

Competitiveness of the South African broiler industry

Bureau for Food and
Agricultural Policy
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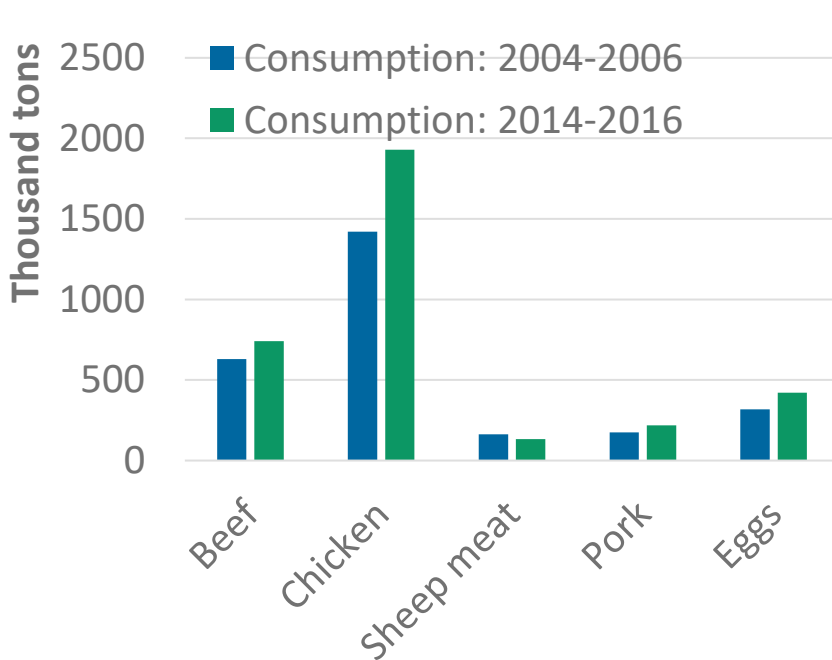


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Introduction

The chicken industry represents the largest agricultural subsector in South Africa. In addition to its absolute contribution, its importance is underpinned by a number of other factors:

- Through its integrated value chain, it impacts multiple other sectors, such as feed materials, and it accounts for almost 44% of total feed use in South Africa
- It provides substantial employment opportunities at different levels of the value chain.
- It's a preferable and affordable source of protein, which accounts for 65% of meat consumption in South Africa. Over the past decade, chicken consumption has grown faster than any other meat type in South Africa (Figure 1).



While consumption has expanded rapidly, production growth has stagnated in recent years, due to a confluence of factors:

- Imports have increased significantly since 2010, placing pressure on prices,
- Drought conditions, particularly in 2015 and 2016, pushed feed prices to an all time high.

Consequently, Figure 2 illustrates that, off the additional consumption that occurred between 2010 and 2017, 73% was

Figure 1: Meat consumption in South Africa

imported and only 27% was produced domestically. This contrasts with only 14% of consumption growth being met by imports over the period from 2000 to 2010

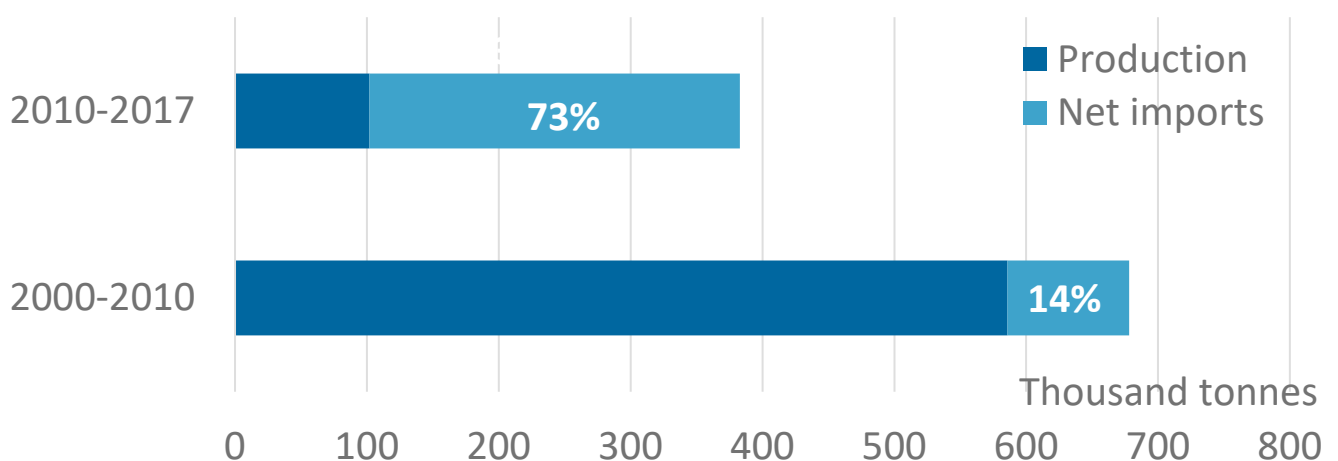


Figure 2: Growth in South African chicken consumption

Having been declared an industry in distress, there have been numerous calls for intervention in the poultry sector in recent years, which raised the question of how competitive South African producers are in the global context and what the fundamental factors are that underpin that position.

In line with leading poultry producers globally, the poultry value chain in South Africa is highly integrated (Figure 3) and hence competitiveness also depends on other sectors, such as feed. South Africa is also a small producer in the global context and so prices tend to be well integrated into international markets. This limits the extent to which changes in feed prices can be recovered from higher chicken prices when short term dynamics cause feed prices to increase.

Integration in the global market has enabled South African producers to access leading technology, but also implies that producers must be competitive in order to remain sustainable. In light of the challenges faced by the industry in recent years, a benchmark analysis was conducted by the Bureau for Food and Agricultural Policy in 2015, in collaboration with Dr. Peter van Horne from Wageningen University and Research, to evaluate the technical and economic efficiency of South African production relative to global leaders. This report details an update of the same study, based on 2017 data, which also highlights how this position has evolved over time. The countries included in the study are as follows:

- Netherlands
- Denmark
- Argentina
- Germany
- Poland
- Russia
- France
- Hungary
- Ukraine
- United Kingdom
- United States of America
- South Africa
- Italy
- Thailand
- Brazil

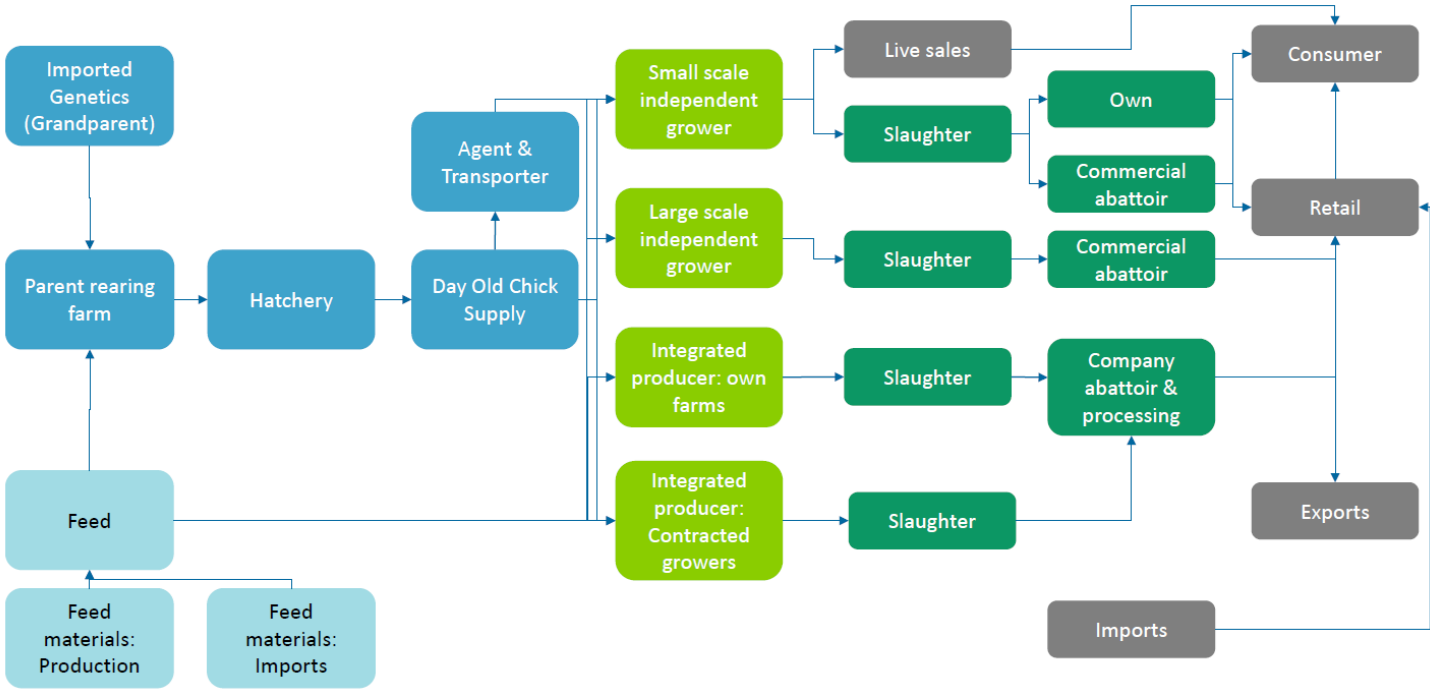


Figure 3: South African poultry value chain

Technical Efficiency

Figure 4 presents the average slaughter weight (left axis) in the countries included in the study, as well as the feed conversion ratio (FCR) achieved (right axis). The feed conversion serves as an indicator for technical efficiency, but must be interpreted with the slaughter weight, as feed conversion declines as birds get older and hence a longer growing period would be accompanied by a higher feed conversion ratio.

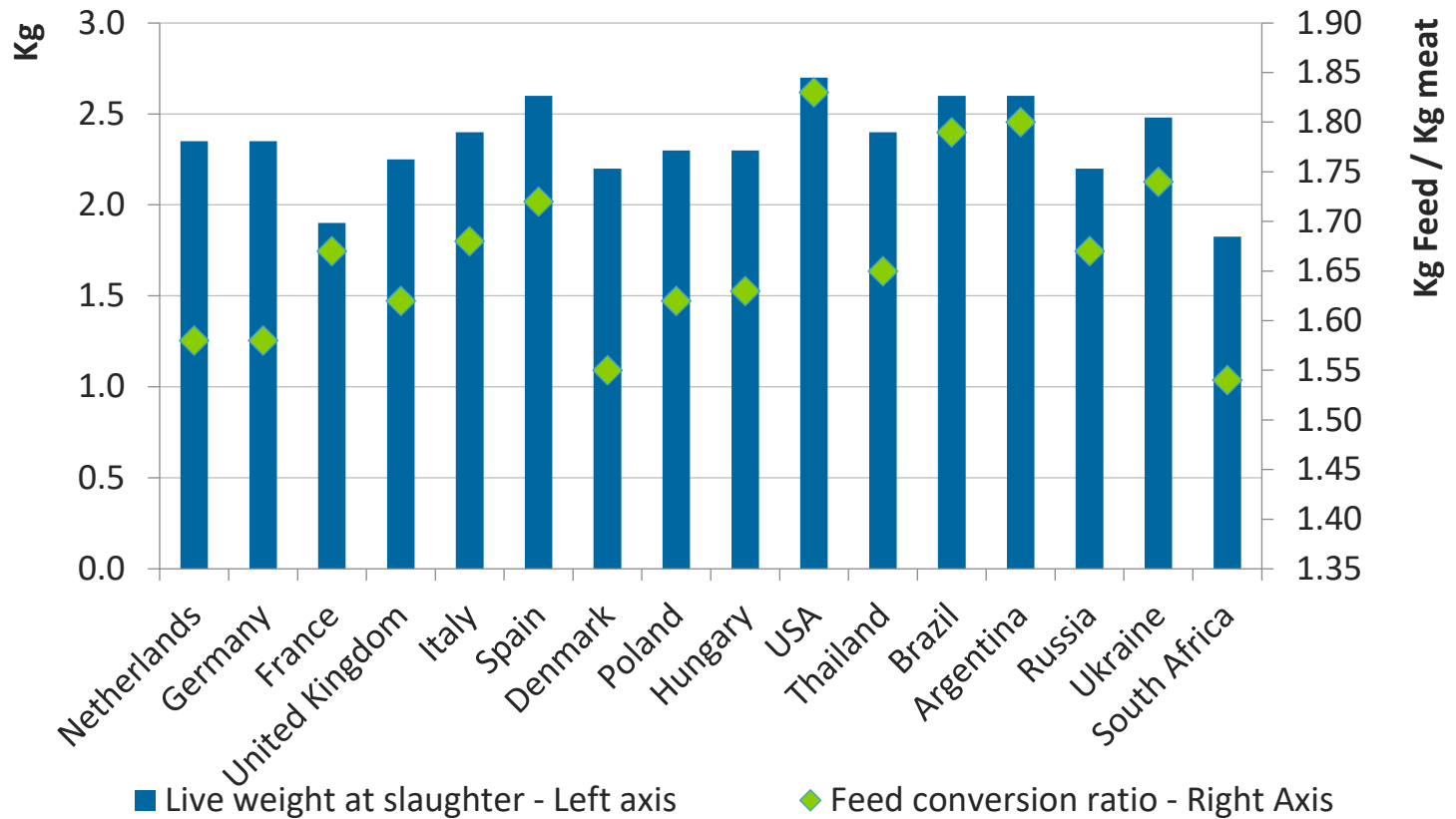


Figure 4: Feed conversion and slaughter weights in different countries in 2017

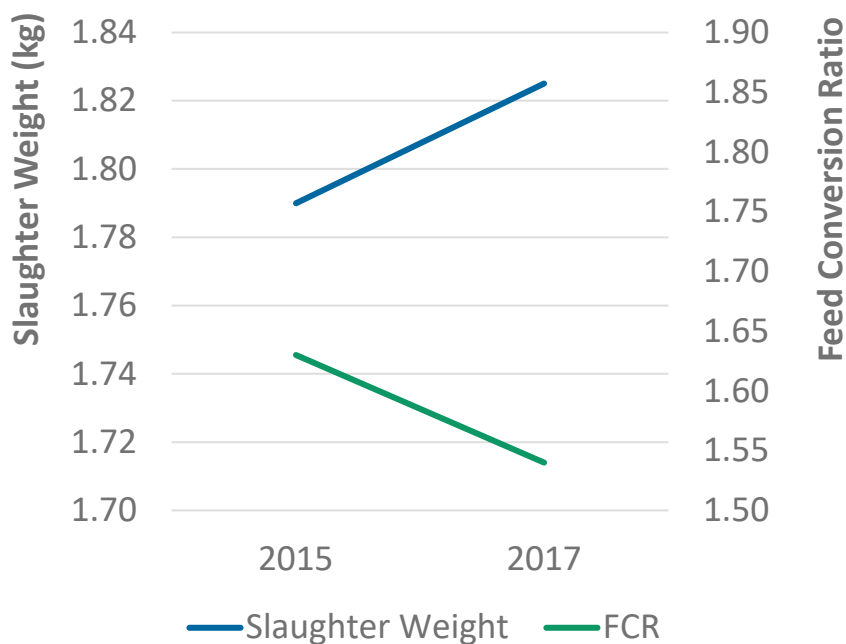


Figure 5: Slaughter weights and FCR achieved in South Africa in 2017 relative to 2015

From Figure 4, South Africa is an efficient producer, achieving the lowest FCR of all countries in the sample. This is not unexpected however, as South Africa's slaughter weight is also the lowest in the sample.

Figure 5 indicates that, relative to 2015, the average FCR achieved in South Africa improved by 5.5%. This was further accompanied by an increase of 4.5% in the average slaughter weight. The combined movement in these 2 indicators are indicative of significant efficiency gains.

Economic Efficiency: Feed Costs

Figure 6 presents a comparative view on feed costs across all countries in the sample, both in terms of costs to produce a kilogram (kg) of chicken, and in terms of actual price paid for an average ration per tonne. It indicates that, on a cost per tonne basis, South African feed costs are above the sample average. On a cost per kg produced basis, South Africa's position improves relative to the rest of the sample, owing to the good FCR.

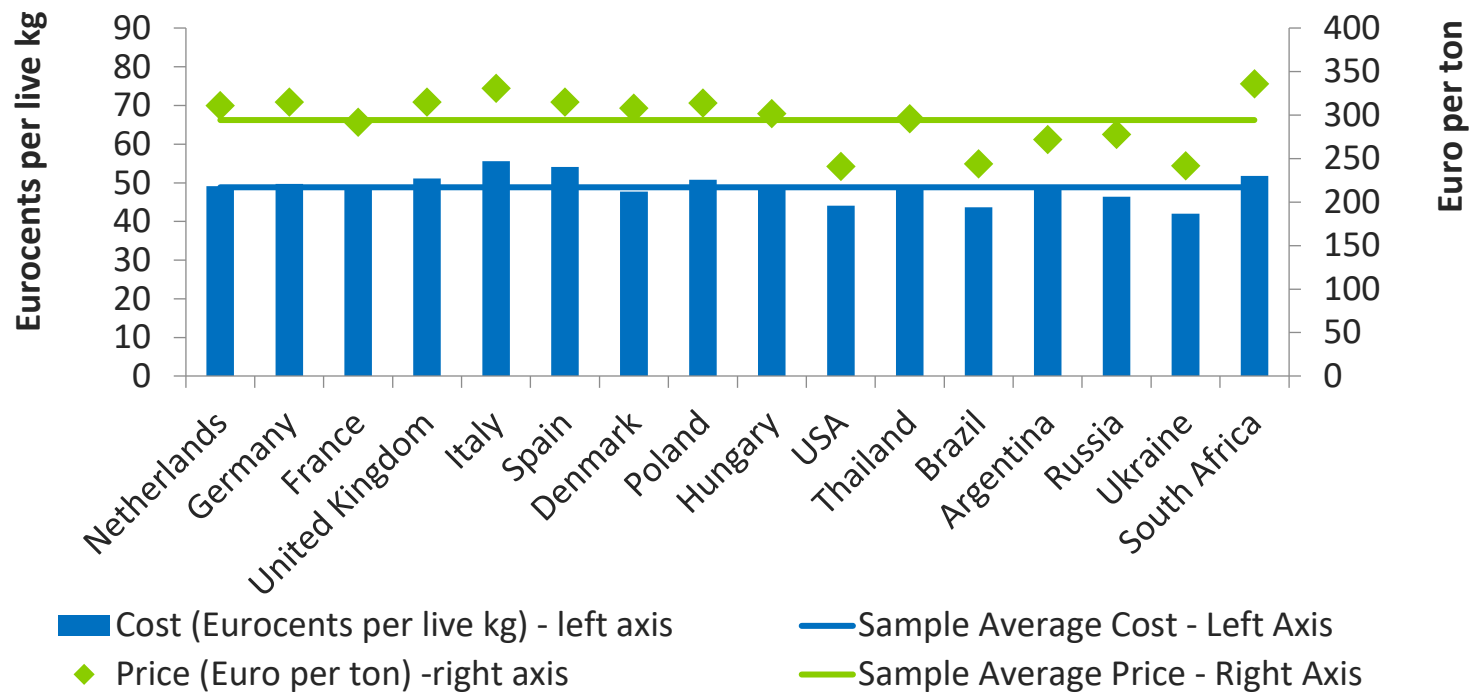


Figure 6: Feed costs in South Africa relative to other leading producers

South Africa's fairly high feed prices are influenced by the costs of raw materials. Typically, South Africa is a net exporter of yellow maize, but a net importer of soybean meal. Consequently, the main source of energy in the ration is competitively priced, but the protein source is more expensive than in countries such as Brazil, Argentina and the USA, which are net exporters of both products.

In 2017, South African feed prices also reflect residual effects of the 2016 drought. Figure 7 indicates that, while the price of feed declined in the EU, USA, Thailand and Russia, it increased by 3.4% in South Africa in 2017 relative to 2015 levels. Prices also increased in Brazil, Argentina and the Ukraine. This movement counter to the global cycle in 2017 influenced South Africa's position relative to its main competitors.

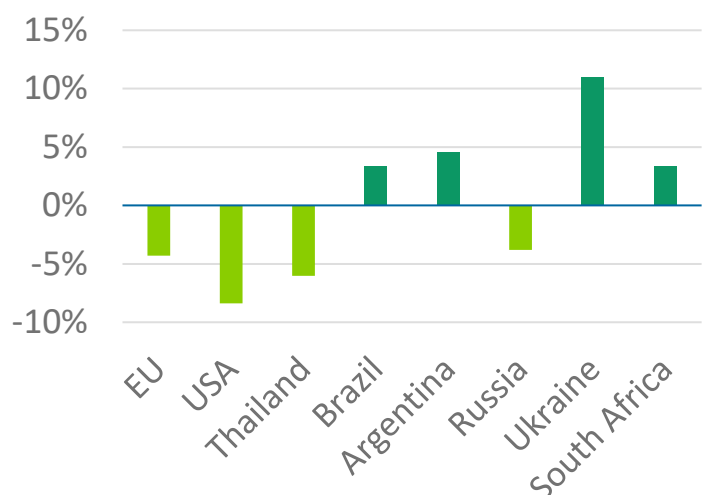


Figure 7: Change in price for average feed ration – 2017 vs. 2015

Figure 8 illustrates the extent to which broiler feed price increased in South Africa as a result of the drought in 2016 – which was the lowest rainfall recorded in a century. In 2017, South Africa harvested a good summer crop, but deliveries only start coming in towards the end of the first quarter, hence the first significant decline in feed prices was observed in April 2017. From there onwards, prices fell to pre 2015 levels, but on annual average, remained 2% higher in 2017 than in 2015.

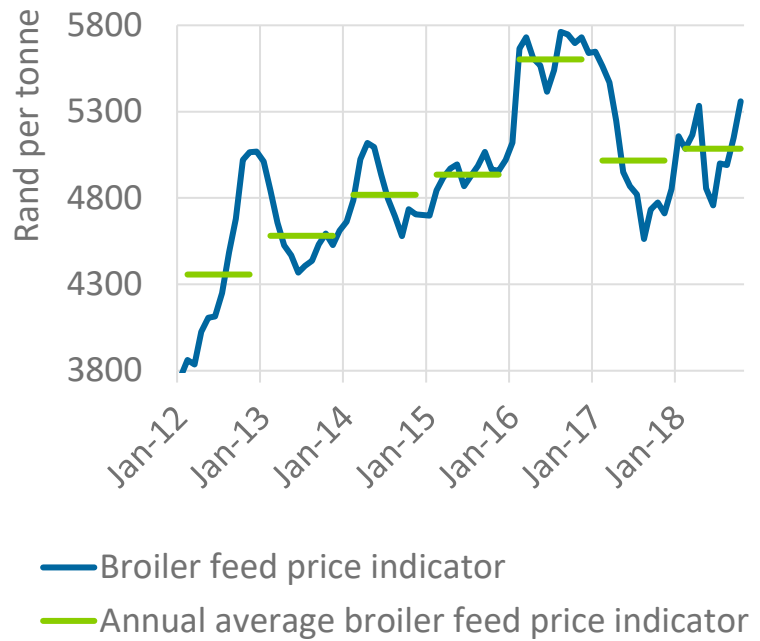


Figure 8: Broiler feed price indicator in South Africa

Source: South African Poultry Association, 2019

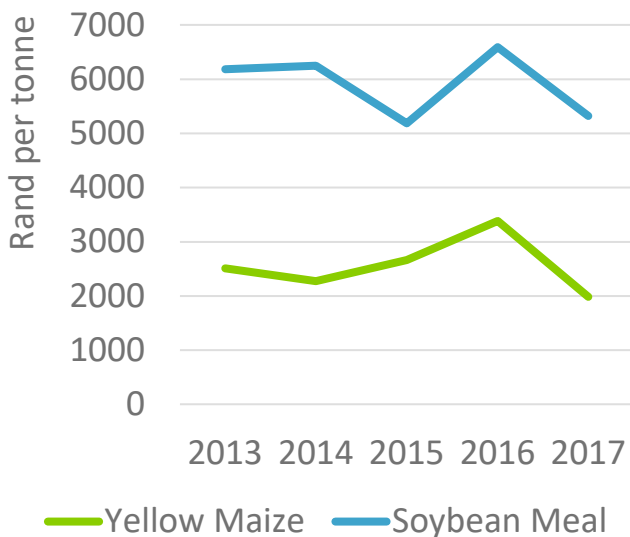


Figure 9: Cost of feed material prices

Source: Grain SA, 2019

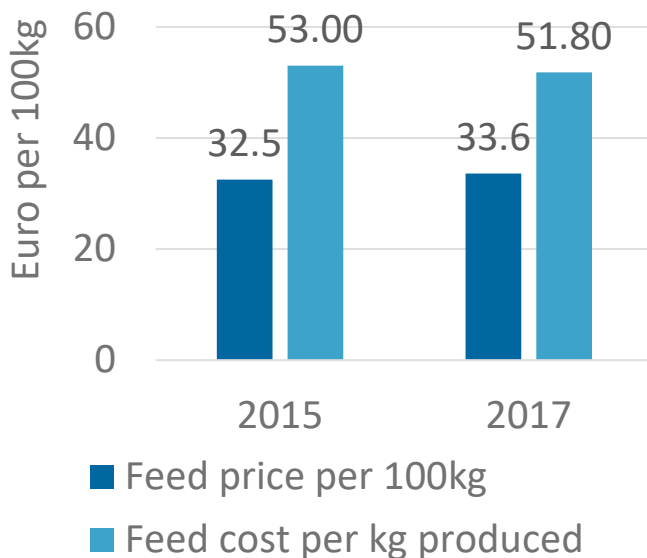


Figure 10: Broiler feed price: 2017 vs. 2015

Figure 9 presents the price of yellow maize, as well as soybean meal from 2013 to 2015. These feed materials represent the primary source of energy (yellow maize) and protein (soybean meal) in broiler rations. From Figure 9:

- Soybean meal prices increased by 2.6% in 2017 relative to 2015
- Yellow maize prices declined by 26% in 2017 relative to 2015

The movement in yellow maize prices suggests that feed prices might have been expected to decline in 2017 relative to 2015. However, ration composition must also be considered. Figure 10 indicates that, despite the increase in feed ration prices per tonne, the cost of producing a kg of chicken declined. This reduction is a result of the efficiency gains achieved (Figure 5), which more than offset the higher cost of the ration. It also indicates that ration composition likely changed when raw material costs declined, contributing to the efficiency gains.

Economic Efficiency: Day old chick costs

Figure 11 presents a comparative view on day old chick costs across all countries in the sample, both in terms of costs to produce a kilogram (kg) of chicken, and in terms of actual price paid per chick. It indicates that, per chick, South African producers pay less than the sample average. However, once accounting for the lower slaughter weight in South Africa, the costs per chick rise above the sample average.

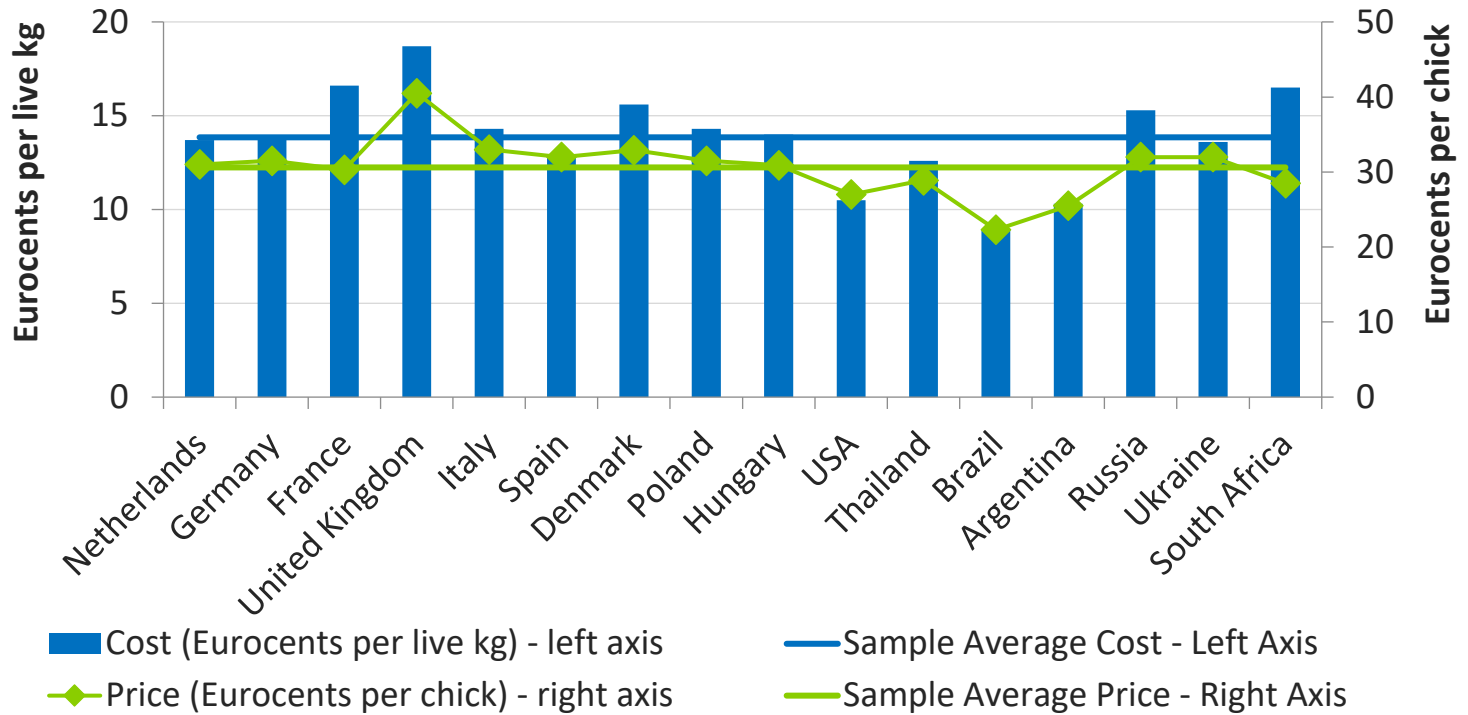


Figure 11: Day old chick costs in South Africa relative to other leading producers

Figure 12 illustrates changes in day old chick prices in South Africa from 2015 to 2017. Both on a price per chick (left) and on a cost per kg produced (right) basis, the costs associated with day old chicks declined in 2017 relative to 2015. Given the increase in slaughter weight from 2015 to 2017, the decline in chick costs measured on a cost per kg produced basis is larger than the decline on a price per chick basis. Across the sample, chick costs declined in all countries except the USA.

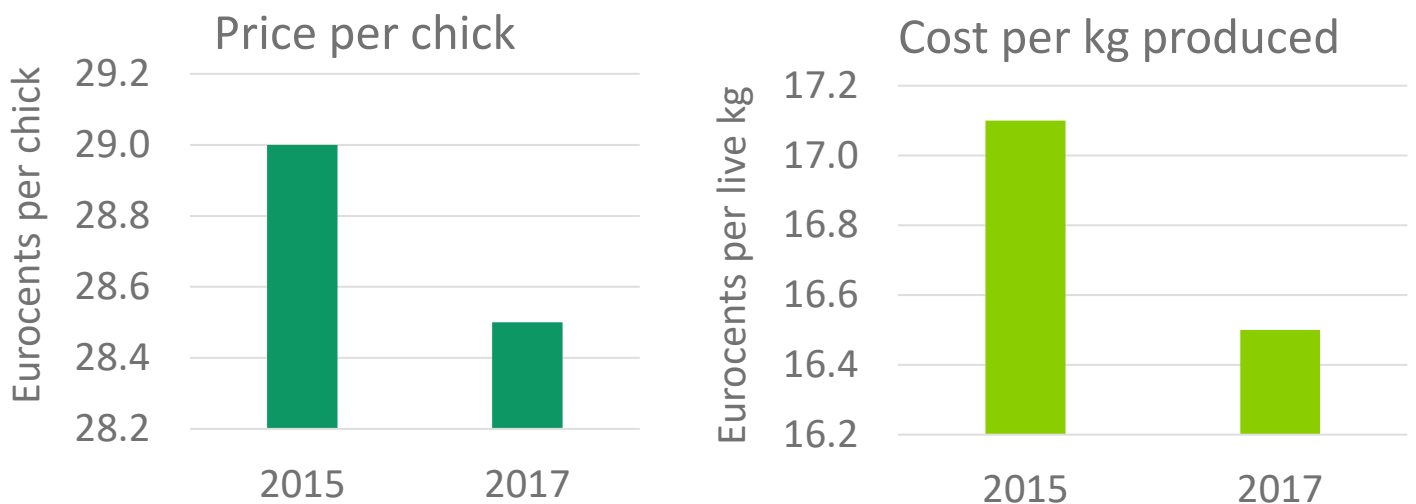


Figure 12: Changes in South Africa's day old chick prices from 2015 to 2017

Economic Efficiency: Total production costs

Figure 13 reflects the primary broiler production costs across selected countries. It illustrates that the cost of producing a kg of chicken in South Africa is very close to the sample average, at a similar level to countries such as Poland and Hungary. This is typically lower than most EU producers, as well as the average for all EU countries, but still higher than leading exporters such as the USA and Brazil. The largest contributing factors to the primary cost of production are feed and day-old chicks, which together constituted an average of just over 80% of the total.

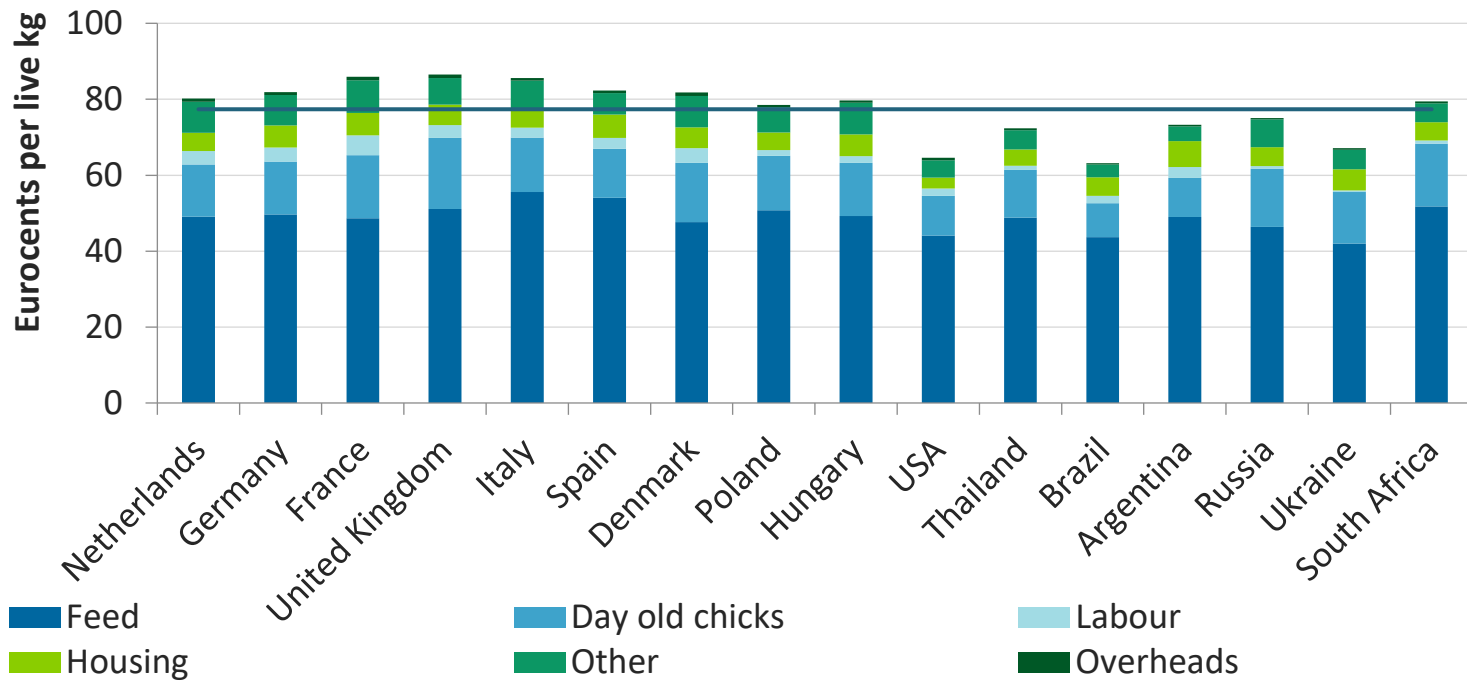


Figure 13: Primary broiler production costs in selected countries: 2017

Figure 14 combines the primary production costs from Figure 13 with the cost of slaughter. In this instance, South Africa's total cost structure relative to others is improved by a slightly higher carcass yield.

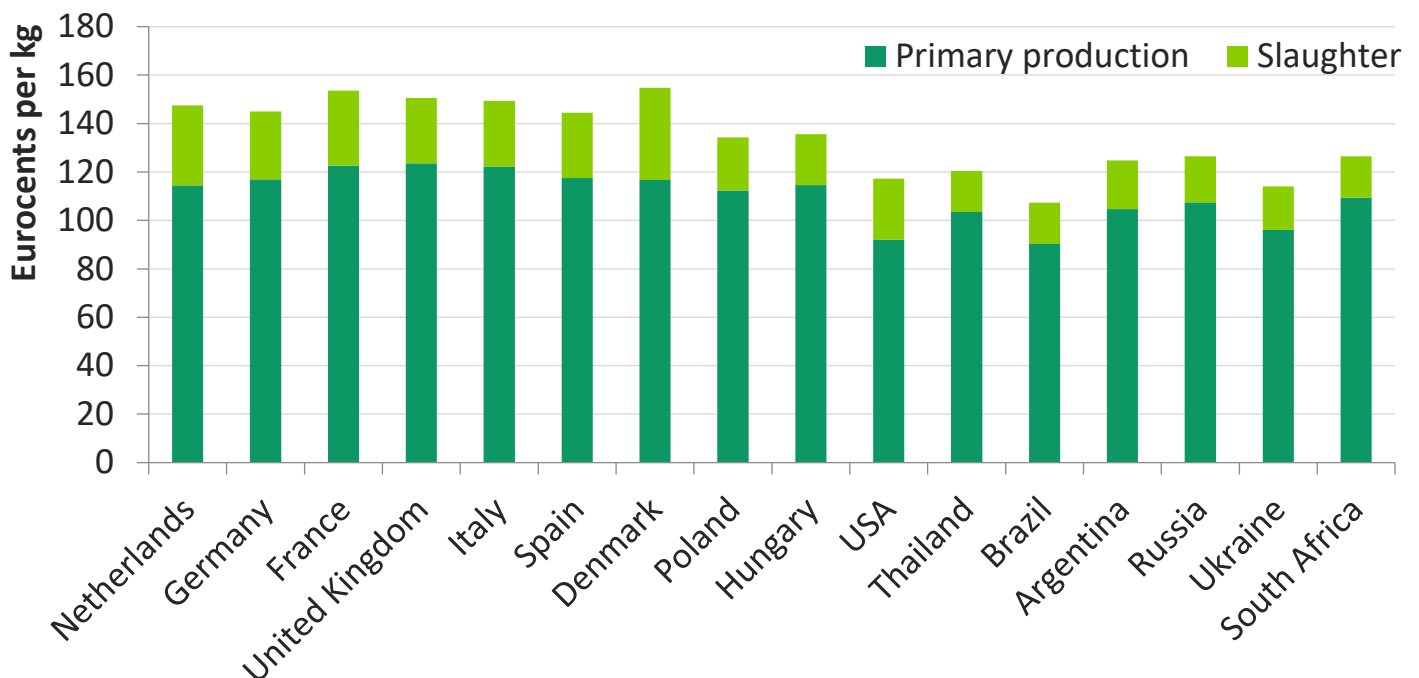


Figure 14: Total broiler production costs in selected countries: 2017

Figure 15 summarises the change in individual cost components from 2015 to 2017. From 2015 to 2017, the change in cost of producing a kg of chicken for major categories can be summarised as follows:

- Feed: -2.3%
- Day old chicks: -3.5%
- Housing: +6.7%
- Primary production costs: -0.7%
- Total production cost: -1.4%

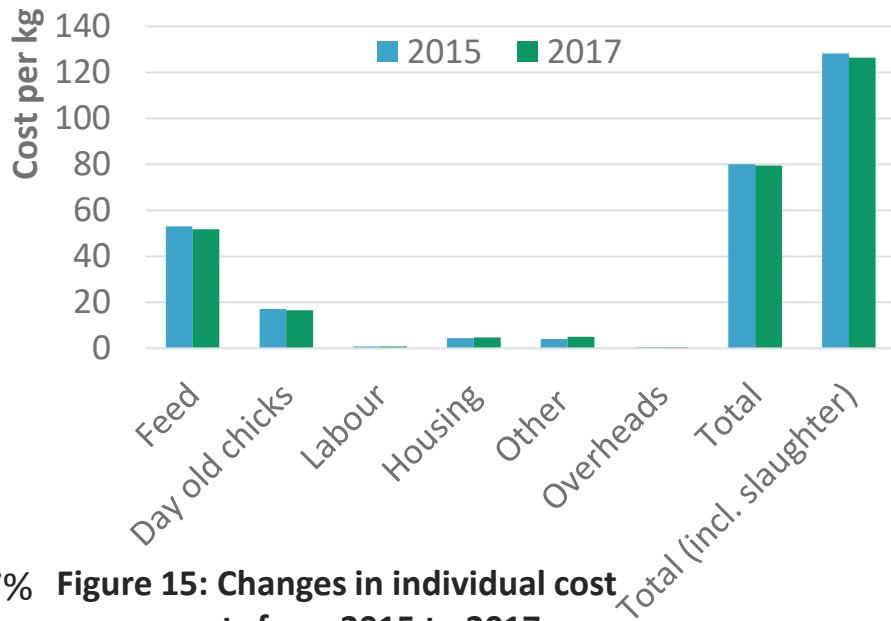


Figure 15: Changes in individual cost components from 2015 to 2017

Figure 16 summarises South Africa’s cost of production relative to others in the sample in 2015, as well as 2017. It shows the percentage deviation in total production costs (primary costs and slaughter costs) of each country relative to South Africa. It indicates that total production costs in all of the European countries included in the sample are typically higher than in South Africa, whereas leading exporters such as Brazil and the USA produce at a lower cost than South Africa – mainly due to lower feed costs. When considering smaller, but still important exporters such as Thailand and Argentina, South Africa’s production costs, on average in 2015 and 2017, was only 3% higher. This would suggest that a small advantage in terms of tariff structure or transport differential would allow South Africa to compete with these countries in the export market. This could be indicative of export opportunities for breast meat into the EU under the Economic Partnership Agreement (EPA).

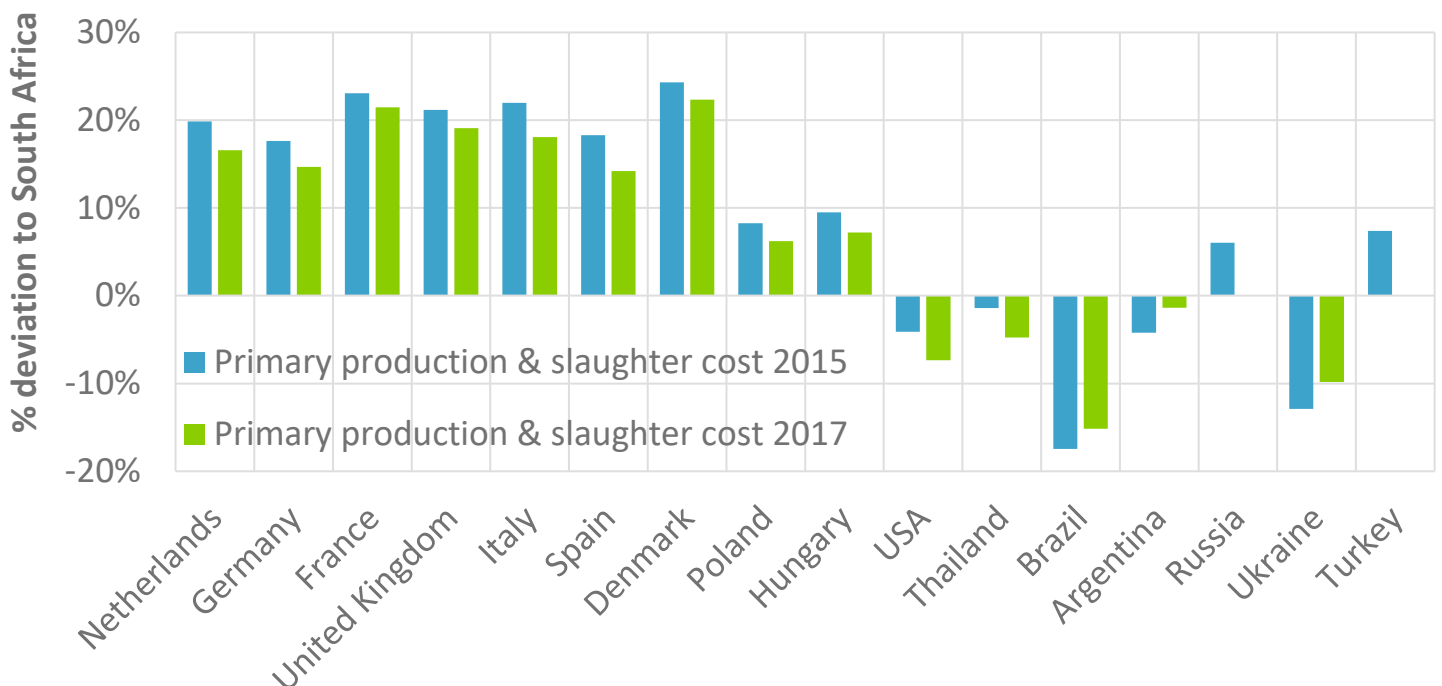


Figure 16: Total broiler production costs in selected countries: 2017

Concluding Remarks

In response to questions related to the efficiency of South African broiler producers, this report benchmarked technical efficiency, as well as production costs of South African producers relative to other leading producers globally. It also considered how the relative competitiveness of South African producers has evolved from 2015 to 2017.

The key changes from 2015 to 2017 can be summarized as follows:

- Technically
 - The feed conversion ratio improved by 5.5% from 2015 to 2017
 - The average slaughter weight increased by 4.5% from 2015 to 2017
 - The number of broilers per worker increased by 12% from 2015 to 2017
 - The placement density increased – with more birds per square meter of housing
- Economically
 - The price of typical feed rations increased by 5% from 2015 to 2017 (in Euro per tonne)
 - Lower feed material prices allowed for changes in ration composition, which in turn enabled efficiency gains that more than offset the higher costs – hence the cost of feed required to produce a kg of chicken meat declined by 2.3% from 2015 to 2017
 - The higher number of birds per worker reduced the cost of labour per kg produced

South African producers remain competitive and were shown to produce a kg of chicken meat at a lower cost relative to the European producers included in the sample, but also at a higher cost than leading exporters such as the USA and Brazil. This difference is mainly attributed to feed costs. Despite this, South Africa continues to import substantial volumes of chicken meat (Figure 17). From 2013 to 2016, the bulk of the increase in imports was attributed to bone-in portions originating from the EU. Since 2017 however, these imports have declined due to trade restrictions emanating from the Avian Influenza outbreak in Europe. These imports have however been replaced by growing bone-in portion imports from other countries - mainly Brazil. The continued growth in bone in portion imports remain a concern for the industry and are indicative of differences in carcass valuation strategies in different parts of the world.

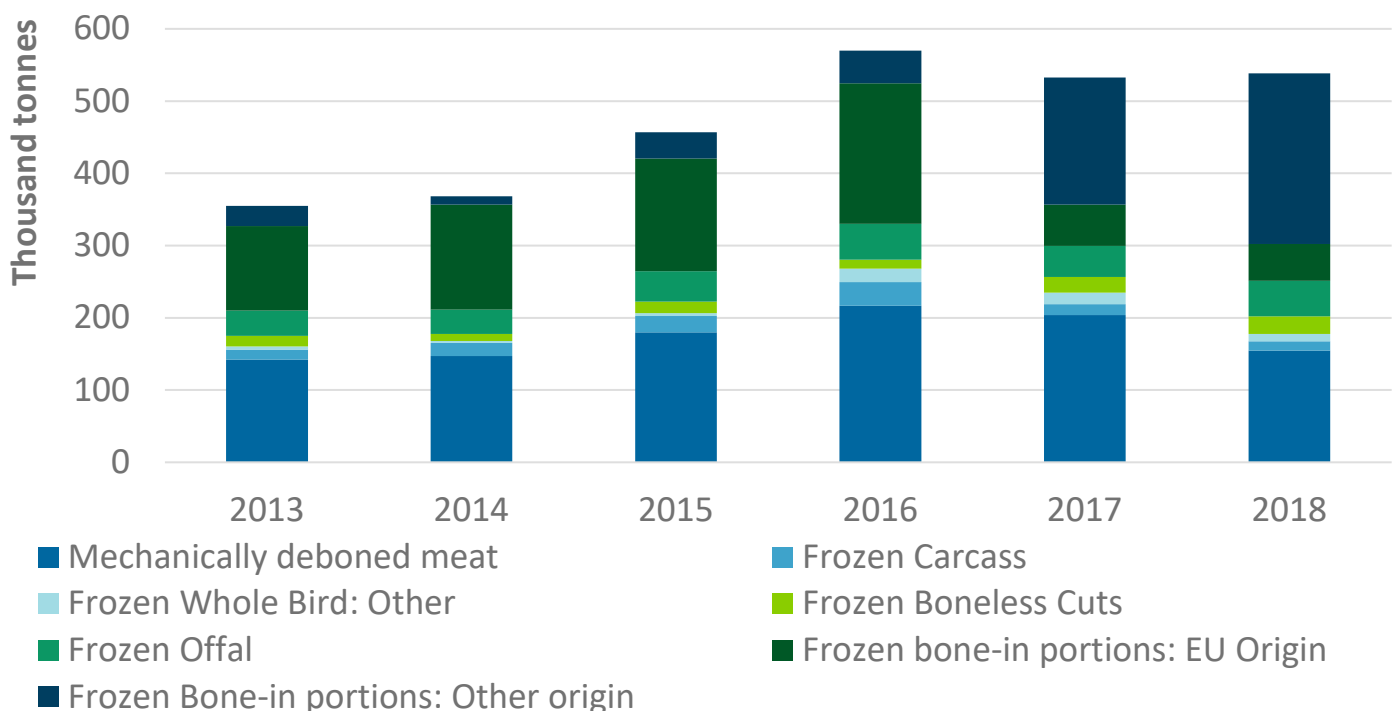


Figure 17: Chicken meat imports into South Africa