculture and agro-processing, access to infrastructure (specifically irrigation and farming equipment) and lack of access to consumer markets as significant constraints to entry and growth in the sector.

The need to unlock markets and allow for greater economic participation is obviously a key concern of national policy. This sector study makes a contribution in assessing barriers to entry and expansion in agro-processing and specifically in food production. In this regard it is notable that South Africa, and indeed Southern Africa as a whole, is a net food importer notwithstanding the potential in the region for competitive production of food products. In the remainder of this introductory section the study locates food processing within patterns of manufacturing performance. It then addresses the core questions by reviewing changes in corporate control through mergers in section 2.

In sections 3, 4 and 5 there are detailed studies of three very important agro-processing subsectors: poultry, milling and dairy products. These studies assess the structure of the value chains within the subsectors, the nature of linkages between successive levels of the value chain and key input costs. Trends in consumer prices and costs are analysed using available data along with margins of the major firms. Detailed assessments are made of entry episodes and the experiences of smaller producers as competitors, drawing on in-depth interviews with new entrants and existing firms in each sector, supported by a review of secondary data on prices, costs, and profits.

The analysis identifies the barriers to entry and expansion in each sub-sector, assesses the competitive dynamics within each sub-sector, and identifies any impact of interventions by the competition authorities in these sub-sectors. The aim is to understand how barriers to entry can be mitigated in the interest of facilitating substantive rivalry and dynamism in the agro-processing sector.

Section 6 draws together conclusions.

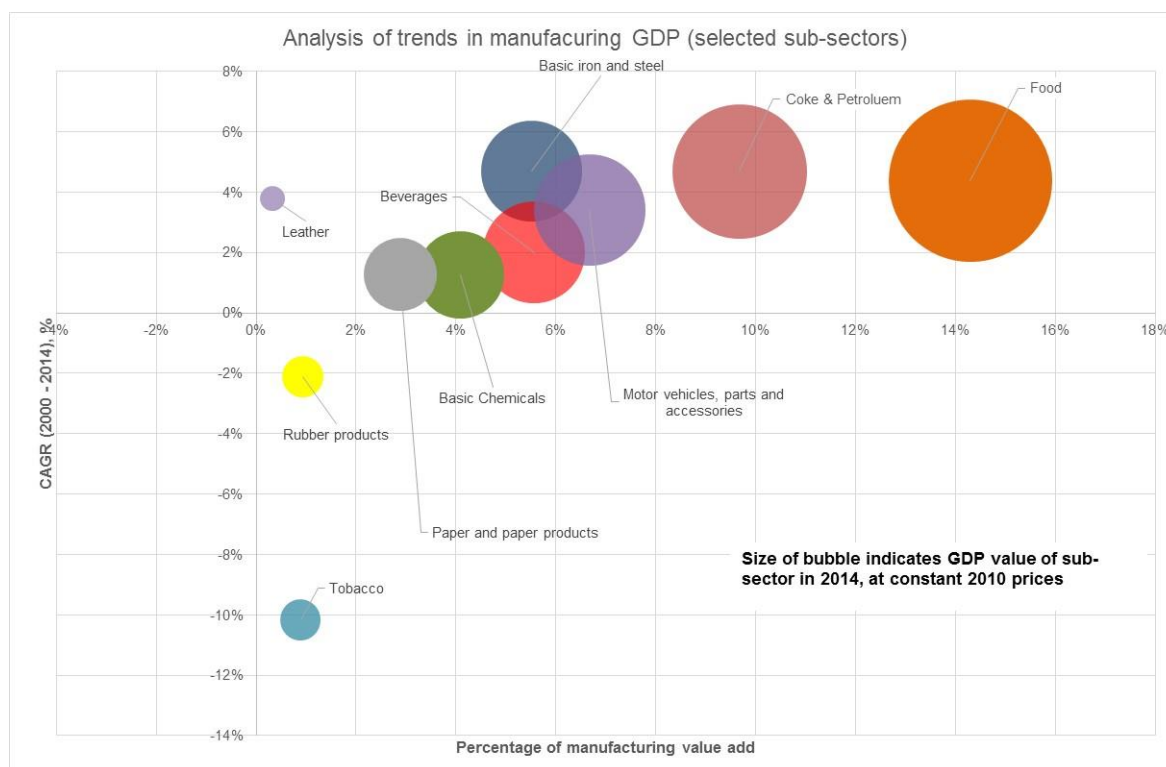
1.1 Overview of agro-processing in the South African economy

Manufacturing value-add

Disaggregating manufacturing value add confirms the importance of food processing. Food processing (not including beverages and tobacco, which are often lumped together) accounted for 14.3% of total manufacturing value add in 2014 and was the largest manufacturing sub-sector by some distance, with the next largest category being coke and petroleum products. Food processing is also the largest manufacturing employer and accounts for 13.6% of total manufacturing employment, with 183 161 jobs in 2014.

The compound annual growth rate (CAGR) of the food processing sector from 2000 to 2014 was 4.4%, which is the 5th highest of the 28 manufacturing sub-categories.⁴ Comparatively, beverages grew at a CAGR of 2% over the period and tobacco products declined by a compound annual rate of 10.2% over the period. Other large manufacturing sectors such as coke and petroleum and basic iron & steel, grew at similar rates to food (Figure 1).

Figure 1: Trends in manufacturing value add of the largest sub-sectors



Source: Quantec

Manufacturing employment

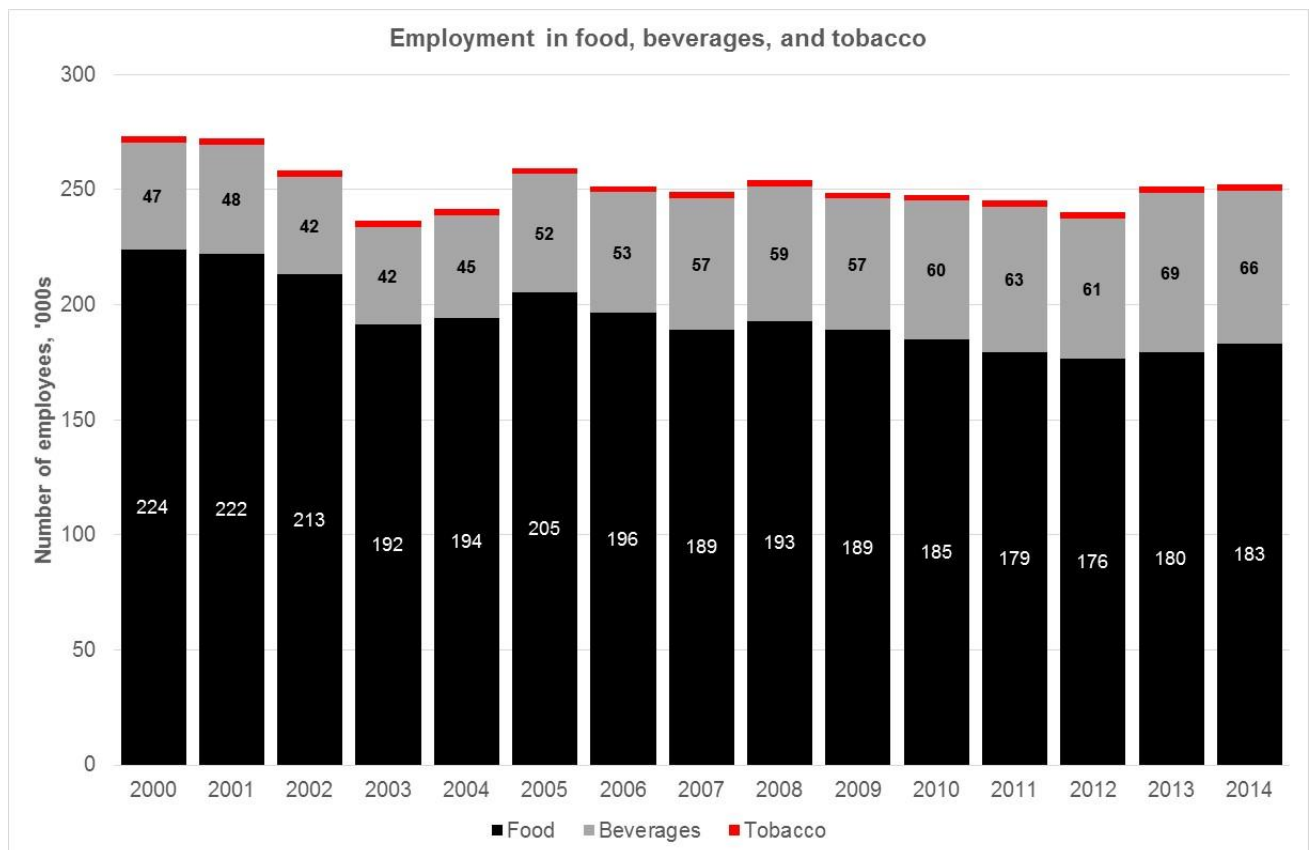
There has been job shedding in the manufacturing sector overall, which has seen employment shrink by 206 168 jobs from 2000 to 2014, 49 324 of which were lost in agro-processing subsectors. More than 40 000 of these agro-processing job losses occurred in food processing (

Figure 2). As the analysis below indicates, there is substantial potential for employment recovery and growth if smaller participants in the economy are able to compete effectively with

⁴ The top four sectors by CAGR are coke & petroleum products, basic iron & steel, other transport equipment and professional equipment.

the large incumbents as part of a more competitive sector with investment in productive capabilities.

Figure 2: Employment in food, beverages and tobacco



Source: Quantec

2. Review of corporate strategy by assessing merger activity in the agro-processing sector since 2010

Evidence of cartel conduct in the agro-processing sector is well documented (see, for example Muzata, Roberts, and Vilakazi, 2012; Mncube, 2014; and Grimbeek and Lekezwa, 2013). The bread cartel which was uncovered in 2006 is often cited as a stark example of the egregious nature of cartel conduct and the disproportionate impact of collusion on the most vulnerable members of society (Lewis, 2012). However, this was by no means the only cartel uncovered in the agro-processing sector as anticompetitive behaviour was revealed and prosecuted (albeit with varying degrees of success) in a number of food processing sectors including maize milling, wheat milling, grain storage, dairy, poultry, and pelagic fish, amongst others.

The large number of competition enforcement cases uncovered in the agro-processing sector,⁵ combined with the disproportionate impact of anticompetitive behaviour in these markets on the poor, have generated considerable research interest. There are a number of insights which emerge from studies of the cases, particularly with respect to understanding why so many cartels were uncovered in the agro-processing sector (see Makhaya and Roberts, 2013, for a review). The studies argue that numerous factors explain the tendency for firms to privately “re-regulate” these markets, including through cartels and vertically restrictive practice, post market liberalisation. These factors include the existence of legal cartels during the apartheid era, close social relations between the managers and owners of large firms in markets (partly due to previously legal cartels), and high levels of concentration throughout many of these value chains. In some cases, this “re-regulation” in the private interest was facilitated by industry associations. Less work has been done to understand the challenges to constructive policies to foster greater economic participation and competitive rivalry in the sector. This study attempts to contribute to this gap in existing research.

In this section we consider merger activity in the period since the conclusion of the main enforcement investigations of the Competition Commission in around 2010 as part of evaluating the post-cartel restructuring by the major firms. Merger activity may provide some insight into changes in corporate strategy that could raise barriers to entry, protect incumbents from competition, and deter competition from new entrants or potential competitors.

The focus is on completed mergers in the food processing sectors (rather than agro-processing more broadly) and only includes the beverages sector as far as it relates to dairy-based beverages. Mergers in carbonated soft drinks, alcoholic beverages, paper products, and forestry; of which there were at least 11 over this period, are excluded for the purposes of the current study. The review relies on publicly available merger decisions.⁶

A total of 83 relevant mergers were identified from February 2010 until September 2015. Of these, there were 27 large mergers, 51 intermediate mergers and 5 small mergers. Small mergers do not have to be notified to the Competition Commission, but where the small merger involves firms that are either the subject of an enforcement investigation or takes place in a sector wherein competition concerns have been identified, the Commission recommends that parties notify the transaction. The number of small mergers discussed here thus do not provide

⁵ We note that the Competition Commission engaged in a sector prioritisation exercise around 2008, in which it identified the agro-processing sector as one of its focus areas (Ramburuth, 2008). Though there may be various factors that explain the high incidence of anti-competitive behaviour in this sector, this particular enforcement focus on agro-processing may also have had an influence.

⁶ Competition Tribunal decisions were available for most large mergers. Coverage of decisions in intermediate mergers, either from the Competition Tribunal or Competition Commission, was less comprehensive. In cases where no merger decisions were available, company press releases were consulted. The number of small mergers reviewed is low because these mergers need not be notified to the competition authorities.

a full view of merger activity below the merger threshold. For the purposes of assessment we consider the small and intermediate mergers together.

2.1 Small and intermediate mergers

Of the 56 small and intermediate mergers identified in food processing and related sectors from 2010 until 2015 many of these mergers involve former and current regional co-operatives who are either integrating into processing, merging with co-operatives in adjacent geographic areas, or expanding their retail footprint either by acquiring new stores or acquiring fuel stations. Twenty-two of the small and intermediate mergers took place in the sectors of interest in this study; 8 in animal feed and poultry, 6 in dairy, and 8 in grain/milling. The rest of the mergers cover a diverse range of sectors including fishing, canning of fruit and other products, sugar, the red meat value chain, and oils and fats.

Poultry

In the poultry sector, Pioneer⁷ 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. This motivation is supported by information obtained during interviews for this study which suggests that there is excess slaughtering capacity in South Africa's abattoirs and that poultry processing is characterised by significant economies of scale. Pioneer also acquired Amaqanda farms in a small merger. Although no documents related to this merger were available on the competition authorities' website, it appears that Amaqanda was previously a 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.

The competitive effect of these mergers is uncertain; they could potentially be positive if the merged entities compete intensively with incumbents in the new markets they have entered, but they could also have a chilling effect on entry if they are seen to represent a strategy by larger firms (such as Astral and Rainbow) of acquiring disruptive smaller firms. In section 3, we try to establish the competitive effect of these acquisitions by reviewing changes in retail prices of poultry products over time. The acquisitions do, however, represent an important change from the previous situation wherein the geographic footprint of larger poultry producers was relatively stable and opened them up to allegations of market allocation.

The overall picture from mergers in the poultry sector is mixed. There has been rationalisation and acquisitions to ensure security of supply to manage processing costs (Pioneer). There have also 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 markets may arise should the trend of acquisitions continue.

⁷ These mergers took place prior to the sale of Pioneer's poultry operations to Quantum Foods.

Milling

There were a total of eight small and intermediate mergers in the grain value chain. Three of these involve integration between commodity traders and firms that provide physical grain handling and storage services. The trend towards integration between commodity traders and firms that provide physical storage (which is also seen in the large mergers that took place over this period) may point to greater commoditisation of agricultural markets. Though the impact of large commodity traders on agricultural prices is beyond the scope of the current study, their increasing involvement in primary markets indicates that this is an important area of future study.

Two of the small and intermediate milling mergers during this period concern entry into new markets. One is Noordfed Eiendoms Beperk's acquisition of maize-milling plant, Empangeni Milling, in October 2014. This acquisition extended Noordfed's geographic presence from the northern provinces (Limpopo and Gauteng) to KwaZulu-Natal and the Eastern Cape, and represents the growth of a smaller rival.

The second expansion is Premier's acquisition of Eastern Cape-based Mister Bread Milling in November 2014. Premier was new to the Eastern Cape at the time, having entered via the acquisition of Eastern Cape bakeries (a large merger discussed below) in November 2013. This acquisition extended Premier's presence upward along the bread value chain, allowing it to establish an integrated milling and baking operation in the Eastern Cape.

Dairy

In the dairy sector, three of the six mergers involve Clover, the largest dairy processor in South Africa. In all three 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.⁸ In interviews, dairy firms confirmed that obtaining access to new and niche markets was a key factor in growing a sustainable dairy business in the face of excess milk supply and increasing imports of low-priced dairy products.

Another interesting trend that seems to be emerging in the dairy sector is the entry of dairy farmers into processing through the establishment of their own milk processing plants. The acquisition of KwaZulu-Natal-based Honeydew Dairies by Dairy Day in March 2015 is one such example. The establishment of Coega Dairy by farmers in the Port-Elizabeth region in the Eastern Cape is another. The rationale for these transactions are discussed further in section 5 of this report.

Small and intermediate mergers in other food processing sectors

In addition to entry into new markets and acquisitions by commodity traders, the mergers in this period reflect a number of private equity investments into the food-processing sector, as well as the acquisition of local food processing facilities by global players. These global links are not always immediately apparent as mergers often happen between newly-created (and smaller) subsidiaries of the larger firms in global markets. One such example is the acquisition, in September 2013, of one of South Africa's largest peanut and pecan nut producers, P Farm Agente, by Gold Peanut Company which is a subsidiary of global food processor and commodity trading firm, Archer Daniels Midland.

⁸ Nkunzi Milkway is one of only 6 producers who supply Ayrshire products exclusively to Woolworths.

The three remaining small mergers cover biscuit manufacturing, the acquisition of a small fuel retail distribution network by an agricultural co-operative, and the acquisition of V&A's cold storage facilities by the Oceana group. Of these, the Oceana transaction is worth discussing, as it is the most pointed example of corporate strategy that may raise barriers to entry and exclude competitors in food processing.

In the V&A merger, Oceana indicated that its primary purpose was not actually the acquisition of V&A's cold storage facilities (in which merged entity would have 75% market share), but the acquisition of the fishing rights of the companies associated with V&A (Phambili Fisheries, Bator Star Fisheries, and African Marine Products).⁹ This trend towards consolidation in fishing rights, which are allocated with the aim of increasing ownership and economic participation, particularly by black South Africans, points to the challenge of encouraging broader economic participation without providing extensive support to ensure that rights holders can operate sustainably. Similar challenges associated with partial government support for new entrants were uncovered in the milling sector where new entrants were granted financial support to acquire milling equipment, but were not given sufficient support to access consumer markets and invariably exited the market.

2.2 Large mergers

Of the 27 large mergers over the relevant period; one was in poultry, one in dairy, and four in grain markets (two in milling, one in grain storage and one in baking). The dairy merger, in which Clover acquired the yoghurt and UHT business of Dairybelle, extends Clover's presence in new markets, similar to the intermediate mergers reported above.

In the grain value chain, two of the transactions involve 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 final 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 trader Louis Dreyfus and grain storage firm, VKB. In the Kromdraai merger we again note the trend of global commodity traders integrating into processing and storage levels of the grain value chain.

The only large poultry merger reported in this period is the 2010 acquisition of Rossgro Chickens by Afgri, though we note that Afgri subsequently sold its poultry operations and Kinross animal feed mill to a black-owned consortium in June 2015. It is discussed in more detail in the Afgri case study in section 3.

A notable trend in the large mergers over this period is the number of acquisitions made by two private equity firms; Zeder Financial Services (indirectly controlled by PSG Financial Services Limited) and Lodestone Brands, a subsidiary of Mauritius-based Standard Chartered Private Equity Ltd. Zeder made four acquisitions over the period January 2012 to January 2014. Lodestone Brands also made four acquisitions over the period August 2011 to January 2012. These private equity acquisitions may be indicative of a growing consumer goods segment; at least during the time that these acquisitions were made. We also note that private equity firm Brait acquired control of Premier in 2011; a year before Premier acquired the

⁹ In 2013, Oceana also acquired the fishing rights of Foodcorp in a separate transaction.

Eastern Cape-based milling and baking operations. These private equity investments may be a disruptive and potentially pro-competitive force in previously concentrated value chains.

Another notable trend is the acquisitions aimed at allowing firms to expand their African footprint. Two large mergers in the period offer this as rationale; the 2011 acquisition of Davita Powdered Drinks by Tiger Brands and the 2014 acquisition of Afgri by AgriGroupe which is ultimately controlled by Canadian investment holding company Fairfax Financial Holdings Limited. The Afgri acquisition again confirms increasing private equity interest in the South African agro-business sector.

2.3 Conclusion and key issues emerging from assessment of recent mergers

The merger review shows a clear trend towards consolidation in poorly performing agro-processing sectors such as poultry. Afgri's disposal of its underperforming poultry division to black-owned consortium, AFPO Consortium Proprietary Limited, in June 2015 is the largest of these transactions.¹⁰ Many interviewees mentioned that this transaction created the first fully black-owned, vertically integrated poultry business in South Africa that has the scale and in-house capabilities to compete with the larger poultry producers. However, the transaction took place at a time when the poultry industry faces pressure from imports and rising feed prices, placing producers' margins under pressure. These challenges will make this an especially difficult period for Daybreak's new owners. A positive trend in the poultry sector is the expansion of large producers into new geographic markets, though the effect of these expansions on prices is as yet unclear.

Merger trends in the grain value chain have seen international commodity traders enter the South African market. There has also been expansion into other levels of the value chain through vertical integration with physical grain storage firms acquiring mills. Existing milling and baking firms are also acquiring smaller competitors to expand their footprint. Though the acquisitions of these smaller millers and bakers may not individually raise substantial competition concerns, they could lead to significant concentration and heightened barriers to entry over time.

The increasing interest of private equity firms in the agro-processing industries indicates that the agro-processing sector is considered to have potential for significant growth across the African continent. This growth should ideally be based on dynamism and rivalry, and not on the exertion of market power, which underscores the importance of examining barriers to entry across agro-processing value chains.

Strategic acquisitions in the dairy sector is largely a story about Clover, which is aggressively diversifying its portfolio and leveraging its existing production and distribution capabilities to enter new niche markets. Though this may further increase Clover's size, interviews in the dairy sector indicate that entry into niche markets such as yoghurt and cheese are not too difficult and production can occur efficiently at small scale. This may constrain any exercise of market power by any large processor. The asymmetric bargaining power between processors and dairy farmers, however, remains a concern.

In fact, the asymmetric bargaining power between producers and processors is given as the reason for entry by two processors, Dairy Day and Coega Dairy, into UHT milk production. Dairy Day entered by acquisition and Coega Dairy by greenfield acquisition. The buyer power

¹⁰ Pioneer's sale of its poultry division, Quantum, is another example that is discussed in section 3

of processors, low raw milk prices, and the prospect of securing higher margins by adding value to their raw milk, were given as reasons for entering the processing level.

In poultry, milling, and dairy the merger review confirms the major trends identified during interviews with incumbents and new firms. The implications for competition dynamics is discussed further below.

3. Barriers to entry in the animal feed to poultry value chain

3.1 Overview of the animal feed to poultry value chain

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 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.

A new entrant into poultry production will face significant challenges. Firstly, the poultry value chain is characterised by high working capital requirements. 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, 2014). 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.

Secondly, poultry production requires a high level of coordination between the different levels of the value chain. Close coordination is required between production of breeding stock from genetically pure lines (great-grandparent stock) through grandparent stock, to the parent stock which produce the day-old chicks that are reared as broilers. In large firms there is often further vertical integration backwards into feed production as feed costs are crucial for the competitiveness of broiler production (Zengeni, 2014). In addition, the poultry value chain is characterised by significant scale economies in the production of animal feed, the production of broilers, and particularly in slaughtering and packaging poultry meat products (Louw, Geyser, & Troskie, 2011).

Given these characteristics, it is perhaps unsurprising that the broiler production industry is relatively concentrated with the top two producers accounting for 46% of broiler meat production in South Africa (DAFF, 2014), although this does represent a significant decline in concentration from the mid-2000s (Grimbeek and Lekezwa, 2013). Though the poultry industry in South Africa has been driven by a few large, vertically integrated firms, there have been changes in market structure over the past few years, with some consolidation and some new entrants coming into the market. South African poultry producers have also seen significant competition from imports that led to increases in MFN duties in 2013 and the introduction of anti-dumping measures in 2015.¹¹ There have also been a number of interventions by the competition authorities in the poultry value chain.

This assessment considers what underpins competitive poultry markets including through the evaluation of changes in market structure, firms' strategic behaviour, and firm performance in the sector. Two case studies are presented. The first evaluates the entry of Afgri into poultry and the subsequent divestiture and restructuring of Afgri's poultry business. The second assesses the entry and performance of VKB's *Grain Field Chickens*, which received IDC

¹¹ The application for an increase in the MFN tariffs followed two ITAC recommendations that anti-dumping duties be instituted against Brazil for boneless cuts and whole birds (both of which are not major import products). All products on which there are tariffs were affected, to a greater or a lesser degree. In response to these tariffs, exporters altered their prices so that landed costs, regardless of the duty effect, are more or less the same meaning that the increased duties provided very little protection for the local industry against imports.

financing. We conclude with an assessment of the main barriers to entry in the animal feed to poultry value chain.

3.1.1 Structure of the animal feed to poultry value chain

The animal feed to poultry value chain describes the range of activities and processes required to produce commercial chickens or broilers. The key stages of the value chain are set out in Figure 3 below.

Most of South Africa's poultry products are produced by large commercial players who are generally vertically integrated from the animal feed level, all the way to slaughtering operations (DAFF, 2014). The poultry is packaged and sold in fresh or frozen form, in pieces or whole, through retailers and restaurants. Large vertically integrated firms sell approximately 50% of their produce through formal retailers.¹² A large proportion of chicken is also sold through wholesalers and quick-service restaurants (QSRs), with sales through informal retail making up a small proportion of total sales.

The most important consumption category is packs of individually quick frozen (or IQF) mixed portion bags, which account for between 50 – 60% of total sales. Frozen meat sales as a whole account for approximately 90% of the chicken meat sold in South Africa. In the past 10 years, fresh sales have accounted for 18% of total poultry sales at a maximum.¹³ Fast food restaurants are also becoming more important as an outlet for poultry meat products such as chicken nuggets and fried chicken pieces (Fessehaie, Das Nair, Ncube & Roberts, 2015).

Feed and chicken breeding stock are the two key inputs into broiler production. Animal feed accounts for between 50% and 70% of the total input costs to produce a live bird (Bagopi et al., 2014). Poultry feed is generally made from milled maize (as a source of energy) and soybean or sunflower (as a source of protein). Maize accounts for the largest share of inputs into feed production by volume and value and accounts for approximately 60% of production costs.¹⁴ Soybean products account for 25 to 30% of animal feed production cost. The rest is made up of additives.¹⁵

There are two main firms providing poultry breeding stock in the world, Aviagen which is privately owned by German-based EW Group, and Cobb-Vantress Inc, a USA-based multinational.¹⁶ 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.

¹² Interview with poultry producer, July 2015; Interview with poultry producer, June 2015

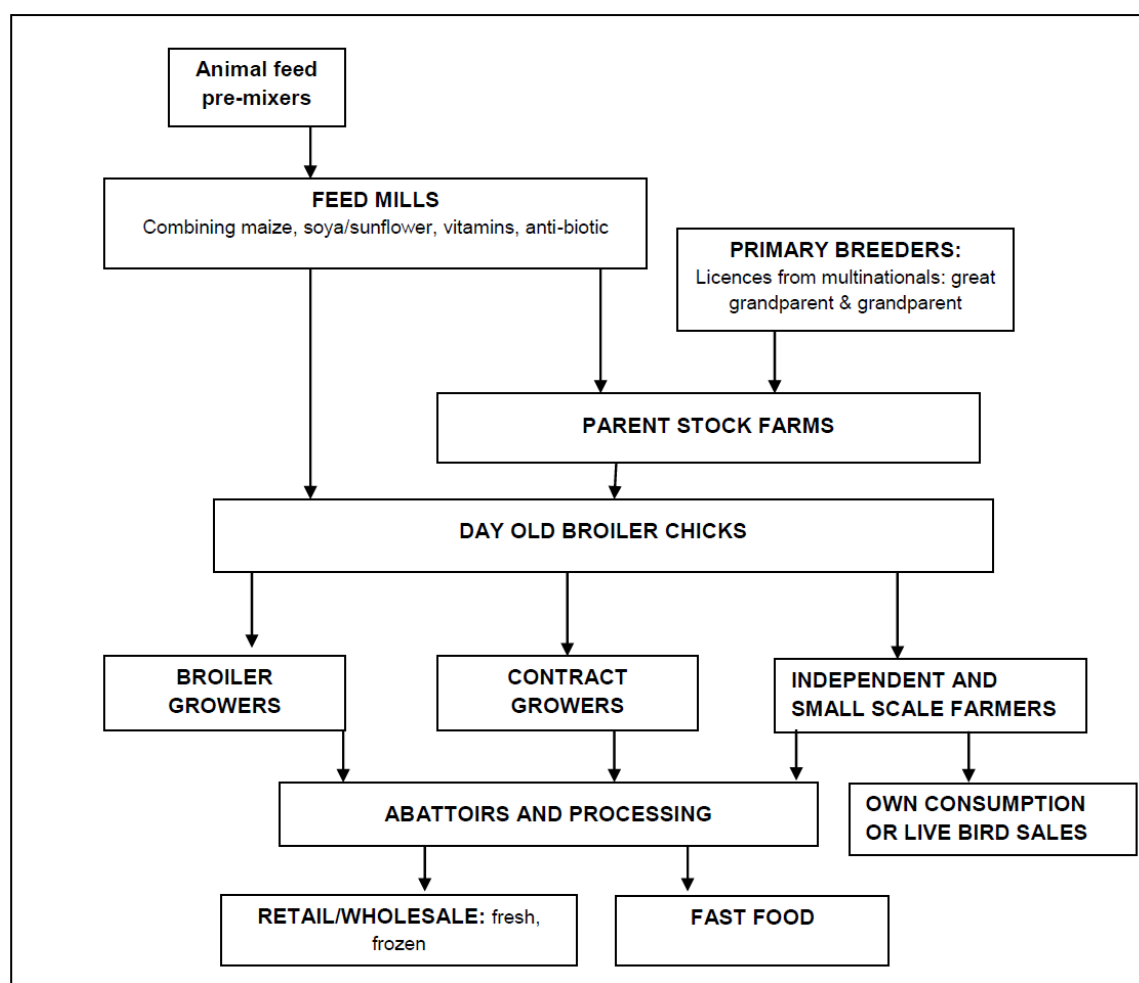
¹³ Interview with SA Poultry Association, 23 August 2016

¹⁴ Interview with AFMA, 15 July 2015.

¹⁵ Interview with AFMA, 15 July 2015; Interview with animal feed producer, July 2015; Interview with poultry producer, June 2015

¹⁶ It is important to note that the breeds for layers (birds grown for the production of table eggs) and broilers (birds grown for the production of meat) constitute two separate markets. This study looks specifically at broilers. The breeds and licenses for layer genetics will not be explored here.

Figure 3: Poultry value chain



Source: Bagopi et al. (2014)

Grandparent stock

In South Africa, both Ross and Cobb have established markets, although a new breed line from Aviagen, Arbor Acres, was introduced in 2007. The breeding license for Aviagen's Ross line is held by Astral, the Arbor Acres license is held by Country Bird Holdings and the breeding license for Cobb is held by RCL.

Aviagen have established their own great grandparent facility in South Africa which supplies day-old grandparent stock to Ross Poultry Breeders, a subsidiary of Astral. Ross Poultry Breeders, supplies breeding stock of the Ross 308 breed to the South African broiler industry. Its breeding stock is produced in KwaZulu-Natal and Gauteng provinces.¹⁷

Cobb sells its breeding stock in South Africa through an agreement with RCL. RCL's breeding operations are located in Mpumalanga and the Eastern Cape.¹⁸ Cobb breeding stock is also used exclusively by Quantum Foods (formerly part of Pioneer), where Quantum has the right

¹⁷ Interview with Astral, 31 July 2015, supplemented with information from SAPA.

¹⁸ RCL annual report, 2014

to import Cobb genetics but only for its own use and not for further distribution to other broiler businesses.¹⁹ The Cobb line is imported at grandparent level.²⁰

In the early 2000s, the breeding stock market was effectively a duopoly. Astral had a market share of 69% of breeding stock sold through its Ross brand, while its main competitor, Cobb, had a market share of 26% of the great grandparent market (as most of the production of breeding stock was used for RCL's vertically integrated operations).²¹ This changed around 2007, partly due to intervention by the competition authorities and the disruptive effect of new entrant, Country Bird Holdings.

Until 2007, Country Bird was a minority partner in a joint venture controlled by Astral known as the Elite Joint Venture. One of the terms of the joint venture was that Country Bird was obliged to source at least 90% of its breeding stock from Elite, effectively preventing Country Bird from trading with Astral's rivals. Country Bird lodged a complaint of exclusionary abuse with the Competition Commission in 2007 and exited the Elite JV shortly thereafter to establish a rival breeding business with the Arbor Acres breed, also sourced from Aviagen. This saw the entry of a third breed into the South Africa market to challenge the Astral/RCL duopoly. As we show below, Country Bird Holdings' exit from the joint venture intensified competition and led to a reduction in margins and resultant redistribution of surplus to South African consumers.

Parent stock

Parent stock is produced from the grandparent stock licensed to Astral, RCL and CBH. Parent stock is used to produce day-old chicks which are reared either by contract growers, the poultry firms' own farms, or independent farmers. The broiler production model has largely evolved from a situation where industry players owned the majority of broiler farms to a situation wherein 60 – 80% of broilers are produced by contract growers.²² One of the reasons for this change is the high cost of owning and managing farming land.

In a contract growing arrangement, the poultry company would typically provide day-old chicks, animal feed, extension services, and training support to the contract grower.²³ Once the day-old chicks are fully grown (between 32 and 42 days old), they are then taken to slaughter at an abattoir and processed for sale. In a small number of cases the chickens are sold live.

3.2 Performance of the South African poultry industry

3.2.1 South Africa poultry production

Domestic poultry production has grown strongly at a compound annual growth rate of 6.3% per year from 2004 to 2014 (Table 1). The expansion in production is largely explained by the growth in local consumption from 23kg per capita in 2003 to almost 38kg per capita in 2014 (DAFF, 2014; SAPA, 2014).

The growth in domestic production has been in line with the growth in domestic consumption. This has meant that while the trade deficit has remained stable as a proportion of local

¹⁹ Interview with poultry producer, September 2015

²⁰ The competition dynamics at the level of genetically pure poultry lines is beyond the scope of this report, but it is important to note that it is highly concentrated at a global level.

²¹ Competition Tribunal case number 69/AM/DEC01

²² Interview with poultry producer, June 2015; Interview with poultry producer, September 2015; Interview with poultry producer, July 2015; Interview with poultry producer, July 2015

²³ Ibid.

consumption, it has grown in absolute terms over the period as a whole. The increased imports in 2011 and 2012, judged to be unfair, resulted in the imposition of anti-dumping duties against Brazil in 2013 (ITAC, 2013). As a result of these duties, imports declined in 2013.

Table 1: Broiler meat production and consumption in South Africa (thousands of tonnes)

	Production	Consumption	Production deficit	Actual imports
2004	928	1 082	-154	
2005	1 019	1 204	-185	
2006	1 143	1 383	-240	260
2007	1 200	1 470	-270	238
2008	1 276	1 508	-232	191
2009	1 358	1 558	-200	206
2010	1 430	1 645	-215	240
2011	1 478	1 753	-275	325
2012	1 499	1 836	-337	371
2013	1 529	1 899	-370	355
2014	1 711	2 023	-312	369

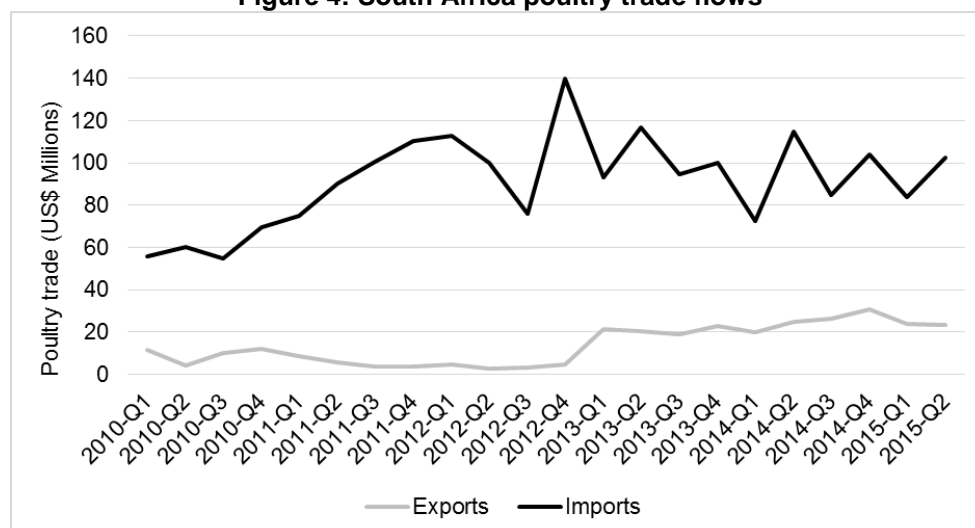
Source: DAFF (2014); Lovell (2012); SAPA (2015)

3.2.2 Poultry imports and exports

The value of imports rose from approximately \$180 million in 2010 to about \$400 million in 2014. Prior to 2012, the main source of imports was Brazil. Thereafter, there was a switch towards imports from the European Union (EU), with which South Africa has a free trade agreement (Tregenna & Kwaramba, 2014). A particularly significant spike in poultry imports in the third quarter of 2012 saw imports increasing from \$80 million to \$140 million and supported the call for anti-dumping duties (Figure 4). There was a second spike at the beginning of 2014 although not to the levels that had been seen previously.

MFN tariffs ranging from 12% to 82% were imposed in 2013 on whole birds, boneless cuts, bone-in portions and offal imported from Brazil and did not, at that time, apply to European Union countries (Tregenna and Kwaramba, 2014). After the imposition of higher tariffs, there was a decline – albeit amid fluctuations – in the value and the volume of imports.

Figure 4: South Africa poultry trade flows



Source: TradeMap

A second spike in imports in early 2014, this time from Europe, led to SAPA submitting another bid for an anti-dumping investigation to ITAC. Provisional duties between 22% and 73% were

imposed on Germany, the Netherlands and the United Kingdom from 4 July until 2 January 2014 (Tregenna and Kwaramba, 2014). ITAC made a final determination on 27 February 2015, recommending the imposition of anti-dumping duties of 31.30% to 73.33% on Germany, duties of 3.86% to 22.81% on the Netherlands and duties of 12.07% to 30.99% on the United Kingdom on bone-in imports. In its determination on this matter, ITAC indicated that though the poultry industry suffered material injury from dumping, other factors also contributed to its poor performance, including rising production costs related to feed, fuel, electricity and labour cost increases (ITAC, 2015). That said, ITAC asserted that these factors do not detract from the material injury suffered by poultry producers as a result of the dumping of poultry products from Europe.

For South African poultry producers, the issue of imports is significant because of the chicken consumption patterns found in North and South American and EU countries compared to those in South Africa. In the South African market, bone-in portions are the most widely consumed, mostly in the form of frozen IQF portions (SAPA, 2014). In contrast, overseas markets mostly consume fresh fillets such as breast portions, which are sold at a premium. Since the bone-in portions are not in high demand in overseas markets, they are then sold in markets such as South Africa at a lower price.²⁴ It is alleged that overseas players make their margins on the fillet meat and sell the bone-in portions at costs that simply cover the logistics cost of shipping the meat to export destinations.²⁵ While the tariffs can be shown to have had an effect on imports for some time, local poultry producers suggest that lack of proper administration of the tariffs could dampen the effect of the tariffs.²⁶ For example, it is suggested that certain poultry imports are incorrectly labelled as “mechanically deboned meat” (MDM) because this tariff code attracts a lower import tariff.²⁷

More recently, a duty-free quota of poultry imports from the USA of 65 000 tons has been discussed in accordance with the agreements made in the African Growth and Opportunity Act (AGOA) framework (Ensor, 2015). This equates to approximately 18% of poultry imports based on import data from 2014 (Table 1).

South Africa’s exports are largely to the other members of the Southern African Customs Union (SACU). At the beginning of 2013, poultry exports increased from \$4.7 million in the fourth quarter of 2012 to \$22 million in the first quarter of 2013 (Figure 4). This was largely due to a sharp recorded increase in exports to Lesotho and Namibia due to an improvement in recording intra-SACU trade since 2013. It is highly likely that South Africa’s pre-2013 poultry exports were under-reported. Since 2013, exports have hovered between US\$20mn and US\$30mn.

In conclusion, trade – particularly imports – is a key issue in the South African poultry industry. As a result of the imposition of tariffs and anti-dumping duties, the South African poultry sector has been afforded some protection from imports. Increasing imports are likely to have downward impact on local poultry prices. The next section looks at the costs and prices found in the poultry industry, starting with costs of the raw materials and then moves to an assessment of the average retail prices of various types of chicken.

3.2.3 Costs in the poultry industry

²⁴ Interview with poultry producer, June 2015

²⁵ Interview with poultry producer, June 2015

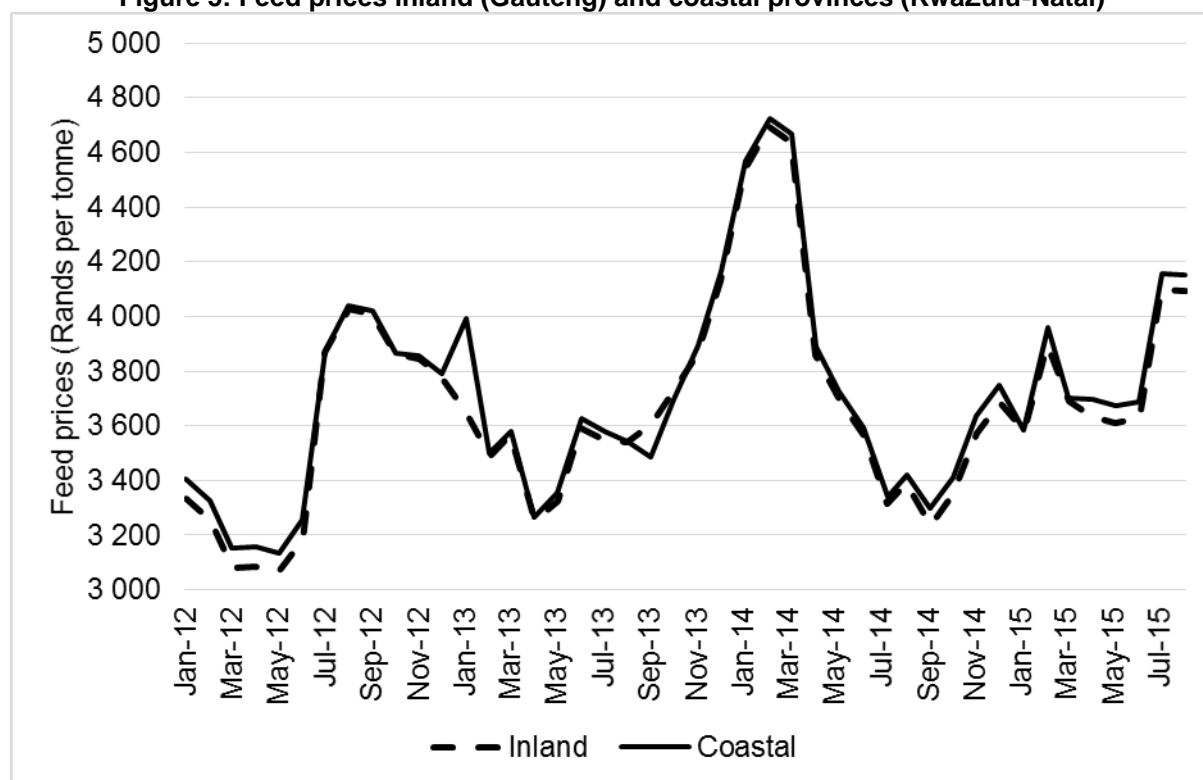
²⁶ Interview with industry player, July 2015

²⁷ Interview with industry player, July 2015

Cost competitiveness of both new entrants and existing players in the poultry value chain is largely determined by the ability of producers to access feed at low cost. Feed is by far the largest cost of producing chicken contributing about 60% to the total cost of producing a bird (Bagopi et al., 2014; Zengeni, 2014). The price of feed is determined by the prices of its key raw material inputs; maize and soya. These two products combined constitute over three quarters of the cost of producing feed.

In the last three and a half years, animal feed prices have been fairly volatile, reaching a peak of almost R4800 per tonne at the beginning of 2014 (Figure 5). Unsurprisingly, both inland and coastal feed prices since 2012 have moved in line with yellow maize prices (Figure 6). The inland and coastal prices of animal feed are very close, reflecting the fact that while 60% of poultry feed is made up of yellow maize, generally priced close to export parity (other than in drought years) 25% to 30% of poultry feed is made up of soya oilcake which is priced at import parity given persistent local shortfalls in production. South Africa is generally self-sufficient in maize production and is a net exporter of maize, however, South Africa is a net importer of soybeans and soya oilcake.²⁸ While inland animal feed producers have a cost advantage when it comes to maize owing to their proximity to the location of maize sources, coastal producers have a cost advantage in relation to imported soybean and soya oilcake.

Figure 5: Feed prices inland (Gauteng) and coastal provinces (KwaZulu-Natal)



Source: SAPA

Note: These are price indicators, calculated by SAPA based on available raw material prices

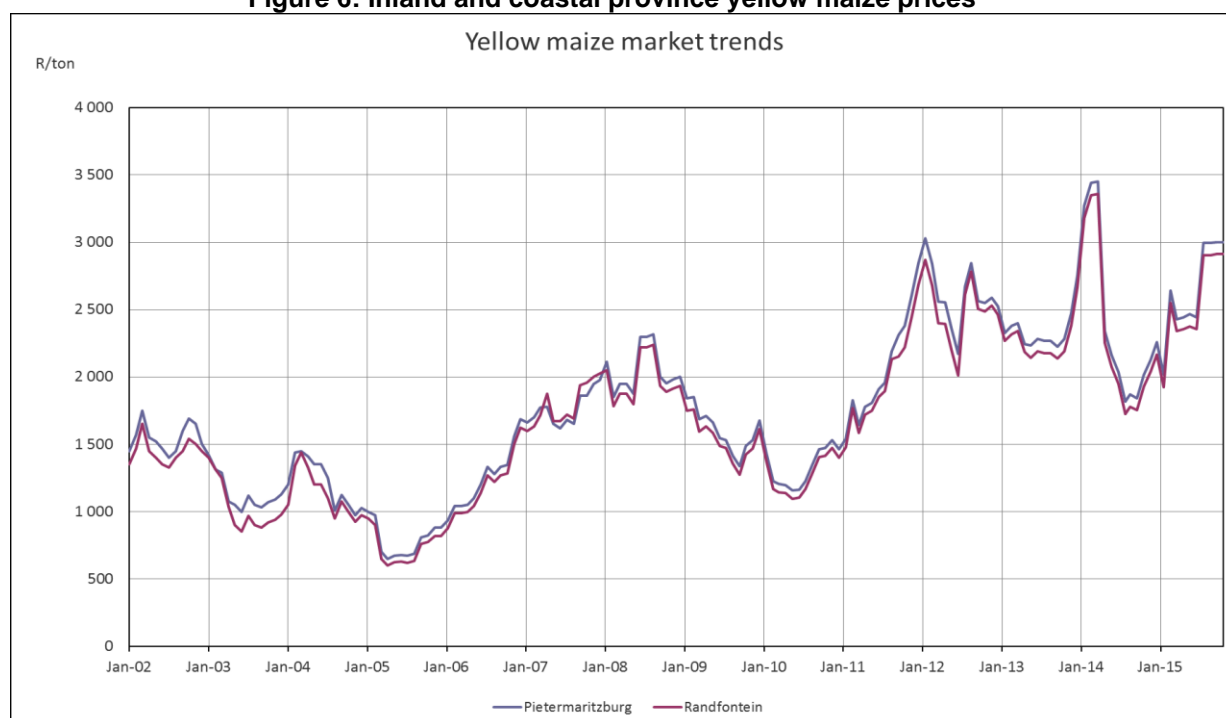
Both maize and soya are traded via the JSE's commodity derivatives market (formerly known as the South African Futures Exchange or SAFEX). The global price of maize is determined

²⁸ Interviews with animal feed producers, July 2015 and August 2015

on the Chicago Board of Trade (CBOT).²⁹ While larger animal feed producers are able to purchase maize using futures contracts, smaller producers generally buy maize on the spot market as they do not have the financial capacity that larger players do.³⁰ As traded commodities, maize and soya prices move with international prices which are quite volatile (Figures 6 and 7).

Although South Africa is self-sufficient in the production of maize in almost all years, the drought in 2015 has created a shortage. In such times South Africa has to import maize to complement domestic production. It is expected that maize prices in inland areas will increase above coastal areas as the country will have to import between 500 000 to 700 000 tonnes of maize.³¹

Figure 6: Inland and coastal province yellow maize prices



Source: SAPA feed ingredient report 2015

South Africa does not produce sufficient soybeans locally and thus imports soybeans and oilcake in substantial quantities. The main import market is Argentina. As expected, soybean prices are much higher than those of maize and inland prices are generally higher than those at the coast, by around R40/tonne (Figure 7).

Despite the fact that South Africa cannot produce sufficient soybeans and soya oilcake, both face an import tariff. In 2009, members of the Animal Feed Association of South Africa applied for the tariff to be removed as they argued that it eroded the price competitiveness of local animal feed and consequently, of locally-produced poultry.³² The Department of Agriculture, Forestry and Fisheries (DAFF) and other respondents objected and opted for the introduction

²⁹ Interview with SAPA, 6 July 2015

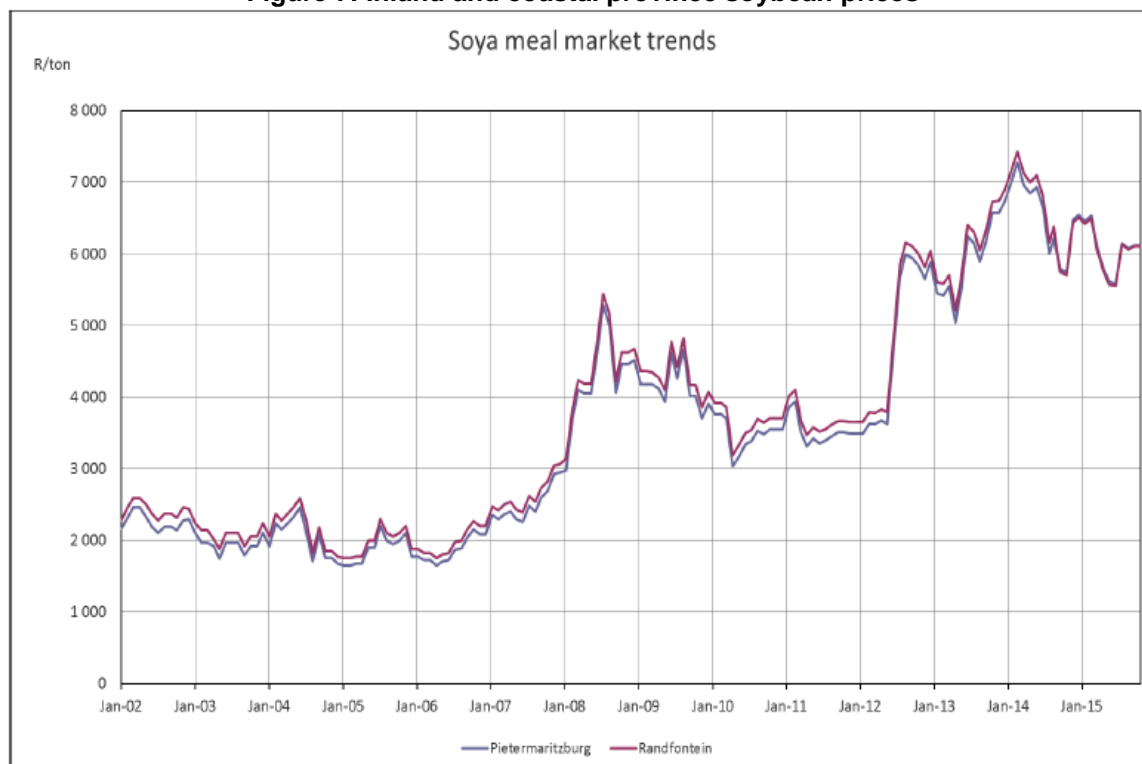
³⁰ Interview with animal feed producer, August 2015

³¹ Interview with animal feed producer, August 2015; Interview with animal feed producer, July 2015

³² Interview with AFMA, 15 July 2015

of the soya strategy which entailed investing in soybean growing and crushing capacity.³³ However, there is no prospect of South Africa growing enough soya to move to a net export position and there is now over-investment in crushing capacity with a capacity to crush 2.1 million tonnes per year while the country only produces 1 million tonnes of soybeans per year³⁴. It seems that the soya strategy has not addressed the low quantities of soybean production in South Africa and has not decreased the costs of local poultry producers.

Figure 7: Inland and coastal province soybean prices



Source: SAPA feed ingredient report 2015

As previously mentioned, animal feed accounts for approximately 60% of cost of producing a chicken. Given that feed is a significant contributor to competitiveness of poultry, it is expected that the price of chicken would move with the price of feed. The next section will look at the prices of chicken, beginning with a comparison of various average national retail prices, including an assessment of the relationship of these retail price with price of animal feed.

3.2.4 Poultry prices

On a 'per kilogram' basis frozen chicken is cheaper than fresh chicken. However, if we take into account that frozen chicken usually contains 30% brine and inflate frozen prices to account for this, a 'meat-for-meat' comparison shows that frozen chicken pieces are more expensive than fresh chicken (Figure 8).³⁵ Average national chicken prices for frozen chicken portions (by far the most popular product) did not increase overall in nominal terms from 2008

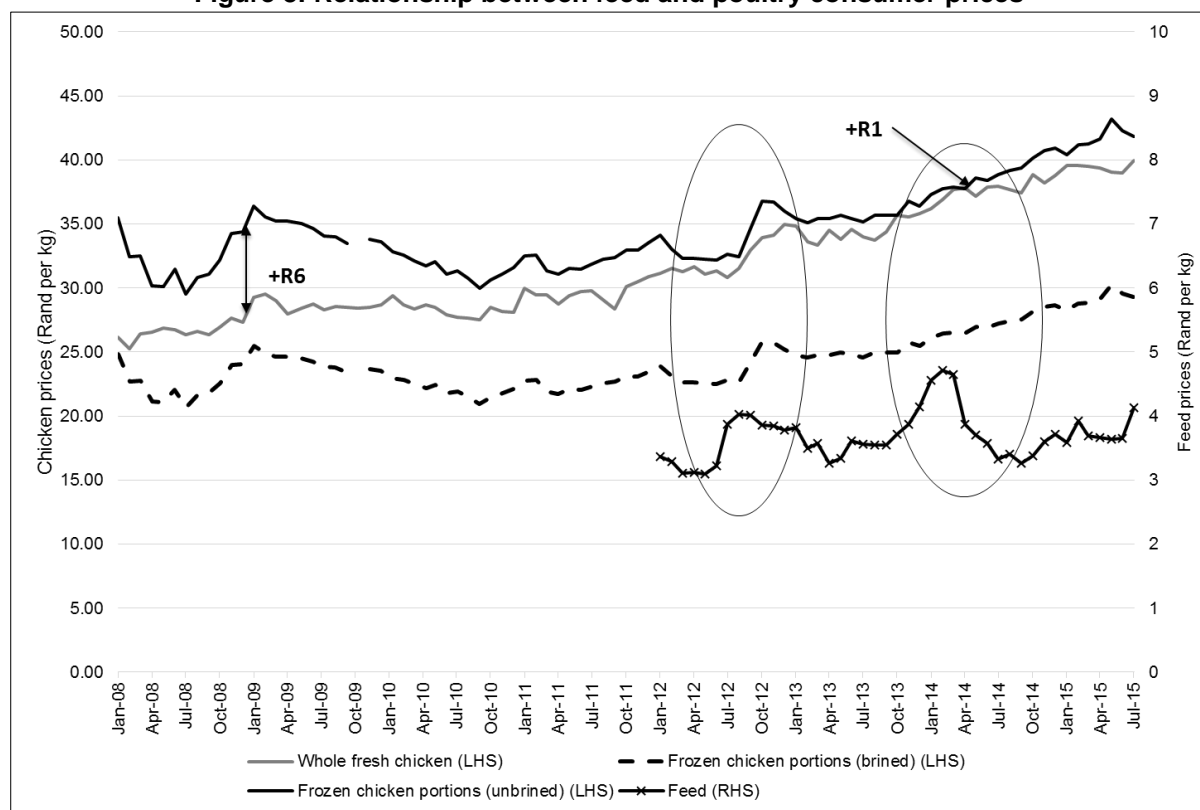
³³ Interview with AFMA, 15 July 2015

³⁴ Interview with AFMA, 15 July 2015

³⁵ The prices of the unbrined chicken portions **have been derived** by adjusting the brined frozen chicken portion prices using the maximum level of brining (30%).

to 2012, while fresh chicken prices increased to reach the frozen prices after correcting for brining.

Figure 8: Relationship between feed and poultry consumer prices



Source: StatsSA; SAPA

Over 2008 to 2010 frozen chicken becoming relatively cheaper compared to fresh chicken. After accounting for brining, frozen chicken is more expensive but only by a very small amount from 2011. The change in frozen chicken prices appears to reflect a reduction of about 20% (R5) in frozen chicken prices in late 2008. This occurs at about the same time Country Bird exited from the Elite joint venture with Astral and introduced a new breed, Arbor Acres. The introduction of the breed not only led to increased production – roughly 20% increase between 2007 and 2010 (Table 1) – but it also increased rivalry in the provision of breeds. It is likely that this rivalry affected the pricing of frozen chicken (which is majority of the market and is produced by the larger suppliers), resulting in the dip in chicken prices in 2008 and the price moderation between 2008 and 2011.³⁶

Prices started increasing in 2012 when the spike in feed prices was followed by a similar spike in chicken prices. However, a similar fluctuation 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 2013 and 2014 which squeezed local poultry producer margins as feed cost increases could not be passed onto consumers. Frozen chicken prices are more constrained by imports than fresh chicken prices, as imports come in frozen form and therefore compete directly with frozen chicken produced locally.

³⁶ It is difficult to make a definitive finding on what influenced the drop in prices. Other factors, such as the weak economic conditions in 2008 for example, may also have had an effect.

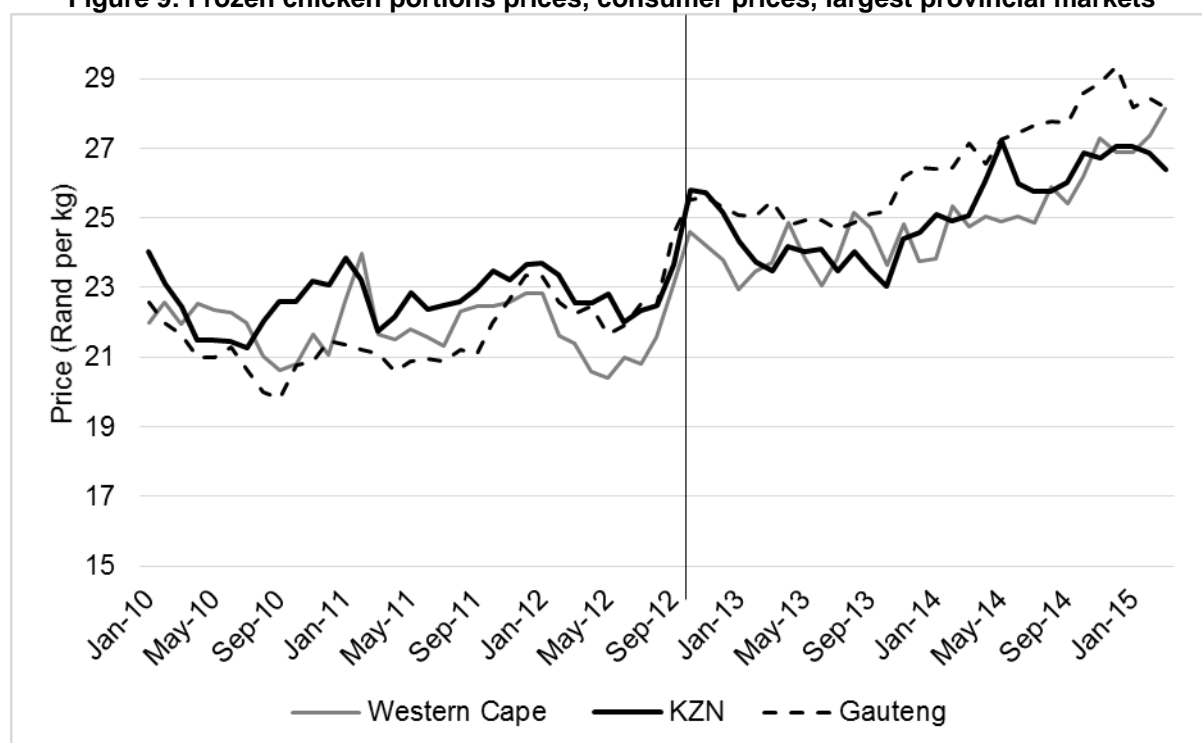
Provincial chicken prices

Poultry production tends to take place close to the main centres of consumption, namely the large urban areas in Gauteng, the Western Cape and KZN. According to DAFF (2014), most broiler production occurs in Mpumalanga, North West and the Western Cape. These locations are close to areas of large consumer demand, while also being located close to feed mills to minimise the cost of transporting feed.

Comparing consumer prices of frozen chicken across provinces reveals interesting changes in relative prices across provinces (Figure 9). Over the two years from 2010 to 2012 prices in Gauteng were significantly below those in KZN (by an average of 8% over 2010 and 2011) suggesting that local competition (and not imports) were influencing prices in Gauteng. This was still within the time period immediately after the introduction of Country Bird's new breed and increases in production. As such, this period reflects increased domestic competition in which domestic producers were competitive against imports.

However, from 2012 the Gauteng price increased to above the KZN and Western Cape prices, and remained an average of 5% higher from 2013 to 2015. This could be explained by the increase in animal feed prices in 2012 (Figure 8). On the other hand, increasing import competition between 2012 and 2014 likely affected coastal provinces more than inland provinces, leading to a relative decline in the coastal prices compared to those found in Gauteng.

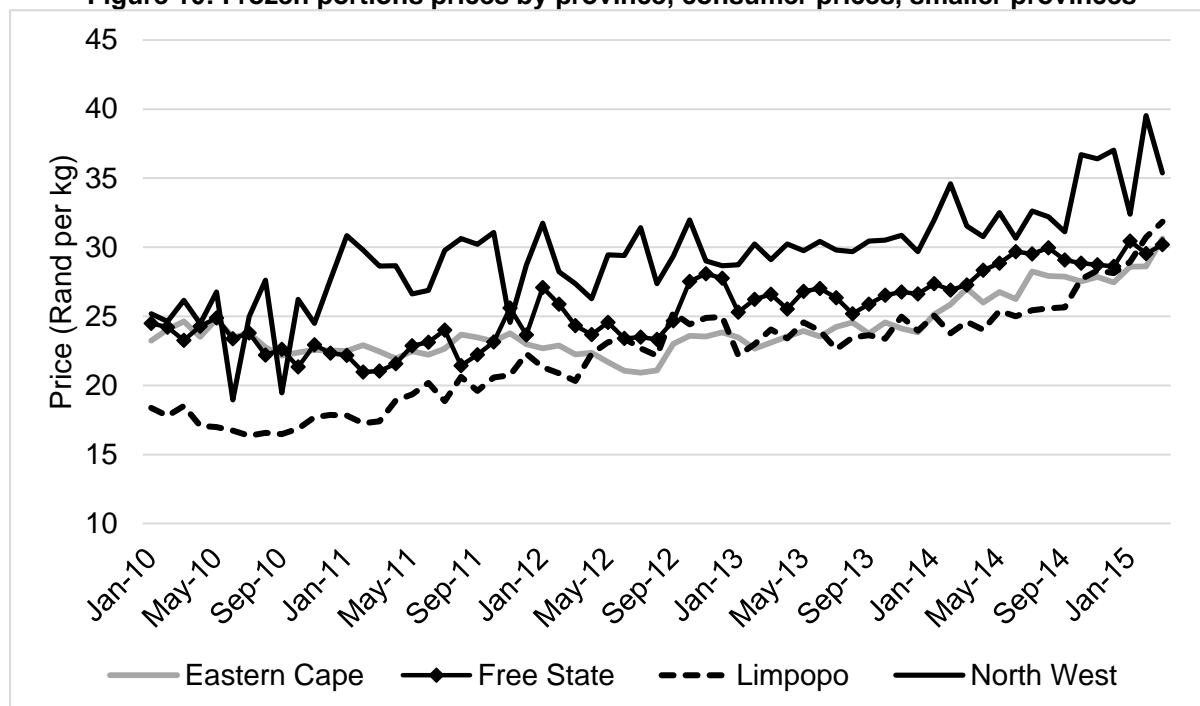
Figure 9: Frozen chicken portions prices, consumer prices, largest provincial markets



Source: StatsSA

In other provinces chicken prices have been higher than in the largest three provincial markets illustrated above. North West province has the highest prices for frozen chicken, while Limpopo has the lowest price, suggesting that local competitive dynamics do matter (Figure 10). The Eastern Cape Province price declined from 2010 to 2012, to be more in line with prices in Limpopo.

Figure 10: Frozen portions prices by province, consumer prices, smaller provinces

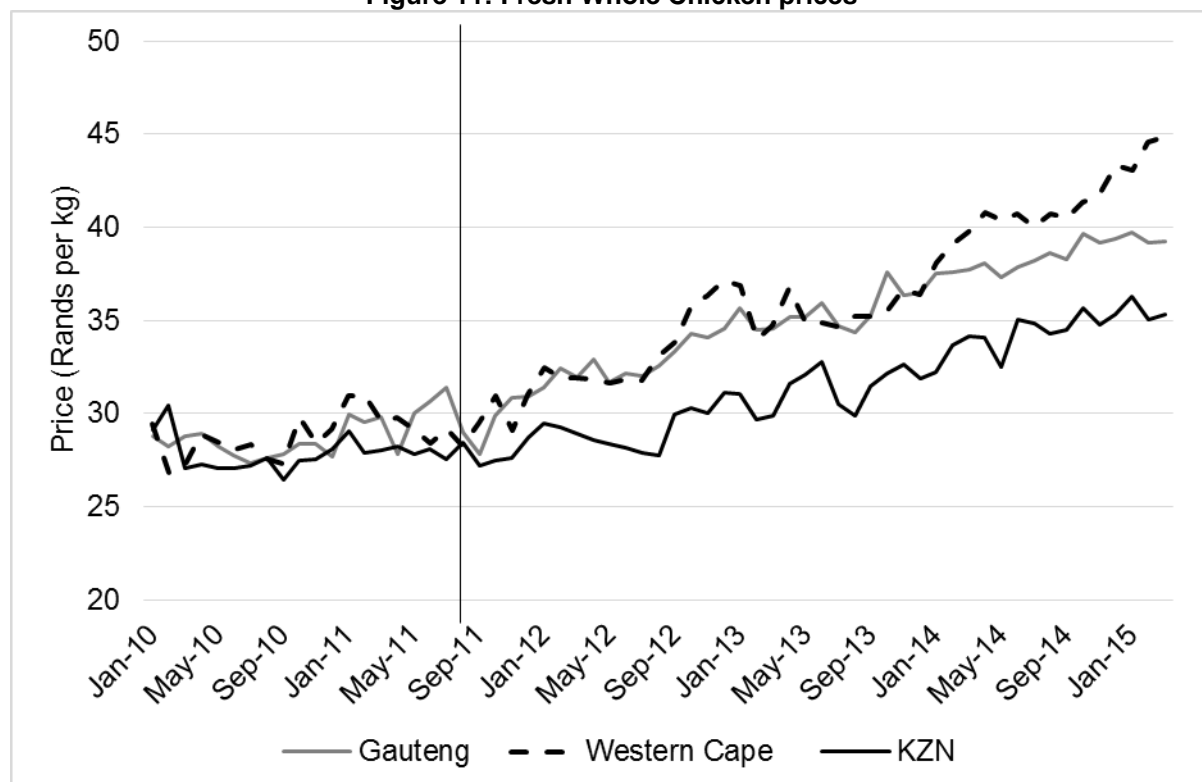


Source: Stats SA

When comparing whole fresh chicken prices by province, there are notable differences between prices of fresh whole chicken in Gauteng, KZN and the Western Cape (Figure 11). Fresh chicken prices are a signifier of local competition dynamics as there is no import competition. Fresh portion prices remained largely unchanged in Gauteng and KZN from 2010 to 2011. This is to be expected given that feed costs are stable over this period. However, from the end of 2011 a substantial gap opened up between KZN on the one hand, and Gauteng and the Western Cape on the other, with KZN appearing to remain highly competitive. The gap is as much as 10% in some months. The Western Cape prices have increased significantly, and have risen above the KZN and Gauteng prices since early 2014. This could be related to the consolidations in the Western Cape, where Astral purchased the abattoir equipment of a Western Cape poultry business through a live auction in 2014.³⁷

³⁷ Astral Annual Report, 2014

Figure 11: Fresh Whole Chicken prices



Source: Stats SA

3.3 Industry structure, market structure, and major producers

RCL Foods Limited and Astral Foods account for 46% of total broiler meat production (DAFF, 2014). Other significant producers are Country Bird Holdings (CBH), Quantum Foods which was formerly part of Pioneer Foods, Daybreak (formerly Afgri Poultry). The operations of each of the larger companies are set out below.

The largest producers RCL, Astral and CBH are vertically integrated with feed production, broiler production and processing, including abattoirs. All three own breeding facilities and own breeding rights for grandparent stock. The animal feed companies which are vertically integrated with these poultry companies – Epol with RCL, Meadow Feeds with Astral, and Nutrifeds with CBH – are the top producers of animal feed in South Africa. Similar to their parent companies, the animal feed producers are also major players in the animal feed market. Their production represents almost 50% of the animal feed produced in South Africa (Louw et al., 2013).

The performance of the main integrated poultry and animal feed producers in revenue terms is outlined below (Table 2). These figures reflect their full operations, including revenues from outside South Africa. However, an assessment of their segmented revenues, where possible, indicates that the bulk of their poultry and animal feed revenues come from their South African operations.

From this, it is clear that Rainbow and Astral are the largest players. There has been some revenue growth among the main poultry and animal feed producers, as they have all grown between 4% and 9% between 2009 and 2014. While the smaller companies – CBH and Quantum – recorded higher growth figures (between 8% and 9%), this is off a lower base than RCL and Astral that both recorded 4% growth. For Astral, the growth is related in part to higher broiler volumes owing to Astral's acquisition of Quantum's abattoir in the Western Cape and

a general increase in bird placements.³⁸ In turn, the increase in Quantum's poultry-related revenue must be viewed in context of its disposal of abattoirs in the Western Cape. Quantum is also selling its abattoir in Gauteng to Sovereign (the smallest vertically integrated player), which is currently only operational in the Eastern Cape.³⁹ At the time of writing, the transaction was pending a decision by the competition authorities.

Table 2: Revenue of main poultry and feed firms, South Africa (Rand billions)

	2009	2010	2011	2012	2013	2014	2015
Country Bird Holdings	2.2	2.4	2.8	3.1	3.2	3.6	-
RCL Foods Limited ⁴⁰	6.8	6.95	8.6	7.8	8.1	8.7	9.1
Astral	7.4	7	7.2	8.16	8.5	9.6	11.6
Pioneer/Quantum		2.4	2.7	3.1	3.6	3.6	1.7 ⁴¹
Daybreak	2.5	2.6	2.9	3.6	4	-	
Sovereign	0.05	0.07	0.09	0.08	0.08	0.07	0.1

Note: The revenue figures in Table 2 include operations outside South Africa. Disaggregating them further for each company would have led to incomparable results.

We now turn to a brief description of the operations of these players.

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.

RCL Foods is a diversified food company made up of four subsidiaries – Foodcorp, Rainbow, TSB Sugar and Vector Logistics. Rainbow, a wholly-owned subsidiary of RCL Foods, is a fully integrated poultry producing unit. The company also has business interests in Zambia and Botswana. In Zambia, RCL Food Limited has a joint venture with Zambeef Products Plc (Zambeef). It partnered Zambeef in 2013 and holds 49% of Zambeef's shareholding in Zam Chick Limited (Zam Chick). Zam Chick manages and operates Zambeef's broiler business, including the broiler houses, chicken abattoir and processing plant. In Botswana, RCL acquired 49% shareholding in Senn Foods Logistics (Pty) in May 2014 via its subsidiary Vector Logistics. Senn Foods Logistics is the largest cold chain distribution business in Botswana and is involved in the distribution of dry, frozen and chilled foodstuffs.

³⁸ Astral Unaudited Interim Results

³⁹ Interview with Quantum, 1 September 2015

⁴⁰ The revenue figures for RCL reported in Table 5 are specifically for their poultry operations, i.e. Rainbow Chicken. In 2011, RCL Foods changed their financial year end from March to June. Therefore, the 2011 revenue figure is for a 15-month period, as opposed to 12 months.

⁴¹ This figure is for the six-month period ended 31 March 2015.

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

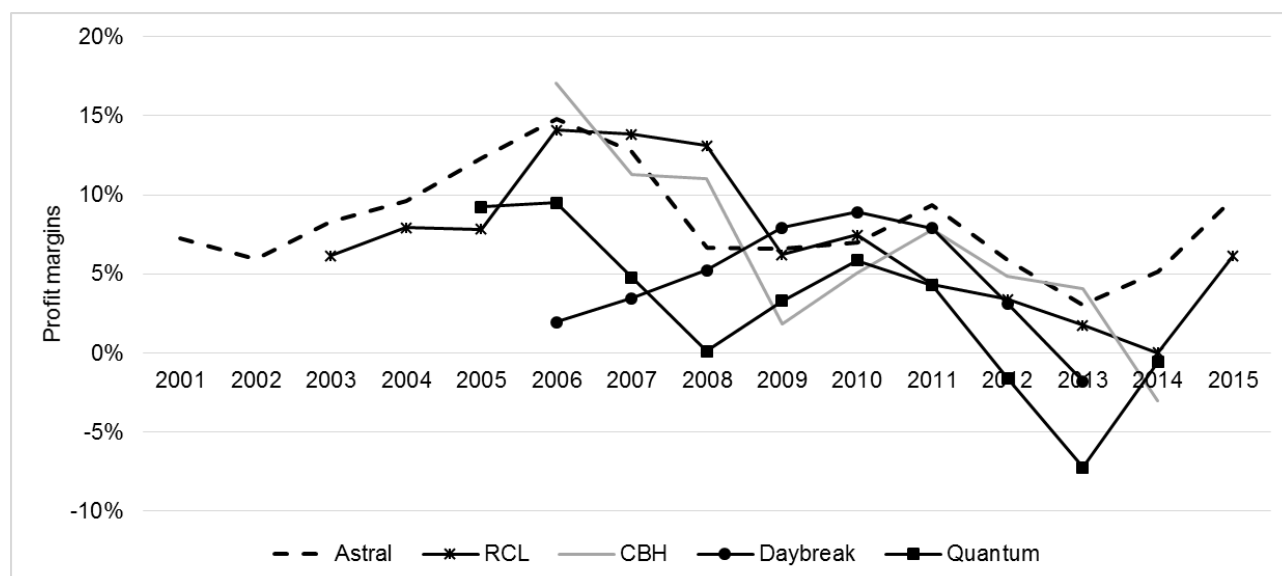
Country Bird Holdings Limited (CBH) is a holding company formed in 2005 incorporating integrated poultry and stock feed business operations in South Africa, operating as Supreme Poultry (Pty) Ltd and Nutri Feeds (Pty) Ltd. Its poultry breeding operations in the region operate as Ross Africa Limited. Country Bird Holdings Limited currently operates in South Africa, Botswana, Zambia, Namibia, Zimbabwe, Mozambique, and Nigeria. CBH's poultry breeding operations in Botswana and Zambia operate under the Ross subsidiary and the animal feed unit operates under the Master Farmer subsidiary. CBH's Mozambique operations are still to be incorporated but they will include a fully integrated poultry business. CBH also operates the KFC franchise in Zimbabwe.

3.3.1 Margin analysis

Operating margins for both Rainbow and Astral increased significantly from 2002, which coincided with Astral's acquisition of National Chicks, a transaction that reduced competition in day-old-chick breeding and hatching (Figure 4).

When Country Bird entered the market in around 2005 it was bound by restrictive agreements associated with sourcing its breeding stock from the Astral-controlled Elite joint venture. These restrictions ended in 2007. As CBH ramped up production from 2007, increased local competition brought RCL and Astral's margins back down to around 6% of turnover in 2009, margin levels which were last seen in the early 2000s. This represents a significant gain to consumers as the difference in margins from their peak in 2006 to their levels in 2009 levels equate to about R1bn per year.

Figure 4: Operating margins



Source: Companies' annual reports. The profit margins are calculated based on revenues and profits from operations both inside and outside South Africa. Disaggregating them further for each company would have led to incomparable results. All margins represent operating profit as a percentage of total revenue

In 2013 and 2014 the industry was faced with intense import competition, as evident in the collapse of margins across all the companies. The general collapse in margins in the sector led to some firms shutting down and selling their assets. Astral purchased some of these assets, most notably in 2014 when it purchased some of the abattoir assets of Kwazulu-Natal's Argyle Farms (Hedley, 2014) and Darling Farm Chickens in the Western Cape (Business Day, 2014). Quantum has also sold its Gauteng abattoir to Sovereign Foods, and has closed its processing operations (abattoirs) in the Western Cape and entered into an agreement to supply live birds to Astral instead (Magwaza, 2014).

The margins recorded in the 2015 results of RCL and Astral have recovered significantly, presumably as a result of protection offered to the sector following the most recent tariff decision by ITAC.

3.4 Entry, growth and exit in the poultry sector

This section reviews the major episodes of entry into the poultry sector with particular emphasis on the modes of entry such as the level of value chain at which entry takes place, extent of vertical integration, and the use of government incentives.

It is notable that entrants and rivals either come from firms with activities in grain trading and milling or those who already have poultry operations in neighbouring countries. CBH, for example, was a major poultry producer in Zimbabwe and Botswana before entering South Africa, while Pioneer, Afgri, NWK and VKB are all rooted in the large grain co-operatives (Pioneer being formed from Bokomo and Sasko, and Afgri having evolved from OTK).

A review of entry into the poultry industry shows that entry has taken place predominantly at the broiler production and processing levels of the value chain. In Afgri's case, entry took place through the acquisition of existing businesses (Daybreak and Rossgro) as well as significant investments in expansion well above R500 million. In contrast, Grain Fields Chicken entered through greenfield investments involving both private and public funds.

3.4.1 Case study 1: Growth and restructuring of Afgri/Daybreak

In 2006 Afgri Operations Limited (Afgri) re-entered the poultry sector through the acquisition of Daybreak Farms. This brought about a period of significant capacity expansion within the industry. Afgri had previously been active in the poultry sector through a 50-50 joint venture with Astral Operations Limited (Astral) in Earlybird Farms (Pty) Ltd (Earlybird) which Afgri exited in 2004. Its re-entry thus provides a unique opportunity to examine some of the modes of entry and expansion into the poultry industry, the benefits of vertical coordination in this sector, and the importance of achieving efficient levels of scale in this low margin industry. The history of Afgri's participation in the Earlybird JV is pertinent to understand some of the historical competition issues in the sector, and is described further below.

In 2004 Astral was the sole distributor and supplier of both Ross 788 and 308 breeding parent stock to the broiler industry (a situation that continues till today).⁴² Astral supplied parent stock to the Earlybird JV, which was a fully integrated broiler producer marketing a full range of frozen, fresh and value added chicken products.⁴³ One of the conditions of the Earlybird JV was that neither of its shareholders (i.e. Astral and Afgri) could start any new businesses which competed with the joint venture.

⁴² Astral Operations Limited/Afgri Operations Limited Tribunal Case No.: 57/LM/AUG04. The Ross 788 breed is no longer being produced (Interview with SAPA, 23 August 2016).

⁴³ Astral Operations Limited/Afgri Operations Limited Tribunal Case No.: 57/LM/AUG04

This was more of a constraint for Afgri than it was for Astral, which already had an existing broiler production business in another subsidiary, County Fair Foods (Pty) Ltd. While Astral could explore further expansion opportunities within the poultry industry outside of the Earlybird joint venture, Afgri was confined, by virtue of the terms set out in the shareholders' agreement, to those growth opportunities which flowed from its participation in the joint venture. As a result, in 2004, Afgri made the decision to exit the broiler production industry; noting that it could re-enter in future when a suitable opportunity presented itself "unencumbered by the constraints imposed (on them) by the Earlybird investment".⁴⁴ This contrasts with CBH which was in a similar position but brought a competition case against Astral and went on to introduce a new breed into the South African market.

The 2006 acquisition of Daybreak Farms at a cost of R120 million marked Afgri's re-entry into the broiler business.⁴⁵ 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.⁴⁶ Accordingly the acquisition of Daybreak saw Afgri embark on a significant drive to increase the production capacity of its new broiler business.⁴⁷ Daybreak was renamed Afgri Poultry in 2010.⁴⁸

Afgri undertook an estimated expenditure of R410 million to expand their broiler business.⁴⁹ The expansion increased weekly production capacity from approximately 325 000 birds to 650 000 birds per week in 2009.⁵⁰ 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.⁵¹

Given its vertically integrated nature, a significant share of Afgri's animal feed production is utilised in its poultry business. In line with its strategy to increase throughput of animal feed from the poultry business, this figure increased from 19% in 2012 to 25% in 2013.

The acquisition of Daybreak, coupled with the expansion of the broiler business, resulted in a substantial increase in output and revenue for the Afgri Animal Feed and Poultry businesses. Revenue increased from R407 million in 2007 to R2.5 billion in 2008, an increase of 529%.⁵²

⁴⁴ Afgri Annual Report 2004, Chairman's Message, page 12. We note that this exit was only in respect of broiler production. A condition imposed as part of Afgri's exit from the JV was that Afgri would continue to supply Earlybird with a specified quantity of feed for a period of 9 years. At the time, Astral's mill did not have the capacity to meet Earlybird's entire animal feed requirements. (57/LM/AUG04).

⁴⁵ Afgri Annual report 2006

⁴⁶ Afgri Annual report 2006

⁴⁷ Afgri Annual report 2006

⁴⁸ Afgri Annual report 2010

⁴⁹ Afgri Annual report 2007

⁵⁰ Afgri Annual report 2009; Afgri Annual report 2012 notes that the initial expansion at Daybreak Farms doubled capacity at Delmas.

⁵¹ Afgri Annual report 2010

⁵² It should be noted that in 2007 the Animal Feed business of Afgri was reported under the protein and oils category and not the food category, thus the percentage increase may be overstated. Given that these results were not reported separately, we cannot provide a more accurate breakdown.

Operating profit increased from R14 million in 2007 to R134 million in 2008, an increase of R120 million.⁵³

In conjunction with its expansion projects at the broiler level, Afgri sought to expand its customer base. It obtained accreditation to supply major retailers and was appointed as a supplier to Yum! (KFC) during 2012. Afgri Poultry's products are retailed under the Daybreak Superior brand and it also supplies supermarkets with private label products. One of the main benefits of distributing through retailers was lower logistics costs as a result of delivering large quantities to a single, centralised distribution centre.

In 2014, following strong growth in group-wide operating profits (and despite two years of consecutive losses in its poultry business, a R89 million loss in 2012 and R112 million loss in 2013⁵⁴) the Afgri group of companies was bought out by AgriGroupe Holdings (Pty) Ltd. Afgri subsequently delisted from the Johannesburg Stock Exchange in April 2014.

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 PIC.⁵⁵ Following this transaction, Afgri 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. However, it entered the industry at a particularly difficult time with poultry producers' margins under pressure from both rising input costs and downward price pressure from imports. It faces further challenges in ensuring that it does have the scale required for competitive production and effective coordination throughout the value chain.

At the end of 2015 Daybreak had a combined processing capacity of 1.5 million birds per week. Its production volumes are comprised of 40% IQF birds with the remainder being made up of fresh whole chicken or portions. Though Daybreak has its own broiler farms, it sold seven of its farms in the six months ending June 2015 to black-owned entities which are now supplying Daybreak with 20% of its broiler offtake on a five year contract. The breakdown for broiler production reveals that 80% of its chickens are produced by contract growers with the remaining 20% coming from its own operations. Currently, Daybreak has 47 sites where broilers are reared.

The Afgri case study highlights the importance of scale, access to customers and the organisational capabilities required in what is essentially an industrial production process. It also indicates a trend towards increased outsourcing of broiler production. The case study offers the following key insights:

Scale and vertical coordination are critical

When Afgri acquired Daybreak in 2006, it planned to expand its Delmas processing plant to a scale that would enable Afgri to compete against other vertically integrated producers at the lowest possible production costs.⁵⁶ In order to do this, Afgri had to expand its broiler business

⁵³ Again, we note that the operating profit figures for 2006 would also be understated as they exclude the Animal Feed operating profits for this period.

⁵⁴ Afgri Annual report 2013

⁵⁵ Afgri Ltd and Agrigroupe Holdings (Pty) Ltd. Case No. 017939

⁵⁶ Afgri Annual report 2012

to bring about efficiencies in other vertically related aspects of the broader business, in particular to improve the capacity utilisation in its animal feed business.⁵⁷

Scale is a key factor in operating a competitive animal feed business. For example, a factory that produces 6 000 tonnes of feed per month will produce animal feed at a price of between R320-R350/tonne, while a factory that produces 20 000 tonnes of feed per month will produce feed at between R210-R250/tonne.⁵⁸

Coordination throughout the value chain is also critical to make the most efficient use of capacity at each level, although this does not necessarily imply full vertical integration. The importance of taking advantage of scale economies was also emphasised by other interviewees, who indicated that the low margins at retail level force producers to secure better margins at other levels of the value chain.

Access to a diverse range of customers

Though access to customers (in general) was emphasised as important, particularly given the perishable nature of poultry products, it is particularly important to secure as broad a range of customers as possible. The benefit of securing the business of fast food outlets, for example, is that this segment is insulated from import competition. Poultry producers also find that the number of alternatives available in the retail market (including private labels) makes it more difficult to negotiate price increases.⁵⁹

Points of entry

There is a trend towards increased outsourcing of broiler production within the poultry industry. Many poultry producers emphasised that growing numbers of black producers are entering the value chain. However, it is important to indicate that entry at the broiler level of the value chain relies on contractual relationships for animal feed input and downstream processing capacity at the abattoir level. It does not necessarily constitute effective competition within the poultry value chain as the feed and processing requirements are critical. Afgri's entry emphasises the importance of scale and vertical coordination, along with the leverage from inputs, so while entry is possible and likely at the broiler production level, these farms do not necessarily compete with the existing vertically integrated players.

These are important lessons here for the 'black industrialists' initiative. Such businesses can be weak and vulnerable businesses, dependent on existing large incumbents for key inputs and routes to market. If this is not to be the case the businesses need to attain scale, to have bargaining power within the value chain and to have access to the main 'routes to market'.

3.4.2 Case study 2: Entry of Grain Field Chickens

Grain Field Chickens (GFC) is a division of the Vrystaat Koöperasie Beperk (VKB) which is based in the eastern Free State. It was established in 2010 and has since become almost fully vertically integrated as it has an abattoir, contract growing farms and two feed mills. VKB owns a 76.9% share in GFC. The rest is owned by the Industrial Development Corporation (IDC).

⁵⁷ Afgri Annual report 2012

⁵⁸ Interview with Poultry Producer, July 2015

⁵⁹ To illustrate the difficulty of negotiating price increases we note that one interviewee reported that after they had approached a major retailer with a price increase request, the retailer simply stopped accepting deliveries for a 2 week period as they knew that the producer only has freezer space for approximately 2 weeks' worth of stock. Once they had run out of freezer space, they had no choice but to return to the retailer and offer their product at a lower price.

The IDC shareholding will be transferred in equal shares to the Grain Field Workers' Trust and the VKB Workers' Trust as soon as the loan is repaid.

VKB Agriculture (Pty) Ltd is a farmer-owned agricultural company which has been specializing in the storage of grain for almost a century. Its primary objectives are "the handling, storing and marketing of agricultural products, the provision of requirements and services and financing activities" (VKB, 2009, p. 24). 60% of their storage capacity in 2009 was allocated to maize and 29% to wheat (VKB, 2009).

The move into poultry production was primarily a means to diversify the business from its primary business of grain handling, where they faced declining margins (Coleman, 2011). The establishment of GFC was based on key pre-existing commercial advantages: VKB's owners produce 600 000 tonnes of yellow maize per year and has increased soybean production from 30 000 tonnes per annum six years ago to the current 140 000 tonnes.⁶⁰ GFC uses 20 000 tonnes of soybean for its own animal feed needs and sells the rest to competitors.⁶¹ So far, GFC has not had to import maize or soybean for their animal feed requirements.

GFC was established as a joint venture with the 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 entire Grain Field Chickens project has seen a total investment of R350 million with the abattoir alone costing R200 million to construct. In addition to the two stock feed mills, VKB also has a 40% share in Free State Oils, a soya oil crushing plant in Villiers (Coleman, 2013). 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.⁶²

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. They also have 22 VKB retail outlets and 41 NTK outlets through which they market their agricultural produce, including the broilers. VKB also supplies the Boxer Group of supermarkets and there are prospects of supplying Spar stores (Coleman, 2013).

GFC is not integrated into breeding stock but receives their day-old chicks from Eagle's Pride hatcheries. GFC uses both Cobb and Ross birds, with Cobb making up 85% of the day old chicks that they purchase.⁶³ The main markets of GFC are in Gauteng and KZN.

In terms of performance, Grain Fields did not post a profit until the 2014/15 financial year (Table 3). In fact, in its first year of operation in 2011, Grain Fields did not realise any revenues due to high pre-production costs. Its losses increased almost sevenfold from R5.2 million in 2012 to R35 million in 2014 before they finally posted a profit in 2015. This was largely attributed to increased volumes but also to a substantial decrease in the shareholder and operating loan from VKB from R269 million in 2014 to R204 million in 2015 (VKB, 2015).

Table 3: Grain Field Chickens profit/losses

	2012	2013	2014	2015
Profit/(loss)	(R5.2 million)	(R37.5 million)	(R35.2 million)	R14 million

Source: VKB annual reports

⁶⁰ Interview with Grain Field Chickens, 28 September 2015

⁶¹ Interview with Grain Field Chickens, 28 September 2015

⁶² Interview with Daybreak, 27 July 2015

⁶³ Interview with Grain Field Chickens, 28 September 2015

Two key issues emerge from the VKB/GFC case study:

High capital costs of entry

GFC required R350 million to enter the poultry business as a vertically integrated operator; R200 million of which was required only for their abattoir. These costs of entry are significant, and constitute a substantial barrier to any new entrant seeking to enter as a vertically integrated producer, partly explaining why most episodes of entry seem to take place at one discrete level of the value chain. As noted above though, the competitive effect of single-level entry is limited by its very nature and cannot readily be compared by the format of entry seen here.

The need for 'patient' capital

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. This does, however, present a significant challenge to any new entrant who may not be able to absorb losses over such a long period of time or may not have access to alternative revenue streams from diversified operations as VKB does. The role of development finance from the IDC has been very important.

The next section draws together the key barriers to entry emerging from these case studies and other interviews more broadly. The issues span structural, strategic and regulatory barriers to entry.

3.5 Drawing together the lessons on barriers to entry

There have been significant changes in the structure of the poultry and animal feed industry in South Africa over the past decade. This includes major entry and expansion episodes as well as significant consolidation.

New entrants have come from within the SADC region, in the form of CBH, as well as through vertical integration from feed and its components, such as VKB. The recent consolidation and restructuring in the sector is part of wider developments in food processing. For example, RCL has acquired Foodcorp (which had milling and feed operations) as well as smaller local producers (including in Limpopo). In contrast, the poorly performing poultry divisions of Pioneer and Afgri were divested as part of the refocusing of these businesses.

This all points to a need to understand effective rivalry in terms of the scale required for efficient operations combined with the ability to ensure key inputs and to coordinate activities across the value chain. As discussed in the two barriers to entry review papers (Banda, Robb, Roberts, & Vilakazi, 2015; Banda, Robb, & Roberts, 2015), it is important to understand barriers to entry in terms of different dimensions. These include intrinsic features of the industry or sector such as scale economies, regulatory obstacles to new firms, as well as the possible conduct of incumbents and how the markets have been shaped by their behaviour and strategies. These dimensions interact in complex ways. For example, scale economies are not necessarily in themselves an entry barrier, however, they imply investments have to be substantial in order to be an efficient producer. In addition to set-up and working capital costs, entrants also face regulatory barriers such as registration and licencing requirements. Critically, new entrants will also require access to customers and to new markets/to meet latent (unmet) demand. We explore these barriers in more detail below and will refer back to the lessons learnt from interviews.

Cost competitiveness

Animal feed is by far the main input cost and determinant of cost competitiveness in the poultry sector. In the context of constrained water, South Africa will remain a net importer of soya and

sunflower.⁶⁴ To sustainably lower the animal feed cost base to close to that of producers in North and South America thus requires complementary agricultural and trade policy that takes into account the opportunities of sourcing agricultural inputs from the region. Currently, South Africa imports most of its soya from Argentina. Yet, Zambia became a net exporter of animal feed in 2012 and continues to grow production volumes. However, it remains cheaper to import soya from Argentina to South Africa than to transport soya from Zambia to South Africa. Improvements in logistics within the SADC region has the capacity to reduce feed production costs significantly.

High performing breeds are also critical to performance. These are obtained from the two of three transnational corporations. In effect, these two corporations, USA-based Cobb and Europe-based Aviagen, dominate the entire southern African region. Access to these breeds is limited by the licencing conditions attached to them.

Competitiveness also depends on being able to process and get the product to market, and thus on the processing and supply through the cold-chain, including the necessary logistics.

Given all these obstacles, what role is there for smaller producers? The changes in large corporates such as Afgri and Quantum show that at the broiler level, but also in specialised breeding operations, there is indeed a role for smaller producers within well-co-ordinated value chains. It is critical to understand, however, that the ability of these firms to compete depends on their position and linkages within the overall chain, such that they can obtain the correct inputs at competitive prices, and can supply the end products into the right markets. At these different levels there are larger firms and thus the competitive space for the smaller firms depends on the conduct of these large firms upon which they depend.

As illustrated in the company experiences, scale economies are substantial at different levels and a critical part of achieving cost competitiveness.

- At the level of feed, a mill producing 6 000 tonnes per month will have processing costs of around R320-350/month, while a mill of 20 000 tonnes per month will have a processing cost of R210-250/tonne, or a saving of around 30%.⁶⁵ The capital investment to establish a large-scale feed mill (of 12 000 - 30 000 tonnes per month) is also substantial at R20-25mn excluding the cost of the land, and takes 18-24 months to construct.
- The abattoirs required for slaughtering and processing also need to be at a large scale to lower average costs. Estimates of the minimum efficient scale in processing are around 100 000 birds per week, which requires an initial capital cost of about R110mn – R200mn.⁶⁶
- Breeding operations require a significant amount of time to bring flocks into production, at around 15-18 months from start-up to the sale of the first broilers.⁶⁷ Significant working capital is required to sustain operations during this time.

⁶⁴ There are other factors that limit South Africa's ability to grow sufficient soybean. South Africa has much higher demand for soya oilcake (to use in animal feed) than for soya oil, an output of the crushing process. Given the low demand, not all the oil can be sold which limits the profitability of growing and crushing additional soya. (Interview with SAPA, 23 August 2016)

⁶⁵ Interview with poultry producer, July 2015

⁶⁶ Interview with poultry producer, July 2015

⁶⁷ Interview with poultry producer, June 2015

- Broiler production can be operated on a much smaller-scale as long as it has strong vertical linkages to enable the efficient slaughter of the live birds produced and the sourcing of feed and day old chicks

Structural barriers

While scale in itself is not necessarily an entry barrier, the investment in the scale required may raise a number of challenges depending on the availability of capital and the degree to which costs are sunk. In the poultry industry there are scale economies at different levels and there are also important considerations related to vertical linkages in the value chain. Though the level of coordination required does imply that there is a need for vertical integration, recent restructuring indicates that non-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. 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.

The linked investments required to be competitive and the time to bring production on-stream mean that building a business will involve a substantial period before returns are realised. The best example of this is the GFC experience. The expansion into poultry was motivated by the need to add further value to their grains business, much as for Afgri. However, the large amount of capital and the time to ramp up meant several years of losses before positive margins were achieved.

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 and, indeed, such linkages into grain milling and storage have provided a basis for important new entrants. 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.

Access to customers

The perishable nature of processed poultry products, as well as the time-sensitive nature of the broiler production process makes access to markets a critical issue. Many interviewees emphasised the importance of supplying the formal retail chains, who remain the largest outlets for poultry products. However, bargaining with supermarkets remains a significant challenge, particularly in IQF portions which make up 60% of poultry consumption in South Africa and are considered a fairly standard commodity. The influx of imports has further weakened the bargaining position of producers relative to large retailers. For these reasons, interviewees raised the importance of finding alternative customers for their broilers.

The fast-food segment is particularly important in this regard as producers do not face competition from imports in this segment. Though supplying fast food restaurants is more lucrative, they also have far more specific requirements regarding the size and weight of the birds. Supplying fast food restaurants is thus dependent on strict contracts and only a few suppliers would have scale and expertise to do so. Demand from the fast food segment is thus limited and competition for custom is fierce. New entrants may find it particularly challenging to build up a diverse customer base upon entry.

Strategic barriers and the conduct of incumbents

The competition cases in the poultry sector illustrate the potential for incumbents individually or collectively to raise entry barriers and exclude smaller rivals. The case brought by CBH against Astral demonstrated the importance of obtaining a high performing breed. The original rationale of the Elite joint venture in the 1980s was for the rivals to cooperate in order to support an alternative breeding business to that of Rainbow, which was vertically integrated and did not supply independent producers.

After gaining unilateral control of Elite in 2002, Astral enforced restrictive provisions lessening the ability of rivals to compete.⁶⁸ Specifically, Astral enforced provisions restricting independents from sourcing from other breeders (entrants and small participants) and tied the purchase of breeding stock to the purchase of feed from its own operations. The end of these restrictive arrangements has seen the growth of smaller producers, substantially increased effective rivalry, increased investment and lower margins. Astral admitted to abusing its dominant position in the breeding market in restricting a smaller rival, CBH, from competing in the broiler market by introducing a new breeding stock.⁶⁹

Incumbents can thus foreclose downstream rivals from inputs meaning that those rivals would have to enter at both upstream and downstream levels, substantially increasing the entry costs. With upstream competitors this foreclosure could only happen if there was coordination or collusion on the part of the upstream firms.⁷⁰ 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.

It is notable that following the entry of CBH at the breeding level with the Arbor Acres breed, Rainbow started selling day-old chicks of their Cobb breed to independent producers in larger volumes.

This points to the importance of effective competitive rivalry to discipline unilateral market power. The scale economies and need for coordination of inputs and supplies means that the markets will remain concentrated, however, there is an important difference between there being effective rivalry, which means independent firms have alternatives to choose from and can bargain in the contracting process, and market power, which means independent firms can be undermined.

The ability of smaller firms to enter and to grow in this sector will thus depend on the conduct of the incumbents, the capabilities of the entrants including links to key inputs, and the support the entrants receive such as development finance. This indicates there are complementarities between the work of the competition authorities, industrial policies to build capabilities, and development finance to provide patient capital. All three are needed to widen participation and ensure a competitive industry. There are major opportunities given the substantial trade deficit. Simple estimates based on existing output-labour ratios and the fact that local production would have to be around 20-25% bigger to supply the volumes currently imported suggest an addition 15 000-40 000 jobs could be created (depending on if the direct or linked employment in poultry is considered, as estimated by SAPA).

⁶⁸ See Ngwenya and Robb (2011), Competition Commission v Astral Operations Ltd and Elite Breeding Farms, 30 June 2008, settlement of Commission with Astral Operation Ltd, 5 November 2012.

⁶⁹ See settlement of Commission with Astral Operation Ltd, 5 November 2012, para 4.2

⁷⁰ Collusion has been uncovered in the poultry sector. Tydstroom (at the time a division of Pioneer Foods) and a relatively small producer, and Astral, admitted to collusive conduct relating to raising prices and agreeing on promotional deals for fresh poultry in the Eastern and Western Cape (settlement of Commission with Astral Operation Ltd, 5 November 2012, paras 3.9 to 3.12).

Regulatory barriers

The poultry sector is subject to domestic regulation just as the case with the rest of the agro-processing sector. Regulation has an effect of creating structural barriers to entry in any given sector. Regulation can take two forms; namely economic regulation targeted at disciplining a monopoly and regulation aimed at controlling for other undesirable outcomes (Banda, et al, 2015). The latter category includes regulation such as licensing and environmental laws that govern a particular sector. Licensing requirements can raise barriers to entry if structured with onerous requirements on new entrants or if the regulator has a limit on number of licences that can be granted (Banda et al, 2015). It is within this context that we critically examine the registration of feed as a structural barrier to entry in the poultry value chain.

According to interviewed firms, registration of feed poses a barrier to new entry in the poultry value chain. All feed produced for sale into the open market has to be registered with the Department of Agriculture Forestry and Fisheries. The feed is regulated by the Fertilizers, Farm feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947, Act 37.

The Act categorises the types of feed registration as follows; new applications, renewal of registration, re-instatement of registration, cancellation of registration, label amendments, technical amendments, additional supplier/manufacture, amendment of registration holder/company name, free sale certificate, addition of packaging size, import permits and advertisement. All feed sold in the open market has to be registered before being sold. All existing feed manufacturers also have to re-register their feed after every three years. The department's regulation is concerned with monitoring quality and assessing whether the feed formulation matches the need of the animals.

The registration of feed involves a four stage process, namely, verification, technical screening, assessment and approval. Table 4 summarises the registration procedure for feed.

Table 4: Feed registration process

Stage	Description	Requirements
1	Verification	Completed application form, and indication of information that will be included on the packaging. Screening of applications is done over a 14 day period. If the application meets all the requirements the applicant is informed of the outcome and notified of approximate completion time for the registration process. In cases where the application fails to meet all requirements the applicant is notified and required to resubmit the application in a period not exceeding 30 days.
2	Technical Screening	The technical team assesses all the information, laboratory reports, and certificates of analysis provided. Deficiencies on the application are communicated to the applicant and should be rectified within 30 days. Failure to supply the requested information on stipulated time will result in the application being rejected.
3	Assessment	Once the application passes the screening process, it is allocated for scientific evaluation. During the evaluation process, the applicant may be required to clarify certain issues on the application or provide data that will be missing. If missing information is not supplied by the applicant within the specified time frame, the application will be rejected.
4	Approval	Once the evaluation process has been completed, the technical advisor submits an evaluation report and recommendations to the registrar. Registration officers prepare documents on the application for submission to Registrar. The applicant is informed about the decision of the Registrar, and issued with the relevant documentation. Registration is valid for three years and is subject to renewal.

The Act also allows for appeal in cases where the application is rejected or has been approved with conditions that do not satisfy the applicant. The appeal is submitted to the Minister for adjudication.

Though feed manufacturers acknowledge that a registration process is necessary to ensure the quality of feed produced, it may be restrictive to new entrants. According to an interview with a small animal feed producer⁷², it is 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.

A more common concern with the registration process is that registration process can take up to 11 months to be completed, almost three times as long as DAFF's internal guidelines. This impedes manufacturers' ability to change feed formulations in response to change in input quality (for example, variations in the protein content of soya), changing commodity prices, or when shortages arise and an input must be substituted. To resolve this constraint, the Animal Feed Manufacturers Association recently partnered with DAFF to assist in the registration process through offering a Feed Registration Facilitation Service as part of the association service to its members (AFMA, 2015). The initial role of the association will be to screen the applications for accuracy before submitting them for assessment by DAFF.

3.6 Conclusion

The competition cases in the poultry sector have emphasised the disruptive effect of new entrants in concentrated markets. The entry of CBH, who already benefited from having institutional capacity and capabilities of running a broiler production business in Zimbabwe, had a notable effect on prices and on margins, directly benefiting customers. Development finance coupled with backwards integration into the main components of feed supply has also supported successful entry. However, the case studies emphasise the need to achieve scale economies and the time lag from investment to positive returns.

Effective rivalry depends on high levels of vertical coordination to ensure that the benefits of scale are secured at both the upstream (feed production and breeding stock supply) and downstream (slaughtering and processing) levels of the value chain. Producers entering at the broiler production level may still be subject to the exercise of market power by the larger firms on which they depend for inputs and for processing capacity. However, it is not necessary for there to be full vertical integration and, indeed, the restructuring of Pioneer/Quantum and Afgri/Daybreak has involved disintegration with the separation of activities in processing (abattoirs) where consolidation can yield greater scale economies.

At the level of supply of breeding stock the critical issue is to ensure supply of high performing breeds on a competitive basis, which is possible through long-term contracts. Indeed, the vertical integration appears to be to ensure that firms are not subject to the exertion of market power by the larger producers. Competitive supply conditions through the value chain in more recent years has allowed non-integrated producers to successfully participate. The differences in provincial prices further suggests that competitive intensity matters for consumer prices.

The other major development over the period has been the growth in imports up until anti-dumping duties were imposed. The recovery of margins and a more competitive local industry, including due to a depreciated exchange rate, suggests these temporary measures could be

⁷¹ DAFF meeting, 14 August 2015

⁷² Meeting with animal feed producer, July 2015

lifted. However, the long-term cost competitiveness of the sector depends on low cost supplies of maize and soya, the latter which can be sourced from countries in the region such as Zambia, as well as from local farmers.

4. Milling of maize and wheat

The second study reviews entry and competition in the maize and wheat value chains. The recent history of cartel conduct in maize and wheat milling provide useful lessons about the behaviour of established incumbents in recently liberalised markets and show quite clearly how incumbents continue to exert market power (either individually or collectively) to exclude rivals and maintain anti-competitive rents post liberalisation (Makhaya & Roberts, 2013). The review of entry and competition in the wheat and maize value chains provides useful lessons about the particular challenges new entrants face to become effective competitors in concentrated or previously cartelised markets.

To contextualise this discussion, it is useful to consider a brief history of the regulation of agricultural commodities and of anticompetitive conduct in the maize and wheat milling value chains in South Africa.

4.1 A brief history of regulation and competition in maize and wheat milling

Prior to the 1990s, the supply, marketing and sale of agricultural commodities was controlled by the Marketing Act of 1937 (amended in 1968). The Marketing Act contained several provisions that limited competition in the interest of white farmers, including setting up “Control Boards” that determined producer and consumer prices, oversaw surplus removal schemes, determined grain handling and storage fees, and controlled the distribution and sale of commodities through a single-channel marketing system (Vink & Kirsten, 2000).

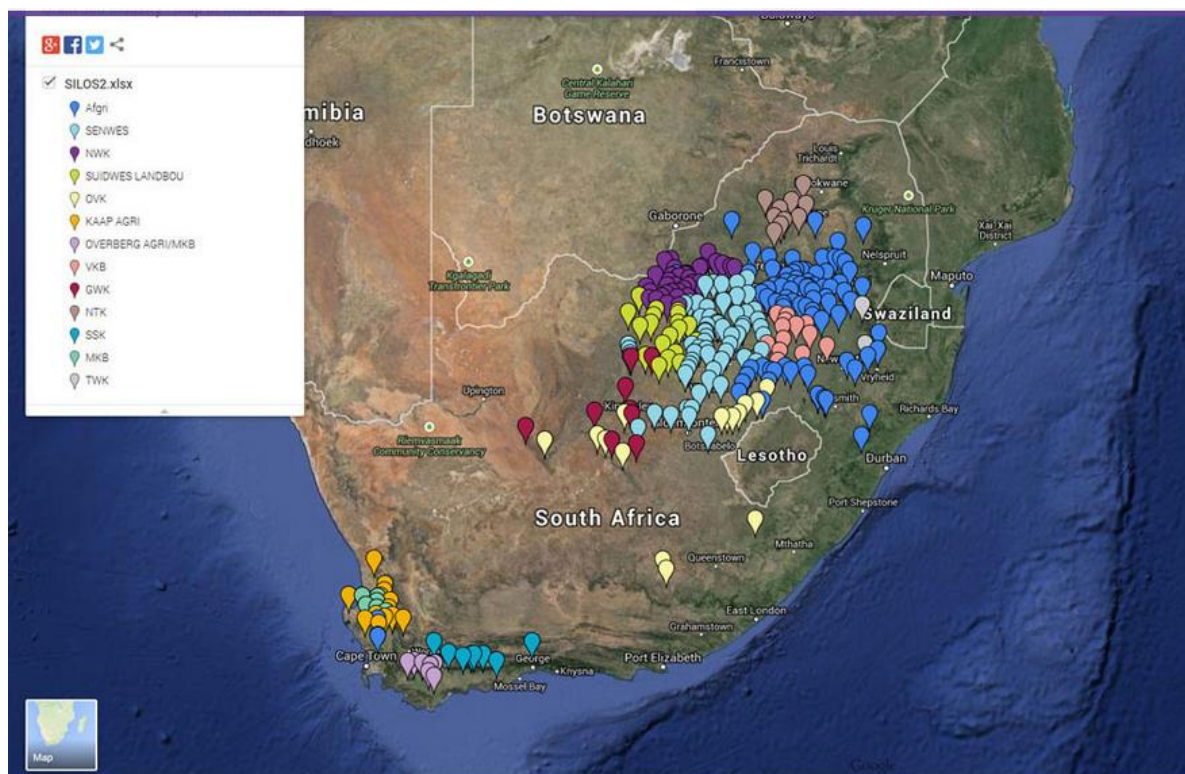
Control Boards set prices along the entire grain value chain, including prices at which the entire grain crop would be purchased, marketed, and sold and the prices at which final products (consumer goods) would be produced and sold. Imports and exports were strictly controlled and local processors were obliged to purchase all locally-produced maize and wheat (Hall, 2009). In the wheat-to-bread value chain, the Control Board also oversaw the baking level of the value chain and required that all bakeries in the country register with a Board (Louw, Geyser and Troskie, 2011).

State-supported producer co-operatives acted as agents within the single channel system. These co-operatives became a common feature of the South African agricultural landscape and would oversee the collective purchase of inputs and collective marketing of agricultural produce, acting as the link between producers and Control Boards. The co-operatives gradually expanded their activities upwards along the value chain into agro-financing and agro-processing, a trend which continues today. Erstwhile co-operatives (now privately-held agro-conglomerates) remain an important part of South Africa’s agricultural landscape, and continue to focus on value addition by expanding their agro-processing operations.

The state, in conjunction with the various Control Boards, determined storage infrastructure requirements, collectively deciding on the establishment, location, and capacity of grain silos whose construction was financed by the Land Bank. A total of 220 silos were constructed 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 co-operatively owned by farmers in their immediate vicinity. They were designed to operate as local monopolies in keeping with the general principle that agricultural

cooperatives would not compete with each other.⁷³ After deregulation, the silos were transferred to the newly privatised agro-conglomerates and are currently operated as private businesses. Given the large capital cost of constructing new silos (about R10mn for a silo with a capacity of 8000 tons)⁷⁴, no new silos have been constructed in the past 20 years, effectively giving the conglomerates that ‘inherited’ the silo infrastructure market power in the local markets in which these silos are located (Figure 13).

Figure 13: Location of privately-owned silos in South Africa



Source: Agbiz Grain (formerly Grain Silo Industry)

The heavily-controlled agricultural system depended on detailed information exchange and encouraged co-operation between players across different levels of the value chain. The collusion cases investigated by the competition authorities from 2006 showed that this culture of cooperation and information exchange, as well as the relationships that developed between competitors at various levels of the value chain, became an entrenched feature of the sector and continued well beyond the liberalisation of agricultural markets.

4.2 Overview of anti-competitive conduct in the wheat and maize value chain

Anti-competitive conduct has been uncovered throughout the grain value chain, from storage and trading through processing (milling) to collusion in final product prices of bread and white maize products. This section provides a brief review of the anti-competitive conduct uncovered

⁷³ For a description of the silo industry, see Competition Commission vs Senwes, Competition Tribunal Case Number 110/CR/Dec06

⁷⁴ Cost of construction obtained from interview with potential new entrant into milling. Interview conducted in October 2015.

in the maize and wheat value chains, but focuses on the key lessons these cases offer about the challenges facing new and potential entrants into the grain value chain.

The storage cartel

The competition authorities uncovered both collusive and exploitative conduct in the grain storage and trading markets. As discussed above, the silo industry was actually planned in such a way that each silo would be a local monopoly and the centrally planned agricultural sector relied on extensive information exchange and co-operation between parties. Post liberalisation, silo owners continued to exert both unilateral and joint market power; the first derived from the monopoly nature of their operations and the second derived from a history of cooperation.

The first competition case in the silo industry related to an exclusionary abuse by Senwes Limited, a 106-year old entity and former co-operative 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.⁷⁵ In addition to providing storage services, Senwes is also active in the trading of grain in competition with 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.

In the second case in the silo industry, the Commission found that private silo owners continued to agree daily storage tariffs for grain within the silo industry as a whole (despite their individual market power). Though the silo owners argued that this practice facilitated transparency of commodity trading, they later accepted that this conduct contravened the Competition Act. Sixteen silo owners 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.⁷⁶

The silo cases shows how privatisation may entrench market power conferred by the structural and behavioural features of markets prior to liberalisation. In this case, the market power of silo owners is further heightened by the high (even prohibitive) cost of duplicating silo infrastructure, which prevents new entrants from disrupting existing arrangements and social relations. This maintains coordinated outcomes.

Though it would have been desirable to regulate for competitive outcomes pre-emptively at the time of privatisation, this did not happen and competition authorities have had to monitor ex-post conduct to ensure that no further abuse of market power takes place.

The maize and wheat milling cartels

In 2006, the Commission uncovered cartel conduct in the bread value chain. The investigations started by looking into collusion in the price of bread, but uncovered additional cartel conduct at the processing (milling) level across both white maize and wheat products (Grimbeek & Lekezwa, 2013).

⁷⁵ Senwes website. Available at <http://www.senwes.co.za/>.

⁷⁶ Tribunal Case Number 43/CR/Jun11

There were broad similarities in the operation of the maize and wheat milling cartels, which essentially operated as a patchwork of regional cartels; coordinated at the national level by the larger vertically integrated millers who have a national footprint. The cartel members kept in regular contact and exchanged information to monitor cartel arrangements, sometimes through the National Chamber of Milling, which had continued post the liberalisation of agricultural markets as a legitimate forum for sharing information on issues and policies of common interest to the milling industry (Kalicharan, 2010).

The patchwork of regional cartels were an important way of ensuring the stability of a cartel comprised of both smaller millers with a regional footprint and larger millers with a national footprint. The regional arrangements offered a way to 'include' smaller competitors and ensure that the national pricing arrangements could be implemented and monitored across the country (Kalicharan, 2010). These regional cartels were more prevalent (and more necessary) in the maize milling sector, which is characterised by a much larger number of competitors due to lower costs of entry (Grimbeek & Lekezwa, 2013).

The maize and wheat milling cartels illustrate the ways in which cartel arrangements respond to local competition dynamics. The care taken by larger cartel members to include smaller regional players in overarching cartel conduct also shows how disruptive new entrants in local markets could be to the maintenance and stability of a cartel. This, in turn, underscores the importance of low entry barriers in disciplining incumbents.

As mentioned above, the collusive arrangements in milling extended to the downstream markets for wheat flour, maize meal and bread. Large vertically integrated bakers coordinated national pricing and trading conditions, including maximum allowable discounts, for these downstream products. The Commission's investigation revealed that the cartel was supported by information exchanged through the National Chamber of Milling and the Chamber of Baking which allowed firms to monitor each other's market shares in detail; at provincial level, by pack size, by product category, as well as by customer channel (Kalicharan, 2010).

The bread cartel

The bread cartel was essentially an extension of cartel conduct at the milling level to downstream markets. The bread-price fixing case saw the four major bread producers: Premier, Tiger Brands, Foodcorp and Pioneer, admitting to their involvement in a long-standing bread cartel. Premier was granted leniency for assisting the Commission in the investigation. Tiger Brands and Foodcorp entered into consent agreements in 2007 and 2009 respectively and paid administrative penalties for their involvement. Pioneer initially disputed its involvement (or the extent thereof) in the cartel, but entered into a consent agreement with the Competition Commission in 2010 (Grimbeek & Lekezwa, 2013).

In addition to eventually admitting its involvement in the bread cartel, Pioneer also admitted that it engaged in anticompetitive exclusion aimed at undermining competition from rival bakeries in small towns in the Western Cape (Mncube, 2014). This conduct was initially brought to the Commission's attention in 2007 when an independent bakery in Mossel Bay (Mossel Bay Bakery) complained that Pioneer had threatened to initiate a price war unless it raised the price of its bread. Mossel Bay Bakery also complained that Pioneer was selling its bread at predatory prices as Pioneer actually produced its bread in Worcester and transported it about 300 km to Mossel Bay but was still selling its bread at lower prices in Mossel Bay than in Worcester. In its settlement, Pioneer admitted that it had, at various times, launched "fighting brands" which it sold at very low prices to deter new entrants or persuade competitors to increase the price of their bread. This aggressive behaviour was particularly important to sustain supra-competitive prices because barriers to entry into bread baking are low (Mncube, 2014; Grimbeek & Lekezwa, 2013). Pioneer was willing to incur losses from selling bread very lower prices because of the longer-term benefit of establishing a reputation as a fierce competitor which would respond aggressively to new entry or to any discounting by existing

competitors.⁷⁷ This behaviour allowed it to maintain prices above competitive levels, despite ease of entry.

Similar to the storage case discussed above, the combination of collusion amongst large millers and exclusionary conduct by Pioneer shows how both collusive conduct and abuse of dominance can operate at separate levels of a value chain to exert and protect market power in various product markets.

The historical context of coordination and cooperation is important for understanding subsequent cartel conduct (or private re-regulation) in the grain value chain. It is also crucial to understand that the social networks/relationships established during the entire collusive period (state-sanctioned and otherwise) and the intimate understanding it allows competitors' to gain about firm strategies and weaknesses, can persist well beyond cartel conduct ceases (Grimbeek & Lekezwa, 2013). Despite successful cartel prosecution, new entrants have still found it difficult to enter the grain milling sector and to participate in existing industry structures.⁷⁸

4.3 Overview of industry structure and major players in maize and wheat

This section provides a brief overview of the main players in the grain value chain. It is followed by a discussion of firm margins and movements in the retail price of bread and milled grain products.

4.3.1 Overview of the main players

Tiger Brands Limited is a fast-moving consumer goods company established in Johannesburg in 1920. It has a presence in milling of white maize and wheat and the production of branded consumer goods. It produces *Albany* branded bread and a range of maize and wheat-based products including *Ace* maize meal, *Golden Cloud* wheat flour, and *Fatti's & Moni's* pasta products. Tiger Brands has production facilities in Cameroon, Ethiopia, Kenya, Nigeria, South Africa and Namibia and distributes products in 65 countries across Africa, Europe, North America, South America, Australia, and Asia. Within South Africa, it has maize milling operations in Randfontein (Gauteng) and Pietermaritzburg (KZN) and wheat milling operations in Randfontein (Gauteng), Pietermaritzburg (KZN), Henneman (Free State), and Belville (Western Cape). The PIC is its largest institutional shareholder, with a 10.69% share at the end of the 2014 financial year (September 2014).⁷⁹

Pioneer Foods was formed in 1997 and has its origin in two co-operatives, Bokomo and Sasko. Its "Essential Foods" division houses its maize milling, wheat milling and baking operations. Pioneer's consumer brands include *Sasko* branded bread and flour, and *White Star*-branded maize meal. Pioneer has maize mills in Estcourt (KZN), Klerksdorp (North West), and Aliwal North (Eastern Cape). Its wheat mills are located in Bethlehem (Free State),

⁷⁷ Competition Tribunal Case Numbers 10/CR/Mar10 and 15/CR/Mar10

⁷⁸ The experience of small-scale millers is instructive in this regard.

⁷⁹ Tiger Brands website, available at <http://www.tigerbrands.com/>. We note that Astral Foods was owned by Tiger Brands until 2001, when Tiger decided to unbundle its animal feed and poultry business and focus on food and healthcare brands. Tiger Brands also owned and controlled Spar until 2004 when it was unbundled and listed separately on the Johannesburg Stock Exchange

Krugerdorp (Gauteng), Mobeni (KZN), Polokwane (Limpopo), Paarl and Malmesbury (Western Cape).⁸⁰

Foodcorp traces its origins to a family-owned mill established in 1891. Foodcorp is now a wholly-owned subsidiary of RCL Foods which is, in turn, controlled by Remgro Limited. RCL acquired a majority share in Foodcorp in May 2013. Its consumer brands include *Sunbake* branded bread, *Supreme* branded wheat flour products and *Tafelberg* branded maize meal. Foodcorp operates 7 bakeries in South Africa and operates a maize and wheat mill in Pretoria (Gauteng).⁸¹

Premier is a privately-held fast-moving consumer goods company founded in 1882 in Port Elizabeth. It operates 14 bakeries, 5 wheat mills and a maize mill in South Africa. Premier's wheat mills are located in Salt River (Western Cape), Kroonstad (Free State), Pretoria (Gauteng), Vereeniging (Gauteng), and Durban (KZN). Its maize mill is located in Kroonstad (Free State) and it has bakeries in the Western Cape (1), Eastern Cape (5), KZN (2), Free State (2), Gauteng (3) and Mpumalanga (1). Premier's branded consumer goods include *Snowflake* wheat flour, *Iwisa* maize meal, *Nyala* maize meal and *Blue Ribbon* branded bread. Brait, an investment holding company, has a 90% shareholding in Premier.⁸²

4.3.2 Margin analysis of major players

A historic trend of operating margins is only available for Tiger Brands and Pioneer Foods. Premier is a privately held company with no financial information in the public domain. Foodcorp's financial information is only available from 2013, when it was acquired by RCL. The margin analysis is thus largely focused on Tiger Brands and Pioneer Foods and is only conducted for the relevant (milling and baking) division.

Discussion of operating margins

Over the eight-year period from 2006 to 2014, Tiger Brands' operating margins are consistently and significantly higher than those of Pioneer (Figure 14). Pioneer's margins average 8.3% over the period while Tiger Brands has an average operating margin of 18.4%. This is in line with Pioneer being oriented to more commodity brands while Tiger has premium brands (such as Albany bread). Given this divergence, what are competitive margins in milling and baking?

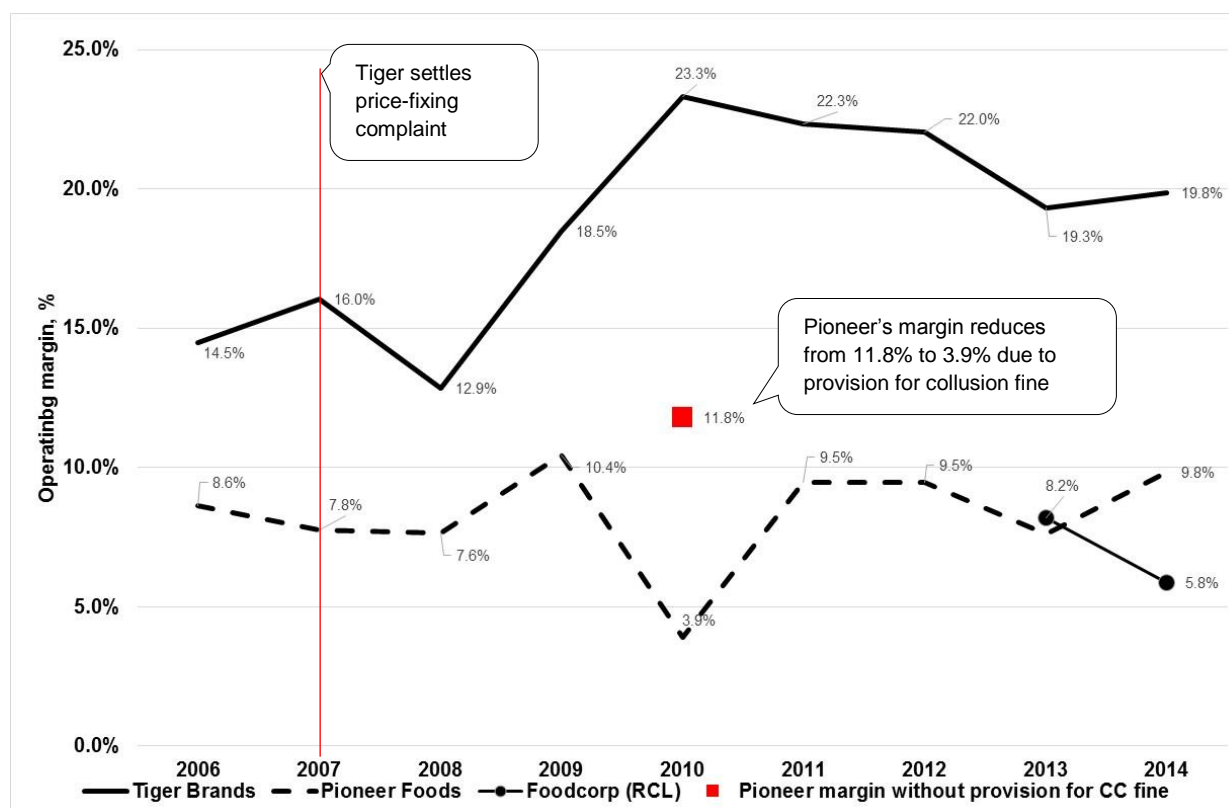
Unlike the poultry sector explored in section 3, there are no significant new entrants into milling and baking over the relevant period to compete margins down to notionally competitive levels. In the absence of such an events, we can consider the effect of the breakdown in the milling and baking cartels around 2006, 2007 and the effect of the Pioneer price-reduction settlement in the post 2010 period as possible indicators of a more competitive situation. Local dynamics also provide an indication of the effects of more intense competition.

⁸⁰ Pioneer Foods website, available at <http://www.pioneerfoods.co.za/>

⁸¹ RCL website, available at <http://www.rclfoods.com/>

⁸² Premier website, available at <http://www.premierfmcg.com/>

Figure 14: Operating margin by company



Source: Annual Reports

Note: The margins for Tiger Brands are reported for its milling and baking divisions. Pioneer's margins are for its SASKO milling and baking division in all years except 2006. In 2006, margins for the "Staple Foods" division are reported. This comprises the SASKO, Agri (poultry), and SAD business units.

In 2010, Pioneer entered into a settlement with the Competition Commission. The terms of the settlement included an agreement to reduce its gross profit by R160 million by adjusting the prices of certain products for an agreed period of time.⁸³ In the post 2010 period, Pioneer's margins averaged 9.1%. Tiger Brands' operating margin, while declining in later years, has been higher on average in the 2010 to 2014 period than in the prior period, 2006 to 2009. Tiger Brand's ability to maintain higher margins appears related to a degree of market power due to its premium brands.

In the next section, we evaluate the existence of pricing power in maize meal and bread by establishing a cost baseline and comparing these costs to retail prices.

⁸³ For a more detailed discussion of the settlement see (Bonakele & Mncube, 2011)

4.3.3 Pricing power as a reflection of barriers to entry: cost build-up and retail prices for white bread and maize meal

We compare the cost of wheat and bread flour in a 700g loaf of bread to the retail price of both white and brown bread (Figure 15).⁸⁴ In a competitive market, we would expect margins and retail prices to be competed downwards and to reflect movements in costs. However bread prices are sticky downwards. The retail price of bread flour responds more closely to the wheat price, which may reflect the bargaining power of independent buyers such as supermarkets and independent bakeries, who closely track the price of wheat. By comparison, bread prices are subject to greater menu costs, greater market power associated with branding and greater concentration at an industry level.

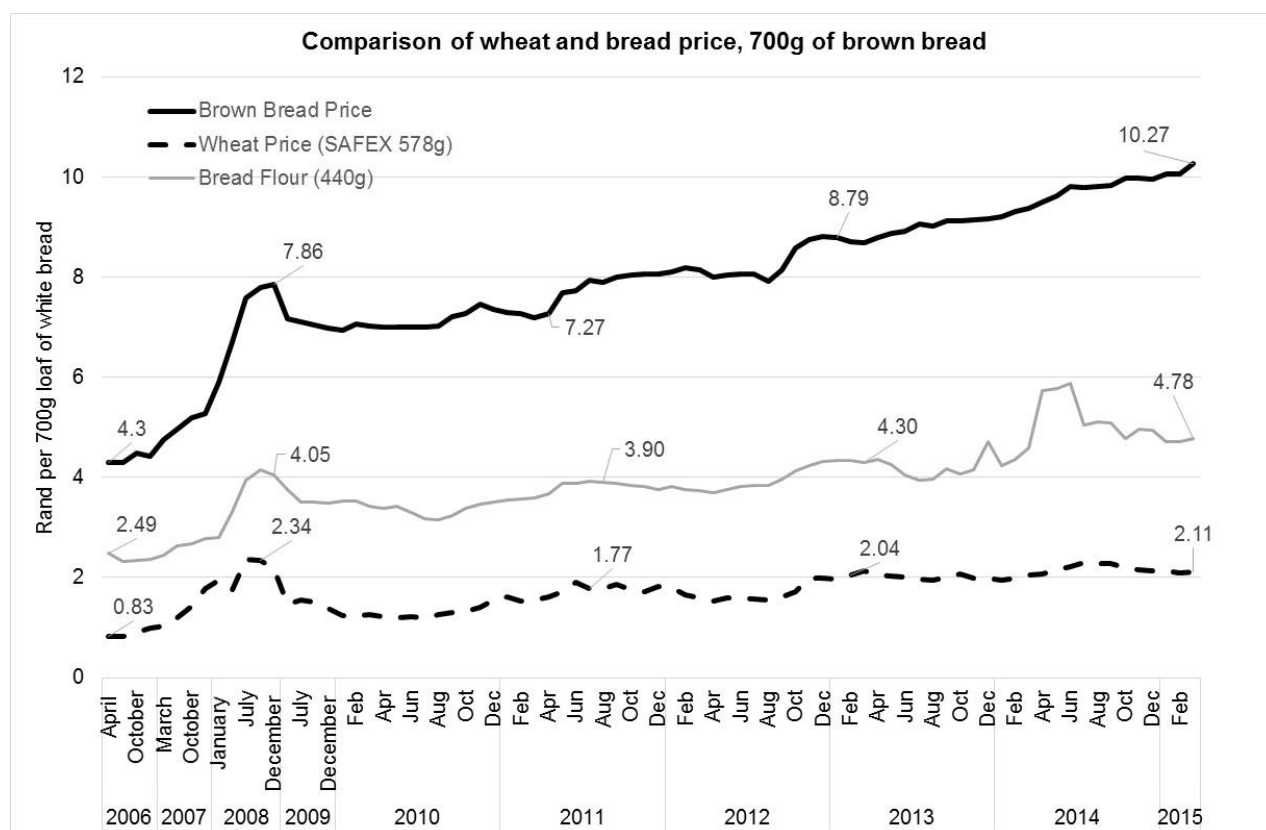
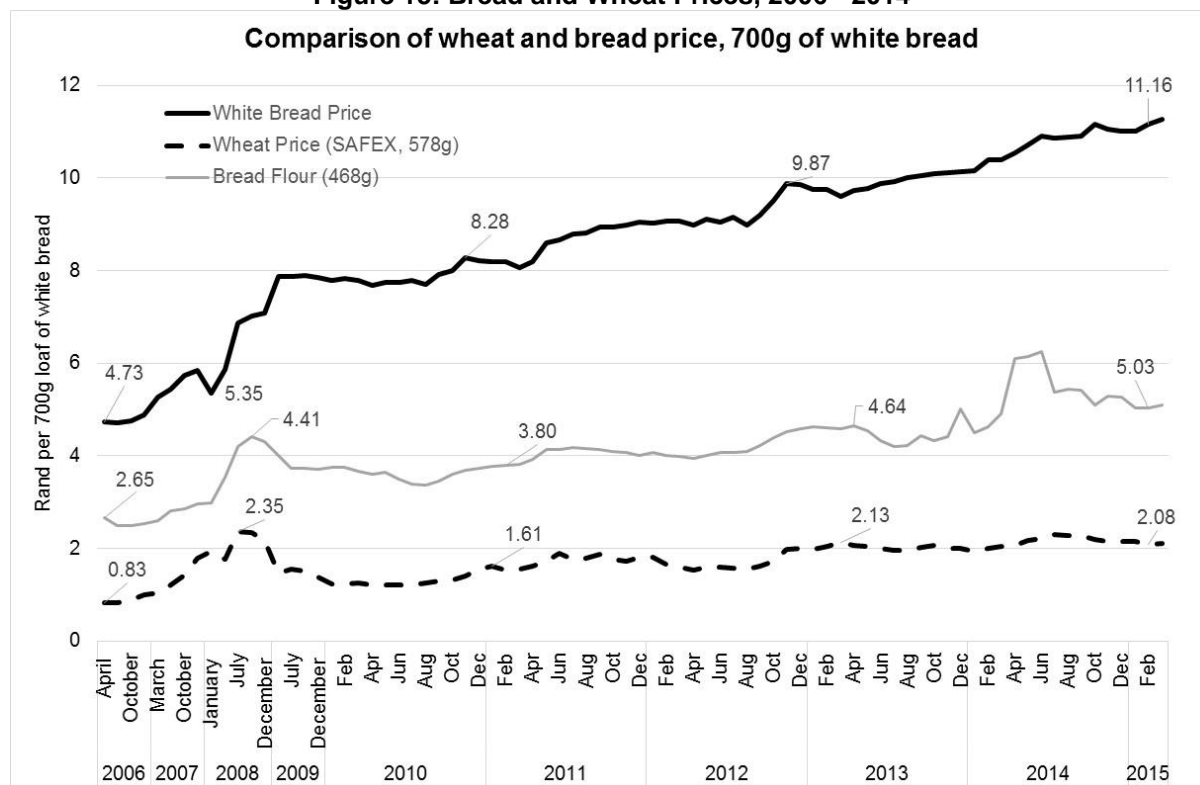
In 2006, wheat accounted for approximately 18% of the retail price of white bread and 20% of the retail price of brown bread. Using retail prices (as producer prices are not available as a time series), flour was equivalent to 53% of white bread prices on average in 2006, and 54% of brown bread prices.⁸⁵ Over the 2007/08 period, margins over the flour price reduced as wheat prices increased (Figure 15) with the result that wheat rises to 31% of the white bread price and 34% of the retail price of brown bread in July 2008. Flour similarly spikes to be equivalent to 50% of the white bread price and over 60% of the brown bread price in the same period. However, when wheat prices reduce in 2010, bakers expand their margins once again.

Retail prices of bread are sticky downwards and remain high when input costs decrease and may reflect market power of bakers, as well as the low price elasticity of demand for bread (NAMC, 2009). However, there is a range of other costs which need to be taken into account as well, while it must also be born in mind that these are retail and not producer prices. This price-cost analysis, together with the margin analysis conducted above, indicate that the large vertically integrated millers still have a degree of market power after the prosecution of the cartel conduct, including power deriving from brand loyalty. This suggests that new entry is critical to ensure greater effective competition, and that effective rivalry requires being able to build brand awareness.

⁸⁴ 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).

⁸⁵ Note, as we are comparing retail flour prices, adjusted for the quantity of flour required for a loaf of bread to the retail bread prices, if we assume the retail margins are the same for flour and bread we are in effect computing the margin over the flour price for a non-integrated bread producer.

Figure 15: Bread and Wheat Prices, 2006 - 2014



Sources: StatsSA for retail prices from 2010 onwards; NAMC for retail prices from 2006 – 2009 (inclusive), SAGIS for SAFEX prices for 2006, JSE for SAFEX prices from 2007 onwards

In the next section, we present some findings on the barriers faced by new entrants. We start with a review of the key episodes of entry and exit since 2010, including regional entry by

Premier Foods into the Eastern Cape, and then present a more detailed case study of a recent entrant into maize milling, Lethabo Milling. The section concludes with a summary of the key barriers to entry identified through interviews in the sector.

4.4 History of entry, growth and exit since conclusion of the competition cases

This section reviews entry and exit in wheat and maize milling since the referral of the collusion cases in 2010. In a previous review of the competitive conditions after the collusive period, Grimbeek and Lekezwa (2013) note that, unlike the poultry sector, there has not been significant entry into milling. They cite only two examples of recent entry, those of Pro-Grain and Target Investments into KwaZulu-Natal in 2007.⁸⁶ This section reviews additional entrants into both milling and baking since then, focusing on the 2010 – 2015 period.⁸⁷

Since the conclusion of the competition investigation, there have been a number of entrants into both maize and wheat milling at small (micro), medium, and large scale, however with varying degrees of success. Small scale millers, in particular, seem to have had little success. Entry at the medium and larger scale has mostly been driven by agricultural co-operatives, or firms that are already involved in milling elsewhere in the country. It is too soon to evaluate the success of these ventures.

4.4.1 Entry by Premier into milling and baking in the Eastern Cape

Premier Foods entered into the Eastern Cape milling and baking market towards the end of 2013. Prior to this, Premier did not have a presence in the Eastern Cape. Though there were a number of independent bakeries in the Eastern Cape, Pioneer had a dominant position in this region, with a 50% market share.⁸⁸

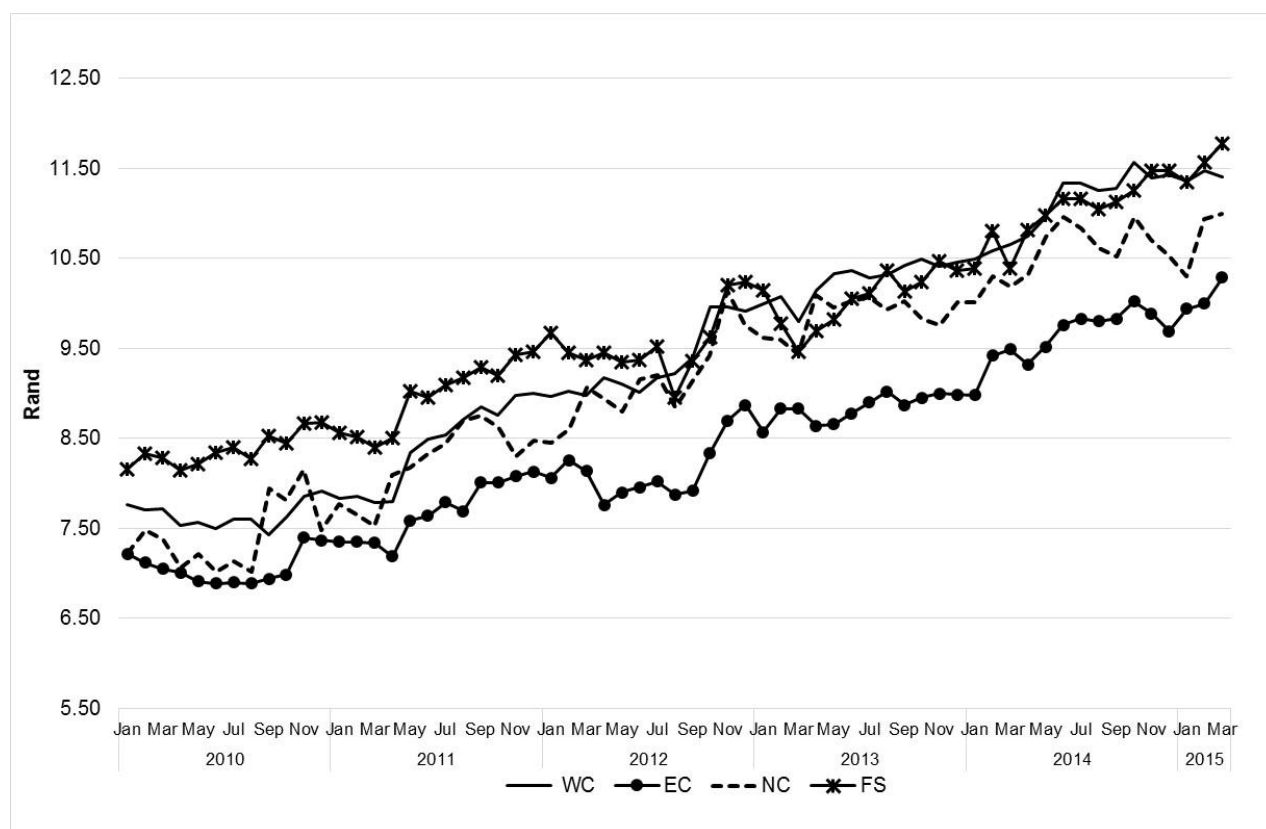
An analysis of the retail price of white and brown bread does not immediately suggest that Premier's entry led to a reduction in the absolute or relative retail price of bread in the Eastern Cape compared to other provinces. What is striking though, is the large and increasing difference between the price of white bread in the Western Cape when compared to the Eastern Cape (Figure 16), and the large and sustained difference between the prices of brown bread in the same two provinces (Figure 17).

⁸⁶ The Grimbeek and Lekezwa paper also mention Free State-based Kromdraai Best Milling as a recent entrant, but Kromdraai was established in 1998 and expanded its capacity in 2004.

⁸⁷ The analysis is limited to a period that corresponds to the period for which we have collected retail prices.

⁸⁸ Market share is based on number of bakeries. See Competition Tribunal Case Number 15/CR/Feb07, page 6.

Figure 16: Price of 700g white bread⁸⁹



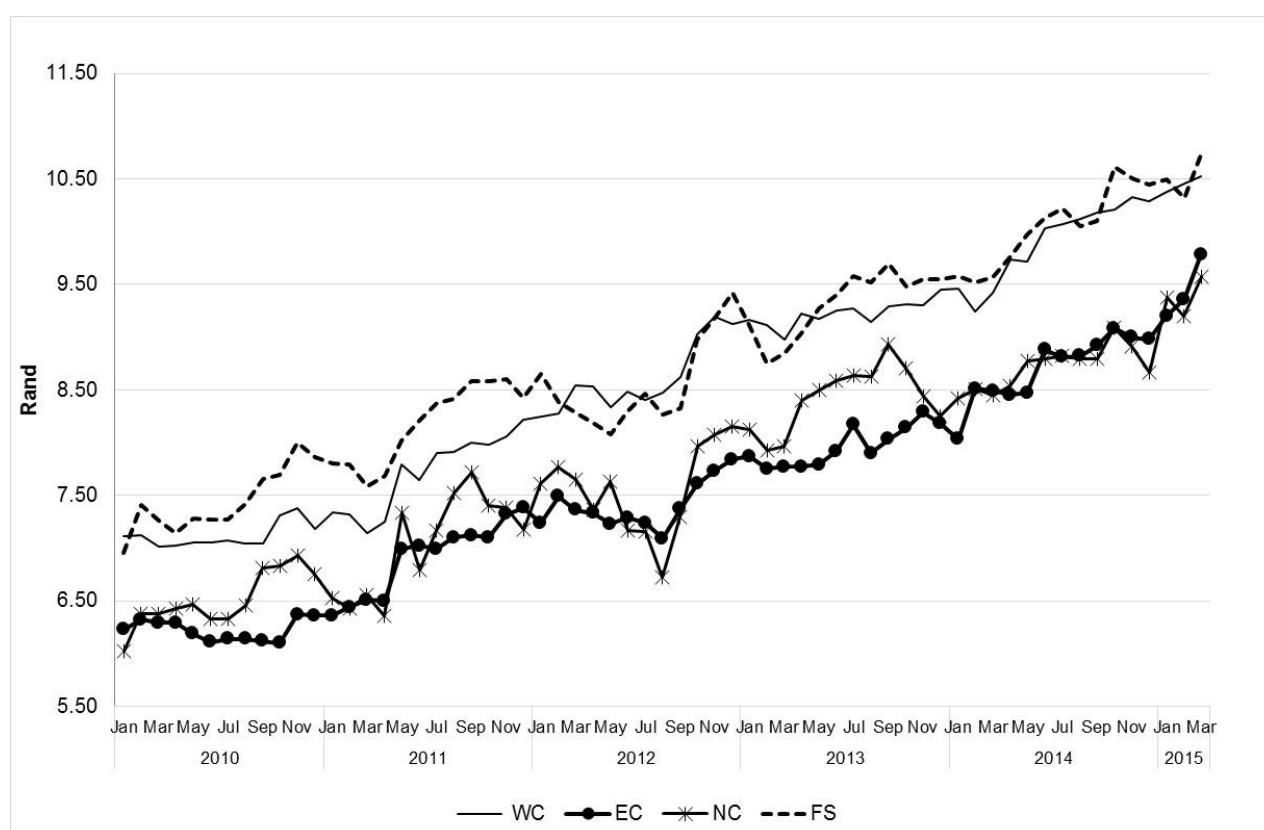
Source: StatsSA

The Western Cape white bread price was R0.84 higher than the Eastern Cape price, per loaf of bread, in March 2012. The gap widened towards the end of 2012, reaching a high of R1.62 per loaf in October 2012. On average, the difference was R1.35 between Jan 2015 and March 2015. Over the period under review the Western Cape price actually increased to be in line with that in inland provinces such as the Free State.

The gap between the Western Cape and Eastern Cape brown bread prices fluctuates from a low of R0.63 per loaf in March 2011 to a high of R1.46 in November 2013. On average, the Western Cape brown bread price was R1.07 higher than the Eastern Cape bread price over the period January 2010 - March 2015 (Figure 17).

⁸⁹ These price charts reflect the price of bread in the main wheat-producing regions in South Africa. An analysis of the retail prices in the main consumption regions is included as an Appendix.

Figure 17: Price of 700g brown bread



Source: StatsSA

These price differences occur despite the fact that the Western Cape is the largest wheat-producing region in South African. It accounted for more than 51% of South Africa's total wheat production in 2014 and is a net wheat-exporting region. The Eastern Cape, by contrast, produced just 1% of South Africa's total wheat in the same year.⁹⁰ One possible explanation for this difference in prices is the continued exertion of marker power by Pioneer in the Western Cape where no new entry has been identified since 2010 (Grimbeek and Lekezwa, 2013).

4.4.2 Other entry and expansions in wheat flour

Oos Vrystaat Kaap Operations Limited (OVK), an agricultural co-operative located in Ladybrand (Free State), commissioned a new state-of-the-art wheat mill in 2013. The mill, located in Clocolan in the Free State, has a capacity of 150t per day and was built at a cost of R40 million. Construction of the mill started in August 2011 and it was commissioned 20 months later in April 2013. It produces white bread flour, brown bread flour, and brown bread flour mix under the "Power" and "Super Bake" brands (Booyesen, 2013).

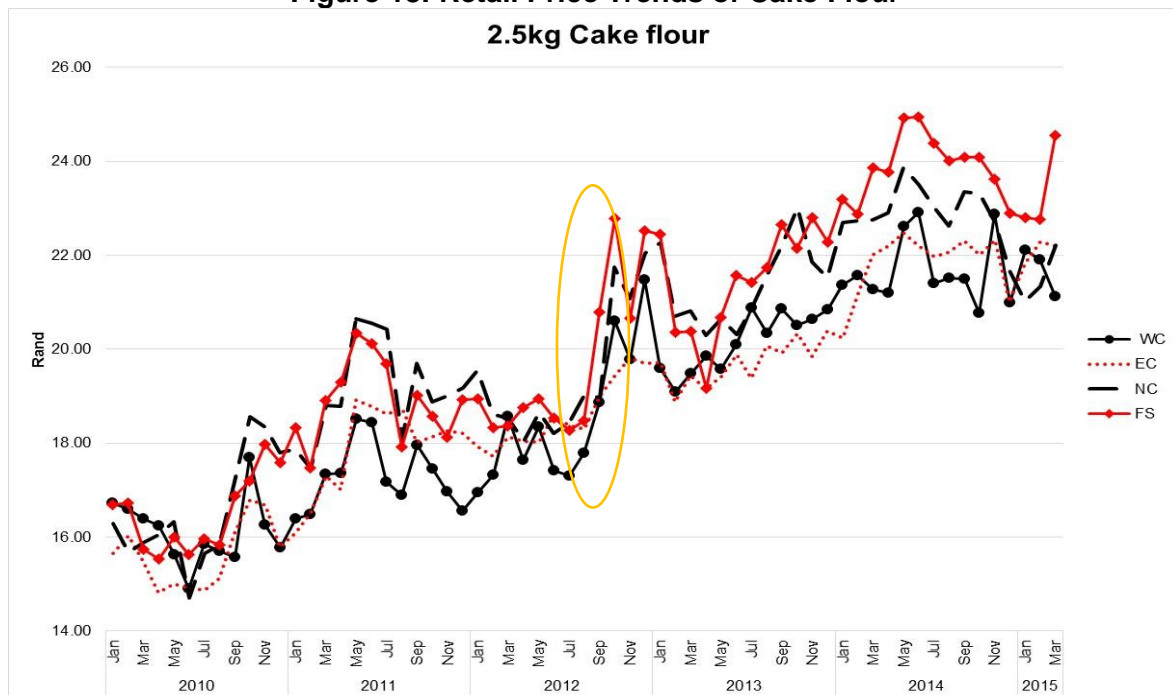
OVK, which already owns a maize mill at Tweespruit, expanded into wheat milling as part of its ongoing strategy of diversifying its business in response to commercial needs and requests from the producers it serves (Booyesen, 2013). The trend of producers expanding downwards

⁹⁰ The Western Cape produced 51.4% of South Africa's total wheat production in the 2014 season. This was followed by the Northern Cape (16.3%), Free State (14%), Limpopo (7.9%), North West (6.1%). KZN (2.2) and the rest (2.1%). See GrainSA crop estimates available at <http://www.grainsa.co.za/report-documents?cat=14>

along their respective value chains to add more value to their primary crops is one that emerged quite strongly in both the dairy and poultry studies.

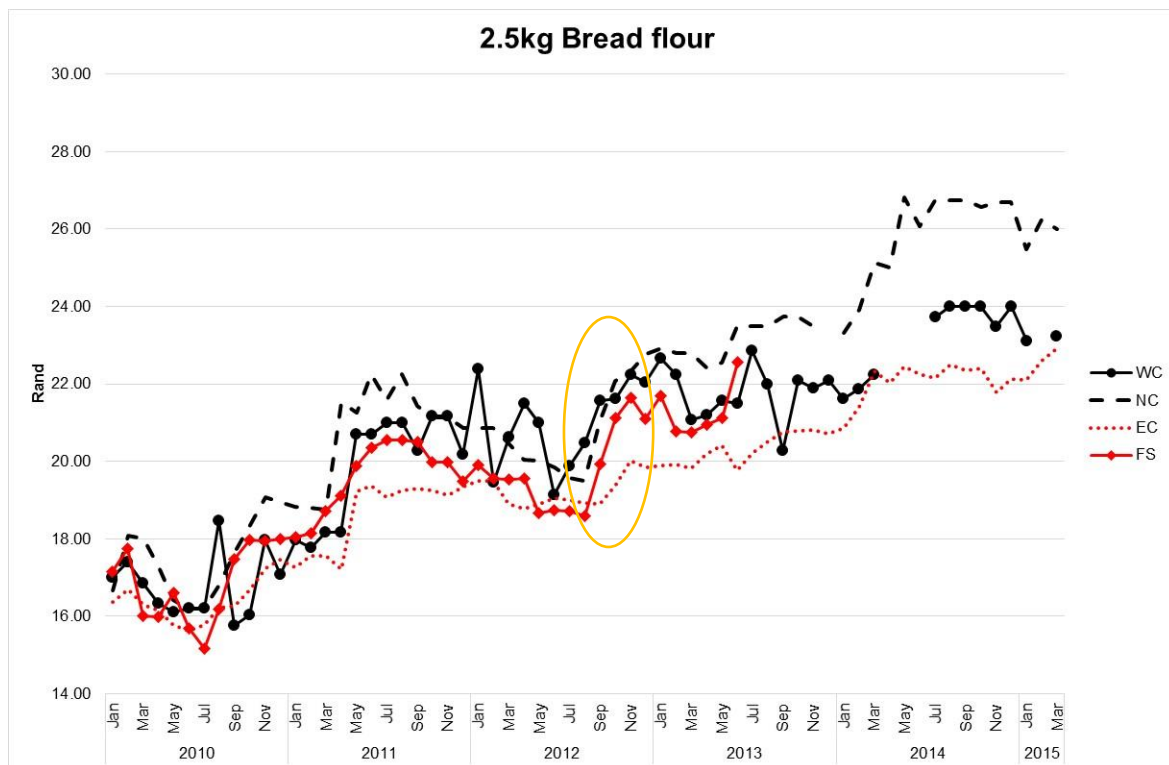
Afgri also constructed a wheat milling plant towards the end of 2013, adjoining an existing silo complex in Harrismith in the Free State. The mill produces cake flour, bread flour, and specialised products used in the baking, pizza, and pasta industries. Though these niche products allow Afgri to add more value to their wheat flour, the products required customised machinery, which increased the cost and complexity of building the new mill.

Figure 18: Retail Price Trends of Cake Flour



Source: StatsSA

Figure 19: Retail Price Trends of Bread Flour



Source: StatsSA

The entry and expansions of OVK and Afgri in 2013 coincide with significantly higher flour prices. Bread and cake flour prices increased substantially from mid-2010 to mid-2012, with a spike towards the end of 2012 (Figures 18 and 19). There has been no noticeable reduction in flour prices since their entry in 2013.

4.4.3 Entry in maize milling

Lethabo Milling

In 2014, entrepreneur Mr Xolani Ndzaba of Lethabo Milling commissioned a new maize mill in Ventersburg. The mill's throughput is currently 3000 tons per month. Lethabo Milling produces *Lethabo*-branded products and also manufactures Massmart's "Econo" brand. Lethabo's entry experience, which was facilitated by the Massmart Supplier Development Fund established as part of the Walmart/Massmart merger, is explored in more detail below.

Micro-millers

As part of the objective of understanding barriers to entry, we have also tried to identify lessons from potential entrants and failed entrants into milling. To this end, FABCOS was identified as a potential/future entrant and African Micro Mills (also known as Kuvusa Mills) as a failed entrant. African Micro Mills seems to have exited the market without ever starting its

commercial operations and FABCOS has faced delays, but still plans to enter the small-scale maize milling market.⁹¹

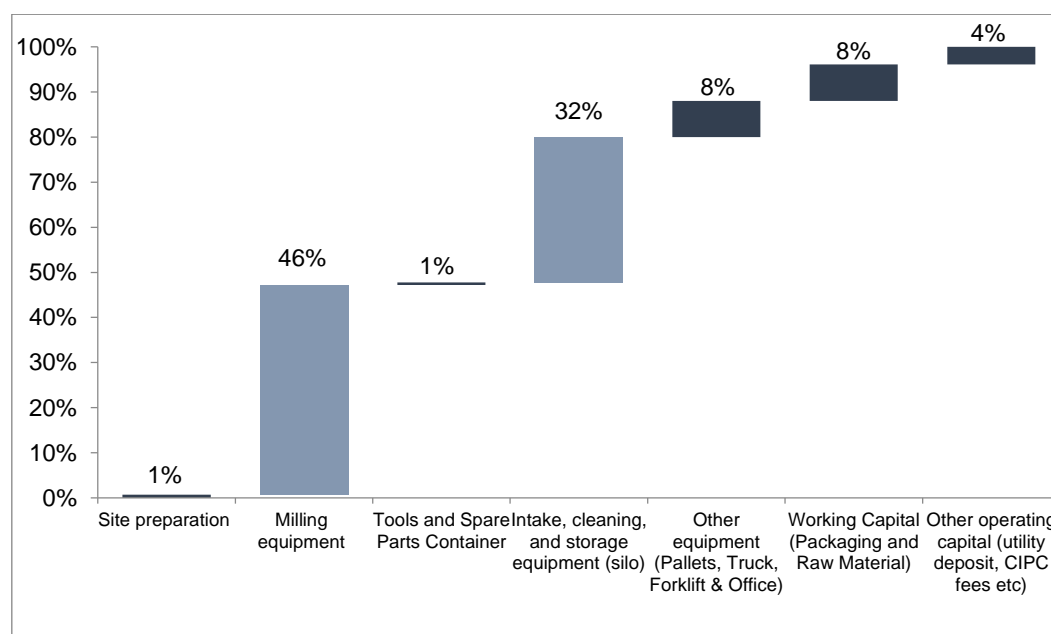
FABCOS and African Micro Mills seem to have had similar business models. Their approach was to enter the maize milling market in a limited geographic area and at small scale via micro mills, primarily to defray transport costs and provide lower-priced maize in local markets (FABCOS, 2015 and Higgins, 2010). African Micro Mills estimated that such small-scale mills could lead to an estimated 20% reduction in the price of a 12.5kg bag of maize meal. African Micro Mills and FABCOS planned to enter around the same time; during late 2012 to early 2013.

The milling equipment for FABCOS' micro mills (called a "mill in a box") was designed by German equipment manufacturer Buhler to fit into two 40-foot shipping containers and the mill can be commissioned in as little as 3 days. Each mill operates at a rate of 2 tons per hour.

The total capital required to start a micro mill is R13.35 million; R6.2 million of which is the cost of the milling equipment. A further R4.3 million is required to construct the intake and storage equipment (effectively a small silo). The rest is required for capital and operational items, as illustrated in Figure 20 below (FABCOS, 2015).

The *dti* pledged to provide financial support to both the FABCOS and Kuvusa projects under the Manufacturing Investment Programme. However, this program was suspended shortly after Kuvusa opened and before the Fabcos project commenced, with the result that no funding had been made available for the Fabcos project as at October 2015.

Figure 20: Set-up costs for a micro mill



Source: *the dti*, Presentation entitled "Localizing food production in South Africa", August 2015

⁹¹ FABCOS is a small business association whose members are primarily informal retailers in township areas.

African Micro Mills was launched in Durban in December 2012 and has since exited the market. Though the mill was commissioned, some interviewees claim that the mills never started production. It is unclear why the firm exited so soon after entering. When asked for their views on this, established millers proposed various reasons for the exit, ranging from consumer loyalty to established brands, difficulty in accessing a consistent supply of good quality maize, and a lack of business acumen that led to unsustainable pricing models. With respect to the claim that Kuvusa did not have the acumen to run the mill successfully, we note that African Micro Mills was established in 2004 as a technical advisor and mentor to new millers and should at least have had an appreciable understanding of milling operations.

In its own risk assessment of small-scale milling, FABCOS confirms that building a brand and accessing good quality maize are major risks associated with small scale milling, and add that the smaller mills are 30-59% less efficient in milling operations, but that these inefficiencies will be more than offset by the lower distribution and variable costs associated with operating at small scale in a narrow geographic market (FABCOS, 2015).⁹² This is discussed further when we present the FABCOS entry case study below.

4.4.4 Future entry

Two large new wheat mills are due to start production in 2015. Bakhresa, a diversified Tanzanian firm involved in food products, beverages, and transport and packaging; will refurbish the mothballed Union Mill in Durban to build a plant with a capacity to mill 750T of wheat per day. Bakhresa obtained a \$25mn loan from the International Finance Corporation in June 2014 for the establishment of the mill. The mill was due to start commercial production of bread flour, cake flour, biscuit flour, and various other types of flour in mid-2015, but the start date has been shifted to the end of 2015. Bakhresa's products will be sold in the local KZN market and exported to neighbouring countries including Mozambique.⁹³

The second wheat mill due to start operating late in 2015 is Westra Mills, owned by agricultural co-operative GWK. Westra is already involved in maize milling. Its rationale for establishing this mill is to add more value to the primary production of GWK's shareholder-farmers. Westra Mills will be vertically integrated into a pasta factory and a biscuit factory. This expansion into value-added consumer goods is similar to the expansion undertaken by Afgri in its new Harrismith mill.

We now move to a more detailed description of the entry experience of the most recent maize miller, Lethabo Milling. Thereafter, we present the experience of an older, more established mill, Vaal Milling, to highlight comparative lessons. Finally, we summarise the experience of potential entrant, FABCOS, to highlight the challenges that are preventing it from entering into the small-scale maize milling market. This section concludes with general observations on the barriers to entry faced by new entrants in the wheat and maize milling value chains.

⁹² See Abu and Kirsten (2009) for further analysis on the relative efficiency of small and medium-sized mills relative to their larger counterparts. They argue that some of these inefficiencies can be mitigated by increased business support and better training and education for small-scale millers.

⁹³ IFC's Investment Summary provides further information on the Bakhresa project and is available [here](#).

4.5 Detailed case studies of new entry

4.5.1 Lethabo Milling

Lethabo Milling presents an interesting case study given its unique mode of entry. Lethabo Milling is a 100% black-owned enterprise and started commercial production in 2014, more than four years after its owner, Xolani Ndzaba, initially decided to start the business and began approaching banks and development finance institutions for start-up capital. It produces *Lethabo*-branded super maize meal in various pack sizes as well as samp, maize rice and white maize grits. Lethabo also manufactures Massmart's *Econo*-branded maize meal. These products compete against established brands such as Ace (Tiger Brands), Iwisa (Pioneer Foods), Pride (Pride Milling), Super Sun (Premier), and White Star (Pioneer).

Access to capital

Mr Ndzaba's first hurdle was obtaining access to capital. He approached all major commercial banks and several public entities, including the IDC, NEF and SEFA for funding; all to no avail. After four years of struggling to obtain access to capital, he became aware of the Massmart Supplier Development Fund (SDF), a fund established as a condition of the Massmart/Walmart merger to provide assistance to small, micro and medium enterprises who are either existing or potential suppliers to Massmart.

Mr Ndzaba went through a stringent application process wherein his business plan, business acumen, and facilities were assessed via interviews, presentations, and site visits. The assessment also included an evaluation of the commercial benefit to the Massmart group of supporting a new maize miller which likely included the benefit of increasing the Massmart group's bargaining power against large FMCG suppliers of established maize meal brands.

In 2013, Massmart entered into an offtake agreement with Lethabo Milling and provided a R1.6mn grant for the refurbishment of Lethabo's mill. The offtake agreement provided surety against which Lethabo Milling took out a further R8.2mn commercial loan from ABSA. Massmart also acted as guarantor for this loan. The offtake agreement and guarantee by Massmart was critical in obtaining a commercial loan as Mr Ndzaba's previous experience showed that it was near impossible to obtain financing without such surety.

Lethabo Milling's partnership with Massmart brought significant additional benefits. It provided Lethabo Milling with a ready-made route-to-market and ensured that Lethabo's products obtained favourable shelf-space relative to established brands. Mr Ndzaba also believes that having his brand stocked by a known and trusted retailer meant that consumers would not doubt the quality product of the product, despite it being a new entrant.

In addition to providing funding and a guarantee, Massmart also provided business support and assistance in developing his initial pricing model.⁹⁴ A further benefit was that he obtained favourable trading conditions and payment terms to ensure stable cash flow.

The Massmart Supplier Development Fund reduced the common barriers new entrants would face in terms of identifying a market, accessing formal retail, securing good shelf space,

⁹⁴ Lethabo Milling implemented a launch price that Mr Ndzaba referred to as a "market entry" price. At this "market entry price", Lethabo's 10kg maize meal was ~34% lower than the retail price of rival brands. This encouraged customers to try his product. He believes that the quality of his product will encourage repeat purchase.

building a customer base, establishing the quality-perception of the brand, and overcoming cash flow problems and listing fees.

Capabilities and skills

Mr Ndzaba decided to start his own business after working in the fast-moving consumer goods sector for 25 years; 15 of which were in manufacturing. He emphasised the importance of this experience in giving him the technical skills to commission his own plant and ensure compliance with health and safety standards. His experience in sales and marketing also gave him some insight into how retail works and to pre-empt how competitors may respond to his product. Importantly, Mr Ndzaba believes that his experience gave him credibility in the Massmart SDF application process, as he could demonstrate a working knowledge of the sector. Though his previous experience was an advantage, he emphasised that the mentorship and business support provided by Massmart has been invaluable and recommended that similar support should be routinely provided by funders, particularly development finance institutions, to new entrants.

Access to inputs

Lethabo Milling is located in the Free State's maize triangle, easing access to good quality raw materials. The maize is purchased via the JSE's Agricultural Commodities trading platform (previously known as SAFEX) and delivery is generally received from Senwes or NWK silos.

Mr Ndzaba is currently exploring alternative supply options as the SAFEX maize price is very variable and leaves no scope for negotiation which means that his primary input cost is subject to wide fluctuations. Silo owners like Senwes also require deposits/ guarantees of a minimum of R1mn against which millers can purchase the grain. These deposits are costly, particularly to smaller/emerging businesses. As a small business and new entrant, Lethabo Milling is also not yet in a position to invest in in-house trading skills.

As an alternative, Mr Ndzaba has approached emerging farmers to propose that they grow maize for Lethabo Milling under an exclusive supply agreement. He believes that this will allow him to negotiate better prices, whilst also developing small emerging farmers.

Expansion and operational performance

Since inception, Lethabo Milling has experienced stable but slow growth on a month-on-month basis. The mill currently operates at between 2 500 – 3 000 tonnes per month. It is currently unable to expand its production capacity due to equipment constraints. Lethabo needs and estimated R11-14 million to expand operations and has approached *the dti* to fund this expansion. His expansion plans include purchasing a de-germinator required to increase production, an extension of his warehousing space, and a testing facility so that he is able to perform quality assessments and retain product samples in-house.

At present, Lethabo Milling reported a conversion for super maize meal of approximately 70%, that is, they produce 700kg of maize meal from each tonne of maize. This is much higher than the industry average of 63% reported by the NAMC in its 2012 food cost review. Despite being a new entrant, Lethabo Milling seems to be relatively operationally efficient.

In terms of its product range, the company is currently focusing on its own brand but has also been approached to produce the FABCOS "*Homegrown*" brand and to manufacture and pack a finer milled maize product for the Angolan market. It also intends to purchase a samp milling line which would allow it to mill maize grits for chips/snacks manufacturers like Simba. This all appears to be part of a strategy to move into the production of niche products given concentration, excess capacity, and strong competing brands in the maize meal portion of the market.

Transport costs

Lethabo does not own its own fleet. They purchase maize at a 'delivered' price, which includes the cost of transport from the silos directly to the mill. The cost of transporting finished goods range between R200 per ton from the mill to Johannesburg to R320 per ton between the mill and Durban.

4.5.2 Vaal Milling

The case of Vaal Milling offers a different perspective on entry and growth in the milling industry. The 15-year old mill located in Sebokeng took two and a half years to build and was constructed with the owner's own capital, using second hand equipment. This (low capital) mode of entry would be difficult to replicate today.⁹⁵

Vaal Milling has a policy of not relying on big retailers for the distribution of its products. They have implemented a dual price system, with a "collected price" and a "delivered price". Most of their customers collect their maize straight from the mill. As much as 85% of Vaal Milling's output is distributed within 50km of the mill. A large proportion of their maize meal (about 50 - 60%) is sold in the immediate local market, with customers collecting maize from the mill in person. These customers generally travel 3 – 5 km to the mill. A small proportion of Vaal Milling's maize is exported to Mozambique; though these customers also collect directly from the mill. Vaal Milling does own two 8-Ton vehicles and deliver to customers who buy in bulk (at least 8 tonnes) as far as 50km from the mill, but most customers prefer to collect as this is cheaper than paying the delivered price.

Vaal Milling noted various benefits of its business model. Not only do they save significantly on transport costs, but they also have better cash flow. The company found that getting products onto retailers' shelves is a very competitive business, and comes at costs that only the larger incumbents can afford to deal with. These costs include marketing and advertising costs.

Although demand for its product is mostly derived directly from its local market, Vaal Milling faces competition from bigger players as well as supermarkets in the area. Their value proposition is to deliver the right quality product at the right time consistently, which has helped them retain their customers over time.

4.5.3 FABCOS

FABCOS, the Foundation for African Business and Consumer Services, is a business chamber that promotes the interests of small black-owned businesses across the country. More than 70% of their members are active in the small retail sector (e.g. spaza shops) and operate in township and rural areas.

FABCOS was formed in 1988 to represent informal/unregistered black-owned businesses, such as the taxi industry, whose interests were not represented by existing business chambers. In these initial years, a large part of their work revolved around formalising these smaller businesses with the aim of creating wealth in township communities.

In 2004, FABCOS acquired a controlling stake (55%) in Premier Milling. This stake was sold to Brait in 2011, as the result of a decision to shift the focus of FABCOS back to its members

⁹⁵ Interview with Vaal Milling, September 2015

(small businesses) and to invest in businesses that add value to the businesses of all its members. This change in focus, along with a study they commissioned on the impact of rising food and transport costs on small businesses, led to their interest in small-scale milling.⁹⁶

From 2013, FABCOS explored the idea of lowering maize prices through a small-scale mining initiative more seriously. It planned to build 24 micro mills in townships and rural areas across the country, and to distribute the maize meal through its network of spaza shops and informal retailers. The maize milling business was familiar to FABCOS because of its prior ownership of Premier Milling which it felt gave it the experience and managerial capabilities to run a successful milling operation.

As part of its planned expansion into micro milling, FABCOS also intended to develop a presence at all stages of the maize-to-maize meal value chain, from developing maize farmers, to managing or owning silo infrastructure, through milling the maize, branding the final product, and selling the product through their existing member network. The rationale for this was to ensure that they could secure continuous supply and manage their margins along the entire chain. Establishing a presence at the storage level would prove to be particularly difficult due to the high cost of constructing silos. FABCOS has also decided to develop a single national brand (*Homegrown*) rather than create different brands on a regional or local basis because of the strength of existing maize meal brands and the brand loyalty of consumers. The single national brand would be supported by the national FABCOS office and would allow all its members to leverage off the strength of one national brand.

The decisions FABCOS has made point to constraints in the current maize value chain. These barriers to entry are summarised below.

Access to finance

FABCOS requires approximately R312mn to roll out 24 micro mills (FABCOS, 2015). The DTI initially committed to funding the project from its Manufacturing Investment Programme (the programme that preceded MCEP), but the programme's budget was exhausted before it could disburse any funds to FABCOS. The MCEP programme has also since been suspended. Presently, FABCOS is still in talks with the DTI about funding for the project.

Access to inputs

FABCOS emphasizes the importance of securing access to sufficient and competitively-priced maize. The procurement of maize via the commodity derivatives market is '*an art in itself*' and involves considerable expertise; capabilities which new entrants and smaller businesses often do not have.⁹⁷ To manage this challenge, FABCOS is considering starting a commodity trading company to assist their members in procuring and trading maize futures. This echoes a similar challenge raised by Lethabo Milling.

Access to maize is fundamentally linked to storage. To sustain a maize milling business, FABCOS will require access to a constant supply of good quality maize to mills throughout the year, which makes it critical to have easy access to silos. As a new entrant with relatively small scale and no pre-existing relationship with existing silo owners, it may be difficult to access

⁹⁶ The study was conducted by TIPS and emphasizes the upward pressure of rising fuel prices on food prices and the downward stickiness of food prices (van der Heijden and Tsedu, 2008)

⁹⁷ Interview with FABCOS, October 2015

maize from large existing silo owners who already have longstanding relationships with large millers. An alternative being explored is to construct its own silos, but this comes at significant cost as one silo with capacity to hold 8000 tons of maize will cost at least R10 million and FABCOS would need at least 8 silos to ensure viability making the cost of this alternative option prohibitive.⁹⁸

The concentration of infrastructure markets and the lasting advantage this has conferred on the agro-conglomerates seems to be a major barrier to entry in the maize milling market.

4.6 Drawing together the insights on barriers to entry in the wheat and maize milling value chains

The case studies raise interesting questions about what it takes to create *effective* rivalry (and not just new entry) and about increasing value addition by producers; both of which are themes that are repeated in the poultry and dairy studies.

Access to capital, economies of scale and capabilities to grow sustainably

The establishment of a milling plant is very capital intensive, even at small scale. Micro mills require initial start-up capital of R13.35 million for a production capacity of just 400 tons per month. Milling equipment and replacement parts are imported, exposing firms to exchange rate risk.⁹⁹

In addition to significant start-up costs, new entrants face considerable challenges in obtaining capital; whether from commercial banks or development finance institutions. Applications for financing are not only cumbersome and lengthy, but entrants are often assessed against historical performance, rather than projections. This discriminates against new entrants.¹⁰⁰

The Massmart Supplier Development Fund, which was established as part of the Massmart/Walmart merger, offers an interesting alternative source of funding new entry. The fund facilitated the entry of new maize miller, Lethabo Milling, after four years of unsuccessful applications to commercial banks and development finance institutions. The fund is not only beneficial to new entrants, but seems to be used by Massmart to disrupt concentrated consumers goods markets and increase its bargaining power relative to large FMCG firms in high-demand products.

The Massmart SDF has been shown to benefit new entrants in more ways than just providing access to funding. The Lethabo Milling experience shows the importance of its affiliation with Massmart to establish its brand in a market where quality and branding matters, to access good shelf-space which would generally be reserved for established brands, and its ability to enter formal retail without incurring costly listing fees or marketing expenses that are usually required when doing business with formal retailers.

Interviewees have also emphasised that funding alone is not enough. All interviewees emphasised the importance of the ability to make sustainable costing and pricing decisions and the importance of understanding the benefits and risks of commodity trading in accessing inputs. The Massmart Supplier Development Programme builds these skills into its funding model. Similar programmes should be extended to beneficiaries of government incentives.

⁹⁸ FABCOS is exploring the option of building the first black-owned silo in the Northern Cape.

⁹⁹ Interview with Premier, 02 September 2015

¹⁰⁰ Interview with industry participant, July 2015

Access to markets

A key lesson from Lethabo Milling's entry is the difficulty of accessing markets and particularly of obtaining shelf space in formal retail channels. Entrants have not only mentioned the costs associated with being listed in a supermarket, but also show that unfavourable payment terms and asymmetric bargaining power present a significant constraint. To mitigate this constraint, firms are exploring alternative ways of getting their product to suppliers; either by selling directly into local markets as Vaal Milling does, or by leveraging existing informal retail networks as FABCOS intends to do.

Benefits of vertical integration and value addition (agro-conglomerates)

The extent to which agro-conglomerates are expanding into processing and production of value-added consumer goods is striking. Some agro-conglomerates, such as OVK and NTK, are even expanding their retail footprint and use these retail networks as the primary outlets for their consumer goods. There are clear pro-competitive benefits to this development and if these (and other) retail channels remain open to competing producers, consumers will have greater choice and access to a wider range of goods.

However, despite recent entry into maize and wheat milling, there has been no clear, discernible impact on consumer prices in bread, flour, or maize meal. The downward stickiness of maize and wheat products requires further evaluation and may be related to the low elasticity of demand for these products.

Other challenges that constrain expansion

Established firms emphasised the costs of poor and intermittent electricity and the poor state of transport infrastructure as a constraint to growth. One interviewee indicated that they have resorted to employing private security guards, at their own cost, to monitor and patrol areas around their mills that are prone to cable theft to avoid the costly downtime of power interruptions. They have also had to invest in refurbishing and maintaining the public road leading up to their premises to minimise damage to their fleet. This points to a failure by local authorities to invest in and maintain infrastructure that could aid the productivity and competitiveness of firms.

4.7 Conclusion

The milling study raised similar issues as the poultry study in terms of increased levels of vertical integration and high capital costs of entry. More so than in poultry, access to capital emerged as a major barrier to entry.

The research highlighted an innovative response to these challenges in the forms of retailer-led support for entry, as demonstrated by Massmart's support for Lethabo Milling. The success of this experience should lead to a broader discussion about competition authorities' use of alternative remedies to facilitate entry, encourage rivalry, and contribute to competitiveness. The Walmart/Massmart Supplier Development Fund not only benefits new entrants, but actually seems to be commercially beneficial to Massmart itself by enabling it to develop alternative sources of supply in concentrated consumer goods markets.

A second issue that emerged quite strongly is that the structure of the agricultural commodity market is seen as a barrier to entry in various ways. The inability of new/smaller entrants to negotiate with silo owners and to invest in capabilities required to trade and hedge effectively, seems to be a major barrier to accessing inputs. In some cases, new entrants are exploring alternative sources of supply which will take time to get off the ground.

Overall, however, there seems to be a high level of dynamism in the maize and wheat milling value chains compared to previous studies. There have been a number of cases of new entry

in maize and wheat milling from a number of sources such as agro-conglomerates involved at other levels of the value chain, firms who have a presence in milling elsewhere in the region, and entirely new entrants. This is a positive change from studies conducted shortly after the conclusion of the competition cases which did not find significant new entry. The new level of dynamism indicates that barriers to entry have been lowered since then, even in the more capital-intensive wheat milling sector. The effect on consumer prices and choice should continue to be monitored.

5. Barriers to entry and expansion in the dairy sector

In 2006 the Competition Commission referred a case of price fixing and abuse of dominance against eight dairy processors to the Competition Tribunal. The case concerned price-fixing of both raw and retail milk and collusion amongst processors to control the flow of excess milk to stifle competition and maintain artificially high prices (Gedye, 2008).

The merits of the milk price-fixing cases were never tested. The milk processors brought several procedural challenges against the Competition Commission that related to matters such as the initiation of the complaint, the addition of respondents to the Commission's complaint, and the validity of the summons issued against the processors. In September 2010 the Supreme Court of Appeal held that the Commission's complaint initiation was indeed unlawful, in part because the Commission did not adequately show a reasonable suspicion of anticompetitive conduct against all named respondents. The Competition Commission subsequently withdrew its case against the dairy processors in 2011 (Competition Commission, 2011).

This section reviews developments in the dairy sector since then, focusing on the entry experience of Coega Dairy, a recent entrant into the production of UHT milk, cheese, and butter; as a way of exploring barriers to entry and expansion in the dairy sector.

This section proceeds in four parts. It starts with a review of the competition cases in the dairy sector, including a review of a recent exemption application by a producer-cooperative. This exemption application raises concerns about the effects of buyer power on dairy farmers. The second part provides an overview of the main players and general trends in the dairy sector. Section three explores the entry experience of Coega Dairy and other smaller processors identified during interviews. Section four concludes with a summary of the main constraints to entry, the major challenges to expansion, and the responses of dairy farmers to varying degrees of buyer power in the dairy value chain.

5.1 Overview of competition concerns in the dairy sector

5.1.1 The 2006 dairy investigation

In 2006, an investigation was initiated against Clover Industries, Clover South Africa¹⁰¹, Parmalat, Ladismith Cheese, Woodlands Dairy, Nestlé, Lancewood and Milkwood Dairy. Four main charges were brought against these firms.

- The first charge related to the exchange of sensitive information which allowed the processors to collusively set the purchase price of raw milk.
- The second charge was that Clover, Parmalat, Woodlands and Nestlé entered into long-term milk supply and exchange agreements in terms of which they agreed to sell their surplus milk to one another, rather than to sell it to end users at lower prices. These surplus removal schemes kept milk prices artificially high.
- The third charge was that Clover and Parmalat entered into exclusive agreements with milk producers which forced producers to supply their total milk production exclusively to Clover and Parmalat; thus preventing producers from selling surplus raw milk at competitive prices to third parties or directly to consumers. These exclusive

¹⁰¹ Clover assisted the Commission in its investigation in return for leniency from prosecution.

agreements also made it more difficult for new or smaller processors to access milk supplies.

- The fourth charge related to price-fixing of UHT milk by Clover and Woodlands, and by Woodlands and Milkwood. Additionally, it was alleged that Woodlands and Milkwood engaged in market division by allocating exclusive territories to avoid competing with each other.

Similar to the anticompetitive conduct uncovered in the milling industry, the dairy processors seemingly engaged in both unilateral and collusive conduct to raise barriers to entry, prevent competition, and maintain anti-competitive rents. Given that they had varying degrees of market power in different parts of the country, it seems that the processors had to employ a range of anti-competitive arrangements to maintain and extend market power.

The case against the dairy processors was dismissed on procedural grounds due to irregularities in the way in which the Competition Commission had initiated and investigated the case. The Commission withdrew the case in late 2011.

In its announcement that it would withdraw the dairy case, the Commission indicated that it has observed changes in the behaviour of firms and the structure of agreements in the dairy sector after its referral. However, we note that Competition Commission is currently conducting an investigation into Parmalat for alleged abuse of dominance. In the new investigation, initiated in November 2014, the Commission alleges that Parmalat has implemented a bonus scheme to reward milk producers in the Eastern and Western Cape for continuously supplying their raw milk to Parmalat (Competition Commission, 2014). This scheme may have an exclusionary effect similar to the outright exclusive supply arrangements the dairy processors previously entered into with farmers. This behaviour may be indicative of the fact that behaviour has not changed as much as the Commission initially believed, but that anti-competitive behaviour has either re-emerged or continued after the withdrawal of the 2006 complaint.

5.1.2 Bargaining power in the milk value chain: review of recent exemption application by dairy a co-operative

The South African Milk Co-operative (Samilco) is a registered co-operative of 251 dairy farmers in the Western and Eastern Cape. It has its origin in the old Bonnitas and Cape Dairy co-operatives. Its members are spread from Malmesbury in the west to East London in the east. The major milk buyer in this region is Parmalat who accounts for approximately 50% of their members' production. Lancewood and Ladysmith are their second and third largest customers respectively.

In August 2013 Samilco applied for an exemption that would allow it to engage in collective price negotiations with milk processors on behalf of its members.¹⁰² The exemption also covered the possible sharing of sensitive price information amongst Samilco's members to facilitate collective negotiations.

The exemption application was amended in October 2014 to include additional conduct related to an "equalisation mechanism" implemented by Samilco. The equalisation mechanism is a system implemented and managed by Samilco to ensure that the members of the co-operative receive the best possible price for their milk. It works as follows: each farmer enters into a milk

¹⁰² The initial exemption application is available in the Government Gazette, no 36760. http://www.gov.za/sites/www.gov.za/files/36760_gen856.pdf

supply contract with a processor that stipulates the amount of milk the farmer will supply on a monthly basis at an agreed price (the “contract volume”). Any production in excess of the contract volume can be sold to the processor, but will generally be sold at a lower price than the prices obtained for the contract volume. Instead of selling the excess milk to processors at lower prices, Samilco members re-distribute the milk to farmers who have not been able to meet their contract volumes; thus allowing these producers to meet their volumes and secure their (higher) contract volume price. Collectively, this equalisation process will raise the price of raw milk obtained by farmers.

Though these practices could clearly be construed as horizontal arrangements between competitors (farmers) aimed at fixing the prices of raw milk; collective bargaining by producer co-operatives is not always considered a *per se* contravention of competition law. Many other jurisdictions provide automatic exemptions for co-operatives subject to certain conditions. The European Commission, for example, provides an automatic exemption for dairy co-operatives with a combined market share of less than 5% and an EU-wide turnover of less than €40mn. EU competition law also allows dairy farmers with a market share of less than 15% to market and sell their milk jointly; as long as the sales are negotiated and agreed via an independent agent or structure and not collectively by the farmers themselves. The EU also allows joint collection and processing of milk in cases where the co-operative does not have significant market power.¹⁰³

The EU's approach recognises the imbalance in bargaining power between individual farmers and large dairy buyers and the efficiencies associated with joint production and logistics in the dairy value chain. It also acknowledges that it is particularly difficult for dairy farmers to vary output in response to changing demand and supply conditions (their herds keep producing milk despite market conditions); and that their bargaining power is further reduced by the perishable nature of the product.

South African dairy farmers have indeed raised issues of asymmetric bargaining power and buyer power of processors and retailers in the South African dairy value chain before. For example, the Milk Producers' Organisation filed a complaint of abuse of dominance against the major retail chains in 2009, arguing that supermarkets used their bargaining power to place downward pressure on farm-gate price.¹⁰⁴

The concern about buyer power at processor and retailer level was reiterated in the interviews conducted in this sector study and is presented as one of the reasons that dairy farmers are integrating into the downstream (processing) level.

5.2 The South African dairy sector

This section starts with an overview of the main players in the South African dairy sector and presents some key insights that emerged from interviews with major players.

¹⁰³ In general, the EU assumes that co-operatives with less than 20% market share do not have significant market power. Above this threshold there is no assumption of illegality, but an analysis will be conducted on a case-by-case basis.

¹⁰⁴ The Milk Producers' Organisation filed a complaint of abuse of dominance against the major retail chains in 2009, arguing that supermarkets used their bargaining power to place downward pressure on farm-gate price. For further discussion see Gedye, 2006. *Supermarkets Chains Investigated*. Available at <http://mg.co.za/article/2009-07-04-supermarket-chains-investigated>

5.2.1 Clover Industries Limited (Clover)

Clover is a food and beverages company with a presence in production, distribution, and merchandising. The company has its origins in a butter factory formed by a group of farmers in the KwaZulu-Natal Midlands in 1898. In 1901, it expanded into milk processing and started distributing milk into the Johannesburg region in 1903.

Clover Industries Limited listed on the main board of the JSE in December 2010. Other notable corporate transactions include Clover's joint venture with Danone from 1998 to 2010; its 2006 merger with New-Zealand based Fonterra Ltd (the world's largest dairy exporter) to form Clover Fonterra Ingredients (Pty) Ltd, its purchase of the Real Juice Co from AVI in 2012, its joint venture with Nestlé to distribute Nestlé Pure Life bottled water and Nestea in 2013, its joint venture with Futurelife to establish nutritional dairy-based products in 2014, and its acquisition of Dairybelle in November 2014. In April 2015, Clover acquired a small Ayrshire milk producer, Nkunzi Milkway, who is one of the six Ayrshire milk suppliers to Woolworths.

Two interesting trends in Clover's business is its recent move into higher margin value-added products such as yoghurt, custard, and the nascent nutritional dairy-based products segment as well as its longer-term commitment to building its logistics/supply chain capacity as a separate business unit and revenue stream. Clover committed most of the capital raised through its listing (approximately R575 million) to optimising its supply chain by expanding and repositioning its facilities to ensure greater efficiency, increased production, and lower overall cost.¹⁰⁵

Location of milk processing plants

Clover has five concentrated products manufacturing plants and 6 liquid processing manufacturing plants.¹⁰⁶ Its UHT milk processing plants are located in Pinetown (KZN) and Port Elizabeth (Eastern Cape). Its fresh pasteurised milk processing plants are located in Olifantsfontein (Gauteng), Port Elizabeth (Eastern Cape), Queensburgh (KZN), and Parow (Western Cape).

Mode of expansion & strategic acquisitions

Since its listing in 2010, Clover has been involved in 2 significant mergers. The first is the acquisition of an Ayrshire milk producer Nkunzi Milkway, and the second is the acquisition of Dairybelle, a yoghurt and UHT milk business.

Though Nkunzi Milkway (Nkunzi) is a small milk processors, it is significant because Nkunzi was one of only six producers who supply Ayrshire milk exclusively to Woolworths. Through this acquisition, Clover is thus able to obtain a share of a small but significant niche market which it may not otherwise have been able to penetrate.

Woolworths, through its enterprise development programme, specifically supports the development of black-owned producers and processors into the Woolworth supply chain. These producers are generally quite small, particularly at the start of the contracting process. Woolworths supports these processors through a range of mechanisms, including ensuring short payment terms, assisting with training and development and making finance available

¹⁰⁵ Clover Annual Report, 2012.

¹⁰⁶ Concentrated products refer to cheese, condensed milk, and milk powders. Liquid products include UHT milk, fresh milk, maas and buttermilk.

through and Enterprise Development Fund.¹⁰⁷ This program is thus specifically designed to facilitate entry by small business and new entrants. The acquisition of Nkunzi Milkway by a larger processors such as Clover may thus distort the dynamic benefits of such a program as its acquisition (and absorption into a larger, more established company), prevents it from growing into a more diversified, larger processor.

Clover's acquisition of Dairybelle signalled its entry into the yoghurt segment, by all accounts a profitable and growing dairy segment.¹⁰⁸ Other interviewees have indicated that concentrated products markets, notably yoghurt and cheese, are relatively easy to enter at small scale for processors wishing to produce 'artisanal' products. Such small scale production may, however, come under pricing pressure as larger processors with greater scale in production and larger cost advantages in distribution, enter these segments.¹⁰⁹

Clover's expansion into niche markets is also partly a response to the buyer power of supermarkets in general, and their buyer power with respect to perishable dairy products in particular. Similar to poultry producers who are trying to find customers in segments unaffected by imports (such as QSR), dairy processors expressed the need to find markets where they have greater relative bargaining power.¹¹⁰

In addition to recent acquisitions, Clover has also entered into a number of joint venture projects aimed at diversifying its portfolio and expanding into growing consumer goods segments. Two such projects include the 70/30 joint venture with Nestlé South Africa to form Clover Waters and the 50/50 joint venture with functional foods producer Futurelife to produce a range of functional foods for health-conscious consumers. In the Futurelife joint venture, Clover will focus on production, distribution and merchandising, while Futurelife leverages its strength in developing food products with a health benefit.

It is clear that Clover has embarked upon an aggressive growth and diversification strategy since its listing in 2010. In many cases, it seems to be building on its existing capabilities in manufacturing, distribution, and merchandising (i.e. its route-to-market capability) to enter into joint ventures that allow it to enter new segments. The effects on new or potential entrants is somewhat unclear as Clover is, in part, supporting the delivery of new products to the market but may, by virtue of its size and reputation for acquisition, limit incentives for potential rivals to enter or limit the ability of smaller and artisanal processors to grow.

5.2.2 Parmalat

Parmalat South Africa is a subsidiary of French dairy company Lactalis, the largest dairy products company in the world by turnover. It started operating in South Africa in 1998.

Parmalat produces a range of liquid and concentrated dairy products including 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,

¹⁰⁷ For further information on the Woolworths Enterprise Development Programme see here: http://www.woolworthsholdings.co.za/investor/annual_reports/ar2012/sustainability/times_are_changing/enterprise_development.asp

¹⁰⁸ In September 2015, Clover reported an 82.9% increase in profits and 8.6% increase in revenues despite losses in some product categories. The increase in profits was driven in part by exceptional sales in yoghurt and custard products.

¹⁰⁹ We note that the effects on consumers may not be straightforward. Consumers may benefit from lower-cost products as larger processors enter, but could also face a decline in variety if smaller processors are forced to exit.

¹¹⁰ Interview with dairy processors, August 2015 and October 2015

maas, and custard, and *Aylesbury* ice cream. Parmalat also produced 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. It sources its raw milk mainly from the Western and Eastern Cape regions, though it does source the milk for its Gauteng-based yoghurt processing facility from the North West. On occasion, it sources a small quantity of milk from KZN.

Mode of entry and expansion

Parmalat entered into South Africa via the acquisition of two established dairy players; Bonnita and Towerkop. This acquisition gave Parmalat access to various dairy processing and warehousing facilities, as well as giving it access to well-known South African brands. In mid-2003, Parmalat acquired the cheese business of (then) Unilever Bestfoods Robertsons, thus expanding its portfolio to include the Simonsberg and Melrose cheese brands.

Despite its relatively recent entry into the South African market, Parmalat reported a 36.6% value share of the cheese category and holds three of the top four brands in the cheese category (Parmalat, 2014). It also has a 15.4% share of the UHT milk market and an 18.4% share in the yoghurt market. These shares are significant considering that Parmalat has only been active in South Africa for 17 years; and shows the advantage of entering at large scale with well-known brands.

Supply and transportation of raw milk

As noted above, Parmalat sources its milk from the Eastern and Western Cape. They indicate that the quality of milk and efficiency of production of the better-performing South African farms are as good as anywhere else in the world; making South African raw milk cost competitive compared to farmers in the European Union. Due to the perishability and low value of raw milk, it is not viable to transport milk for distances greater than 200 to 300 km and milk processing facilities are thus located areas of milk supply. Processors also require specialised refrigerated trucks to transport raw milk, which constitute a significant barrier to new entrants.

There are various contracting relationships between dairy processors and farmers in South Africa. Some of the smaller dairies such as Coega Dairy and Woodlands have a co-operative relationship with farmers, while others such as Faircape own and manage their own dairy farms. The larger processors, including Parmalat, do not own any dairy farms but enter into commercial milk-supply contracts with farmers.¹¹¹

Parmalat indicated that benefits of scale largely accrue in transportation rather than in processing as it is possible to process products such as cheese and yoghurt cost-effectively at small scale (which partly explains the large number of small, artisanal brands in these segments).

Regulatory barriers

Parmalat and other interviewees viewed the regulatory requirements, including food safety, health, and quality standards, as a necessary feature of the dairy market, and not necessarily as a barrier to entry. Labelling requirements, though onerous, are also considered a necessary

¹¹¹ Interview with Parmalat, 03 August 2015

feature of a food manufacturing business. The only regulatory matter that emerged as a common concern was the difficulty of obtaining export certification. Firms require both veterinary and export certification for every processing facility from which they may export which is a lengthy and costly process.

5.2.3 Nestlé South Africa¹¹²

Nestlé South Africa (Nestlé) is a subsidiary of the Swiss multinational, Nestlé S.A. It was established in 1866 and started distributing products in South Africa in the 1870s. Nestlé was formally registered in South Africa in 1916. It has 8 manufacturing facilities and 3 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.¹¹³

Nestlé's milk buying operations

Nestlé obtains its raw milk from two regions; the southern region which covers the Western and Eastern Cape from Caledon to Jeffrey's Bay; and the northern region, which covers Underberg, Swartberg, Qwa Qwa, Kokstad and Estcourt. The southern region is their largest production area, with about 150 farmers supplying 75% of their annual requirements. In the northern region, Nestlé has relationships with about 50 emerging farmers who produce 25% of its requirements.

Nestlé has a close relationship with its producers whom they support financially and operationally. It provides on-farm advisory support to emerging farmers and also installs and maintains tanks and cooling equipment on new farms. Commercial farmers can also rent tanks and cooling equipment from Nestlé, which will be maintained and serviced on their behalf. Alternately, farmers can also apply to Nestlé for finance to upgrade their own equipment and milking machines.

Transportation and processing of milk products

Nestlé confirms that the transportation of raw milk from farm to factory is a scale business. Transporting milk requires specialised equipment and careful, real-time route planning to ensure that tankers are used at maximum capacity, and that as much milk as possible is transported over the shortest possible distance. The cost of transporting milk is high because tankers only transport a full load one way; from farm to processor but must return to farms empty, meaning that only half the available capacity is used.¹¹⁴ A study conducted by the

¹¹² Nestle designated a representative from its Southern Cape operations for the interview. The interview focused on operation matters at the farm level; including logistics of raw milk collection and extension services provided to farmers.

¹¹³ Interview with Netsle, 26 August 2015

¹¹⁴ In logistics terms, this is referred to as a 50% load factor.

NAMC in fact finds that “collecting raw milk from farms is probably of the most difficult and potentially hazardous transport tasks that can be undertaken” (Max Braun Consulting Services, 2010). Transportation alone contributes as much as 8% of Nestlé’s total production cost.

5.2.4 Woodlands Dairy

Woodlands Dairy is based in Humansdorp in the Eastern Cape. Its majority-shareholder, with a 75% stake in the company, is Gutsche Family Investments (GFI).¹¹⁵ The remaining 25% of Woodlands Dairy is held by African Pioneer Limited and Nozala Investments (Pty) Ltd.

Woodlands entered the dairy market in 1995 and packages UHT Milk under the *First Choice* brand. They also package private label UHT milk for Spar and Woolworths and manufacture a range of concentrated dairy products including cheese, butter, cream, amazi, flavoured milk, and extended shelf-life fresh milk.¹¹⁶

5.2.5 Smaller processors and more recent entrants

There are a number of smaller dairy processors who distribute their products in local markets. These include Montic in Heidelberg (Gauteng), Dewfresh in Leandra (Mpumalanga), Douglasdale Dairy in Gauteng (Sandton), Crickley Dairy in Queenstown (Eastern Cape), Orange Grove Dairy in Dundee (KZN), Honeydew Dairies in Mooi River (KZN), Langeberg Foods in Swellendam (Western Cape), Ayrshire milk producer Imbani Homsek in Bloemfontein (Free State), Limpopo Dairy in Rustenberg and Polokwane (Limpopo), and Intshona Dairy in Somerset West (Western Cape). Recent entrants include Coega Dairy, whose entry experience is explored in more detail below, and Dairy Day which entered in early 2015 through the merger of Honeydew Dairy and Stonelees Dairy in the KZN Midlands (Kruger, 2015).

5.3 General trends in the South African dairy sector

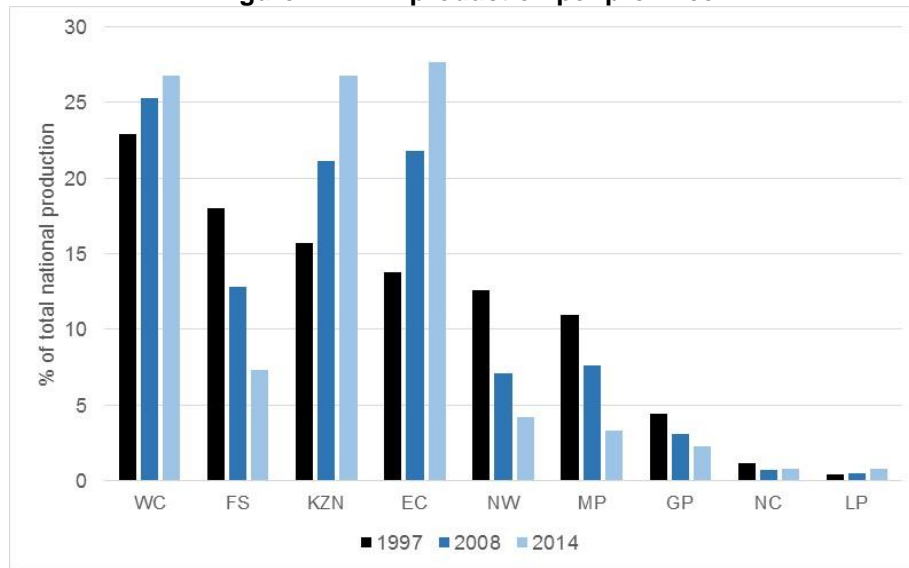
There are six main milk - producing regions in South Africa: KwaZulu-Natal, the Southern Cape, Western Cape, Eastern Cape (further divided into a Central and Southern region), the Central Highveld and the Free State. Since the late 1990s, milk production has moved from the central provinces to coastal regions. Interviewees suggest that this is largely cost-driven and represents a move from higher cost inland systems where herds are fed total-mixed rations to lower cost pasture-based systems at the coast.

Figure 21 below confirms that milk production in the Free State has dropped significantly, while there has been a considerable increase in milk production in the Eastern Cape and KwaZulu-Natal.

¹¹⁵ GFI also holds an 80% stake in Coca-Cola SABCO, a Coca-Cola bottler with operations in 7 African countries.

¹¹⁶ Woodlands Dairy website. Available at <http://www.woodlandsdairy.co.za/>

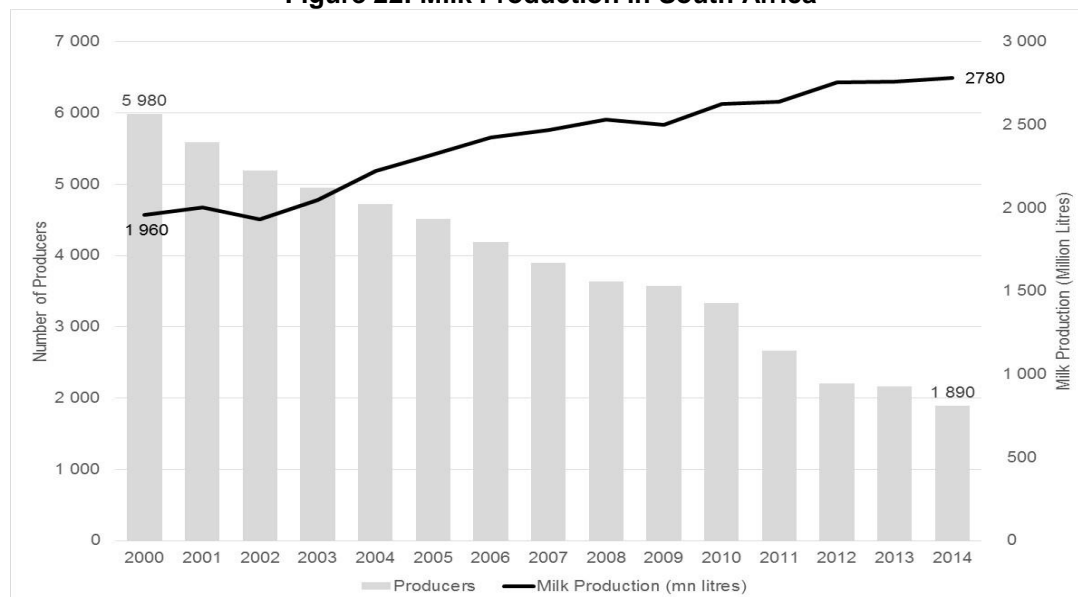
Figure 21: Milk production per province



Source: Milk Producers' Organisation

There has also been considerable consolidation at the production level over the past 15 years. The number of commercial farmers decreased from 5 980 in 2000 to 1 890 in 2014.¹¹⁷ Over the same period, milk production increased from 1 960 million litres to 2 891 million litres. Together, these trends point to the emergence of fewer commercial farms with larger herds. The Milk Producers' Organisation confirms that larger farms (those producing more than 5 000 litres per day) supply 80% of South Africa's total milk production.

Figure 22: Milk Production in South Africa



Source: Milk Producers' Organisation

¹¹⁷ Interview with Milk Producers' Organisation, 26 June 2015

The dairy sector becomes increasingly concentrated as we move down the value chain. The latest statistics released by the Milk Producers' Organisation in March 2015 show that there are 1 834 producers in the dairy sector and only 153 milk buyers across the country. The four largest milk buyers (Clover, Nestlé, Parmalat, and Woodlands) purchase more than 50% of the total milk production.¹¹⁸

About 60% of the dairy products consumed in South Africa are "liquid" products such as pasteurised (fresh) milk, UHT (long-life) milk, flavoured milk, maas, and buttermilk and 40% are "concentrated" products, such as cheese, butter, condensed milk and milk powder.

In the three years from December 2011 to December 2014, consumption of UHT milk, yoghurt, and pre-packed cheese has increased each year. Consumption of fresh milk has been volatile by comparison (Table 5). The Milk Producers' Organisation suggests that these consumption patterns, and particularly the increase in cheese and yoghurt consumption, reflects rising income levels and increased availability of these products as processors and retailers expand their footprints into rural areas.

Table 5: Growth in consumption (sales) of dairy products

Product	12 months growth to:			
	Dec-11	Dec-12	Dec-13	Dec-14
Fresh milk	2,6	-4.8	-5.9	1.2
UHT milk	10,6	7.6	8.0	4.1
Flavoured milk	5,8	16.0	1.5	-2.2
Yoghurt	8,3	3.9	1.2	2.5
Pre-packed cheese	17,8	21.1	17.1	29.0
Butter	1,1	4.3	17.2	1.4

Source: MPO (from AC Nielsen data obtained from SAMPRO)

Though the consumption of fresh milk has been more volatile than that of UHT milk, fresh milk still accounts for more than 50% of the total liquid products market. UHT milk is the second largest component at 29%, followed by yoghurt at 13%, maas and buttermilk at 2% and flavoured milk at 2%. In the concentrated goods market, cheese makes up the largest consumption category at 63%. Butter is second at 12%, followed by milk and whey powder at 9% each, condensed milk at 7% and buttermilk powder at 1%.

5.3.1 Global considerations

All interviewees referred to milk as an increasingly commoditised product as it is fairly homogenous product and easily tradable. The only constraint to trade in dairy products are the specifications that national governments typically impose on factors such as fat content and protein content of different classes of milk. However, global standards organisations ISO and IDF are advocating for standardisation of both measurement and classification of protein content to ease global trade (ISO, 2014). The effect on South African producers is uncertain. Standardisation may make it easier for South Africa to export dairy products into the rest of

¹¹⁸ Interview with MPO, 26 June 2015; and various Lactodata publications

the African continent, but interviewees indicated that it will likely encourage the larger dairy producing countries in the European Union and New Zealand to do the same.

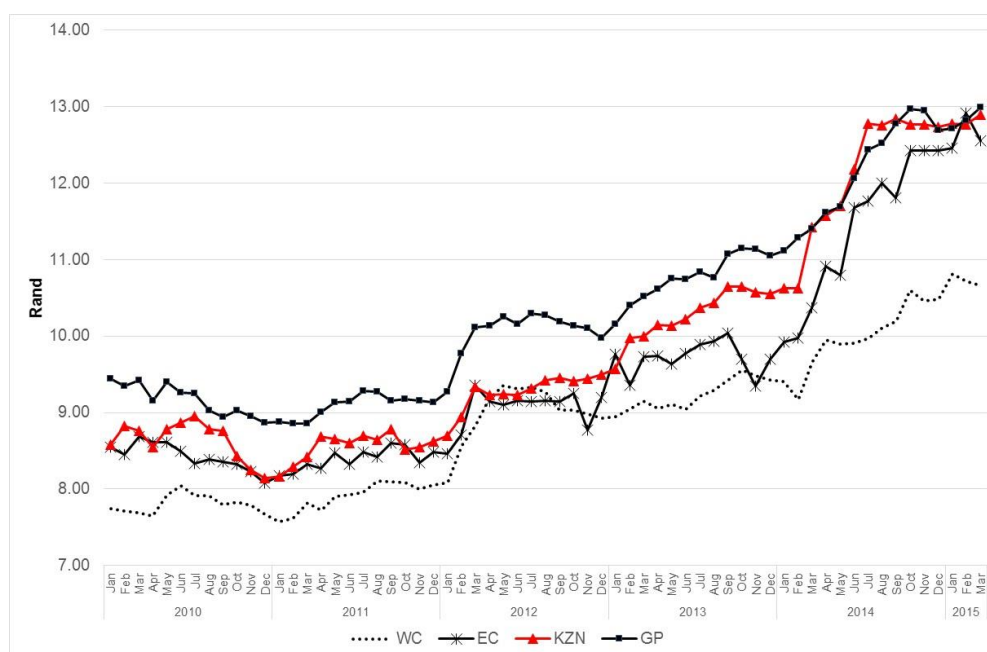
South Africa is currently experiencing a 10% month on month growth in milk production.¹¹⁹ Globally, there is a surplus of milk and decline in consumption, particularly from China. This increase in milk supply and decline in demand, has seen milk price drop from around \$4500/tonne in February 2014 to \$1250 in 2015.¹²⁰ Interviewees suggest that excess milk from the EU and New Zealand is already being exported to African countries at prices 50% cheaper than South African processors can produce comparable goods.

5.3.2 Price trends in fresh and UHT milk in South Africa

In the overview of the industry structure, we noted that there are a number of smaller processors who manufacture concentrated products and sell fresh milk, primarily in local markets. There have also been two significant new entrants into the UHT milk segment since late 2011 (Dairy Day and Coega Dairy). Against this background of entry, we assess price trends in fresh milk and UHT milk to establish whether these new entrants have had any discernible impact on prices. The impact of transport costs in explaining price differentials is also considered.

Two interesting trends emerge (Figure 23). In the period before 2012, dairy prices are relatively stable. Prices in the coastal, milk-producing, provinces are below the Gauteng prices, as we would expect given the cost of transporting fresh milk from coastal to inland provinces. From early 2012, prices increase significantly across most provinces (the increase in the Western Cape is more moderate) and the price differential between Gauteng and the coastal provinces of KZN and the Eastern Cape reduce almost entirely.

Figure 23: Average retail price of 1L fresh milk



Source: Statistics South Africa

¹¹⁹ Interview with MPO, 26 June 2015; Lactodata

¹²⁰ Interview with dairy processors, August 2015

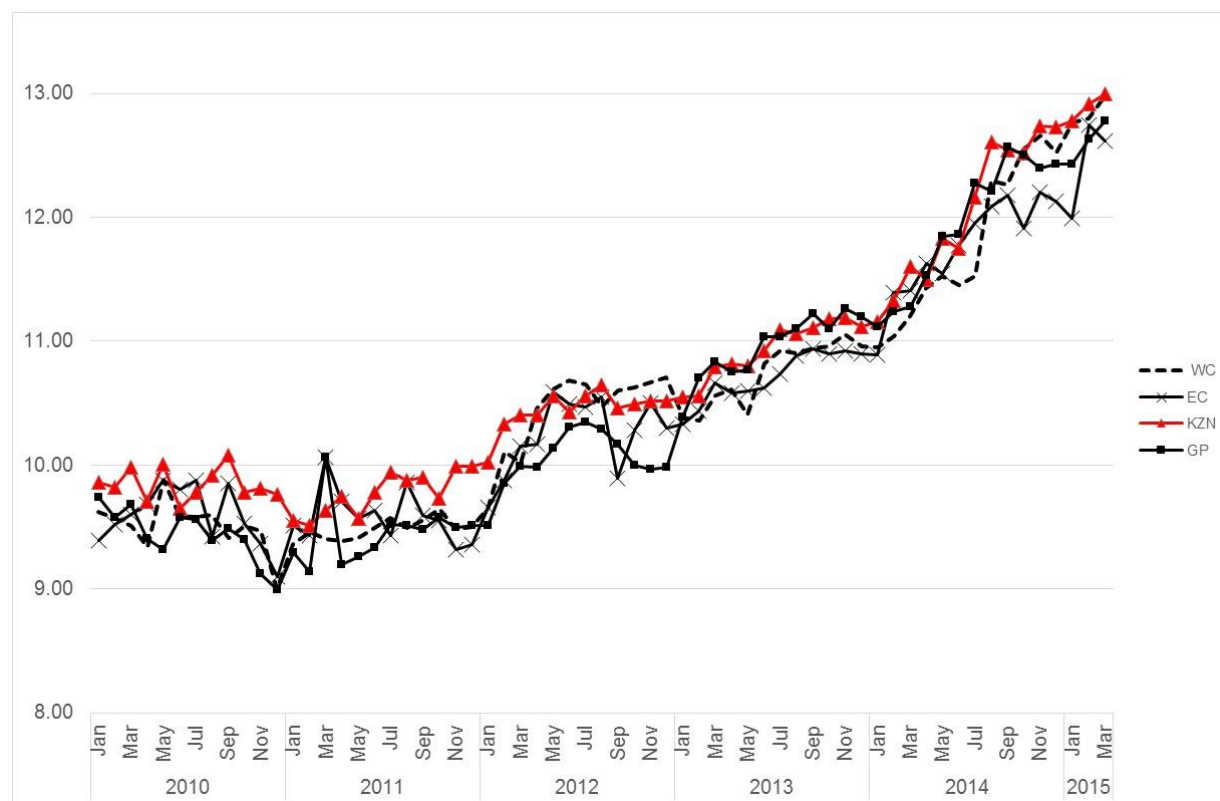
Two questions emerge: (1) why did prices increase from early 2012, and (2) why do prices in the milk-producing provinces of KZN and the Eastern Cape converge with prices in Gauteng despite the transport differential?

The prices increases from 2012 are all the more curious considering that global milk prices were actually declining over this entire period, and milk supply in South Africa was on the increase (Figure 22). Interestingly, this change in price trends coincides with the decision by the Competition Commission to withdraw the milk collusion case (the decision was made public in late 2011). Given the significance of the change in average retail prices, further investigation may be necessary to evaluate the possible re-emergence of anticompetitive conduct.

The reduction in the differential between coastal provinces and Gauteng is also puzzling. The entry of two new UHT producers (Coega Dairy at the end of 2011 and Dairy Day towards the end of 2013) may partly explain this trend. It is likely that more raw milk went to UHT production when these new processors entered the market. This diversion may have resulted in a corresponding decrease in the volume of raw milk available for the fresh, pasteurised segment and an increase in the price of fresh milk.

UHT milk prices show a similar overall trend to fresh milk. That is, prices are relatively stable in the 2010 – 2011 period, but increase steadily from 2012 to 2015. However, unlike for fresh milk, there is hardly any difference between the inland (Gauteng) price and the price in coastal regions (Figure 24). The similarity in prices across regions reinforces interviewees' stance that UHT milk is a commodity and that consumers are not particularly brand loyal. While there may be small fluctuations in prices, no single brand can demand a premium. Price reductions (particularly by private labels) may also be limited by available supply and the capacity that processors allocate to private label brands.

Figure 24: Average retail prices for UHT Milk



Source: Statistics South Africa

A final observation is that the fresh and UHT milk prices converge at a level of about R13 per litre in March 2015. In the earlier period (2010 – 2011), fresh milk was about R1 cheaper than UHT milk. Over the same period, processors are reporting an increase in the consumption of UHT milk relatively to fresh milk.¹²¹ The convergence in prices could indicate that processors are taking greater relative margins on fresh milk, treating UHT milk as the “upper limit” of fresh milk prices as the products are consumed interchangeably.

5.4 Case study of entry: Coega Dairy¹²²

Coega Dairy was established by a group of 13 farmers in 2010. It is located in the Coega Industrial Development Zone near Port Elizabeth. Coega Dairy is majority-owned by farmers who hold a 62% share in the company. The rest (38%) is managed by a trust; whose beneficiaries include Coega Dairy’s factory workers, farm workers, and 6 emerging black-owned dairy farms in the region.

The initial decision to start Coega Dairy was prompted by the large and increasing volume of milk on the South African market in 2010 (Figure 22), which placed producers’ margins under pressure. The farmers took a decision to expand into processing as a way of adding additional value to their milk and securing a processing margin. They also saw the expansion as a way to develop a sustainable milk buyer who would purchase farmers’ entire production at a better price than they could negotiate with larger processors and who would provide more reliable and regular payments to allow farmers greater certainty in managing their farming operations.

The UHT production facility was an entirely greenfield investment. The total capital required to establish both a processing plant and a warehouse was R120 million with the processing plant alone amounting to R90 million.¹²³ The plant has a capacity to produce 150 million litres of UHT milk per annum and took just over a year to commission. Production started in September 2011. In addition to producing UHT milk under their *Coastal View* brand, Coega manufactures Shoprite’s UHT private label milk for their stores in South Africa and in other African countries. Coega Dairy also produces butter from the by-product of the UHT milk production process under the *Coastal View* brand.

In October 2012, about a year after Coega Dairy started operating, the Coega Dairy Company entered into a joint venture with Famous Brands to produce cheese for all Famous Brands restaurants through a related, though independent, company called Coega Cheese. Famous Brands holds a controlling (51%) stake in Coega Cheese and the shareholders of Coega Dairy hold the remaining 49%. Coega Cheese purchases all its milk inputs from Coega Dairy and produces mozzarella, cheese slices, and cheese spreads for the Famous Brands group. It does not currently manufacture cheese for the retail market. The equipment required for the cheese factory was imported from Italy at an estimated cost of R35mn; funded entirely by the joint venture partners in proportion to their shareholding in the joint venture.

¹²¹ Lactodata and Parmalat 2014 Annual Report

¹²² This case study is based on a telephonic interview with Coega Dairy conducted in September 2015

¹²³ This cost includes the cost of outfitting the raw materials and finished goods warehouses. Note that this only includes capital expenditure on equipment for the processing plant and warehouse. The Coega Development Corporation built, and owns, all the land and structures.

5.4.1 Why did Coega enter into UHT and not fresh milk?

The decision to manufacture UHT rather than fresh milk was largely driven by consumption patterns and logistical factors. On the consumer side, Coega Dairy noted that consumption of UHT milk is growing faster than the consumption of fresh milk (a trend confirmed by the SAMPRO data in Table 5). From a logistics perspective, UHT milk is much less sensitive to changes in temperature than fresh milk. Fresh milk must be transported entirely in a chilled environment, while UHT milk can be transported in an ambient supply chain which is both less costly and more convenient. The extended shelf-life of UHT milk is also beneficial as Coega Dairy is located relatively far from the main markets in the northern part of the country and the major distribution centres of large supermarket chains.¹²⁴

5.4.2 Key issues emerging from the Coega Dairy case study

This section identifies some key lessons from Coega Dairy's entry experience and mainly highlights the key issues they have faced in their first four years of operation. These lessons are incorporated into the broader discussion of barriers to entry and expansion in the South African dairy sector in the section that follows.

Importance of securing private label or other "anchor" business

Coega Dairy highlighted its ability to secure Shoprite's private label UHT milk as a significant advantage. Given that UHT milk is a fairly uniform commodity, consumer choice is driven by price rather than by branding. All retailers offer a private label UHT milk product and often discount these private labels relative to branded products as a way of attracting foot traffic into stores.¹²⁵ Their agreement with Shoprite provides some core volume and ensures that Coega Dairy has a share of the private label market.

The Coega Cheese/Famous Brands joint venture also secures a market for at least 38 million litres of milk throughout the year (Radebe, 2012).

Challenge of managing supply and factory capacity

The perishability of milk, along with the inability to vary output, makes it very difficult to plan the optimal production capacity of a milk processing plant. Coega Dairy's plant was designed to cope with milk processing during the peak production period which lasts approximately four months. During peak periods, capacity utilisation is more than 90%, while utilisation drops to 50 – 55% during less busy periods. Coega Dairy is exploring opportunities to pack long-life fruit juices during the off-peak season to ensure more efficient use of their production facilities.

Logistics capacity for route optimisation

Many interviewees highlighted the importance of optimising milk collection to manage costs. Coega Dairy faces similar challenges in managing milk collection, but this is eased by the fact that it has a smaller producer network with 12 farmers producing 70% of their milk.

¹²⁴ We note that the structure of the supermarkets' supply chain infrastructure may also have an effect on the decisions of producers. For example, in order to be listed with a large supermarket, firms must make sure that they can deliver their products to all regional distribution centres of these supermarket chains.

¹²⁵ Parmalat noted that increasing consumption of UHT private labels is a global phenomenon and that most of the UK's milk consumption is actually private label products.

5.5 Key issues and barriers to entry in the dairy value chain

Interviewees agreed that there is scope for new entry in the dairy sector, particularly at small scale and in concentrated dairy products (cheese and yoghurt specifically). However, despite two new entrants in UHT milk and the presence of a number of smaller processors, questions about the extent of competitive rivalry in the dairy sector remain. New complaints about the buyer power of large processors and increases in retail prices after the withdrawal of the competition complaints in 2011 may point to the continued exertion of market power. The effectiveness of new entrants remains uncertain and may be limited by the fact that they serve the interests of the small groups of farmers that own them.

Additional issues that emerged from interviews that help us understand these constraints are summarised below.

5.5.1 Logistics is a key competency required for success in the dairy business

An interesting insight from the interview with Clover is that it sees itself as a logistics provider, in addition to being a dairy products producer. Though dairy products make up 70% of Clover's operations, they only contribute 50% of its revenue. The remaining 50% comes from its distribution and logistics function which it built on the back of its primary business of sourcing, collecting, processing, and marketing dairy products.

All interviewees confirmed that transport is particularly challenging in the dairy business for a number of reasons. The first is that raw milk is highly perishable and low in value relative to volume, which makes it costly to transport. Secondly, farmers' output is uncertain, and milk supplied by each farm fluctuates on a daily basis. Tanker routes must thus be planned and revised on a daily basis to ensure that the greatest volume of milk is collected over the shortest possible distance. Lastly, the efficiency of a fleet is hampered by the fact that they only carry a full load in one direction: from farm to processing facility. At best, firms can only manage a load factor of 50%. This challenge is repeated at the downstream level of the value chain, when processors transport finished goods to distribution centres or directly to stores.

New entrants thus face a considerable challenge in managing the efficiency of milk collection and related logistics; which could add considerable costs to their operations.

5.5.2 Concentration in input cost markets places pressure on margins

Interviewees noted that packaging costs represents one of their most significant cost drivers, contributing approximately 17% to the cost of finished goods. Most of the packaging used for fresh and UHT milk, is either imported (in the case of Tetrapak products), or priced at import parity levels (in the case of polymers supplied by Sasol). In the absence of alternative sources of supply, the concentration in packaging markets imposes significant costs on processors.

This is a useful reminder of the fact that competition in one value chain cannot be separated from an understanding of concentration and competition dynamics in related sectors. Essentially, increasing dynamism and rivalry should be considered on an economy-wide basis.

5.5.3 Government incentives are only as useful as they are accessible

The only incentives program that interviewees in the dairy sector had taken advantage of was the *dti's* Manufacturing Competitiveness Enhancement Programme (MCEP). The MCEP program, which was discontinued in late October 2015, provided grants and loans for capital expenditure projects that would create employment, contribute to diversification of manufacturing output and increase exports.

A major complaint about accessing the MCEP grants was that the process was lengthy and burdensome; so much so that consultants were engaged to manage the funding process. A poultry producer raised a similar issue; stating that the funding process was simply too complex to manage in-house. This is far from ideal as the fees allocated to consultants simply to apply for and access government incentives, could have been more gainfully applied to the capital expenditure projects themselves.

5.5.4 Niche markets are the most likely sites of entry

Barriers to entry into concentrated dairy products and niche product markets seem to be relatively insignificant. A number of smaller manufacturers have entered into the cheese and yoghurt segments in recent years. Other segments wherein smaller or new entrants have grown include the organic products segment, including the production of Ayrshire milk, and the production of goats' milk and goats' milk products. These new entrants are largely based in urban areas and distribute in local or regional markets which help them to avoid the costs of investing in a national distribution network. Woolworths has been an important distributor for niche organic products and goats milk.

Large processors have confirmed that they have seen significant entry into cheese, yoghurt and organic products and attribute this to the lower capital costs of entering these segments and the ability to operate efficiently at low scale. They indicate that further entry into the UHT milk market is unlikely due to existing excess capacity in the industry, and the high capital cost of setting up a UHT milk plant. Margins are also low and declining due to significant price competition from private labels.

6. Conclusion: drawing together lessons from the agro-processing sector study

This review focused on entry and changes in competition dynamics in the agro-processing sector, in the context of the overall trade deficit in processed food products in southern Africa and the need to both expand participation and build competitive capabilities. The study focused in particular on three food value chains, poultry, milling and dairy, considering the developments since extensive competition investigations up to around 2010. In the last five years, there have been examples of entry in each value chain but the effect of new entry on rivalry and retail prices has not always been clear. The assessment points to important areas for more concerted action to widen economic participation in the value chains, supporting black industrialists, and improving competitiveness to underpin growth and employment creation.

In the poultry sector, entry has occurred in two ways. First, large vertically-integrated poultry firms are increasingly outsourcing their poultry growing operations which has seen entry by a number of smaller black-owned contract growers. Though these contract growers produce a significant proportion of poultry firms' total output (up to 60–80% of their total broiler volumes), the contract growers are entirely dependent on the larger firms for critical inputs. They typically receive their day-old chicks, animal feed, and veterinary services from the established firms and deliver the fully-grown broilers to their abattoirs. The contract growers are only involved at a discrete level of the value chain and though they may acquire capabilities to rear broilers efficiently, they do not offer a competitive constraint to the larger poultry firms as they have neither the access to critical inputs, nor the scale to compete effectively.

The second major mode of entry is by vertically integrated poultry firms such as Afgri (later, Daybreak) and Grain Field Chickens (GFC). Both Afgri and GFC had a presence in storage and milling of maize and expanded into poultry partly to generate a new market for the output of their milling and animal feed operations. Despite the benefit of vertical integration and scale, both Afgri and Grain Field Chicken suffered major financial losses from 2011 until 2013 due to a combination of pressures led by rising raw material costs and competition from low-priced imports. Afgri has since sold its entire poultry division (including its Kinross animal feed mill) to a new entrant, the black-owned Matome Maponya consortium and GFC became profitable in 2015, five years after its entry in 2010. Under the terms of IDC financing GFC will also be substantially black-owned.

The Afgri and GFC experiences show the challenges of entry faced even by those that are relatively large and with backward linkages to some key inputs. They demonstrate that there must be a combination of factors including long-term investment enabling the coordination required for competitiveness through the value chain and the ability to ride-out adverse shocks. It also requires processing, access to routes to market and the know-how for competitive poultry production. Vertical coordination is critical for successful participation in the poultry business as it allows firms to manage their costs and margins along the entire value chain and reduces their reliance on competitors for key inputs. The increase in the competitiveness of Country Bird Holdings after it exited its joint venture with Astral and went on to introduce a new breed is further evidence of this. The mode of entry by Afgri/Daybreak and GFC thus seems more likely to generate effective competition to existing vertically integrated incumbents.

For the sector as a whole, competitively priced inputs are essential. In this regard, the sources of low cost inputs are most likely to be in the region from countries such as Zambia. Instead, policies have protected soybean processing which raises the costs of poultry production while there is no prospect of South Africa becoming a net soya exporter and achieving lower than import parity prices given water constraints. Competitive value chains built at the regional level have the potential to replace deep sea imports and meet the rapidly growing demand in southern Africa associated with urbanisation.

In the milling sector, there are big non-cost related price differences in maize meal and wheat products across provinces, which are at least partly explained by differences in competition. However, the ending of cartel conduct has not necessarily generated more competitive outcomes where the markets remain concentrated. Market power also derives from strong brands and links with retailers. Some of the merger activity here has been associated with entry of firms into provinces in which they had not been present, such as Premier Food's entry into the Eastern Cape. There have also been substantial mergers where global trading companies have integrated into South African milling businesses, bolstering the positions of the large firms even more.

While there has been entry by firms of various sizes into both wheat and maize milling, much of the new milling capacity was added by agricultural conglomerates who have a presence elsewhere in the grain value chain, either in grain storage, the milling of another grain, or the production of animal feed. There have been small-scale maize milling businesses with *dti* support but the overall record has not been good – African Micro Mills appear to have closed despite support.

There have also been some cases of medium-scale entry including by black industrialists. For example, Lethabo Milling is the most recent entrant into maize milling. Its experience confirms that new entrants still face significant challenges in securing funding, accessing inputs, obtaining shelf space in major retailers, and in making operational decisions like developing marketing and pricing models that will both facilitate entry and sustain their business. In Lethabo Milling's case, these challenges were overcome by retailer-sponsored entry and support from Massmart's Supplier Development Fund, established as part of the settlement in the Walmart/Massmart merger. The relationship with retailers, where competition between retailers can be linked with supporting greater rivalry in suppliers, is a key part of opening up access and supporting investment and growth. The entry of another potential maize miller, FABCOS, has also been slowed by access to funding, despite the fact that it has an entire network of informal retailers that could distribute its maize meal.

These experiences thus emphasise the importance of continued focus on easing access to funding for new entrants, of business development support, and in finding new (informal, niche, or export) markets to provide them with alternatives to the formal retail supermarkets. The role of the Supplier Development Fund and Agro-processing Competitiveness Fund in facilitating entry also illustrates the value in allowing the competition authorities somewhat greater flexibility to implement pro-competitive and innovative remedies that have a direct impact on facilitating entry in value chains or markets where there have been competition issues in the past.

The planned entry in 2015 into wheat milling by Tanzania's largest conglomerate, the Bakhresa Group, is a significant development which indicates the potential for developing markets at a regional rather than simply national level. Bakhresa has a presence in nine African countries and is involved in grain milling, carbonated soft drinks, dairy-based beverages, logistics, packaging, media, and petroleum. They have indicated that they will use their site in South Africa to mill and export wheat flour to other countries in southern Africa. They will introduce significant additional capacity into the wheat flour market, which is still relatively concentrated with four large players. Bakhresa has not yet indicated whether it would enter the baking level of the value chain in South Africa (which is less concentrated and faces competition from retailers and independent bakeries), but they do manufacture biscuits, bread, and other confectionary products elsewhere.

In the dairy sector, there has been entry by two new UHT processors in the last five years, Dairy Day in KwaZulu-Natal and Coega Dairy in the Eastern Cape. Both firms were started by groups of milk producers and shared similar reasons for entering into milk processing, namely a lack of countervailing power against larger dairy processors, establishing greater control

over downstream margins and distributing income from large processors to dairy producers themselves. The review of the dairy sector indicates, however, that competition concerns remain. The Competition Commission is currently investigating whether a bonus scheme introduced by Parmalat has the effect of inducing dairy farmers not to deal with Parmalat's competitors in contravention of the Competition Act. Milk producers seemingly remain in a precarious position relative to processors, which further supports Coega Dairy and Dairy Day's reasons for expanding into milk processing.

In relation to evaluating ease of entry into the dairy sector, information was somewhat mixed. All interviewees confirmed that it is relatively easy to enter into concentrated dairy product segments such as cheese and yoghurt at small scale. However, the impact of entry at this level is limited. Larger dairy processors (Parmalat, Clover, Dairybelle, and Lancewood) have significant market share in the cheese category and these products are mostly purchased by higher-income consumers. On the other hand, there are significant barriers to entry into liquid products such as fresh or UHT milk which require significant capital investment for processing and specialist logistics capabilities to transport milk efficiently. Retailers also play a very important role here, especially as they have their own private label milk brands and often discount these to attract consumer footfall into stores.

Across the sectors there are clear cross-cutting insights:

- *Successful entry requires an understanding of the entire value chain and potentially entering at multiple levels:* the success of processors in each value chain depends on access to reliable inputs (at low cost) and on access to a diverse range of customers. Facilitating new entry requires an understanding of the entire value chain and the challenges that may arise from relying on competitors for access to key inputs (such as breeding stock for broilers or relying on agro-conglomerates for access to silos), as well as the costs associated with accessing formal retail markets.
- *Finance remains a critical challenge for new and black-owned businesses:* alternative sources of funding that have emerged from settlements by the Competition Commission have facilitated entry into agricultural value chains. These funds had less stringent requirements, allowing greater flexibility to take a risk on new entrants. Increased competition means some new entrants will fail. The volatility in commodity prices and key variable such as the exchange rate also requires support to ride out shocks.
- *The relationship with retailers is critical.* More diversity at the retail level (such as the growth of Fruit n Veg City, Massmart and independent retailers) can be linked with supporting greater rivalry in suppliers, as retailers look to different sources of food products including as manufacturers of their own brands. Engaging with retailers is thus a key component to opening up access and supporting investment and growth.

Lastly, although not explicitly within the term of reference of the study, it is evident that value chains stretch across country borders. This is very important in terms of the agricultural production of inputs to processed food given the inherent constraints of water for South African agriculture and the potential for expanded production in southern Africa as a whole. In addition, the growth of countries in the region coupled with ongoing rapid urbanisation means the regional market for processed food has expanded and is expected to continue to do so. The spread of retailers is part of this picture.

The objective should be to address the negative trade balance in processed food in South Africa and in southern Africa as a whole, investing in expanded and competitive production capacity while widening participation, to turn the region into a net food exporter. The current piecemeal initiatives such as the supplier development funds from the Pioneer competition settlement and the Walmart acquisition need to be built on and linked with strategies along

the value chains. Partnering with retailers is particularly important. Ultimately overcoming barriers to the entry and growth of producers can develop black industrialists in South Africa, as has already been achieved in a few cases, as part of African industrialisation across the southern African region.

7. References

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