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Measuring the competitive trends of the South African citrus industry

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ABSTRACT

This paper analyses the competitive trends of the South African citrus industry, making use of the relative trade advantage model to calculate such competitive trends over time. The data to measure competitive performance was obtained from the Food and Agricultural Organization and the International Trade Centre. Results reveal that the industry is competitive and has maintained positive figures since the early 1960s. Results also indicate that, when compared with global competitors, it is being challenged by the most powerful nations in both southern and northern hemispheres, and this indicates the need for the industry to develop meaningful strategies that can enhance the its competitive performance.

Keywords: South African citrus industry; competitive performance; relative trade advantage

JEL classification: Q17, P32, F12

1   INTRODUCTION

The South African citrus industry dates back to the 1600s, when the first citrus fruit trees were planted in the Cape region. It has since experienced some growth, with the first citrus traded in the early 19th century, when three thousand boxes were exported (TurtleSA 2015). In the late 1940s, the industry was controlled by the Minister of Agriculture, through a range of acts and regulations that determined production quantities, qualities and exports via a single statutory body named 'Outspan' (TurtleSA 2015). Producers were not free to promote their produce as they wished in the export channels. However, this all changed in 1997, when the South African agricultural sector undertook a series of structural and policy changes.

One of the standout policy changes was the implementation of the Marketing of Agricultural Products Act (MAP), No. 47 of 1996, which came into effect at the beginning of 1997, replacing the old Marketing Act of 1968 (Sandrey and Vink 2008). The key objectives for the MAP Act were, amongst other things, to promote market deregulation and transformation within the agricultural sector (Nyhodo and Burger 2015). The application of the Act signalled the end of the single channel agricultural export marketing schemes and measures (government-directed producers) that had been introduced by the 1968 Act. These regulation changes obliged producers and enterprises in the value chain to structure themselves as business-driven players, working in a less regulated and now highly competitive trading environment (Van Rooyen et al. 1999).

After the deregulation, competition in the fruit export industry increased, as hundreds of marketing agents and marketers entered the sector (Vink 2004). The result was a huge drop in prices and in the quality brought to an international market characterised by a growing demand for new products (Vink 2004). The fruit industry has since revealed great refinements in terms of developing new strategies and innovative systems with regard to supplying foreign markets.

South Africa is one of the leading citrus-exporting countries, and the citrus industry could play a significant role in achieving Vision 2030 of the National Development Plan, which aims to grow the local gross domestic product at an annual rate of 5.4% and to add a further million jobs in the agricultural and agro-processing sector. With global markets gradually undergoing significant changes, however, resulting from such factors as the political changes in the United Kingdom (with regards to the results of Britain voting to leave the European Union), and the proposed 'closed economy' in the United States of America, it is necessary for the citrus industry to continuously reassess its competitiveness in international markets. Furthermore, according to Edmonds (2016), the rising costs of production and the international demand for food are placing many food industries, including the citrus industry, under continued pressure to be more competitive not only in local markets, but also in international markets.

Increased world trade also increases the level of competition faced by local producers or service providers in global markets. It is reasons like these that have made the matter of competitiveness vital for export-orientated agricultural industries such as the citrus industry. According to O'Rourke (2011), these industries cannot maintain their financial relevancy and development without harvesting and promoting competitive products. Remaining competitive is essential for the future growth of the agricultural industries (Van Rooyen et al. 2011), which means that firms or producers in the value chain have to place themselves in a position where they can be competitive in the global markets. Various forms of restrictions, policies and trade negotiations between countries also affect the competitive strength of an export-orientated industry. Furthermore, at farm level, producers are faced with uncertain weather conditions (the recent drought has hit hard certain citrus-producing provinces), rising input costs, severe water restrictions, changing technology, and rising labour costs, etc. Others in the value chain have to contend with the stringent administrative and compliance regulations related to safety, ethical, environmental and financial requirements, increasing transportation costs (especially shipping), packaging and labelling regulations, etc.

On the demand side, consumers are concerned about food safety standards and health (with reference to citrus black spot (CBS)), responding to which requires an active, efficient, competitive and sustainable economy.

The problem statement directing this paper thus revolves around developing and applying a two-step framework for a comprehensive statement on the competitive performance of the citrus industry as an important player in global markets; this involves defining competitiveness in the context of the industry and measuring its competitiveness over time.

The research objectives are to:

- define competitiveness in the context of the citrus industry; and
- measure and analyse the competitive performance of the industry over time and compare this with its major global competitors.

Questions driving the direction of this paper are, therefore:

- How can 'competitiveness' be defined in the context of the SA citrus industry?
- How competitive is this industry in relation to international competitors?

This paper is structured as follows. Section 2 provides an overview of the South African citrus industry in terms of production trade and contribution to the economy; Section 3 provides the definition of competitiveness and describes the analytical tool used to measure the competitive trends of the industry; Section 4 provides the findings from the analysis, and the last section provides conclusion.

2   OVERVIEW OF THE SOUTH AFRICAN CITRUS INDUSTRY

2.1   Production
The South African citrus industry is characterized by a diversity of growers, ranging from large and highly profitable producers to small-scale producers who mostly sell their products in local markets. The industry supplies numerous varieties of citrus, such as soft citrus, lemons, limes, orange and grapefruit. Citrus fruits are grown in fifteen regions across the country - eighteen when one includes Swaziland, Namibia and Zimbabwe. Gauteng and Free State are the only provinces not producing citrus. There are important differences amongst production regions in South Africa based on climate and on farm structure. For example, the western and eastern sides of the country are considered 'cooler regions' and production mostly focuses on navel oranges and lemons, whilst the upper part of KwaZulu Natal and Limpopo are warmer regions and better suited for the production of Valencia oranges and grapefruit. From Figure 1, it is evident that oranges are by far the most produced citrus fruit in the country, with more than a million tonnes produced since 2006, mostly in the Eastern Cape (which produces about 41% of navel oranges) and Limpopo (which produces about 51% of Valencia oranges). The slight decline in production of oranges in 2009 and 2012 can be associated with the reduction of area planted, due to the threat of CBS.

*Figure 1: Production trends of South African citrus fruits*
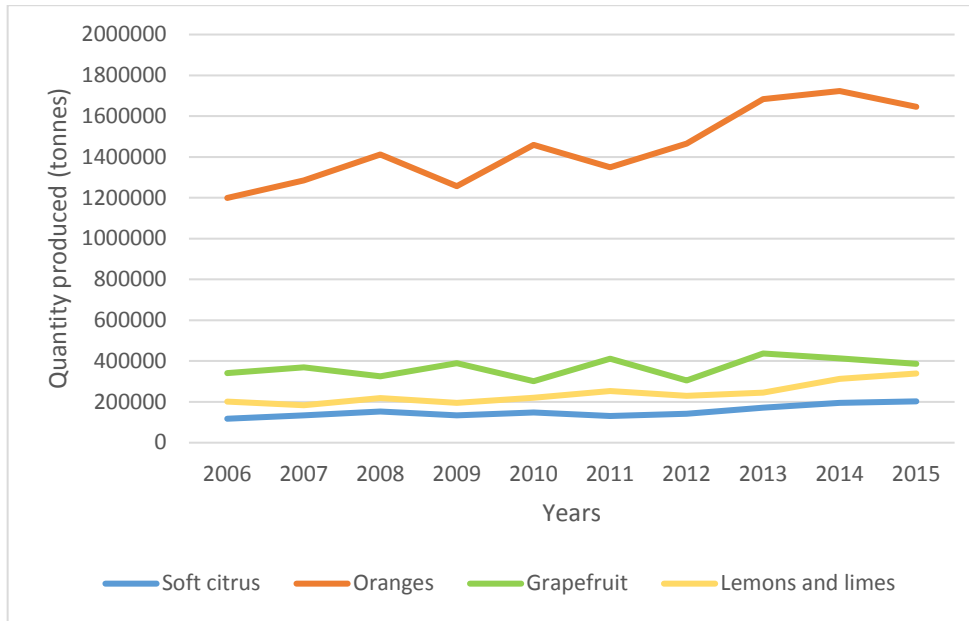
Source: Authors elaboration based on CGA (2016a)

Grapefruit is the second most produced citrus fruit and is mostly harvested in the warmer areas of Limpopo and Mpumalanga. Lemons and limes, on the other hand, are produced mostly in the Eastern Cape, followed by Limpopo. The area planted for lemons and limes has been increasing since 2012, and this can be associated with greater demand in the Middle East. Overall, the industry harvests more than two million tonnes of fresh citrus each year, of which about 70% is exported, 24% is supplied to the domestic market, with the remainder sold to processing industries (CGA 2016a).

2.2   Distribution trends of South African citrus

South Africa is ranked amongst the top three exporting countries (by value) of citrus and has shown impressive and positive trends over the last decade. Europe is an extremely important market for most of the citrus exports, absorbing more than 10% of each of the citrus varieties. The historically excellent quality and the fact of opposite seasonality from Europe play a major role in the continued good performance of local citrus there: South African citrus exports enter this market when competitors in the northern hemisphere are leaving it. This market is particularly important for orange exports, absorbing more than 30%, even though Europe still applies full phytosanitary control regulations to combat CBS. New regulations, however, now allow the entry of CBS-infected citrus into the EU if the fruit is intended for processing (Sishuba 2016). Canada is also a notable important market for South African citrus, absorbing share of 4% (see Figure 2). Other important export markets include the Middle East, particularly for lemons and limes, its share of exports growing from 34% in 2015 to 40% in 2016. The Russian Federation and the Far East are also important markets for lemons and limes. The Far East, European Union and Asia are important markets for grapefruit, absorbing more than 60% of exports between them.

Figure 2: Destination of South African citrus exports
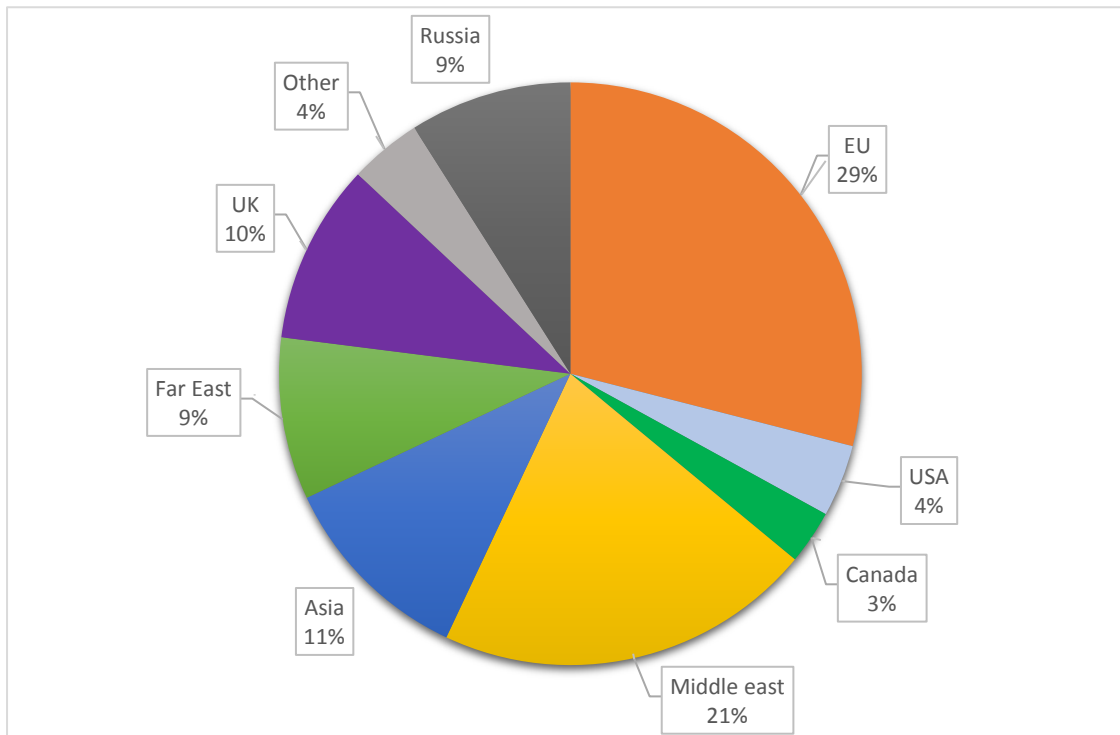
Source: Authors' elaboration based on CGA (2016)

2.3   Contribution to the economy and challenges

To date, the fruit industry is the largest contributor, by value, to South African agricultural exports. The fruit industry is also an important foreign currency earner, with about 90% of the revenue derived from fruit earnings originating from foreign countries, and with a total export value of R22 billion (Uys 2016). The citrus industry contributes approximately R13.2 billion to this total fruit export value, employs more than 125 000 workers (roughly about 14% of agricultural labour), and contributes approximately 27% of total agricultural exports value (CGA 2016b; Uys 2016). Driving the success and development of the citrus sector is the Citrus Growers' Association (CGA), which protects the interests of stakeholders (growers) among exporters, suppliers, research institutions and government. The CGA was formed with the vision of gaining, retaining and optimising markets. That vision has now expanded into keeping the citrus growers and other stakeholders well informed on matters that may affect their business. Despite its continued success in the recent past, the domestic citrus fruit industry still faces challenges with a complexity and intensity that cannot be separated from the ever-changing business environment. The identified general challenges, from recent data sources, include, but are not limited to, the following (CGA 2016b; DAFF 2016):

- Operating against tariffs and non-tariffs barriers.

- African Growth Opportunity Act specifications (in the USA market).

- Labour policy uncertainties in the South African context – hidden costs, high administration and red tape compliance.

- Trade policy changes.

- Climate change implications.

- Transportation (cold storage, issues related to costs and capacities costs).

- Market access and changes regarding policy changes.

- Market development – opportunities, new markets, declining traditional markets.

- Land redistribution uncertainties in South Africa.

- Capital investment requirements in a uncertain environment.

- Government policies (redistribution, trade, tax system, social compliance).

- Post-harvest treatment and labelling –increasing demands for compliance and rising costs.

- High input costs, resulting from a weakening currency and increasing administrative costs, higher charges for electricity, labour, etc.

- Social transformation uncertainties and changing legislation and scorecards.

3 ANALYTICAL FRAMEWORK

3.1 Comparative and competitive advantage

Competitive and comparative advantage are two important concepts that form the basis of understanding international trade (Porter 1998; Van Rooyen *et al.*, 1999; Angala 2015) and are often confused with one another (Lim, 1997; Mashabela 2007; Angala 2015). Therefore, understanding the meaning of these two terms is crucial when one hopes to use the different methods available to measure an industry's and/ or a nation's competitiveness. Comparative advantage refers to the ability of one country to produce a commodity at a lower opportunity cost (best alternative forgone) relative to the output of another country (i.e. the amount of commodity X forgone in order to produce a certain amount of commodity Y) (Lindert and Pugel 1996; Pugel 2012). In the words of Lipsey *et al*. (1993), comparative advantage explains how trade could potentially benefit countries through the more efficient use of the resource base (e.g. land, capital, labour) when trade is entirely unrestricted (i.e. free markets), or at least when an equal playing field exists. Comparative advantage therefore gives an indication of whether it is economically advantageous to expand the production and trade of a specific commodity (Pugel 2012).

Competitive advantage, on the other hand, explains current trading patterns, given the actual market forces, together with all distortions to trade such as product quality, price effects, policy effect and firms' marketing skills that are overlooked by comparative advantage (Worley 1996; van Rooyen *et al.* 1999; van Rooyen *et al.* 2011). It therefore shows real business opportunities within existing price and policy distortions (Esterhuizen and van Rooyen 2006) and is created and earned via an extremely contained process (Porter 1998). Thus, the main difference between the two concepts is that comparative advantage advocates for a free market economy (i.e. removal of market distortions), whereas competitive advantage takes into account market distortions. The former is concerned with efficient allocation of scarce resources (traditional theories), whilst competitive advantage focuses on commercial performance of a nation, firm, industry or sector.

3.2 Competitiveness

The concept of competitiveness has enjoyed much attention amongst scholars, to the extent that a plethora of definitions now exists. Nevertheless, it was important that a fitting and clear definition of competitiveness be adopted within the agricultural trade framework in order to have an appropriate measure to be utilised as a proxy for the evaluation of competitiveness. Freebairn's (1986) definition of competitiveness serves as a starting point in this paper. Freebairn defines competitiveness as 'the ability of a sector, industry, firm or farm to compete by trading their products at the time, place and form within the global environment while earning at least the opportunity cost of returns on resources employed'. This definition has been adopted and modified by several scholars such as Esterhuizen (2006), Jafta (2014) and Boonzaaier (2015), to mention just some. Recently, Boonzaaier and Van Rooyen (2017) provided an updated version of this definition. They define competitiveness in the stone fruit industry as the 'sustained ability of the stone fruit industry to attract investment by trading its produce competitively within the global marketplace, whilst continuously

striving to earn returns greater that the opportunity cost of scarce resources engaged'. This definition places more emphasis on competing in the highly contested and uneven global trade setting, focusing on the competitive rather than comparative advantage analytical viewpoint (Porter 1998; Esterhuizen 2006; Boonzaaier 2015).

3.3   Measurement tool

The second step is to measure whether the industry can compete internationally. The revealed comparative advantage (RCA) model, as developed by Balassa (1965) and extended by Vollrath (1991) to the relative trade advantage (RTA) method, was chosen as the most appropriate method to capture this competitive trend. The improved version by Vollrath is thought by many scholars, notably Bender and Li (2002), Batha and Jooste (2004), Esterhuizen (2006), Mashabela (2007) and Van Rooyen *et al.* (2011), to be a more fitting measure of competitive advantage. They argue that competitive advantage could be shown by the trade performance of individual commodities, chains and countries, in the sense that the commodity trade pattern reflects relative market costs as well as differences in non-price competitive factors, such as government policies.

The RTA method allows for the measurement of competitiveness under real world conditions such as uneven economic 'playing fields', distorted economies and different trade regimes, and is therefore the best suited for measuring competitiveness status (Van Rooyen *et al.* 2011). The method describes the country or industry's real share of trade value in the world market relating to citrus (e.g. oranges, soft citrus, lime and lemons) over time, relative to its share of all traded goods across the economy i.e. a relative value indicator.

The relative export advantage (RXA (which is equivalent to Balassa's RCA) calculates the ratio of a country's export share of a commodity in global markets to the country's export share of all other commodities, as in Equation 1.

$$RCA_{ij} = RXA_{ij} = \frac{\left[\frac{X_{ij}}{X_{ik}}\right]}{\left[\frac{X_{nj}}{X_{nk}}\right]} \tag{1}$$

where *i* represent a nation and *j* represent a commodity; *X* represents exports, *k* represents all commodities other than *j*, and *n* denotes all nations other than *i*.

Vollrath (1991) offered the RMA index that is similar to Balassa's RXA, but it relates to imports rather than exports. In Equation 2, *M* denotes imports.

$$RMA_{ij} = \left[\frac{M_{ij}}{M_{ik}}\right] / \left[\frac{M_{nj}}{M_{nk}}\right] \tag{2}$$

The RTA is therefore computed as the difference between the relative export advantage, and its colleague, the relative import advantage. A positive value of RTA reflects a status of competitive advantage (Equation 3).

$$RTA_{ij} = RXA_{ij} - RMA_{ij} \tag{3}$$

Any RTA indicator above one suggests that a nation has a competitive advantage in the considered commodity or service, and an index below zero indicates a competitive disadvantage, whereas index values between zero and one reveal that a nation is marginally competitive in that particular product. By considering both imports and exports, the RTA indicator implicitly weighs the revealed competitive advantage by calculating relative export and relative import competitive advantages. This is advantageous when looking at the perspective of trade theory, mostly due to the increase in intra-industry trade (Frohberg and Hartmann 1997). Several scholars, notably Pitts *et al.* (1995) and Batha and Jooste (2004) argue that it is crucial to consider both import and export values, because if one takes into account only exports (RXA), for instance, some countries act as a transit and the RXA values might reveal high levels of competitive

advantage that would be purely false. Thus, taking into account both exports and imports, the Vollrath RTA method is a more complete measure of competitiveness than the RCA.

Given the above, when comparing a cross-section of RTA indexes, different characteristics of the formula can change, and with them the interpretation of the RTA indexes. Care should therefore be exercised when interpreting RTA results. Table 1 provides some indications as to how to interpret different cases of the RTA index. It is important to note that there are three aspects of the formula that can change when calculating the RTA indicators. In considering Case 1, a comparison of differences in the RTA indicators for different commodities or products traded for the same country with the same reference countries can make use of the real value of the RTA indicator. The higher the value of the indicator, the greater the competitiveness the product has over other products. In Case 2, a specific country's competitiveness for a specific commodity is compared with those of different reference countries. A comparison of the RTA indexes rank enables one to determine the relative importance of the traded commodity to those of different trading partners. In Case 3, special care needs to be exercised, as different size of economies will affect the absolute value of the RTA index. By using trend analysis, however, the competitiveness of different countries can be compared.

Table 1: Interpretation of different relative trade advantage indexes

Case	Country or group of countries to be analysed	Commodity, product or commodity group	Group of reference countries	Interpretation
1	Same	Different	Same	RTA indicators can be compared between products/ commodities. The higher the value of the indicator, the greater the competitive advantages the product has over the other products in the country that has been analysed.
2	Same	Same	Different	A specific country's competitiveness for a specific product or commodity is compared to different reference countries. A comparison of the RTA indicator rank enables one to determine the relative importance of the traded commodity with different trading partners.
3	Different	Same	Same	Special caution needs to be exercised in this case. The index is affected by the size of the economy. Trends should preferably be used to compare competitiveness between the countries.

Source: Valentine and Krasnik (2000)

3.4 Data used

This paper made use of secondary trade data from two internationally recognised sources, namely the International Trade Centre (ITC) (www.trademap.org) and the Food and Agricultural Organisation (FAO) (http://www.fao.org/faostat/en/#data). The ITC database provides trade statistics for all products for most countries registered with the World Trade Organisation, starting from 2001. The FAO is a United Nations organisation that provides trade statistics of agricultural commodities only for over 245 countries and territories, offering agricultural trade data for the period 1961–2013. Using these two databases provides a historical and more updated picture of the competitive performance of the industry over time. Both FAO and ITC datasets are used, although the ITC data better describes the 'opportunity cost' status of an industry/commodity as per the definition of competitiveness used below, because it includes all industries and commodities, whereas the FAO data refers only to agri-commodities. The value of FAO trade data is its longer time frame, allowing interesting trend analysis opportunities; although it is only available until 2013.

4 FINDINGS

In the first step, the main task was to define 'competitiveness' as it applies to the strongly export-directed South African citrus industry. Having reviewed the relevant literature and situating the industry, in particularly as it is as highly integrated into global trade, competitiveness in this paper was conceptualised as the ability of the South African citrus industry to produce and trade citrus fruit on a maintainable basis in global markets, given current economic structures and trade regimes, whilst earning returns that are equal to or greater than the opportunity cost of scarce resources engaged.

The second step sought to evaluate, quantitatively, the competitive performance of the industry over time. After a consideration of internationally recognised techniques, the RTA method was selected as most suitable, as it embodies the concept of 'competitive' rather than 'comparative' advantage, and thus serves agribusiness considerations best, as it uses current market prices as value indicators.

The competitive trend of the South African citrus industry was calculated using the RTA method for the period 1961–2013 for data obtained from the FAO (agriculture-based dataset), and from the ITC (whole economy) for the period 2001–2016 (see Figure 3). A correlation factor of 0.81 between the RTAs of both datasets was obtained when calculations were made for 2001–2013. This implies a higher linear relationship between these two RTAs, which follow similar trends during this period. However, the citrus industry appears marginally less competitive using the more focused agriculture-based dataset (FAO) than with the broader, multi-sector-based dataset (ITC). There are many reasons for this, including the high competition for scarce resources within the seasonally based agricultural sector, and the related competition for labour and availability of farming substitutes within the citrus industry.

Figure 3: Relative trade advantage values for the South African citrus industry
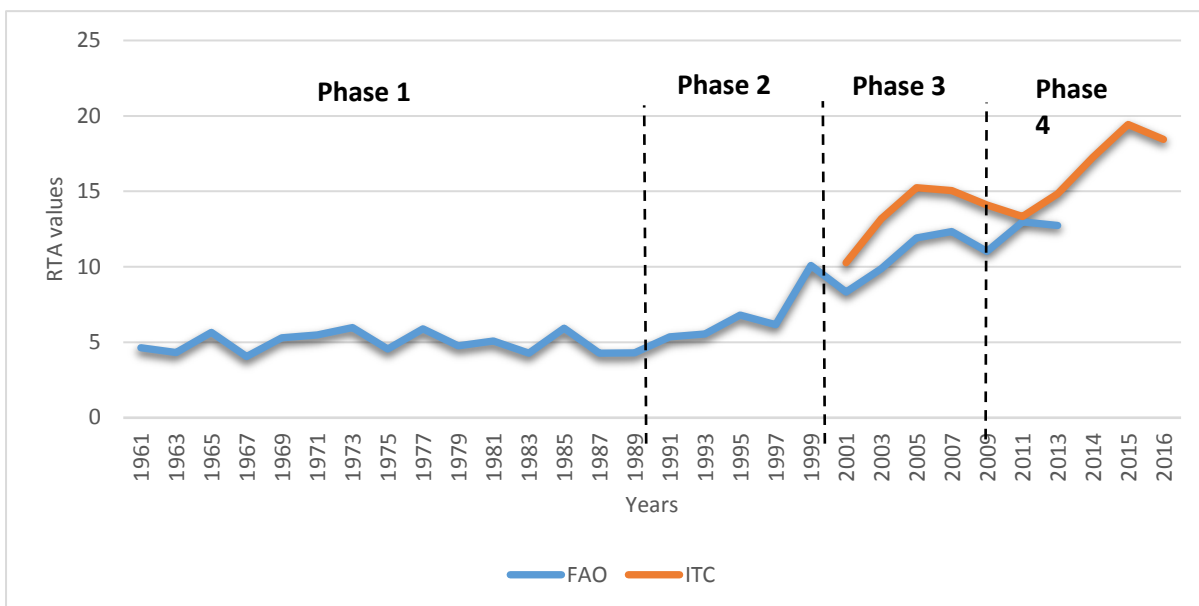
Source: Own calculations based on FAO and ITC datasets.

A closer inspection of the FAO and ITC trend lines shows that the industry had high positive figures throughout the studied years. This implies that the industry performed competitively in international markets and maintained these positive figures since the 1960s (RTA of 4.6 in 1961-FAO), with the period from 2005 (RTA 15.2-ITC) onwards being comparatively more positive than other periods, and with a gradually increasing trend during recent years (RTA 18.6 in 2016). The figure also reveals considerable variation in the competitive performance of the industry during certain periods. After reviewing the relevant

literature, these variations were grouped into four periods showing trends in the local industry's competitive performance. They are explained in detail below.

Phase 1: Competitiveness in a highly regulated agricultural economy, 1961 to 1990

The competitiveness status of the citrus industry during this period can be viewed as somewhat 'artificial', due to subsidised support and regulated prices (a domestic resource cost (DRC)/policy matrix analysis will show such distortions). The citrus market was under the control of the Citrus Board, which was established in 1939 and controlled the amount of citrus exported through a quota system. Production was thus not driven by market forces, but rather by centrally regulated interventions such as controlled export prices (usually kept high) and subsidies received by farmers (i.e. financing of export losses) (Vink 2004; Vink and Van Rooyen 2009). The improvement in competitive performance during the mid-1970s was fuelled by the opening of Middle East markets and the enlargement of markets in Europe (CGA 2007).

This period was also marked by political and economic trade sanctions imposed on the country by the international community, which resulted in political and economic instability (Kirsten *et al.* 1994). Sanctions restricted South African agricultural exports to certain markets, bringing about occasional drops in the performance of the industry and consequently disadvantaging the ability of the sector to compete in global markets. Occasional severe climatic conditions also played a negative role during this period, particularly the 1981 floods (in the western cape), which resulted in huge losses in production, damaging rail links and roads and thereby cutting some producers off from accessing markets (Kirsten *et al*. 1994). The quantity of citrus exported also declined by 2.02% per year for the period of 1980-1990 (Kirsten *et al*., 1994). Despite these drawbacks, the citrus industry managed to retain positive RTA values during this period, indicating a well-connected and resilient agricultural sector.

Phase 2: Democracy and economic deregulation- access to global trade, 1990 to 2000

This phase represents the period following the first democratic elections in the country, also characterised by global movements to free markets and a period of deregulation of the South African fruit sector. Before the deregulation, South African citrus exports were advertised under the single 'brand', whereby growers had to station their output into a pool looked after by the statutory monopoly empowered by citrus control boards (Vink 2004; Vink and Van Rooyen 2009). Sandrey and Vink (2008) as well as Vink and van Rooyen (2009) state that the main positive aspect of the single station was its ability to manage the price of exports and its having the sole power in keeping prices higher. The main disadvantages were that producers had little incentive to explore new markets, save on marketing costs and produce fruit of a higher quality. The outcome was that local production lagged behind that of its competitors, and the industry also lagged behind in innovative cultivars (Vink 2004).

This phase also included the lifting of international sanctions on the country, giving unrestricted access to lucrative export markets, exposure to profitable international business, and increased investment (BFAP 2016). The level of investment directed to the agricultural sector was also relatively higher during this phase when compared to the 1980s (Kirsten, 1999).

Phase 3: Becoming a global player in an increasingly deregulated environment, 2000 to 2009

During this period, global trade increasingly moved towards broader-based deregulation and increasing freedom to trade, with fewer policy and support distortions (Sandrey and Vink 2008). Despite disastrous citrus production seasons during the early 2000s (CGA 2007), the industry's competitive performance continued to rise, reaching its highest point during the 2006/07 production season. This rise in competitive performance was driven by the increase in the quantity of citrus exported, which amounted to 72 million cartons in 2006, when South Africa became the second-largest exporter of citrus, overtaking the USA (CGA 2007). With increased experience and better understanding of business strategies being mandatory for competing at the global level, the industry was able to withstand the 2007/08 global 'economic meltdown', even though there was a notable drop in competitiveness performance during that season.

Phase 4: Towards sustaining competitive performance, from 2010 onwards

At the start of this period, most industries were still recovering from the effects of the 2008 global economic crisis and meltdown (van Rooyen and Esterhuizen 2012). The fluctuations in competitive performance were due to increased regulations in the international markets, particularly in the Europe, where citrus originating from South Africa was banned during the 2012/13 harvest season because of the threat of CBS. Exporters exporting to the EU were forced to meet increasingly stringent technical and environmental standards, as this market required compliance with external certification of standards. During the 2016 harvest season, the country was faced with severe droughts, which resulted in poor production and a consequent drop in competitive performance.

Growth prospects for the future will be attained by producers, input suppliers and processors who can position themselves correctly in a position from which they can be truly globally competitive. This will include export strategies that are being implemented, along with some that are currently being developed for the future, clear strategies that engage relevant personnel, maintaining existing markets and negotiating better trade deals, and innovative ideas in terms of production (e.g. shade-netting); these will be critical to maintain and enhance competitive performance of the industry going forward (BFAB 2016).

One issue of concern may be the voices calling for a more restricted trade environment again – Brexit-type arrangements, possible USA trade policies, etc. Such possible impacts were, however, not considered in this paper.

4.1   Comparison with global competitors

In order to establish the competitive performance of South Africa's citrus industry in international markets, an analysis of the competitive performance of the industry was conducted, and comparison was made with other major citrus-exporting countries. As noted earlier, Valentine and Krasnik (2000) caution that the RTA values of trading countries might affected by the size of the economy. In the case of this paper, citrus may be relatively more competitive in one country, for instance in Egypt (see Figure 4) than in Chile because the opportunity cost of citrus would make this industry less competitive (lower value) in Chile while the opportunity cost in Egypt would make it relatively more competitive. A comparison of the RTA values makes it possible to determine the relative importance of the traded commodity (here citrus fruit) amongst trading competitors. Such comparisons could also be conducted in terms of competitive trends. Therefore, RTA values provide a relative measure, not an absolute competitiveness measure. Comparisons made below relate to the relative competitive position of South African citrus in the context of the country's total trade situation; compared to each competing citrus country—each shown in the context of its particular trade situation.

Observations from the graph in Figure 4 reveal that, in the early 2000s, Morocco was relatively more competitive and had by far the strongest competitive advantage in terms of citrus. This sustained competitiveness performance can be associated to favourable conditions, such as the special treatment of Moroccan fruit in European markets (since the early 1960s), availability of cheap labour, and favourable climatic conditions (Aloui and Kenny 2005). Other favourable conditions include Morocco's dependable macro-economic management, growers' aptitude to adopt new machineries, and the good reputation the sector has built in foreign markets due to the serious public implementation of mandatory SPS regulations (Aloui and Kenny 2005). The country is also aided by having traditional markets such as France, Russia, and Netherlands, where it has export market shares of 30.2%, 28.3% and 16.9%, respectively.

Figure 4: Relative trade advantage values for selected nations' citrus industries
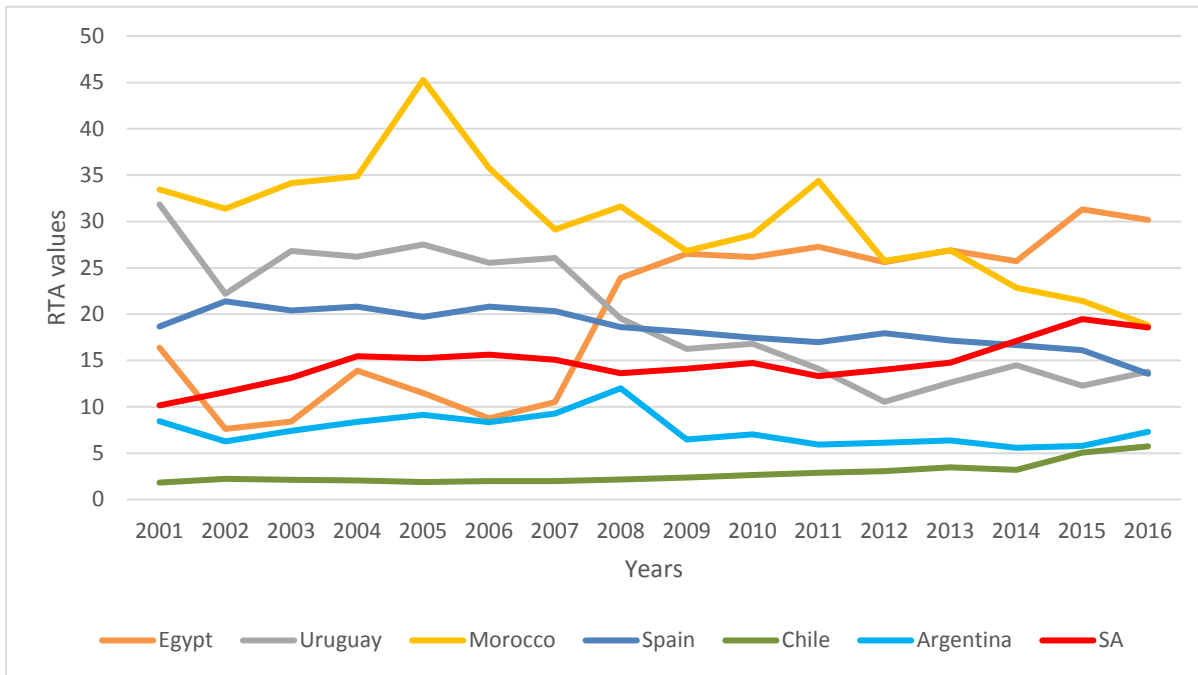
Source: Own calculation based on ITC data (2017)

Figure 4 also shows that Egypt is currently relatively more competitive as 'first league' and has by far the strongest and most globally competitive status in terms of citrus. Egypt's RTA values have been ranging above 25 in the period from 2009. Its global leadership in citrus-competitive status arrived in 2014 when it leapfrogged Morocco. The reasons for the rise in Egypt's citrus-competitive performance lie in the combination of a suitable geography (Nile River), soil (fertile grounds), low labour costs, low prices, good quality, and an early harvest season (Buitenland 2016). Also, in this part of the world, Egypt is the only other producer of consequence (besides Morocco), and has a comparative advantage in terms of transportation costs for exporting to the Middle East, Russia and Asian markets – which, in fact, usually absorb more than 60% of the country's citrus exports (Buitenland 2016).

Morocco, South Africa, Uruguay and Spain are currently also highly competitive, effectively a 'second league', with Morocco rated best and leading competitor in this category. Other countries such as Chile and Argentina are also generally competitive, but clearly have a 'third league' status, with RTA values below 10, although Argentina is the constant leader of world exports by volume. Compared to the rest of the southern hemisphere citrus-trading regions, the South African citrus industry (with RTA of 18.6) is by far the most globally competitive, with the Uruguayan citrus industry following with RTA of 13.8 in 2016.

5   FUTURE STRATEGIES

Based on the measurements and establishing of trends, and assuming that the immediate future will continue recent trends, strategies could be directed through industry-level Delphi discussions, and by applying the Porter Diamond model (Porter 1998) where factors affecting and/or enhancing the industry can be identified, rated and prioritised. The Delphi technique, largely credited to Dalkey and Helmer (1963), is a commonly used and globally accepted method for achieving convergence of opinion relating to real-world knowledge sought from experts relating to a certain topic (Hsu & Sandford, 2007). This method, by design, is an iterative multistage communication process that intends to conduct detailed examinations and discussions of a specific issue for the purpose of goal setting (strategies), policy effect investigation, or

predicting the occurrence of future events (Ludwig 1997). In the case of the citrus industry, this method could be used to generate consensus amongst different experts in the citrus value chain on factors that influence (positively or negatively) the competitive performance of the industry in question.

These factors could be grouped into six key determinants: (i) factor conditions – relating to production factors i.e. labour, land, etc; (ii) demand conditions – relating to the nature, changes and knowledge of market demand; (iii) related and supporting industries – relating to the availability or absence of competitive suppliers (i.e. input suppliers, research, etc) and other related industries; (iv) firm strategy, structure and rivalry – the way firms are created, organised and managed; (v) government support and policy – relating to trade policy, administrative regulations, social stability, etc; and (vi) chance factors – relating to war, exchange rates, etc. Analysing these will offer a qualitative explanation of the factors driving the competitiveness success or failure of the citrus industry, putting it in a better position to formulate meaningful strategies that can enhance its future competitive success.

6   CONCLUSION

This paper focused on measuring and analysing the competitive trends of South African citrus industry. The main conclusion is that the industry is globally competitive, and has been since the early 1960s. The industry is, however, being challenged by the most powerful citrus-exporting nations in both the southern and northern hemispheres. This indicates the need for the industry to develop meaningful strategies to enhance its competitive performance and maintain its status as one of leading citrus-exporting countries.

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