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Review of the merger between Klein Karoo International (Pty) Ltd, Mosstrich (Pty) Ltd and Cape Karoo (Pty) Ltd: an application of the Guppi and Upp tests

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Review of the merger between Klein Karoo International (Pty) Ltd, Mosstrich (Pty) Ltd and Cape Karoo (Pty) Ltd: An application of the Guppi and Upp tests

A Research Report completed in partial fulfilment of the Degree of Master of Commerce (Economics) in the School of Economics and Finance, University of the Witwatersrand

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Abstract

This research paper reviews the merger between Klein Karoo International (Pty) Ltd ("KKI"), Mosstrich (Pty) Ltd ("Mosstrich") and Cape Karoo (Pty) Ltd ("Ostrich merger"). The Ostrich merger was prohibited by the Competition Commission (Commission). Upon review, the Competition Tribunal (Tribunal) approved the merger subject to conditions. This paper focuses on the meat market as the Ostrich case's main contention was the meat market. In reviewing the Ostrich merger, this research paper applies two price pressure indices, the Upward Pricing Pressure (UPP) and Gross Upward Pricing Pressure Index (GUPPI). The two indices are computed and used as alternative screening tools to analyse the horizontal merger, involving differentiated products in an oligopoly market. The computed indices are analysed based on two different scenarios. The first scenario relies on the Commission's market definition, while the second uses the merging parties' description of the market. The results indicate that both UPP and GUPPI, under the two different scenarios, show that the merger would have created incentives to raise prices.

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1. Introduction

One of the most important elements of the competition regime is an effective merger review. Effective merger review can assist in prevent consumer harm from anticompetitive mergers which are likely to negatively affect competition among competing firms and/or foreclose rivals. The assessment of unilateral effects in horizontal mergers is one of the important component of merger review. Competition authorities have traditionally based unilateral effects analysis on the merging firm's post-merger market shares and the market share increment that results from the merger. This method requires a definition of a market as a first step and thereafter the assessment of factors such as market shares. The assumption on market shares is that they indicate whether merged entity will possess market power and whether that market power gives them an ability to increase prices and the extent to which other firms in the market exert competitive constraints on each other (Murgatroyd and Swan, 2012). However, Murgatroyd and Swan (2012) state that market share estimates "fail to provide a reliable indication of competitive constraints and unilateral effects in differentiated product markets." Market share screens fail to capture the merging firm's incentive to raise prices post-merger.

Affeldt et al. (2012) also agree with the view that the use of post-merger Herfindahl-Hirschman Index (HHI) and the merger-related change in the HHI as a screening measure in mergers has in practice also encountered problems in practice, especially when assessing mergers involving differentiated products. As a response to these challenges, pricing pressure indices have recently been proposed as the alternative screening devices for horizontal mergers involving differentiated products. Existing antitrust literature argues that competition authorities experience limitations in applying a traditional concentration-based merger screening methods (Cheung (2013), Murgatroyd and Swan (2012) and Affeldt et al. (2012). Recent developments in the European Union and the United States of America have shown that competition authorities have started using pricing pressure indices in their assessments (Cheung, 2013) to complement the traditional approach.

Much of the literature on the use of Upward Pricing Pressure *(*UPP) and Gross Upward Pricing Pressure Index (GUPPI) tests to assess unilateral effects of a merger is based in the developed countries. To our knowledge, this is the second study to consider the use of UPP and GUPPI tests to study the unilateral effects of a merger in the African continent. The first application of

the UPP and GUPPI tests was in the Greif and Rheem 2017 merger, which was prohibited by the Commission and subsequently blocked by the Competition Tribunal.

1.1.The aim and rationale of the research

The research report will provide a review of the merger between Klein Karoo International (Pty) Ltd, Mosstrich (Pty) Ltd and Cape Karoo (Pty) Ltd ("Ostrich merger") by empirically estimating the incentives that the merged entity would have to raise prices post-merger. The Competition Commission South Africa ("the Commission") used the traditional method of estimating post-merger market shares in its assessment of the Ostrich merger. The research paper's primary motivation is to determine how the price pressure indices such as the GUPPI and the UPP can be used as alternative merger screening instruments in the assessment of unilateral effects involving differentiated products.

The report will, using estimated market shares, calculate diversion ratios between the firms. Then, the paper will use data on prices and quantities sold to calculate the UPP and GUPPI indices. UPP assesses whether the merged entity would have an incentive to raise prices post-merger due to the elimination of competition between the merging parties, while the GUPPI test focuses on estimating the unilateral incentives to raise prices post-merger and is related to the market definition and assists competition authorities to answer questions pertaining to market definition (Moresi, 2010). Using the UPP and GUPPI tests, the paper will assess whether the Ostrich merger would have created strong incentives for the merged entity to raise prices post-merger.

Specifically, the research report will, answer the following questions:

i) What would have been the outcomes of the case if the UPP and GUPPI tests were applied to assess the competitive harm that the merger could induce. Would the outcomes have been different or the same?

ii) The second question is whether the GUPPI test would have helped answer questions about the market definition, which were the main contention between the Commission and the merging parties?

1.2.Background on the Ostrich case

On 19 December 2018, the Commission prohibited the Ostrich merger. Ostrich Skins intended to acquire control of the business of Mosstrich and KKI. Ostrich Skins, the acquiring firm, is a wholly subsidiary of Mosstrich, one of the target firms. The proposed transaction entailed the sale of Mosstrich and KKI's business in exchange for shares in Ostrich Skins (Competition Commission, 2019).

If approved, the Commission was concerned that the merger would result in the merging parties having market power given the ostrich industry's concentrated nature. In this regard, the Commission was worried that the merger was likely to increase concentration in the markets for the supply of ostrich meat and leather (Competition Tribunal, 2019). The Commission, therefore, assessed the ability of the merged entity to raise prices or reduce the quality of services for ostrich meat and leather post-merger. The Commission believed that ostrich meat is a different market from red meat based on customers and competitors' preliminary indications. The Commission also had foreclosure concerns regarding the supply of raw and unprocessed feathers. The concern that arose in this regard was that post-merger, the merged entity might process feathers internally, and therefore rivals and third parties would not be able to receive supply from Mosstrich. This concern was an input foreclosure concern, and the Commission assessed the likelihood of input foreclosure post-merger (Competition Commission, 2019).

Lastly, if approved, the Commission was concerned that the merger would result in coordinated effects that might arise due to the merger since the ostrich industry is highly concentrated in South Africa. Also, the Commission was concerned about the pre-existing relationships between the parties. In this regard, the Commission was worried that the merger would likely increase concentration for the supply of ostrich meat and feathers (Competition Commission, 2019). Hence the Commission assessed the extent to which the merger was likely to facilitate or enhance coordinated outcomes. These concerns were exacerbated by the pre-existing shares held by farmers in each of the merging parties.

After the Commission's prohibition, the parties referred the transaction to the Competition Tribunal (Tribunal) for reconsideration to challenge the Commission's decision to prohibit the merger. The Tribunal's reasons for the decision state that the merging parties specifically disputed the Commission's finding that post-merger, the merger will result in anticompetitive effects relating to i) increased pricing power in the ostrich market in South Africa; and ii) the substantial foreclosure of (downstream) ostrich feather processors in South Africa

(Competition Tribunal 2019, page 2). The merging parties' expert disputed the Commission's meat market definition in their report. The parties believed that the Commission's market definition was too narrow and disregarded the merging parties' real competitive constraints. The merging parties were of the view that "the ostrich meat market has to be disaggregated further into at least a distinction between steak and fillet on the one hand and trimmings on the other hand. The prices of these products were determined by different demand and supply factors. The data show that trimmings are predominately sold in the local market and have different price trends, which confirms that it competes with red meat substitutes locally" (FTI Consulting 2019, page 6). The merging parties concluded that the major cuts sold by the merging parties, e.g., steak, fillet and trimmings, are substitutable with other meat categories. As such, the relevant market cannot be narrowed to ostrich meat (FTI Consulting 2019, page 6). The parties substantiated this statement to the Tribunal by providing evidence from retailers and wholesalers. After submissions were heard from both the Commission's witnesses and parties' witnesses, on 14 August 2019, the Tribunal approved the merger subject to conditions (Competition Tribunal, 2019).

To address any competitive harm resulting from the merger, the Tribunal imposed three main categories of conditions. The first set of conditions pertain to ostrich feathers. The Tribunal imposed a tender-based condition to address the issue of input foreclosure in the market for unprocessed feathers. The second set of conditions with regard to ostrich meat relate to the volume-based condition and obliges the merged entity "to comply with certain annual volume conditions in relation to their supply of ostrich meat in South Africa for local consumption. This means that it must make a certain percentage of its ostrich steaks and fillets, as well as ostrich trimmings, available for sale in South Africa in each financial year." The third set of conditions obliges the merged entity to provide third parties with access to their abattoirs and tanneries (Competition Tribunal 2019, page 40-50).

The analysis will only focus on the meat market as the Ostrich case's main contention was in the meat market. In addition, the Commission did not find any anticompetitive effects in the leather market and did not find substantial anticompetitive effects in the feather market. This research report will focus on the competitive assessment of the unilateral effects in the meat market.

2. The market for Ostrich meat in South Africa

2.1. Description of the ostrich industry

To understand the competitive dynamics of the ostrich industry, it is essential to consider the state of the ostrich industry's when the Ostrich merger was evaluated by the Commission, the industry's history, and its key features. A 2017 report by the Department of Agriculture, Forestry and Fisheries (DAFF) state that a few decades ago, South Africa was the sole producer of farmed ostriches globally. However, with liberalisation in the agricultural sector, many countries started to import South African ostriches to create their ostrich industries. In 2017, the South African ostrich industry accounted for 75% of the global market share regarding global ostrich production (DAFF, 2017). The Commission's investigation found that the ostrich industry in South Africa throughout the value chain is highly concentrated and the merging parties were the two largest competitors in the markets for the production and supply of ostrich meat and leather nationally.

The ostrich industry in South Africa includes meat, feathers and skin (which is processed into leather). Meat products are sold as fresh, frozen and pre-heated. Also, ostrich meat is processed into biltong and other value-added products such as cold meats, sausages and pet foods. The feather and leather ostrich markets in South Africa are tiny as most of these products are exported (DAFF, 2017).

2.2. The structure of the ostrich industry

Production areas

In South Africa, ostriches are produced in five provinces, these include the Western Cape, Limpopo, Eastern Cape, Free State and Northern Cape, with 80% of the ostriches found in the Western Cape with KKI (one of the parties in the Ostrich merger) dominating the production. The Eastern Cape and Limpopo Province produce 12% and 5% of ostriches, respectively. The balance is produced in Free State and Northern Cape. (DAFF, 2017). In 2017, South Africa had a total of 588 export farms, 453 of those farms were in the Western Cape, 102 in the Eastern Cape and 33 farms in the rest of the country.

Production trends

According to DAFF (2017), the number of ostriches produced experienced fluctuations between 2006/07 and 2015/16. These fluctuations were caused by a number of factors such as the 2007/08 economic crisis, which resulted in the demand foe ostrich meat to decline as it is classified as luxury goods. The outbreak of Avian Influenza (also known as bird flu) also impact the production levels in 2011 to 2013/14 production season. The bird flu resulted in the decline of the number of slaughtered ostriches (DAFF, 2017).

Local consumption

The ostrich industry in South Africa is regarded as self-sufficient and export oriented. There is more ostrich meat produced than consumed in South Africa. In the domestic market, until November 1993, ostrich products were sold through the Klein Karoo Co-operative in "one channel marketing system." In November 1997, this system was replaced by a free market system, which meant that the prices were now determined by forces of demand and supply. Since deregulation new firms were able to enter the market and as a result more abattoirs were built (DAFF, 2017).

Exports of Ostrich meat

South Africa is a net exporter of ostrich products, the country's export quantities are far higher than import quantities. Due to the ban of ostrich meat in the EU market in 2011, South African exports experienced a drastic decrease from 2011 to 2014. However, exports picked up in 2015 to 2016 as South African was declared disease free. In their report, DAFF (2017) stated that there was an increase of 120% in exports of ostrich in 2016 as compared to 2015. In 2016, the European Union was the largest consumer of South African ostrich meat and also South African major export destination, accounting for 98%. The remaining 2% is exported to East Asia and Africa.

2.3. The value chain of the ostrich industry

With regard to the value chain, the broad subsections of the value chain are as follows: (1) farmers/producers of live ostriches; (2) abattoirs and services provided; (3) the ostrich meat market and meat processors; (4) feather market and feather processors; and (5) the leather market and tanneries. The value chain's abattoir level is concentrated, with only six (6) registered and approved abattoirs in South Africa. Equally, the value chain's meat processing level is concentrated with only four (4) meat processors in South Africa, including KKI and Mosstrich (DAFF, 2017).

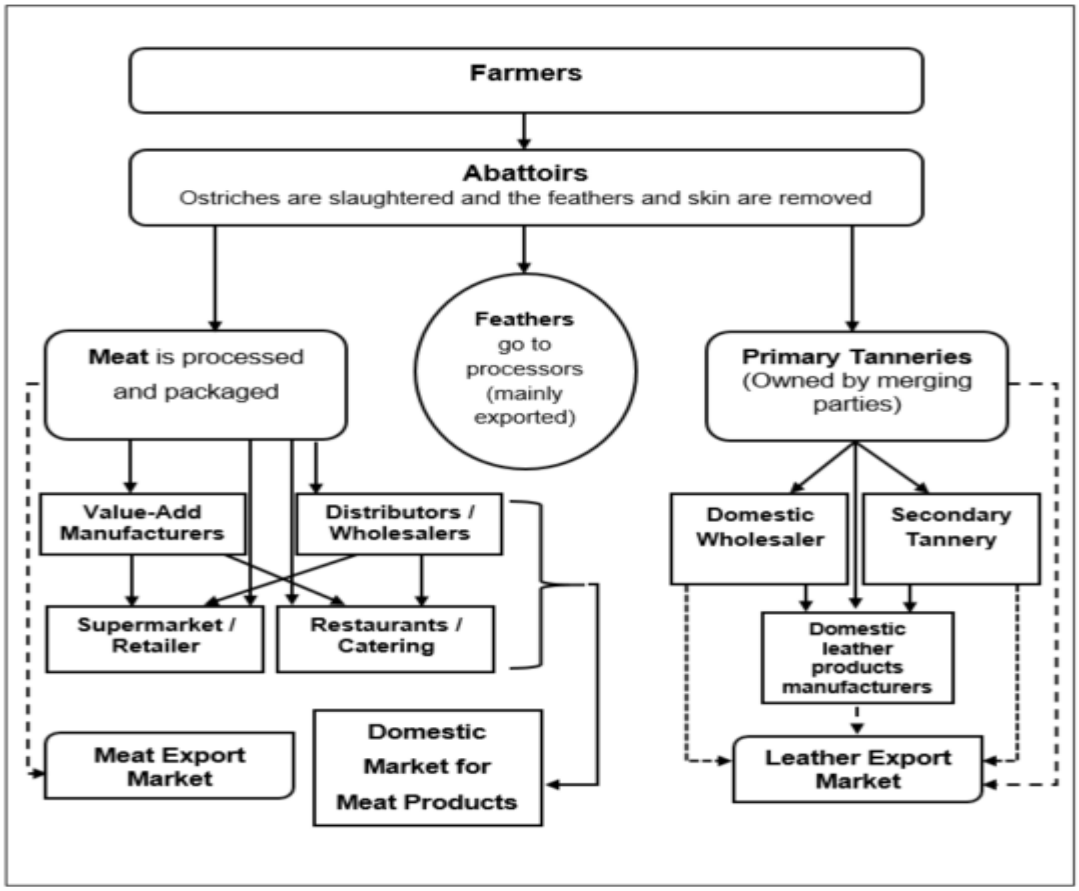

Figure 1: Value chain of Ostrich Industry

Source: Competition Commission

The value chain of the ostrich industry starts with the the procurement of live ostriches from farmers/producers who receive a pre-determined value for each ostrich product (meat, skins and feathers) from customers such as the merging parties. Some market participants such as the merging parties have their own meat processing facilities in which they package and sell the meat to: (1) wholesalers/distributors; (2) retailers such as supermarkets; (3) secondary meat processors/value-add manufacturers; (4) restaurants and catering companies; and (5) the export market. The skins are removed and taken to tanneries in which they process the skins to "crust" leather or "finished" leather according to customer demand. Crust leather can also be sold to secondary tanneries for further tanning (crust to finished). The processed ostrich leather is sold by market participants such as the merging parties to the export market or to South African leather product manufacturers. Lastly, ostrich feathers are sold on a tender basis to mainly four local feather processors. KKI has its own feather processing facility, and it processes these feathers to be predominantly sold in the export market with a small volume sold locally for the manufacture of mainly cleaning products such as feather dusters (Competition Commission, 2019). Each of the main levels of the value chain are discussed in more detail below:

Farming and production of live ostriches

The Commission's investigation found that the majority of registered farms from which the merging parties receive live ostriches also constitute a large portion of each of the merging parties' shareholding. The number of shares that each farm holds in the respective merging party depends on the farm's production volumes (slaughter allocation) of ostriches. The shareholding is allocated depending on the number of ostriches that a farmer may potentially slaughter at the merging parties' respective abattoirs. In 2018, there were approximately 331 registered ostrich farms in South Africa. However, not all of these farms are active producers, as in 2018 there were less than 200 active ostrich farms. The Commission's investigation found that the number of registered farms has decreased over time due to a decrease in export sales (Competition Commission, 2019).

Out of the total active farmers, there are three ostrich farms which also market their own ostrich products. Two of these ostrich farms do not have their own abattoirs and rely on either or both of the merging parties to slaughter on behalf of them. KKI and Mosstrich at the time of the Commission's investigation were not operating their own ostrich farms and only received live ostriches for slaughter from farmers (Competition Commission, 2019).

Abattoirs

In 2018, there were six European Union approved and registered export abattoirs operating in South Africa. Four of these were operated by the merging parties.

Meat processing and sales

At the time of the Commission's investigation, there were four players active in the meat processing sales in the Ostrich industry. Two of those players are the merging parties. These players supply ostrich meat to wholesalers/distributors, value-add meat processors, supermarket chains, restaurants and catering companies. The meat processing activities also include the packaging of meat products on behalf of clients such as the main supermarkets.

Feathers

After the ostriches are slaughtered at the abattoir, the feathers are plucked from the carcass before the skins are removed. The feathers are sorted and processed. Apart from the feathers plucked from the birds after slaughter, feathers are also obtained from live ostriches at 6 months of age. At 6 months, farmers remove feathers from ostriches in order to allow the feathers to

grow to a high quality at maturity. These feathers are however, of a lower quality. Further, feathers are also obtained twice a year from breeder ostriches on the farms. There are a number of different types of ostrich feathers which are sorted depending on which part of the body the feathers come from. The two main types of feathers are the body feathers and the plume feathers. Body feathers are used mainly for cleaning products and plume feathers are used predominantly for decorative purposes. Ostrich feathers are popularly used as cleaning products such as feather dusters, and for the costume, carnival and high-end fashion industries (Competition Commission, 2019).

Leather

The skins obtained from slaughtered ostriches are sent to tanneries for processing. The skins are graded and priced accordingly. At the time of the Commission's investigation, there were 4 tanneries in the country. Two of these tanneries are owned by the merging parties.

Considering the above, KKI and Mosstrich are both active in the market for the production of ostrich meat and feathers. As such, the parties' activities resulted in a horizontal overlap in the market for the production of ostrich meat and feathers. The paper will focus on the meat market as the main contention in the Ostrich case was in the meat market.

2.4. Competing market definitions

The Ostrich merger's main contestation concerned the market definition, specifically the delineation of the ostrich meat market.

The Commission's view

In defining the product markets, the Commission mostly based their view on evidence from third party submissions. In their assessment of the extent of substitutability within the red meat category, the Commission considered factors such as customer perceptions regarding substitutability between ostrich meat and other types of red meat. The Commission found that "ostrich meat is considered a niche customer product associated with higher-level Living Standard Measure and health-conscious groups" (Competition Commission, 2019). On the basis of the product characteristics outlined above, the Commission was of the view that ostrich meat is not necessarily substitutable to beef and lamb meat. As such, the Commission concluded that ostrich meat constitutes a distinct relevant product market excluding other red meat products such as beef and lamb.

The merging parties' view

The merging parties opposed the Commission's view. They believed that the characteristics of ostrich meat were comparable mainly to beef and other types of red meat. The merging parties' expert report stated that the Commission's market definition for ostrich meat was narrow and disregarded the merging parties' real competitive constraints. In this regard, the merging parties' expert stated that ostrich meat would be constrained by other red meat types such as beef and lamb (FTI Consulting 2019, page 22). In addition, the merging parties' expert asserted that "ostrich meat has to be disaggregated further into at least a distinction between steak and fillet on the other hand, and trimmings on the other hand" (FTI Consulting 2019, page 6).

Ultimately, the Tribunal did not conclude on the relevant market for analysing the Ostrich merger and also stated that they "cannot conclude that ostrich meat prices in South Africa will post-merger not be constrained by the prices of other meat products" (Competition Tribunal 2019, page 28).

The Commission considered that the market for all cuts of ostrich meat to be the relevant market for assessing the merger. On the other hand, the merging parties considered two market definitions: i) delineated the market to different cuts of ostrich meat, steak, fillet and trimmings; and the broader market which include all red meats (beef, lamb etc).

3. *Literature Review*

3.1. Assessing unilateral merger effects

The 2004 European Union horizontal merger guidelines state that mergers that involve competitors in differentiated product markets can lessen competition. The reason behind this is that "the most direct effect of the merger will be the loss of competition between the merging firms. For example, if, before the merger, one of the merging firms had raised its price, it would have lost some sales to the other merging firm. The merger removes this particular constraint" (European Union, 2004). To explain the implication of this, the 2010 United States merger guidelines adds that "some of the sales lost due to the price rise will merely be diverted to the product of the merger partner and, depending on relative margins, capturing such sales loss through merger may make the price increase profitable even though it would not have been profitable before the merger." (U.S. Department of Justice and the Federal Trade Commission, 2010). This internalization of the competition between the merging firms would give rise to unilateral anticompetitive effects. Shapiro (1995) states that unilateral anticompetitive effects are based on the following logic: in a merger between Brand X and Brand Y, the likelihood of

customers shifting from Brand X to Brand Y after a rise in price of Brand X is highly likely, especially if Brand X and Brand Y are considered to be close substitutes. Before the merger, these customers would be lost to the firm owning Brand X. However, since post-merger this same firm owns Brand Y, the firm will not lose these customers. As such, the price increase is more profitable to the merged firm.

Werden and Froeb (2005) uses a simple case of a merger of duopolies to explain the unilateral merger effects that flow from internalization of competition between the merging entities. Assuming that merged firm is putting their self-interest firm, a merger of duopolies will cause a shift from the duopoly equilibrium to the less-competitive monopoly equilibrium. This shift will result in unilateral anticompetitive effects as they will reduction in competition as a result of the merger. According to Werden and Froeb (2005), unilateral effects theories are based on old oligopoly economic theories such as the Cournot model, which is commonly applied to homogenous products and the Bertrand model, commonly applied to differentiated products. For example, in Bertrand oligopoly, a merger between two competing firms offering differentiated products, keeping costs constant, leads in a unilateral price increase. The merged entity finds it profitable to raise their prices, as the merged entity make up for the lost sales from the increase of the other firm's products.

This is why it is important for competition authorities to assess unilateral merger effects. The assessment of unilateral merger effects provides answers to whether a merger is likely to create an incentive to increase prices post-merger.

Competition authorities across the globe use economic tools to assess the likely competitive effects of horizontal mergers. All these tools have one primary objective, to evaluate unilateral impacts that may arise from a merger. Unilateral effects occur "if there is a worsening of competitive offers by the merging parties to their customers due to the loss of rivalry between them after the merger; the offers by other firms in the market may also deteriorate following the merger (Ernstone and Chowdhury, 2011)." This negative impact on competition may result in increase in price, lower quality and negatively affect innovation in markets.

As such, the analysis of unilateral effects in mergers between competitors remains at the heart of merger regulation. Werden and Froeb (2008) state that "these economic models/ tools can be useful in the assessment of unilateral effects in the following three different ways: i) economic tools build a solid basis for concerns about unilateral effects; ii) economic models explain the precise nature of unilateral products in a particular case by describing what factors

give rise to the unilateral effects and how they give rise to the unilateral effects, and iii) the models provide a quantitative analysis of unilateral effects using models such as merger simulation to quantify the unilateral effects that arise as a result of the merger."

Existing literature has shown that "post-merger price rise is often the easiest to quantify, explaining why the assessment of likely post-merger price increase has been a primary concern of competition authorities in merger cases across jurisdictions." (Ernstone and Chowdhury, 2011).

3.2. Challenges associated with traditional/ concentration-based approaches

As mentioned earlier, competition authorities have traditionally used the concentration-based approach in merger screening. However, as stated by Shapiro (1995) that is important to first determine whether one is reviewing mergers with homogenous products or those involving differentiated product before assessing unilateral effects arising from a merger. Shapiro (1995) states that the traditional structural approach of defining markets and measuring market shares and market concentration works best for mergers with homogenous products. This is because, in these markets, it is appropriate to count each firm's unit of production or revenues, or capacity, to measure market shares and to make inferences about the effect of the merger based on market structure, including the HHI of market concentration. However, the traditional structural approach has been described as less attractive for differentiated products. The HHI test is based on Cournot competition between homogenous goods. In order to assess unilateral effects accurately in markets with differentiated products, Shapiro (1995) states that "it is highly desirable to go beyond industry measures to look directly at the extent of competition between the merging brands." This is especially true if the merging brands are close substitutes due to product characteristics. The focus should be on the possibility that the prices for one or more brands sold by the merging firms will increase post-merger (Shapiro, 1995).

When analysing a merger, in the traditional concentration-based approach, one has to define the relevant market first, then calculate the market shares in that relevant market. After that, assess whether the merger increases concentration and, therefore, the merging parties' likelihood to increase the prices post-merger. The reasoning behind this approach is embedded in the link between structure and performance: if a market becomes more concentrated, competition lessens and prices rise. The risk of collusion can also rise with less firms in the market. Whereas Murgatroyd and Swan (2012) state that the price pressure tests/ indices/ uses a relatively limited amount of data from the merging parties and a simple formula to indicate

whether a merger is likely to give rise in prices, that is causing upward pricing pressure. Hence, they provide evidence using existing literature that the price pressure indices may be more efficient than traditional market share/ concentration-based screens when assessing a merger's prospects to give rise to unilateral effects in differentiated product markets.

Farrell and Shapiro (2010) examined the challenges associated with the concentration-based approach. They state that merger regulation policy relied on "a presumption that a merger that substantially increases market concentration is likely to be anticompetitive for an extended period." This statement assumes that there is a link between concentration and poor market performance. Farrell and Shapiro (2010) state that competition authorities worldwide have been using the concentration-based approach, which defines the relevant markets and then stresses market concentration as a main indicator of competitive effects.

However, Farrell and Shapiro (2010) believe that this approach does not always work well in mergers in which merging parties offer differentiated products as product differentiation can make defining the relevant market complex. As a consequence, a risk might arise where the merger investigation produces inaccurate results. One test used by competition authorities to describe the relevant product market is the small but significant and non-transitory increase in price (SSNIP)/ the "hypothetical monopolist" test. Farrell and Shapiro (2010) state that although this test addresses the market definition problem in principle, it faces some challenges.

Farrell and Shapiro (2010), Cheung (2013) discuss these challenges in greater detail. The first challenge is that the hypothetical test makes the merger investigation process difficult as it requires that the merger analyst predict price changes by a counterfactual firm. As such, it fails to provide "the desired simple, practical, rapid and reasonable accurate diagnostic" (Farrell and Shapiro, 2010). Another challenge presented by the hypothetical test is that "it often leads to relatively narrow markets that exclude some products that certainly compete to some extent with those of the merging parties" (Farrell and Shapiro, 2010). This case arises particularly when gross margins are substantial.

Also, Farrell and Shapiro (2010) state that the traditional approach is inaccurate and does not show the actual effects of a proposed merger in industries/ markets with differentiated products. The theory of harm is related to the unilateral than coordinated effects. For instance, concentration does not necessarily mean that consumers will be negatively impacted as consumer welfare can increase with a concentration in some cases. Additionally, Cheung (2013) shows that challenges arise when one must first define the market using the traditional

approach. As a result, merger assessments would be bound to that market definition. This does not accommodate differentiated products as any two differentiated products have some substitutability for certain consumers. Whether the market is broadly defined or narrowly defined affects the measurement of market shares drastically.

Nevo (2000) supports the view that the concentration-based approach is problematic, more so in mergers that involve differentiated products. Flochel (2011) also states that the traditional approach has some limitations as the market share or concentration approach is relevant when firms compete on relatively homogenous goods. Further, Flochel (2011) emphasised this point by stating that when it comes to differentiated goods, the market share indicators have limitations, and this is because "the competitive pressure exerted on a firm is stronger for those goods which are the closest substitutes. Indeed, if the price of good rises, consumers will first switch to the goods which are the closest substitutes or which can most easily replace that product." As such, analysing market shares in this context may lead to misinterpretation since it does not consider the level of substitutability between products and does not assess the competitive pressure by one product on another product.

3.3. Effect-based approaches for analysing mergers

In their paper, Farrell and Shapiro (2010) state that the focus on merger regulation should be on "assessing the change in pricing incentives due to a proposed merger. That is analysing a merger's effects on pricing incentives." To explain the importance of this pricing incentives analysis, Farrell and Shapiro (2010) argue that there are two direct effects on pricing effects when rivals merge. These effects are as follows: i) a possibility of prices increasing post-merger as the merging parties no longer compete with each other to attract customers, and ii) at the same time, a possibility of lower prices as a result of lower marginal costs resulting from the fact that the merged entity can now manage the merging parties' assets jointly to achieve efficiencies.

There have been several models created to capture such effects, and one of them is merger simulations. According to Flochel (2011), merger simulations "involve modelling competition in the market, calibrating the model based on pre-merger data, and simulating post-merger competitive equilibrium prices." However, Flochel (2011) states that such models are complex and require expertise and, as a result, cannot be used on a large number of mergers. Ernstone and Chowdhury (2011) also described full merger simulation as "possibly the most comprehensive, albeit complex, approach to estimating the likely price rise after a merger."

This approach's complex nature means that the data requirements for analysing the effects of the merger on prices are more significant. This represents a challenge for many competition authorities, explaining the limited use of merger simulations in merger review. Another challenge associated with merger simulation relates to timing issues as the amount of time available for merger review is short, as such simulation presents time constraints. This represents a significant issue considering that competition authorities worldwide have limited time to consider merger cases as mergers are usually time-sensitive (Baltzopoulos, Kim and Martin, 2015).

As a solution, Farrell and Shapiro (2010) propose using the UPP test to assess concerns about unilateral effects in markets with differentiated products. They state that this test is, “based directly on the underlying economics of pricing, asks whether the merger will generate net upward pricing pressure." The UPP test is based on the Bertrand theory that accommodates differentiated products. Farrell and Shapiro (2010) state that the UPP approach involves comparing two opposing forces. “The first one assesses the loss of direct competition between the merging parties, which creates upward pricing pressure. The second force analyses the marginal-cost savings from the merger, which produce (offsetting) downward pricing pressure.” (Farrell and Shapiro, 2010) Salop and Moresi (2009) argued that “the balance between the upward and downward pricing pressure determines whether the merger is likely to raise or lower prices of merging parties’ products”, keeping other things constant. Unlike the traditional concentration-based approaches, the UPP test does not require market definition. As such, this approach accommodates the assessment of differentiated products without being bound to a market definition.

Another advantage of the price pressure indices is that the UPP approach as a merger screening instrument for likely unilateral effects is “practical, more transparent, and better grounded in the economics than are concentration-based ” (Farrell and Shapiro, 2010). A modified version of the UPP test, the GUPPI test, on the other hand, "calculates the unilateral incentives to raise prices post-merger" (Affeldt et al., 2012). Moresi (2010) argues that the GUPPI test could be related directly to the market definition tests. Thus, the GUPPI test can be used to create presumptions in the same way that the traditional market-share based approach describe hypotheses using market share statistics. Moresi (2010) stated that the main advantage of a GUPPI test is that it can be directly linked to market definition. It assists with questions around the relevant market definition when assessing competition in markets with differentiated

products. Flochel (2011) also agrees that competition authorities have also used these price pressure tests in the U.S. as an alternative to defining the relevant markets.

Affeldt et al. (2012) extend Farrell and Shapiro (2010)'s concept of UPP tests. Affeldt et al. (2012) also shared the same views about the hypothetical test, showing that it may be problematic in the assessment of mergers with differentiated product markets, as this test neglects to account for information on the substitutability of products. Affeldt et al. (2012) believe that the best approach to assess unilateral effects in differentiated products markets was to use the price pressure indices. Further, Affeldt et al. (2012) state that the UPP test's basic assumption is that firms set prices separately pre-merger, which is an assumption of the Bertrand competition with differentiated products, where firms compete by setting prices independently and customers buying the product with the lowest price. The UPP only calculates whether the price is likely to increase or not post-merger and does not estimate how much the price is expected to increase. Another main factor that makes the UPP different, especially from the merger simulation, is that it holds the cost of all other products constant and does not consider competitors' price reactions. UPP assess the change in price incentives of the merging firms (Affeldt et al., 2012).

Cheung (2013) agrees that the UPP tests provide an alternative to the conventional concentration-based tests in merger analyses. Cheung (2013) states that "in addition to being free of market definition, the UPP's appeal lies in its ease of use and entails a straightforward formula that indicates whether a merging firm has an incentive to increase prices post-merger." Further, Cheung (2013) agrees with existing literature that this new methodology concentrates on various price changes caused by a merger. In contrast, the conventional method relied on the growth in market shares.

Also, Cheung (2013) states that in contrast to a traditional HHI test based on Cournet competition between homogenous goods, the "UPP test is based on Bertrand theory that accommodates differentiated products, which is deemed more appropriate for most consumer products." UPP also serves as a fast, simple initial merger screening tool that recognizes mergers that are anticompetitive without requiring heavy data. Most authorities have limited time and data to investigate mergers and to make appropriate decisions if the mergers raise any competition concerns. The UPP is an appropriate tool in this regard. Cheung (2013)'s study was the first paper to examine the empirical performance of the UPP test. It compared the UPP's projections against those from a standard structural merger simulation.

However, competition authorities have also been cautioned against using UPP and GUPPI in their competitive assessment of mergers. Baltzopoulos et al. (2015) caution competition authorities on using effects-based instruments such as the UPP and GUPPI to assess mergers. They state that "the quality of the UPP predictions also rests on the quality of instruments that go into calculations, namely the diversion ratios and the profit margins of the companies involved." For this reason, Baltzopoulos et al. (2015) indicate that the indices should not be considered on their own but instead "need to be supplemented with complementary evidence." Conlon and Mortiner (2013) also had similar sentiments. They assert that although the computation of the UPP and GUPPI indices do not require data from all firms in an industry, only from the firms involved in a potential merger, the indices may not always correctly forecast the sign of the price effect of a merger and that these indices may either overpredict or underpredict pricing effects. As such, it is essential for competition authorities to not only rely on the results of these indices but to also take into account any other complementary evidence to make a final decision.

4. Methodology

The main objective of merger assessments, especially in differentiated product markets, is to assess whether the merged entity will increase its profits by raising prices. It is referred to as the unilateral effect. The main concern of competition authorities in this regard is to assess whether the merged firm would be able to exert their market power subsequent a merger and if the merged firm would be able to increase profits by raising one or both of the merging parties 'product prices and the likelihood of this harming competition in the market and harming consumers. Ivaldi et al. (2019), find that unilateral effects tend to arise in product markets associated with differentiated products where the merging parties have goods that are highly substitutable. This suggests that the closer are the substitutes, the more significant are the unilateral effects.

To quantify the incentives of a consolidated entity to implement such potential change after a merger, several competition authorities have utilised the UPP and the GUPPI metrics. This paper will apply these two price pressure indices to assess whether the Ostrich merger would have created strong incentives to raise prices by the merging parties' post-merger.

4.1. Diversion ratios

Diversion ratios are an essential factor when it comes to the calculation of UPP and GUPPI. "Diversion ratios measure the closeness of competition between competing firms or products,

and it measures the degree of substitutability between products" (Oldale and Padilla, 2013). There are several ways diversion ratios can be obtained. These include i) using market shares to calculate diversion ratios; ii) using surveys from customers to gather information about alternatives in the market; iii) switching data, and iv) demand estimation. In this paper, the approximated diversion ratios are obtained using market shares. Market shares are likely to be a good proxy for diversion ratios when products are homogeneous, but this technique may be overly dependent on an assumption that competitors will not react. In more realistic situations, customers may switch to products outside the market entirely, in this case the diversion ratio will be lower in proportion. For differentiated products, market shares may be an adequate proxy for customers' first preferences, but it is not clear why customers' second preferences would divide in proportion to the relative market shares. In this case, the merging parties had a near monopoly and market shares provide a suitable proxy.

The formula to calculate the diversion ratio is as follows:

$DR_{12} = (ms_2) / (1-ms_1)$

Where, ms2 denotes firm 2's market share; and ms1 denotes firm 1's market share.

Affeldt et al. (2012) state that the diversion ratio is "the fraction of customers who buy from product 2 when they stop buying product 1." For instance, pre-merger, there is a competition between the merging prices. This means that if firm one increases their prices, depending on how close substitutes their products are, customers will likely switch to firm two and firm two will get the lost sales of firm one. However, in instances where firm one and firm two merge, a price increase is firm one will not be a loss for the combined entity as sales will go to firm two, which is part of the merged entity.

Economists such as Moresi (2010) and Oldale et al, (2013) state that a high diversion ratio between parties in a merger will increase upward pricing pressure if any of the merging firms increase their prices. Therefore, the higher the diversion ratio between the merging firms; the higher the incentives to increase prices.

4.2. Upward Pricing Pressure (UPP)

The UPP tests indicate whether a merging entity has an incentive to raise prices after the merger. In assessing the merged entity's incentive, the UPP test considers two forces that a merger induces: i) increased prices and ii) efficiency gains.

The formula to calculate the UPP is as follows:

$UPP_1 = DR_{12} \times (p_2 - c_2) - eff \times c_1$

Where: DR_{12} is the diversion ratio of firm 1 to firm 2; p_2 denotes the average price of firm 2; c_2 denotes the average cost of firm 2; c_1 denotes the average cost of firm 1; eff denotes the efficient parameter, which is the percentage decrease in costs induced by the merger, and we assume it to be between 0 and 20%. For instance, if there a no efficiency gains, a horizontal merger between firms selling differentiated substitutable products creates incentives for the merged entity to increase prices post-merger.

In their paper, Farrell and Shapiro (2010) state that if the UPP is positive, then this would indicate that the parties to the merger have an incentive to increase prices upon implementation of the merger. Whereas, if the UPP is negative, this would suggest that the merger will create cost efficiencies that would benefit consumers as prices would unlikely rise post-merger. Further, Farrell and Shapiro (2010) maintained in their paper that mergers with a positive UPP for at least one of the merging parties' product should be investigated further by competition authorities as it signals the merged entity's incentive to increase price's post-merger.

4.3. Gross Upward Pricing Pressure Index (GUPPI)

The UPP only signals that the firms have an incentive to increase prices but does not state how much the price is likely to increase. This is where the GUPPI comes in. Ivaldi et al. (2019) state that "the GUPPI is the price index related to the UPP with the market dynamics. It expresses the price change as a percentage of pre-merger prices by connecting the lost sales of one firm to the increase in revenues of the other."

The formula to calculate the GUPPI is as follows:

$$GUPPI_1 = DR_{12} \times \frac{p2 - c2}{p1}$$

Where: DR_{12} is the diversion ratio of firm 1 to firm 2; p_2 denotes the average price of firm 2; c_2 denotes the average cost of firm 2; p_1 denotes the average price of firm 1;

As indicated previously, the GUPPI test assists with questions around the market definition. For example, Affeldt et al. (2012) state that if the merging parties' products are substitutes, GUPPI results will always be positive. As such, positive GUPPI signals that there is substitutability between the products of the merging parties. Ivaldi et al. (2019) link the connection that GUPPI has to a market definition to a SSNIP test and state that if two parties find it profitable to impose a SSNIP of about 5%, then their products will be assumed to belong

to a distinct product market. More specifically, two products belong to a specific relevant market if:

$$GUPPI \geq 2SSNIP$$

A GUPPI of less than 5% would not raise concerns. On the other hand, a GUPPI above 10% raises competition concerns as it signals that there is a likelihood that the merger will prevent or lessen competition in the market (Ivaldi et al., 2019).

5. Price pressure effects of the Ostrich merger

As previously indicated, there was a disagreement on the relevant product market during the Tribunal proceedings. Concerning the product market, the parties' overlap in the market for production and supply of ostrich products such as meat, leather and feathers. Concerning the meat market, the Commission believed that ostrich meat is a different market from other red meat types. However, the parties contested the Commission's market delineation asserting that it is too narrow and disregards real competitive constraints on ostrich meat products in South Africa (FTI Consulting 2019, page 22). As indicated previously, the Tribunal chose not to conclude on the market definition. It stated following the inconclusive evidence provided by the key witnesses during the proceedings. They cannot conclude that ostrich prices in South Africa will not be constrained by the costs of other meat products post-merger (Competition Tribunal 2019, page 28).

This study computes the UPP and GUPPI indices for the two (2) product-market specifications, using data provided by the Competition Commission. The data is at the national level; thus, the study computes the indices at the national level. This study, therefore, considers the following two scenarios:

i) Scenario 1: the market comprises all firms that were producing ostrich meat. This scenario considers the Commission's view and assumes that the relevant market includes all different cuts of ostrich meat, using annual data.
ii) Scenario 2: the market for ostrich meat is delineated in different cuts of ostrich meat. This scenario considers the merging parties' view and assumes that the ostrich meat market has to be disaggregated further into at least a distinction between steak, fillet and trimmings, using annual data.

Due to data challenges, this paper will not assess the second view of merging parties on market definition. The second view was that the market is broader and include all red meats.

5.1. UPP test results

Scenario 1: Ostrich meat, annual data

The first scenario considers the Commission's view and assume that the relevant market includes all different ostrich meat cuts, i.e., fillet, steak and trimmings.

Using annual data available from 2015 to 2017. For competitors, this study used annual data for 2015 to 2017. Table 1 indicates the computed UPP with different values of the efficiency parameter. For each value of the parameter (eff), the table also indicates the average and standard deviation of the annual UPP results.

Table 1: UPP summary statistics for the market for all ostrich meat products

		Efficiency Parameter																					
		0,00	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20
KKI	Mean	8,93	8,63	8,22	7,82	7,41	7,01	6,60	6,20	5,79	5,39	4,98	4,58	4,17	3,77	3,36	2,96	2,55	2,15	1,74	1,34	0,93
	Std.Dev.	1,60	1,71	1,75	1,79	1,84	1,89	1,94	2,00	2,06	2,12	2,18	2,25	2,31	2,38	2,45	2,52	2,59	2,67	2,74	2,82	2,89
Mosstrich	Mean	23,08	22,73	22,37	22,13	21,67	21,32	20,97	20,61	20,26	19,91	19,56	19,20	18,85	18,50	18,15	17,80	17,45	17,10	16,74	16,39	16,04
	Std.Dev.	8,09	8,02	7,95	7,91	7,81	7,74	7,67	7,60	7,53	7,46	7,39	7,17	7,25	7,18	7,11	7,04	6,97	6,90	6,83	6,77	6,70

Source: Own calculations using data submitted to the Commission.

As previously indicated, a positive UPP means that the merged entity will have an incentive to increase prices post-merger. In this case, the average UPP for all the efficiency parameters for both KKI and Mosstrich are positive, indicating that the merged entity will have an incentive to increase prices. Under the Commission's view that ostrich meat is a distinct market, the results suggests that there is a significant risk that the merged entity would increase prices post-merger.

Scenario 2: Ostrich meat cuts, annual data

The second scenario considers the view of the merging parties. This view assumes that the ostrich meat market has to be disaggregated into at least a distinction between steak, fillet, and trimmings. Table 2 below displays the average UPP statistics of KKI and Mosstrich for the three different ostrich meat cuts, namely, steak, fillet and trimmings.

Table 2: UPP summary statistics for the market for ostrich meat cuts

Fillet		Efficiency Parameter																				
		0	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,1	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,2
KKI	Mean	21,9	21,1	20,4	19,6	18,8	18,1	17,3	16,5	15,8	15,0	14,2	16,5	16,0	15,5	15,0	14,6	14,1	13,6	13,1	12,6	12,1
	Std.Dev.	5,0	5,2	5,4	5,6	5,7	5,9	6,1	6,3	6,5	6,6	6,8	9,3	9,7	10,1	10,6	11,0	11,4	11,9	12,3	12,8	13,2
Mosstrich	Mean	40,9	40,1	39,2	38,4	37,5	36,7	35,9	35,0	34,2	33,3	32,5	34,5	33,9	33,3	32,7	32,1	31,6	31,0	30,4	29,8	29,2
	Std.Dev.	14,1	14,0	13,9	13,7	13,6	13,5	13,4	13,3	13,2	13,1	12,9	14,6	14,7	14,9	15,1	15,3	15,5	15,7	16,0	16,2	16,5

Steak		Efficiency Parameter																				
		0	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,1	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,2
KKI	Mean	11,0	10,5	10,0	9,5	9,1	8,6	8,1	7,6	7,1	6,6	6,1	7,6	7,2	6,9	6,6	6,3	6,0	5,7	5,4	5,0	4,7
	Std.Dev.	2,1	2,1	2,2	2,3	2,4	2,5	2,6	2,7	2,8	2,9	3,0	5,5	5,8	6,1	6,4	6,7	7,1	7,4	7,7	8,0	8,3
Mosstrich	Mean	26,5	26,1	25,7	25,2	24,8	24,4	23,9	23,5	23,1	22,6	22,2	23,3	23,0	22,7	22,4	22,1	21,9	21,6	21,3	21,0	20,7
	Std.Dev.	10,5	10,4	10,3	10,2	10,1	10,0	9,9	9,8	9,7	9,6	9,5	10,1	10,1	10,1	10,1	10,1	10,2	10,2	10,2	10,3	10,3

Trimmings		Efficiency Parameter																				
		0	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,1	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20
KKI	Mean	6,6	6,4	6,2	5,9	5,7	5,5	5,2	5,0	4,8	4,6	4,3	4,9	4,8	4,6	4,5	4,3	4,2	4,0	3,9	3,7	3,6
	Std.Dev.	1,2	1,2	1,3	1,4	1,4	1,5	1,6	1,6	1,7	1,7	1,8	2,8	2,9	3,0	3,2	3,3	3,5	3,6	3,8	3,9	4,1
Mosstrich	Mean	12,3	12,1	11,8	11,5	11,3	11,0	10,8	10,5	10,3	10,0	9,5	10,4	10,2	10,0	9,8	9,6	9,5	9,3	9,1	8,9	8,8
	Std.Dev.	4,7	4,7	4,6	4,6	4,5	4,4	4,4	4,3	4,3	4,2	4,2	4,3	4,3	4,3	4,3	4,3	4,4	4,4	4,4	4,5	4,5

Source: Own calculations using data submitted to the Commission.

Concerning a fillet cut, the average UPP for both KKI and Mosstrich is positive for all the efficiency parameters. It signals that the combined entity will have an incentive to increase prices post-merger. Concerning a steak cut, the average UPP for both KKI and Mosstrich is positive for all the efficiency parameters. It signals that the combined entity will have an incentive to increase prices post-merger. Lastly, concerning the trimmings, the average GUPPI for both KKI and Mosstrich is positive for all the efficiency parameters. It indicates that the consolidated entity will have an incentive to increase prices post-merger.

5.2. GUPPI test results

Scenario 1: Ostrich meat, annual data

Table 3 depicts the computed GUPPI statistics for KKI and Mosstrich.

Table 3: GUPPI summary statistics for the market for all ostrich meat products

	Mean	Std.Dev.	Min.	Max
KKI	15%	0,05	10%	22%
Mosstrich	49%	0,12	35%	58%

Source: Own calculations using data submitted to the Commission.

Both KKI and Mosstrich have a GUPPI of more than 10%. It indicates that the merged entity will have a solid incentive to raise prices post-merger and find it profitable to impose a SSNIP of 5%. This finding corroborates with the Commission's view that ostrich meat can be

considered a relevant market on its own. In this case, there is a likelihood that the merger would result in the prevention or lessening of competition in the Ostrich meat market.

Scenario 2: Ostrich meat cuts, annual data

Table 4 depicts the computed GUPPI statistics of KKI and Mosstrich for the three cuts of ostrich meat.

Table 4: GUPPI summary statistics for the market for ostrich meat cuts

Steak	Mean	Std.Dev.	Min.	Max
KKI	16%	0,07	9%	23%
Mosstrich	45%	0,11	33%	55%

Fillet	Mean	Std.Dev.	Min.	Max
KKI	20%	0,11	11%	32%
Mosstrich	36%	0,11	24%	44%

Trimmings	Mean	Std.Dev.	Min.	Max
KKI	20%	0,09	11%	29%
Mosstrich	35%	0,09	26%	44%

Source: Own calculations using data submitted to the Commission.

Concerning the fillet cut, the average GUPPI estimates for both KKI and Mosstrich are above 10%, 20% and 36%, respectively. This suggests that the merging firms have a strong incentive to increase ostrich fillet prices after the merger as they will find it profitable. Concerning the steak cut, the average GUPPI estimates for both KKI and Mosstrich are above 10%, 16% and 45%, respectively. This suggests that the merging firms have a strong incentive to increase ostrich fillet prices after the merger as they will find it profitable. Lastly, concerning the trimmings, the average GUPPI estimates for both KKI and Mosstrich are above 10%, 20% and 35%, respectively. This suggests that the merging firms have a strong incentive to increase ostrich fillet prices after the merger as they will find it profitable.

These results signal that the merger is likely to lead to a rise in price post-merger. In conclusion, the computed GUPPI and UPP for both scenarios indicate that the consolidation would have potentially led to price increases.

6. Market definition implications

From our previous discussion, we know that a positive GUPPI signals that there is substitutability between the products of the merging parties. The GUPPI results from the two

scenarios indicated that the merging parties' products are close substitutes as all the GUPPI estimates were positive. This shows that, irrespective of the market definition followed, the prices for KKI and Mosstrich's products would be significantly higher than pre-merger.

7. Conclusion and recommendation for further research

This research report set out to provide a review of the Ostrich merger by estimating analytically the incentives that the merged firm would have to increase prices post-merger. Two pricing indices, UPP and GUPPI, were computed to calculate the price pressure effects of the Ostrich merger. Using data provided by the Commission to calculate the UPP and the GUPPI, the research report found that irrespective of the market definition followed, the prices post-merger for KKI's and Mosstrich ostrich meat cuts would be substantially higher than pre-merger prices. This indicates that the merged firm would have had an incentive to increase prices post-merger. The results from the UPP and GUPPI showed that the closer are the substitutes, the more significant are the unilateral effects as unilateral effects tend to arise in product markets associated with differentiated products where the merging parties have goods that are highly substitutable. As such, the implications for these results fit with the theoretical and methodological debates.

It is important to highlight that the role of these metrics is simply to inform and supplement merger investigations, in a similar way to how market share and concentration analysis has been used for decades. As such, the UPP and GUPPI metrics should be used a pre-screening tests to determine whether there is a need to probe further into an investigation of a merger.

Although the Tribunal chose not to conclude on the market definition for ostrich meat, and also decided not to conclude whether the prices of other meat products would have constrained ostrich meat prices in South Africa post-merger. The results from the computed GUPPI and UPP indices suggested that ostrich meat can be considered as a distinct market. The merger would have created an incentive for the merged firm to raise prices of ostrich meat post-merger. Also, even though the Tribunal chose to impose conditions to address the competition concerns that arose from the merger, based on the UPP and GUPPI results, the Tribunal should have prohibited the merger. This finding affirms the decision by the Competition Commission to prohibit the merger.

For further research, a study can be done to provide an ex-post evaluation of the Ostrich merger's impact, if there is any, and assess the effects of the Tribunal's decision and conditions in the ostrich industry in South Africa. This ex-post evaluation could examine the following:

i) whether the Tribunal’s decision has had any effects on the Ostrich industry in South Africa, specifically on the quality, prices and availability of ostrich products post-merger;

ii) whether the merged entity has complied with all the conditions to the approval of the merger imposed by the Tribunal. The combined entity stated that in compliance with the Tribunal's conditions, they had submitted their first annual report to the Commission attesting that they complied with the conditions as set out by the Competition Tribunal regarding the volume of ostrich meat to be made available in the local market, as well as the volume of feathers to be available on tenders. Further, the merged entity stated that no price increases for ostrich meat in the local market post-merger. Instead, there was a decrease in prices in certain product lines due to supply and demand reasons in the ostrich market. Concerning the condition of access to abattoirs and tanneries, the merged firm stated that there had not been an instance where a third party was declined access. Essentially, the merged entity has complied with the conditions so far; and

iii) lastly to examine how the Covid-19 global pandemic has affected the Ostrich market in South Africa.

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