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GUEST EDITORIAL

UNDERSTANDING ECONOMIC REGULATION AND COMPETITION IN A DEVELOPING ECONOMY: INTRODUCTION TO SPECIAL ISSUE

Genna Robb & Simon Roberts

University of Johannesburg

The most widely regulated markets are natural monopoly markets, where regulators impose limitations on monopoly behaviour regarding price, quantity or entry and exit into the market (Viscusi et al., 2000). A critical element of regulation is identifying the essential facilities or infrastructure where competition is not possible and enforcing measures to make sure access is provided on fair terms to different participants, along with ensuring appropriate incentives for investment. The articles in this special issue analyse how these challenges have been addressed by different regulators. There is also a strong link here with competition law provisions prohibiting abuse of a dominant position. Economic regulation and competition law enforcement is particularly important where there are entrenched dominant firms, which are also often vertically integrated into a range of related activities and may have incentives to exclude rival actual and potential participants. However, the case for economic regulation is much wider than simply constraining market power; it can also rest on information imperfections, the existence of incomplete markets and externalities, and the resulting income and wealth distribution effects (Jalilian et al., 2006).

Regulation theory can be viewed from several perspectives. The normative perspective seeks to determine when regulation should be introduced and what optimal regulation should be while the positive perspective focuses on economic, political and legal forces that lead to regulation, and influences the institutions and their performance (Joskow & Rose, 1989). The articles in this special issue cover both perspectives – some examining the political economy of regulation, while others assess regulatory performance in normative terms.

Typically regulation in economies with mature infrastructure, built by state-owned enterprises and now privatised, emphasises allocative and productive efficiency. Regulation is portrayed as addressing market power and market failures. This implies that the norm is perfectly functioning competitive markets. Given that market power and market imperfections are intrinsic to a market economy, it makes sense to see economic regulation more broadly – as the set of rules within which businesses make investment, production and supply decisions. Viewed in this way, competition enforcement is part of economic regulation.

In addition, in developing countries such as South Africa, where the historic provision of infrastructure itself is part of a skewed economy which favoured particular interests, the role for economic regulation cannot be divorced from economic policies to change the development path. Stimulating investment in line with a more broad-based development path is thus a key consideration. Note that positive externalities, and social discount rates that are lower than

private discount rates, imply on-going state support for investment in expanded provision and pricing. In the absence of such support, firms will under-invest and mis-price services relative to their returns to the economy. This is the case even where the firms are state-owned but run on a corporate basis with investments based on narrow cost recovery from immediate users. Regulation is part of the choices about changing incentives to alter the development path of the economy, for example, in deciding about relative energy prices, incentivising renewable energy and about pricing and access to transport infrastructure.

Choices about economic regulation and competition law can be likened to deciding on the 'economic constitution' of a country (Gerber, 2010). These are part of a set of rules and institutions which influence whom has access to economic opportunities and on what terms and whether, in the terms of Acemoglu and Robinson (2012), the economy tends towards being inclusive or extractive. It is about processes and outcomes. Effective regulation achieves the policy objectives set by government for the regulator (Jalilian et al, 2006).

The articles in this special issue are drawn from papers presented at the second South African Economic Regulators Conference held on 18 and 19 March 2014 in Johannesburg with the over-arching theme of expanding investment in infrastructure to meet the challenges of inclusive growth. The conference was co-hosted by the National Energy Regulator of South Africa together with the University of Johannesburg's Centre for Competition, Regulation and Economic Development.

The article by **Montmasson-Clair and Ryan** examines an important policy success story in the form of South Africa's Renewable Energy Independent Power Producer (REIPP) procurement programme. The REIPP programme stimulated investment in renewable generation at quite competitive prices, in other words with low effective subsidies. Montmasson-Clair and Ryan analyse why the programme was successful, achieving falling prices for the power purchased in each successive procurement round, with every round being over-subscribed and with a high success rate for chosen projects. The findings highlight the way in which a clear policy framework with hard commitments created the competitive space for the bidders to come forwards with financed projects. Cooperation between the key stakeholders – Eskom, the regulator and the private sector – was critical to the success of the programme, as was flexibility in implementation such that the lessons from each round of procurement were learned and incorporated into subsequent rounds. Whilst the authors acknowledge that there is still room for improvement, the programme provides a great example of what can be achieved through forward-thinking and responsive policymaking, which incorporated multiple goals and took into account a range of stakeholders with different interests. It also highlights that the private sector does have appetite for investing in power generation in South Africa and can respond quickly once a clear mechanism for participation has been provided. The article draws out the lessons learned in a simple manner which can inform future projects of a similar nature, such as, other large infrastructure development programmes.

Sithebe and Kolobe's article also deals with the electricity sector, but considers the structure of the industry and asks the question of how the sector could best be organised in order to promote competition, drawing on international experience and learnings. The authors argue that the key constraint to the development of independent power generation has been uncertainty around the policy framework. In this context, REIPP is seen as the exception that proves the general rule – a successful, albeit small-scale, example of how private players can be effectively brought into the electricity generation market to the benefit of competition. In assessing the possible impact of the vertical separation of Eskom's activities, Sithebe and Kolobe draw from

international experience in their finding that it may be a necessary but not sufficient condition for successful entry in generation. Vertical separation needs to be carefully implemented with regard given to the industry context and supported by regulation in order to be successful. Sithebe and Kolobe note that vertical integration is also present in the piped gas sector, where Sasol Gas has a virtual monopoly over the upstream market and is also vertically integrated into the downstream market.

Mondliwa and Roberts pick up the issues of regulation of liquid fuels. Their analysis finds that regulation has favoured the up-stream refiners, setting prices for many years that were in fact above the actual cost of importing fuel. This highlights the importance of information asymmetries between regulators and those they regulate. Mondliwa and Roberts also argue that the security of supply concerns under apartheid have been used to continue to justify restrictive regulations when in fact ensuring supply can as readily be achieved through efficient logistics to source imported fuel. Indeed, there are strong threads of continuity and the authors suggest revisiting the recommendations of the 2007 Windfall Tax Task Team for a substantially revised regulatory framework as the apparent National Treasury conditions have not been met.

Ismail, Mabuza, Pillay and Xolo assess the reasons for delays and cost overruns in major infrastructure projects against different models for the funding and financing of infrastructure investments. The article presents an alarming view of cost overruns in recent major infrastructure projects which have varied from 21% to 1329%. Five out of the ten projects considered by the authors ended up costing more than double the initial budget for the project. This is extremely concerning in the context of recent concerns about the level of government spending and the affordability of sharply increasing user fees for different types of infrastructure. The authors conclude that inefficient infrastructure delivery, particularly from SOEs, leads to the inefficient pricing of the relevant asset. This is particularly problematic where the allowable revenue model is used to determine pricing, as CAPEX for infrastructure, including overruns and unnecessary additional costs, is reflected in the institution's asset base and hence in prices and is passed through to consumers. Problems which occur in practice seem to include inefficient procurement and contracting methods, project overruns, and inefficient funding mechanisms such as in the case of the Gauteng toll roads. There appear to be important lessons for government departments and SOEs to learn in terms of how to plan and manage such projects in future so as to minimise costs.

The articles by **Ratshisusu** and **Sylvester** address the role of the competition authorities in addressing the conduct and market power of companies. Ratshisusu analyses the experience of bid-rigging in construction, which raises the costs of building infrastructure. This article details how and why collusion has been found to be widespread across the industry, in a number of countries. Ratshisusu then reviews the fast-track settlement process of the Competition Commission of South Africa which played a big role in uncovering the extent of the conduct and how it worked in practice. A range of practices are explained such as 'cover pricing' and 'loser fees' by which firms gave the appearance of competition while actually replacing rivalry between themselves with a common understanding. In addition to vigilance by the competition authorities, Ratshisusu points to a number of policy implications such as better procurement practices, more effective monitoring by the Construction Industry Development Board as the body with regulatory oversight and support for new entrants and the growth of smaller firms.

Sylvester addresses the specific issue of special cost advantages in relation to excessive pricing cases under competition law, which is where the competition authorities are effectively playing the role of a 'regulator of last resort'. The article considers the finding by the Competition

Appeal Court (CAC) in the Mittal case that special cost advantages should be excluded from the cost build-up of the dominant firm. It is argued that the cost advantage cannot simply be added back-in to the costs as this fails to take into account that the firm would have taken different decisions, except under very restrictive assumptions. Sylvester also notes that there may be cost advantages, such as industrial policy support, which in a concentrated sector in South Africa are effectively just to a single firm while in another country or sector is to a set of firms. The CAC approach makes this distinction between support to a single firm or to an industry of material importance and, argues Sylvester, will severely restrict government's ability to develop downstream industries supplied by a monopolist.

The two articles by **Tregenna and Kwaramba** examine the work of the International Trade Administration Commission (ITAC) in undertaking tariff investigations and recommending decisions. The first paper considers two investigations, relating to paper and poultry, to critically assess the way in which ITAC has undertaken its evaluation under the broad guidance of the country's trade policy. They find that ITAC made thorough investigations before recommending changes in tariffs, however, did not fully appreciate the impact of existing trade agreements which affected the outcomes. Tregenna and Kwaramba also note that ITAC should work more closely with other bodies analysing firm behaviour, in particular, the Competition Commission. The second article analyses the role and capacity of ITAC. It compares the semi-independent institutional framework to other developing countries and assesses the robustness of ITAC's decisions to legal challenges over time, finding that ITAC's decisions have become more robust. The development of internal capacity to analyse corporate financial information has been crucial in this performance, in common with other economic regulators.

The articles in this volume, whilst covering diverse subject matter, all deal with a common theme in that they highlight the challenges with economic regulation in South Africa currently. As noted above, the more positive REIPP experience serves to emphasise the shortcomings in other areas, however, it does provide a model for what can be achieved with clarity of purpose, policy certainty and commitment, and effective and flexible implementation. In order to create a vibrant and dynamic economy where strong competitive rivalry can deliver inclusive growth and broader participation, we need to learn from this type of example. Hopefully the insights from the various papers in this special issue can help to identify solutions which can take us closer towards achieving these goals.

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LESSONS FROM SOUTH AFRICA'S RENEWABLE ENERGY REGULATORY AND PROCUREMENT EXPERIENCE

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Abstract

South Africa's Renewable Energy Independent Power Producer (REIPP) procurement programme is hailed worldwide as a model for renewable energy procurement. Its success is far from experimental and haphazard and points directly to lessons acquired prior to, and during, the launch and running of the programme. This article explores the journey to the REIPP procurement programme and draws critical lessons from the process. It discusses the success of the REIPP procurement programme in developing the renewable energy sector in South Africa, drawing seven key lessons explain this success and exploring the remaining challenges. The article shows that, despite the need for further improvements and continual optimisation, the development of the REIPP procurement programme has been a positive illustration of successful policy and regulatory learning processes

Keywords

Electricity, renewable energy, Independent Power Producers, procurement, economic regulation

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1. INTRODUCTION

As the world grapples with multiple crises on economic, social and environmental fronts, sustainable development, notably through the transition to a green economy, has been internationally acknowledged as the way forward. South Africa is in a unique position to benefit from the shift to a greener development path, owing to its abundance in renewable resources. Accordingly, the country has demonstrated an increasing commitment to sustainable development, especially in renewable energy.

The development of renewable energy in South Africa, which is strongly intertwined with the introduction of independent power producers (IPPs) onto the electricity market, results from four grand dynamics. First, the South African government recognises that Eskom alone does not have the financial and technical capacity to meet the country's electricity demand and ensure energy security. In 2003 government set the objective of deriving 30% of the new power generation capacity from private developers from renewable energy, but also from coal and gas (Steyn, 2013). Second, the development of renewable energy, along with the introduction of IPPs, aims to reduce the cost of electricity in South Africa, in the short term, through generation capacity built at the cost and financial risk of IPPs, and in the medium to long term, through the development of increasingly competitive and cost-effective renewable energy-based alternatives to traditional fuels and technologies (DoE, 2013a, 2011; IRENA, 2013a). The proposed carbon tax should also strengthen the business case for shifting to greener generation technologies. Third, renewable energy technologies, as clean, low-carbon options, form part of government's climate change mitigation and green economy strategies. Lastly, the creation of a renewable energy industry in the country is meant to support local economic development objectives, with the aim of contributing to the creation of 400 000 new direct jobs by 2030 in green economy sectors, as targeted in the country's New Growth Path (EDD, 2010).

Against this background, South Africa's Renewable Energy Independent Power Producer (REIPP) procurement programme was launched in August 2011. The programme has been hailed worldwide as a model for renewable energy procurement (IRENA, 2013b; Eberhard, Kolker & Leigland, 2014). Matching (if not setting) international guidelines, the current South African procurement programme is structured around the following best practice criteria: effective and efficient institutional coordination; coherence and certainty in the selected support scheme; flexibility provisions in the event of significant market changes or unintended consequences; centrality of the price mechanism; certainty on return on investment; coordination between all interest groups; development goals for rural and vulnerable populations; and regulatory principles of transparency, clarity and predictability (Bjork et al., 2014).

While the achievements of the programme have been extensively publicised, little research has been conducted on the political, policy and technical underpinnings of the current scheme. This success is indeed far from experimental and haphazard and points to a set of learnings and lessons acquired prior to, and during, the launch and running of the programme.

Exploring the journey to the REIPP procurement programme and drawing a series of critical learnings require a theoretical framing essentially oriented towards a delivery analysis framework, as conceptualised by Parsons (1995). Although it does cover issues of agenda definition and agenda setting (meso analysis) or questions around public choice (decision analysis), the analysis concentrates on the entire chain of implementation, including the choice of instruments and their application, evaluation, performance and revision (Lafferty, 2004). This

approach provides the right focus to understand and analyse in detail the road to the current procurement programme and shed light on its foundations.

The methodological approach to exploring the development and progress of the renewable energy procurement programme draws on an analysis of South African government policy and its implementation from the mid-1990s to 2014, complemented by a review of relevant literature, as well as a series of more than 50 semi-structured interviews. Interviews were conducted with relevant stakeholders, from government departments (including the Department of Energy (DoE) and the National Treasury's (NT) Public-Private Partnership Unit), the National Energy Regulator of South Africa (NERSA), financiers, the national utility and IPPs, to academics and consultants. Following these interviews, a workshop was hosted with these stakeholders to discuss findings of the review of the regulation of renewable energy in South Africa. This interactive and iterative research process has contributed to formulating the findings of the paper.

The remainder of the paper proceeds as follows. Section 2 discusses the success of the programme in developing the renewable energy sector and reflects on South Africa's experience in the introduction of renewable energy and IPPs. Sections 3 to 9 draw a series of seven key lessons. Remaining challenges and areas of improvements are also investigated. Section 10 concludes with a discussion on the way forward.

2. THE SUCCESS STORY OF THE RENEWABLE ENERGY INDEPENDENT POWER PRODUCER PROCUREMENT PROGRAMME

The South African government has progressively developed a procurement framework to support large-scale renewable energy-based power generation and introduce IPPs in the country's energy market. Several initial attempts failed to effectively procure power from IPPs. Initial programmes, such as the Pilot National Cogeneration Programme, the Medium Term Power Purchase Programme and the Multisite Base-load Independent Power Producer Programme, were conceptualised by Eskom in 2007-2008 with the primary objective of expanding generation capacity. These programmes were however all interrupted due to the lack of readiness from both government and the private sector (DoE, 2009a; Yelland, 2009). Following these programmes, government needed to create a credible procurement programme. NERSA accordingly developed a Renewable Energy Feed-In Tariff (REFIT) mechanism to procure power output from qualifying renewable energy generators at predetermined prices. Faced with political and legal challenges, the REFIT policy was then abandoned in favour of an auction system (Baker, 2012; Creamer, 2011). A lengthy transition process resulted in the DoE, assisted by the NT's Public-Private Partnership Unit, launching the REIPP procurement programme in August 2011.

The first phase of the REIPP procurement programme has been designed with an initial allocation of 3 625 megawatt (MW) to be procured from large-scale IPPs over a maximum of five bid windows by 2016, as determined by the Minister of Energy under Section 34(1) of the Electricity Regulation Act No. 4 of 2006. TABLE 1 illustrates the breakdown of energy sources to meet this target and reveals the significant targets set for onshore wind and solar photovoltaic (PV) technologies and the increasing interest in concentrated solar power (CSP), in line with the country's current electricity plan. While no capacity cap (other than the total allocation of the programme) was set in the first round, the allocation for subsequent rounds has been determined based on the initial market response to encourage competition in the renewable

energy sector. The first three rounds have largely been oversubscribed, a testament of the interest for the programme, and resulted in committed investment of ZAR 150 billion.

TABLE 1: Total megawatt awarded per technology, bid responses and preferred bidders in the REIPP procurement programme

<i>Awards (MW)</i>	<i>Initial determination (2012-2016)</i>	<i>Second determination (2017-2020)</i>	<i>Round 1 allocation</i>	<i>Round 2 allocation</i>	<i>Round 3 allocation</i>	<i>Total allocation</i>
Wind	1 850	1 470	634	563	787	1 984
Solar PV	1 450	1 075	632	417	450	1 499
CSP	200	400	150	50	200	400
Small hydro	75	60	0	14.3	0	14.3
Landfill gas	25	47.5	0	0	18	18
Biomass	12.5	47.5	0	0	16.5	16.5
Total	3 625	3 100	1 416	1 044.3	1 456	3 916
Bid responses received	N/A	N/A	53	79	93	225
Preferred bidders	N/A	N/A	28	19	17	64
Success rate	N/A	N/A	53%	24%	18%	N/A

Source: TIPS, based on DoE, 2013a and DoE, 2012

In less than two and a half years, 64 projects have been approved, of which 47 have already achieved financial close for a total of 3 916 MW, i.e. more than the original allocation of 3 625 MW. The allocations for onshore wind, solar PV and CSP have been already exceeded for the 2012-2016 period. In December 2012, the DoE published an additional determination of 3 100 MW for the 2017-2020 period, of which 307.5 MW were made available for the third bid window, bringing the total determination for large-scale projects to 6 725 MW (DoE, 2013b). De facto, a part of the third round as well as upcoming bidding windows for the 2014-2016 period are already carving up the determination for the 2017-2020 period, essentially due to the positive market response and the excellent quality of projects. Practically, all projects selected as preferred bidders have so far reached financial close and the first project, Scatec Solar's 75-MW solar PV plant, was connected to the grid three months ahead of schedule in September 2013 (Clover, 2013). These positive achievements were no accident and have resulted from continual policy and regulatory learnings from previous initiatives as well as the iterations of the current programme.

3. POLICY SPACE AND POLITICAL SUPPORT ARE A PREREQUISITE

From the publication of the 2003 White Paper on the Renewable Energy Policy of the Republic of South Africa (DME, 2003), which set the objective of generating 10 000 gigawatt-hour of renewable energy by 2013 (approximately 4% of the energy mix), to the procurement of the first MW of generation capacity in 2011, a long and complex policy development process took place.

Only when policy certainty on the role of renewable energy and the associated investment strategy (i.e. the role of the private sector) was achieved could the procurement framework be successfully implemented.

South Africa has been considering the introduction of IPPs, partially for the generation of renewable energy-based electricity, since the 1998 White Paper on Energy Policy (DME, 1998). A blueprint for a competitive electricity supply industry was accordingly produced for Cabinet in May 2001, but was eventually discarded in May 2004. Only the gradual introduction of IPPs resulted from the 2001 blueprint. In 2003 Cabinet approved the participation of the private sector in the electricity industry and resolved that future power generation capacity would be divided between Eskom (70%) and IPPs (30%) (Steyn, 2013). In a statement on 5 September 2007, Cabinet designated Eskom as the single buyer of power from public and private producers, mandating the state-owned enterprise to ensure that "adequate generation capacity is made available and that 30% of the new power generation capacity is derived from IPPs" (GCIS, 2007). Cabinet further specified that over the 2007-2027 period, "Eskom will build all nuclear power plants in South Africa and the IPPs will build more than 50% of all non-nuclear power plants" (GCIS, 2007).

Large-scale commitment to renewable energy was achieved only in 2011 with the Integrated Resource Plan for Electricity 2010-2030 (IRP 2010). Promulgated in May 2011, the IRP 2010 plans for 17.8 GW of new build renewable energy over the 2010-2030 period, in addition to 1.1 GW of already committed capacity. The plan intends for renewable energy technologies to supply 42% of the new additional capacity over the 2010-2030 period or 9% of the total electrical energy in 2030 (DoE, 2011). These two concomitant policy trends on the role of renewable energy and IPPs have shaped the development of procurement programmes in the country.

The IRP 2010 and the 2011 ministerial determination created a clear policy space for renewable energy in South Africa. This clarity assured investors, through policy and planning, that renewable energy would play a sizeable role in the country's electricity mix. It also opened the door for the design and implementation of an ambitious procurement mechanism, providing further certainty on the demand and procurement of renewable energy.

Benefiting from these positive evolutions, the REFIT programme, in development since 2007, was set to be the national procurement framework for renewable energy. The scheme had largely resolved the flaws that characterised previous initiatives and developers had already prepared to submit their projects to participate in the REFIT policy (Eberhard, 2013). As concerns arose in 2008/2009 around the REFIT policy, the rationale underpinning the shift from a feed-in tariff to an auction programme took prominence, eventually leading to the introduction, with full political support, of the existing competitive bidding process.

Going forward, long-term certainty on the future of the procurement scheme, in terms of megawatt capacity and technology, must be maintained. The publication in November 2013 of an update of the IRP, while advocating that the current renewable energy programme should be continued with additional annual rounds (of 1 000 MW capacity for both solar PV and wind, 200 MW for CSP and potentially hydropower at competitive rates), has re-introduced a degree of uncertainty. The update slightly reduces the allocation to renewable energy from 18.8 GW to 17.4 GW. It also suggests a shift from wind to solar energy in the coming years, by cutting the total generation capacity allocated to wind energy in 2030 (from 9.2 GW in the current IRP to 4.4 GW in the 2013 update) and increasing the share of solar PV (from 8.4 GW to 9.8 GW) and CSP (from 1.2 GW to 3.3 GW) (DoE, 2013c). While reviewing and updating the country's electricity plan is a

necessary ongoing exercise, further certainty on the allocations per technology must be ensured in the process to provide clarity to the sector.

4. INSTITUTIONAL ARRANGEMENTS ARE AT THE CRUX

Over and above policy and political support, the design and implementation of successive IPP programmes in South Africa has raised the importance of institutional arrangements. Institutional leadership and political will (to take and implement decisions) are cornerstones of a successful procurement programme; and the active participation of all relevant stakeholders is essential to an effective and efficient design and implementation.

Early programmes driven by Eskom largely failed as a result of inadequate leadership, oversight and political support. Project developers were reluctant to participate owing to Eskom's role as an industry player, i.e. as a generator, transmitter and distributor, as well as administrator and referee, with little oversight to ensure that the utility would not leverage its monopoly in the electricity supply industry. This demonstrated the need for an independent institution. Independent price setting with clear cost-recovery rules not dependent on Eskom's financial standing was also required.

Likewise, NERSA's REFIT programme increasingly faced political and legal challenges, which ultimately resulted in its abandonment to the benefit of a DoE-led scheme. The REFIT policy was conceptualised within NERSA's Electricity Regulatory Division in 2006/2007, following study tours to Germany and Denmark. Despite some opposition within NERSA itself as well as reluctance from the then Department of Minerals and Energy (DME) and Eskom, the development of a REFIT policy gained traction at NERSA's board level in June 2007 (Baker, 2012). However, the DoE, supported by the NT, later identified that by developing the REFIT, NERSA was acting beyond its mandate stipulated in the Electricity Regulation Act No. 4 of 2006. According to the Act, the function of developing energy policy belongs to the DoE, while NERSA acts as an implementer. While NERSA understood at the time that such a programme was meant to be developed by the DoE, the regulator explains that, owing to administrative issues that caused delays, NERSA ended up initiating the process all within the legislative framework in place at the time.

In addition, the NT and the DoE were convinced that NERSA had neither the budget nor the expertise to efficiently run a REFIT, and that the relatively high prices set by NERSA meant that the programme was not financial feasible. The risk of a large oversubscription, notably in relation to Eskom's financial and grid connection capacity (Baker, 2012), was particularly concerning (Yelland, 2009).

In January 2009, the then-DME put forward the proposal of a bidding system, also shifting the strategic and planning responsibilities from NERSA to Eskom, and giving the Minister of Energy wide discretion regarding NERSA's REFIT process (IDASA, 2010). In August 2009, the DoE's Electricity Regulations on New Generation Capacity, which enacted this shift, were approved (DoE, 2009b). This followed the DoE receiving legal advice that feed-in tariffs could be challenged against South Africa's public finance and procurement laws. Evidence suggests that a REFIT would have been inconsistent with the Public Finance Management Act No. 1 of 1999 (as amended) due to the absence of price competition. The 'first come first serve' basis upon which bids would have essentially been chosen under the REFIT was considered not to be in line with the procurement regulation that stresses competitive bidding (Creamer, 2011). An auction system was considered as doing more to encourage price competitiveness among developers than the

feed-in tariff. This analysis can however be challenged: although price would not have been a differentiating factor, competition would have occurred based on other criteria, most likely local economic development.

In November 2010, revised New Generation Regulations published by the DoE, supported by the NT, effectively removed NERSA and Eskom's functions to implement a REFIT, and replaced the scheme with a competitive bidding process under the governance of the DoE and the NT (DoE, 2009b). The feed-in tariff was effectively never implemented and not a single MW of power was signed under the REFIT programme. Ultimately, the political play between NERSA and the DoE appeared to become a dispute over turf, and the change in regulation was more a political matter than a technical problem. What is certain in the shift from the REFIT to the REIPP procurement programme is that NERSA's role has been significantly diminished. While facilitating the entry of IPPs into the electricity generation market and, importantly, ushering in renewable energy in the energy supply mix, the shift to a DoE-led bidding process served to reinforce direct governmental control over the development of renewable energy in the country.

The political will and leadership emanating from the DoE and the NT that drove the establishment of the programme have been instrumental to its success. The two institutions are central in drafting the Request for Proposals and the methodology for project selection. The DoE, as driver and coordinator of the programme, has provided policy clarity and direction for renewable energy development. This is complemented by the financial and technical support of the NT. In addition, all relevant stakeholders are actively involved in the design and implementation of the scheme, as illustrated in FIGURE 1, in comparison to previous initiatives, which relied heavily on one single institution. Other government departments provide advisory inputs as per their areas of expertise. Whereas Eskom and NERSA were the architects of previous independent power procurement programmes and remain instrumental to the success of the programme, they both now have secondary decision-making functions in the process. The regulator was largely responsible for designing and administering the REFIT. Under the REIPP procurement programme, NERSA is tasked with awarding generation and distribution licences to successful IPPs for the period and MW capacity in line with the power purchase agreement (PPA), with less autonomous decision-making power about the role of renewable energy. This is indeed more an instruction that the regulator carries out as stipulated by the Request for Proposals than an independent decision. Eskom's System Operator is responsible for designing and ensuring that the grid infrastructure can equitably accommodate renewable energy projects to feed into the national grid. The utility's Grid Access Unit provides technical analysis on the connection of projects to the grid and supplies IPPs with cost-estimate letters and budget quotes on these options. Last but not least, project developers and the community of financiers, in addition to developing and financing renewable energy projects, are dynamically considered in the continual improvement of the scheme, through consultations with the NT and the DoE.

Owing to the complex and interconnected nature of institutional arrangements associated with the REIPP procurement programme, areas of improvements still exist. Issues around the grid connection and associated processes, which create uncertainty for IPPs, should be mitigated. IPPs rely on Eskom to obtain a cost-estimate letter and budget quotes in a timely fashion for their grid connection. Uncertainty around the timeline for grid connection and the lack of accuracy of the cost-estimate letter and budget quotes provided by the utility, which are accurate at +/-40% and +/-15% respectively, have raised some financial risk for IPPs.

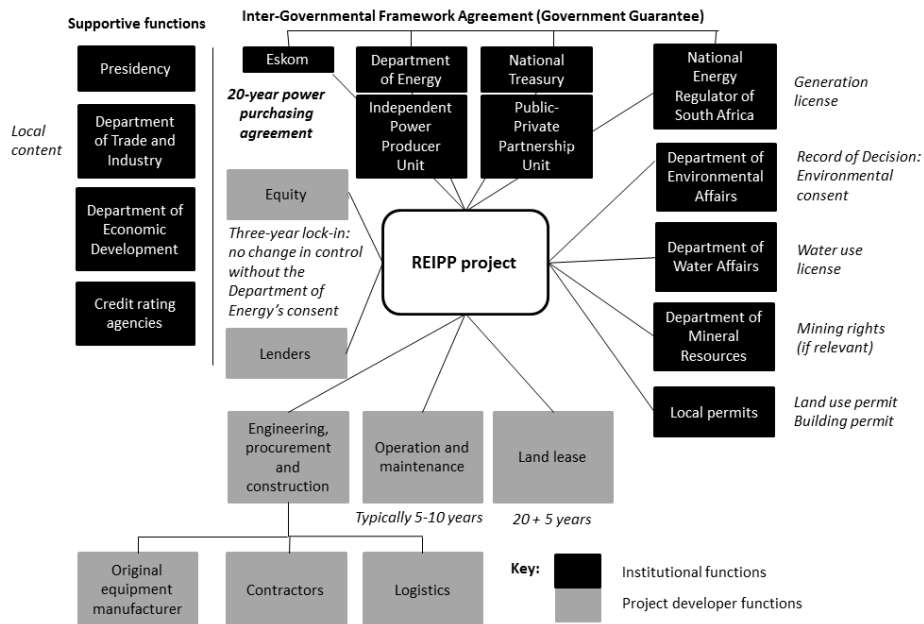


FIGURE 1: Institutional arrangements around the REIPP procurement programme

Source: TIPS, based on Pickering (2013); Haffejee (2013)

Ultimately, more certainty is required at the time of submission to enable efficient planning and ensure the lowest possible prices and maximum economic development benefits. Another area of amelioration is the misalignment of multiple authorisations required from national, provincial and local levels and the associated application processes, which should be streamlined and fast-tracked, particularly in the case of water licences, to facilitate project development. While ameliorations could be achieved on the coordination of all involved institutions, the success of the REIPP procurement programme lies in the inclusion of all stakeholders from government departments, to the regulator and the state-owned utility, to the private sector. Had just one of these vital players been missing from the programme design and consultation, the scheme would undoubtedly have not been such an overwhelming success.

5. MARKET READINESS UNDERLINES THE POSITIVE RESPONSE OF THE PRIVATE SECTOR

The readiness of the domestic market, progressively built over a number of years, has played a critical role in the positive response to the REIPP procurement programme. As such, the existing programme has benefited from previous initiatives and schemes, which contributed to preparing both domestic and international private developers for their entry into the electricity market in South Africa.

Despite failing to take off, early programmes developed by Eskom prepared and tested the market. They created expectations and constituted building blocks of the current achievements (DoE, 2009a; Yelland, 2009). Similarly, the REFIT programme, which had largely resolved the

flaws that characterised previous endeavours, was instrumental to the enthusiastic market response experienced in the REIPP procurement programme. As such, preferred bidders from the first round of the REIPP procurement programme were predominantly developers who prepared to submit projects under the REFIT programme (Eberhard, 2013).

The unexpected change in the procurement framework nevertheless raised concerns over whether there would be further changes, without notice or consultation going forward, i.e. would this remain government's *modus operandi* to deal with IPPs? This became an important consideration in the design of REIPP procurement programme, which institutionalises continual engagement with the private sector. In addition, the DoE provides valuable feedback on the evaluation of unsuccessful bids, allowing project developers to improve the quality of their bids and often resubmit unsuccessful projects in subsequent windows.

Furthermore, the design of the REIPP procurement programme was tailored by the DoE and the NT to the South African context, against the initial prescriptions of international advisors. The scheme was conceived as a rolling programme, and not a once-off exercise, which contributed to creating market certainty, confirmed the readiness of the private sector and encouraged the participation of developers. Adequate intervals between bidding rounds have allowed the DoE the flexibility to respond to design challenges (in order to maximise benefits for the country) as well as issues raised by the private sector. This resulted in growing interest from the private sector, attested to by the increasing number of bids received, from 53 proposals in the first round to 79 and 93 in the second and third rounds respectively (DoE, 2013a). The maximum size for a single project was also adjusted (at 75 MW for solar PV and 100 MW for CSP for example) to match local requirements and characteristics. Well-structured, timely and tailor-made implementation, to match and further build market readiness, has been vital to establish confidence and certainty in the market and prepare all players. Linking the programme design, i.e. demand, with the market response, i.e. supply, has constituted a keystone of the significant interest from the private sector and ultimately the success of the REIPP procurement programme.

6. FAIR, TRANSPARENT, AND CONSISTENT EVALUATION CRITERIA PROVIDE EFFECTIVE GUIDELINES FOR THE MARKET

With regards to the actual implementation of a procurement programme, the publication of transparent, consistent and independently reviewed evaluation criteria has emerged as a critical condition for the private sector. The current evaluation framework, building on the experience of the REFIT policy, ensures a fair and level playing field for all participants. Overall, financiers have commended the programme for the extensive due diligence required of developers in their bids, as well as its clarity and reliability.

The evaluation process of the REIPP procurement programme is composed of two clear-cut phases. In a first pre-qualification stage, bidders must meet a set of minimum criteria. Bidders have to first satisfy certain minimum threshold requirements in six areas: financial; technical; commercial and legal; land; economic development; and environment. They must *inter alia* demonstrate the readiness of the project (land acquisition, funding, technologies, suppliers, ability to meet deadlines, environmental consent, etc.), its financial viability and the arrangements to meet minimum requirements in terms of economic development. As a rule, and in order to secure local participation, the project company must also comprise 40% ownership

participation by a South African entity. Bids meeting all these initial requirements are admitted to the second stage of the auction, where they are assessed on a competitive basis.

TABLE 2: Local content requirements across the first three rounds of the REIPP procurement programme

<i>Bidding rounds/ Technology</i>	<i>Bidding round 1</i>		<i>Bidding Round 2</i>		<i>Bidding Round 3</i>	
<i>Criteria</i>	<i>Threshold</i>	<i>Target</i>	<i>Threshold</i>	<i>Target</i>	<i>Threshold</i>	<i>Target</i>
Onshore wind	25%	45%	25%	60%	40%	65%
Solar PV	35%	50%	35%	60%	45%	65%
CSP without storage	35%	50%	35%	60%	45%	65%
CSP with storage	25%	45%	25%	60%	40%	65%
Biomass	25%	45%	25%	60%	40%	65%
Biogas	25%	45%	25%	60%	40%	65%
Landfill gas	25%	45%	25%	60%	40%	65%
Small hydro	25%	45%	25%	60%	40%	65%

Source: TIPS, based on Campbell, 2012

In the second stage of the evaluation process, bids are reviewed based on weighted criteria, namely 70% for their price offer and 30% for their additional contribution to economic development (i.e. over and above minimum requirements). Within the 30 points (out of 100) which are awarded for economic development, different components are weighted as follows: job creation (25%), local content (25%), ownership (15%), management control (5%), preferential procurement (10%), enterprise development (5%), and socio-economic development (15%) (DoE, 2013b). For each category, points are allocated based on minimum desired targets, over and above minimum thresholds. In a given category, only meeting the minimum threshold translates into zero points, while reaching the target grants the maximum number of points. From the threshold to target, a linear relationship determines the total of points awarded to the bid. TABLE 2 illustrates these thresholds and targets for local content across the first three bidding windows. This system is meant to ensure minimum economic development contributions from project developers while encouraging them to aim for higher targets.

The evaluation mechanism has contributed to creating certainty and ensuring the large participation and the selection of the most competitive bids. The rigour required to meet evaluation criteria and each step in the bidding process, while welcomed by the private sector, has nevertheless proven to be extremely time-consuming and expensive. Key advisors, such as legal experts, are particularly costly for project developers, and can represent up to 15% of project development costs. The need to reduce the cost of meeting all requirements has arisen for IPPs. As such, the design of evaluation criteria, particularly their stringency, is reviewed between every bidding window, factoring market dynamics and local capabilities, notably in terms of local content requirements.

7. FINANCING HINGES ON A BANKABLE POWER PURCHASE AGREEMENT

Not only did the market require clear guidelines for IPPs, but banks needed the assurance that deals could be structured around reasonable and sensible terms and aligned to their investment mandates. The PPA, which is the only source of revenue for developers and for commercial banks financing IPPs, is the cornerstone of the success of any IPP programme. Most notably, the PPA is used to divide and allocate risk between all parties involved. A multitude of risks can be associated with the construction and profitable operation of a renewable energy-based power plant, from foreign exchange, environmental assessments and authorisations, the connection to the transmission and distribution networks, revenue collection, to timely and on-budget plant construction and plant operation. From the point of view of IPPs, and financial institutions backing their projects, the only acceptable risks that project developers can shoulder are linked to building and operating the power plant. All other risks must be mitigated by the state, between the utility, the NT and the DoE.

Appropriate risk allocation was a problem in early procurement schemes as well as the REFIT programme. NERSA's (2009a) initial draft of a PPA in July 2009 was criticised by developers and investors for allocating too much risk to IPPs (Baker, 2012). Developers identified that there was no stabilisation clause for law changes, which posed a realistic risk, as demonstrated in previous procurement programmes which were abandoned without compensation to IPPs (Brodsky, 2010). The PPA did not adequately delimit the buyer of renewable energy. Given government's clear intention to introduce an Independent Systems and Market Operator (ISMO), this did not guard against the consequences of a restructuring of the electricity supply industry. Neither was the Renewable Energy Purchasing Agency (REPA) clearly defined. Consequently, no PPA was signed with Eskom at that stage, as developers and banks insisted on a PPA that would be underwritten by government.

The inability of different stakeholders to agree on how to apportion risk was a key reason for the halt in signing PPAs. The NT was sceptical about providing a PPA that would be underwritten by government, as this would threaten the country's balance sheet. At the same time, the NT recognised that developers were unwilling to enter into a PPA underwritten by Eskom alone (Baker, 2012; Eberhard, 2013).

Under the REIPP procurement programme, the PPA is held for a period of 20 years and in local currency. It allocates risk between the parties based on investment-friendly terms. It guarantees payment of an agreed tariff for power generated on a take-or-pay basis (Stemple, 2013). Essentially, this means that irrespective of power demand by the grid, if the power is generated, the tariff will be paid by Eskom for each kilowatt of energy produced. The tariff is agreed upon the award of the preferred bid status and is indexed to the rate of inflation over the duration of the contract with Eskom.

On the one hand, answering the unwillingness from developers to enter into PPAs underwritten by Eskom, the agreement underwritten by the NT should Eskom default on the terms of the agreement. This includes if Eskom fails to connect renewable energy projects to the grid and if the utility fails to pay for the generated electricity. Under this PPA, Eskom is accountable to the NT and has a vested interest to ensure grid connection. The DoE has also separately contracted with the project companies in order to offer recourse for project investors in the event that Eskom fails to meet its obligations under the PPA. Under a Direct Agreement between the DoE and the lenders of the project, the DoE, underwritten by the NT, commits to taking on payments due to the project company should Eskom default on payments. This governmental backstop has

earned the REIPP procurement programme significant credibility with international investors (Stemple, 2013).

On the other hand, should the project company fail to generate the contracted energy, the lenders are asked to step in and find a replacement project company, if feasible. If not, the allocation for that project could be put up for bid in subsequent rounds. In the case of IPPs defaulting on supplying the agreed amount of electricity due to weather instability or plant degradation or destruction, the liability falls on the IPP and its financiers. In this case, commercial lenders include comprehensive insurance to cover the loss and protect the developer, as part of the project finance. Should there be an inability to generate electricity caused by a fault in the construction of the plant, the liability falls on the contractor as agreed in the Engineering, Procurement and Construction (EPC) contract, the predominant form of construction contract used on large-scale infrastructure projects. Should there be a dispute between IPPs and Eskom over terms not being met in the PPA, the responsibility of mediating the conflict falls squarely on NERSA.

In relation to risk allocation and financing, some modifications are recommended to improve the financial close phase. The financial close process should be revised to prevent delays by matching the signing of the PPA and the Implementation Agreement (between the DoE and the project company) with the date of financial close. While the South African government carries the foreign exchange risk between the bid submission and the signature of the PPA and the Implementation Agreement (allowing IPPs to adjust their price offering for any evolution of the exchange rate in between the two dates), project developers are exposed from the signature to the date of financial close (around one month). The financial close process should also better integrate EPC contractors as initial contractual terms are substantially renegotiated after the award of the preferred bidder status to ensure the best and most competitive offer.

The significance of the PPA is regarded as a crucial factor in the success of the REIPP procurement programme by commercial banks and IPPs. Notably, the allocation of risk between all stakeholders has contributed to a bankable PPA and the success of the programme in attracting significant interest from developers in the sector.

8. GETTING THE PRICE RIGHT IS AS IMPORTANT AS LEARNING HOW TO GET IT RIGHT

A critical factor in establishing a viable programme for renewable energy is the price of the procured electricity. From a government perspective, getting the price right remains one of most challenging tasks. While a feed-in tariff or auction system can be used, the mechanisms of the two systems are inversed and will tend to bring different benefits, particularly in the short term. They differ mostly in terms of pricing approach and procurement decision-making. Whereas a feed-in tariff is based on setting a price per kilowatt-hour for a certain renewable energy technology, competitive bidding relies on capacity allocation, price caps and procurement criteria. In other words, a feed in tariff is based on a fixed price and a varying quantity, while a bidding system is structured around a set quantity and a variable price. On the one hand, the main advantage of an auction system is its ability to drive pricing down through competition. A feed-in tariff, by predetermining prices, exposes government to the risk of getting prices wrong (offering high returns to investors in the case where tariffs are set too high or preventing the development of the sector if tariffs are set too low). On the other hand, with price being the

largest determinant in the evaluation of bids in the auction system, bids are less competitive in terms of economic development (even though minimum economic development criteria are set). Developers tend to meet minimum requirements in terms of local content, favouring the price component of their bid. In a system based on a feed-in tariff, the price is pre-determined and fixed. Provided that the REFIT scheme is not run on a 'first come first serve' basis, developers will tend to compete on other aspects of their projects, such as local content, industrial development, job creation and social development outcomes, to increase their chance of success, and potentially resulting in higher economic development benefits than in the auction system. The logics underlying an auction system and a feed-in tariff are inverted and will tend to bring different benefits, particularly in the short term.

In December 2008, NERSA proposed a set of tariffs regarded as close to international standards. Stakeholders stressed that tariffs were too low to make any renewable energy project viable and called for NERSA to review them in order to create a viable renewable energy market (Baker, 2012). These tariffs and their successive revisions in 2009 and 2011 are presented in TABLE 3. In March 2009, NERSA released revised tariffs fully indexed on inflation designed to cover generation costs plus a real return on equity of 17% (NERSA, 2009b). Unlike the original tariffs, these were generally regarded as generous by developers (Eberhard, 2013). The private sector, through an informal advisory committee notably composed of leading South African banks, played an influential role in their calculation. The March 2009 tariffs were calculated on the assumption of a high interest rate and a high dollar exchange rate, and input from developers who were hoping for a higher return. NERSA stated that the 2009 tariffs were set at these higher than international levels not only to ensure a return on investment for developers, but also to incentivise a small renewable energy market and the long-term commercial viability of the sector (NERSA, 2009c). Nevertheless, developers expressed apprehension around the financial capacity of the South African government to sustain tariffs at these levels over the 20-year lifetime of the PPA (Eberhard, 2013; NERSA, 2011). Such high tariffs would create excessive profits for IPPs and make electricity less affordable for consumers. In turn, this could impede innovation among developers for more cost-cutting, efficient and better quality technologies and result in inefficient operations (Eberhard, 2013).

In March 2011, NERSA unexpectedly released lower feed-in tariffs, arguing that a number of parameters used in 2009, such as exchange rates and the cost of debt, had changed (NERSA, 2011). The new tariffs were in line with international trends in the cost of renewable energy technologies, which had decreased since 2009. There was speculation that the cut may have also been an attempt to trade lower prices for a larger allocation of renewable energy to be included in the IRP 2010. The lower tariffs did not raise concerns among developers, who were reassured by the larger allocation of independent generation capacity (Eberhard, 2013). The March 2011 tariff revisions also signalled a shift in the tariff structure. Notably, the capital component of the tariffs would no longer be fully indexed on inflation. However, NERSA maintained the required real return for equity investors of 17% in its final revision (NERSA, 2011). The successive changes operated by NERSA and the mixed reactions that these triggered illustrate the difficulty of the exercise. As the regulator and the private sector appeared to come to an agreement on feed-in tariffs, the shift to an auction system and the involvement of the DoE and NT changed the procurement design and implementation.

With the transition from a feed-in tariff to an auction system, a pricing mechanism was no longer required. Tariff caps, determined by the DoE, were however used to limit the risk of high prices linked to inter alia a lack of competitive behaviour, particularly for the first bidding

window. While the 2009 REFIT tariffs were initially thought to constitute the upper limit, new price ceilings were published, as summarised in TABLE 3.

TABLE 3: REFIT tariffs (2008–2011) and REIPP price caps (in ZAR/kWh)

<i>Technology</i>	<i>December 2008</i>	<i>March 2009</i>	<i>March 2011</i>	<i>REIPP round 1 price cap</i>	<i>Round 1</i>	<i>Round 2</i>	<i>Round 3</i>
Wind	0.66	1.25	0.94	1.15	1.14	0.89	0.66
CSP	0.61	2.10	1.84	2.85	2.68	2.51	1.46
Solar PV	--	3.94	2.31	2.85	2.75	1.65	0.88
Small hydro	0.74	0.94	0.67	1.03	--	1.03	--
Landfill gas	0.43	0.90	0.54	0.84	--	--	0.84
Biomass	--	--	--	1.07	--	--	1.24

Source: TIPS, based on DoE, 2013a; Greyling, 2012; NERSA, 2011

New developers were not yet ready to put forward competitive bids in the first window, which was utilised in many ways as a round of observation. In addition, no capacity cap (other than the total allocation of the programme) was set in the first round, resulting in a lack of competition and failing to create pressure on the bidders to reduce their price offering. As a result, prices in the first round were very close to the prescribed ceilings. In addition, price caps set too low played a part in the absence of successful projects in the first two rounds for some technologies, such as landfill gas and biomass.

In order to stimulate competition and drive prices down, the maximum generation capacity was capped in the second and third bidding windows and the price ceilings per technology were adjusted (downward in the case of solar PV, CSP and wind). Tariffs have dropped significantly over the three rounds. For example, prices plummeted on average from ZAR 2.75/kWh to 88c/kWh for solar PV, and from ZAR 1.14/kWh to 66c/kWh for wind. This trend essentially resulted from project developers being more experienced and familiar with the programme, an increased maturity of technologies, aggressive (price) competition, reduced price ceiling for some technologies and the allocation of a capacity limit for each technology from the second round onwards. As a result, prices received for the second and third auction rounds were very competitive and even lower than expected (IRENA, 2013b). This success story, resulting from a well-crafted combination of price caps, maximum project size and determined allocation, has been one of the major achievements of the REIPP procurement programme. It might however have occurred as the expense of other policy objectives associated with the government-run scheme.

9. MAXIMISING LOCAL ECONOMIC DEVELOPMENT CENTRES ON UNDERSTANDING THE MULTIPLE OBJECTIVES OF RENEWABLE ENERGY PROCUREMENT

Developing the renewable energy sector in South Africa has aimed to achieve several objectives, from the procurement of additional generation capacity and affordable electricity, to

introducing IPPs to the market, to contributing to green economy and broader economic development goals. While some priorities of the current procurement programme fit perfectly with the overall energy system and the country's policy framework, such as commissioning new generation capacity and contributing to climate change mitigation policies, others appear more conflictual.

The REIPP procurement programme aims to procure affordable renewable energy-based electricity from IPPs. As a nascent industry in South Africa, renewable energy has in the short term required some governmental support, in the form of a price premium. The sustainability of the programme also relies on Eskom's ability to incorporate IPPs into the electricity grid and procure the contracted power from preferred bidders. This has resulted in budgetary implications for the national utility, which have been passed on to consumers through tariff increases. In the medium to long term, the REIPP procurement programme will however effectively contribute to generating affordable electricity, as the levelised cost of renewables technologies decreases. Government also aims to stimulate employment generation and develop an industrial base for the local manufacturing of the inputs required in renewable energy projects. Social development outcomes, primarily through community ownership, have also been included as part of the objectives of the programme. Economic development objectives have focused on ensuring that South Africans participate, own and benefit from renewable energy activities in the country. The structure of the programme has been explicit in facilitating this, although economic development criteria remain secondary to price. In the current auction scheme, the emphasis is put on the price offering (accounting for 70% of the selection process), while developmental outcomes are a smaller part of the weighted criteria (30%). Traditionally, government's procurement has been based on 80–90% price consideration (and 10–20% for developmental objectives such as black economic empowerment). While project developers have committed to job creation, as illustrated in TABLE 4, employment opportunities in the construction and operation of renewable energy-based power plants remain limited. Trade unions have moreover raised concerns about the quality and precarious nature of the jobs generated by the projects, most employment created in the communities surrounding projects being low-skilled security guards.

TABLE 4: Committed job creation for selected technologies over the first three bidding rounds of the REIPP procurement programme

<i>Technologies and jobs categories</i>	<i>Round 1</i>	<i>Round 2</i>	<i>Round 3</i>
Solar PV jobs in 12 person-months	8 498	6 079	9 632
Solar PV jobs per MW capacity	13.4	14.6	21.4
Onshore Wind jobs in 12 person-months	4 271	4 025	11 118
Onshore Wind jobs per MW capacity	6.7	7.1	14.1
CSP jobs in 12 person-months	3 265	2 344	4 812
CSP PV jobs per MW capacity	21.8	46.9	24.1

Source: TIPS, based on DoE, 2013a

In addition, local content requirements, which are leveraged to stimulate employment and develop domestic capacity, involve short-term trade-offs. As the localisation of green

technologies raises the costs of goods, local content requirements can hinder the shift to sustainable development if they are not in line with the country's capacity and capability, and impede the decrease in prices.

TABLE 5: Trend in local content for selected technologies over the first three rounds of the REIPP procurement programme

<i>Technology</i>	<i>Round 1</i>	<i>Round 2</i>	<i>Round 3</i>
Solar PV	29%	48%	54%
Onshore wind	22%	37%	47%
CSP	21%	37%	44%

Source: TIPS, based on DoE, 2013a

Targets and accordingly the local content share of projects have increased over each bid window to encourage further industrialisation and job creation, as illustrated in TABLE 5. However, the industrialisation envisioned as part of the programme remains constrained owing to the limited megawatt capacity allocated per technology (to create sufficient aggregate demand for international companies to set up manufacturing sites in the country) and the small existing manufacturing base.

In the end, the programme could strengthen its impact on economic development, particularly in terms of local manufacturing and community development, by establishing strong monitoring and evaluation frameworks and further capacitating project developers in meeting economic development requirements. Setting the appropriate instruments to create aggregate demand (required for the development of local manufacturing) could further contribute to enabling the type of economic development and skilled employment envisioned for this programme. In other words, sufficient domestic demand per manufactured good must be ensured. This could take the form of an embedded auction scheme, in which manufacturers would first bid for the provision of certain parts and components (to a share or the entirety of the programme) and developers would then be mandated to use successful manufacturers in the design of their projects in order to be eligible to the programme. In the short term, however, this is likely to come at the expense of other policy objectives attached to the programme, such as cost affordability and the transition to a green economy, and trade-offs between various objectives must be carefully considered in order to maximise benefits to the country.

10. CONCLUSION: TAKING THE LESSONS FORWARD

The development of the REIPP procurement programme has a positive illustration of successful policy and regulatory learning processes. The design and implementation of the programme have incorporated the accumulated experience and lessons from previous procurement initiatives as well as the first phases of the existing scheme. The seven key lessons taken from the development and implementation of successive procurement programmes highlight how challenges have been overcome over time. This hinges on the political will and participation of key players as well as the intentional modification of the programme. Moreover, the South African government is continuously working to further improve the mechanism and remove the remaining issues and bottlenecks. As the programme progresses and expands, continual

improvements, to answer arising challenges, will be required to ensure the sustainability of the programme and the sector as a whole.

The programme has constituted a very efficient springboard for the renewable energy industry in the country by stimulating interest and investment, and laying the foundations for further developments. In addition to procuring large-scale renewable energy-based electricity at increasingly competitive prices, the programme has brought some added benefits to the country in the form of job creation, industrial development, community development and local ownership. Ultimately, the success of the REIPP procurement programme has enabled significant changes in the electricity supply industry by facilitating the entry of IPPs into the generation market and the development of renewable energy in the country. The programme represents a cornerstone feature of the creation of a more competitive and efficient electricity supply industry and the transition to a clean and low-carbon energy mix in South Africa.

Going forward, the development of the renewable energy industry outside government-led programmes should also be considered. The current electricity industry in South Africa and the REIPP procurement programme are structured around Eskom as the single buyer of electricity (as per the single-buyer model prevailing in the country). The Independent Systems and Market Operator Bill, which is meant to create a state entity independent of electricity generators and distributors, and serve as a buyer of electricity from generators and seller of power to customers at wholesale level, remained stalled in Parliament as of September 2014. While remaining fully owned by government, an ISMO would contribute to levelling the playing field by eliminating the potential bias created by the current structure in which the DoE procures energy and trading occurs within Eskom (Unlimited Energy, 2013). It would also open the door for customers to choose their suppliers, i.e. Eskom or an IPP, potentially contributing to sustainable development by renewable energy producers being given preference (Abrahams et al., 2013).

The development and success of the REIPP procurement programme carries important findings for other infrastructure programmes in the country. The private sector and government clusters working in infrastructure development have expressed interest in using the model of the REIPP procurement programme to procure other type of infrastructure projects beyond the energy sector (Munshi, 2013). The NT's task team responsible for the private sector financing of infrastructure, which includes personnel from the Department of Public Enterprises, the Presidential Infrastructure Co-ordinating Commission, business and labour unions, have particularly investigated this possibility. This may trigger a significant shift in how the South African government approaches public-private partnerships and open for the door for more efficient, sustainable, job-creating infrastructure procurement in the country.

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IS VERTICAL SEPARATION A PREREQUISITE TO ENHANCING COMPETITION IN THE SOUTH AFRICAN ENERGY INDUSTRY?

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Abstract

Vertical separation is believed to have positive effects in energy sectors where certain phases of the value chain operate under a natural monopoly. This paper discusses whether unbundling is necessary in the South African electricity and piped gas sectors to encourage entry and increase competition based on the experiences of other nations. Despite positive results in some instances, unbundling does not always result in higher levels of competition and benefits for consumers. In fact, in some cases, vertical separation has resulted in energy sectors that are worse off.

Keywords

Vertical integration, electric utilities, electricity markets gas utilities, gas, vertical separation

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1. THE ECONOMICS OF UNBUNDLING

The liberalisation of the energy sector globally was conceived with the idea of benefitting industry and consumers through lower energy prices and ensuring security of supply. Achievement of these benefits relies on the creation of efficient and competitive markets which can offer high quality and varied services at lower prices to energy users. It is generally believed that for markets to evolve and function effectively new market entry should be possible and there should be a sufficient number of participants who are able to compete with each other.

The neoclassical model of perfect competition relies on the assumption of free and costless entry and exit from a market. This means that in a frictionless market, when demand for the product increases a higher market clearing price will result. This higher price acts as a signal to producers operating in the market to increase their production. The additional quantity produced will be sold at a higher margin, allowing for the producers to earn additional revenue in excess of cost. The higher margin and resulting additional revenues act as a signal to potential entrants, indicating that entry into this market is profitable.

This reasoning is dependent on market entry being frictionless and costless. If the market were to have some barrier to entry that adversely influences the profitability of entry (such as the existence of sunk costs, economies of scale or any other cost advantage that makes entry unprofitable), the market-clearing price would no longer serve as a signal indicating the profitability of a market. In this case, the potential entrant would observe a high price in the market but would not enter if entry is costly. Notably, two features remain in the market: (a) the high price charged to consumers and (b) the excess market demand. Thus, the existence of entry barriers impede the ability for the market to clear, and competition may be limited.

This is particularly true in the energy industry, which possesses unique characteristics that make entry difficult. The energy industry may be described as a network industry. Soares and Sarmento (2010:4) define a network industry as an industry with significant economies of scope or scale, and a large degree of vertical and horizontal integration. These are industries that often have a production chain that involves separate activities which provide complementary services used in the production of the final good. There are certain stages in the production chain that cannot viably be duplicated (due to high sunk costs), and thus allowing a single firm to operate in the market ensures low-cost provision of the final good. Consequently, entry in these markets is not frictionless, and even if entry does occur a competitive market outcome may not eventuate.

Vertical separation is thought to be the most efficient way to encourage market entry in network industries (European Federation of Energy Traders, 2000:2). Vertical separation is the structural solution proposed to separate activities that are amenable to competition from those that are not (European Federation of Energy Traders, 2000:2). Numerous arguments in favour of vertical separation have been advanced, the two main ones being that (1) the network operator will have less of an incentive to discriminate between the affiliated and independent generators; and (2) the network operator will have an incentive to invest in transmission capacities (Haucap, 2007:302). Another important argument favouring vertical separation is related to the reduction of regulatory intervention through the development of competition (Soares & Sarmento, 2010:5).

Vertical integration is also associated with efficiencies. Michaels (2004:4) stated that vertical integration is an efficient organisation choice if (i) assets are highly specific to a given use or location, and (ii) they are utilised in activities that must be coordinated. This is particularly

relevant for network industries such as the energy industry, where retaining ownership of the activities to a single entity may allow for greater synergies and consequently an increase in scale and lower-cost production. However, it is generally thought that vertical integration increases entry barriers and that this may be used by the integrated entity against potential competitors (Soares & Sarmiento, 2010:15). Thus, the basic assumption behind calls for vertical separation is that by opening up the market, competition will increase as the barriers to entry are reduced. It is noted that this line of thinking oversimplifies the reform process for network industries. The separation of potentially competitive activities from network activities is just one step in the reform process towards the development of competitive markets. This paper will analyse this simple reading of economics by considering the experience of various countries with the separation of vertical relationships in the electricity and piped gas industries and infer policy implications for South Africa.

Section 2 provides an outline of the South Africa electricity sector, including its structure, and questions whether vertical separation is appropriate given the status of the electricity supply industry. Section 3 discusses the South African piped gas sector and poses the same question regarding calls for vertical separation of the sector. In section 4, the experiences of unbundling in other countries are discussed. Finally, section 5 develops the policy implications of unbundling in the electricity and natural gas sectors in the South African context. The main lesson drawn from this study is that vertical separation does not in itself lead to effective competition and increased entry. Instead, a cautionary approach should be used (which takes account of other market conditions that facilitate competition) when restructuring the regulated energy industries.

2. SOUTH AFRICA'S ELECTRICITY SECTOR

Electricity provision has always been thought of as a natural monopoly (Hertzmark, 2012:2). This is due to the high investment costs as well as an understanding of significant economies of scale that exist in the industry. The generation and supply of electricity has usually occurred through vertically integrated systems. The key stages of the electricity value chain – generation, transmission and distribution – are usually owned and operated by one entity. Until 1990, this meant that the provision of electricity was the domain of state-owned utilities in most countries aside from the United States of America and a few others (Hertzmark, 2012:3). Indeed, this remains the case in South Africa (with Eskom).

2.1 Structure of the electricity sector

Eskom is a state-owned utility generating two-thirds of Africa's electricity and at least 95% of South Africa's electricity (Mali, 2013). It generates electricity from mainly coal-based sources, owns and operates the high voltage transmission grid that covers the country and distributes electricity together with municipalities. Energy-intensive users such as the mining houses purchase electricity directly from Eskom, while residential and commercial customers' access electricity mainly through the municipalities, which act as distribution agents (Steyn, 2003:1).

Electricity Generation

Electricity generation is the production of electricity using renewable and non-renewable raw materials such as coal. In South Africa, 95% of electricity is generated by Eskom, with the remainder provided by independent power producers (IPPs) as well as renewable sources from SADC countries (Eskom report, 2012). There have been key challenges in maintaining the generation capacity of electricity in South Africa. These challenges have been assessed by Steyn (2003), who notes that the inherent trade-off between providing electricity at a low price and ensuring all costs are covered and sufficient returns are made on investments in the sector is considered one of the key issues in electricity generation in South Africa.

Electricity Transmission

Transmission infrastructure is owned and operated by Eskom. Similar to electricity generation, this level of the value chain has suffered from underinvestment, resulting in a maintenance backlog (National Treasury, 2013).

Electricity Distribution

Currently Eskom distributes electricity to key industrial users, which account for 55% of the electricity consumed. The remainder is sold by Eskom to municipalities, who then act as retailers for residential customers and the rest of the commercial sector.

2.2 Electricity supply industry policy context

Entry into the South African electricity supply industry

International experience indicates that the generation of electricity does not exhibit natural monopoly tendencies, while the transmission and distribution segments do. This is due to the competitive nature of the electricity generation stage where alternative energy sources are available. However, the competitive nature of the generation stage is dependent on the minimum efficient scale of the generating plants relative to the market demand for electricity. Generation also does not require the large investments in infrastructure associated with other functions such as transmission. Consequently, energy regulators have advocated greater competition in the generation segment. Recently, however, the delineation of natural monopoly boundaries has shifted significantly as upstream (i.e. generation segment) and downstream (i.e. retail segment) competition has been introduced. Thus, the natural monopoly portion of the value chain refers more to the transmission grid or systems network only. This rethinking of the natural monopoly boundaries has allowed for the introduction of independent power producers (IPPs), in most countries, in the generation segment (Hertzmark, 2012:9).

However, problems with capacity underinvestment in the South African ESI sector still remain. This is regardless of government initiatives to facilitate entry. This leads one to question whether the separation of the vertically integrated entity is a necessary prerequisite to facilitate entry into the South African electricity generation segment. Numerous policy initiatives have been proposed to encourage greater competition in the market in South Africa.

These policy initiatives date as far back as 1998, when the White Paper on the Energy Policy of the Republic of South Africa was released. The initiatives sought to address the issues surrounding entry into the market and capacity. The policy initiatives considered various issues, and in fact some appear repeatedly. Common themes included:

- (i) The encouragement of entry and competition, especially in the generation market.
- (ii) Ensuring security of supply, one of the ways being through a diverse energy mix.
- (iii) The restructuring of Eskom into separate generation and transmission entities.
- (iv) The introduction of an independent systems operator (ISO), which would provide non-discriminatory access to the transmission system.
- (v) Power purchase agreements that would ensure that the electricity generated by IPPs would indeed be bought.

The table below summarises the main policy documents and the main ideas put forward in these documents in relation to the problems facing the electricity supply industry in South Africa.

TABLE 1: Electricity supply industry policy

<i>Policy</i>	<i>Main Highlights</i>
<i>White Paper on the Energy Policy of the Republic of South Africa (1998)</i>	<ul style="list-style-type: none"> • Introduction of IPPs into the generation market. • Market restructuring through a “managed reform process”. • Separation of Eskom’s generation and transmission.
Electricity Pricing Policy of the South African Electricity Supply Industry (2004)	<ul style="list-style-type: none"> • “Multi-market model with a number of generation clusters, IPPs, and an independent Transmission Company and a Transmission Systems Operator”.
Minister Hendricks, Statement on the Energy Regulation bill (2005)	<ul style="list-style-type: none"> • “The Bill provides for non-discriminatory access to the electricity networks. This is to ensure participation of IPPs, including renewable energy producers [...]. The introduction of IPPs has been identified as an opportunity that is in line with that strategy within the electricity sector”.
Energy Security Master Plan – Electricity 2007 – 2035	<ul style="list-style-type: none"> • Introduced competition in the generation sector, greater private sector participation, non-discriminatory access to the transmission system. • Definitive approach to implementing new generation capacity: “Any private participation will be via the IPP mechanism with a power purchase agreement with Eskom”.

Source: *White Paper on the Energy Policy of the Republic of South Africa (1998); Electricity Pricing Policy of the South African Electricity Supply Industry (2004); Minister Hendricks, Statement on the Energy Regulation bill (2005); Energy Security Master Plan – Electricity 2007–2025 (2007).*

Despite the formulation of these policies, entry and competition in the electricity industry had not occurred at a sufficient rate. One of the main hindrances was the lack of regulatory uncertainty regarding exactly how competition would be introduced into the industry. This

certainty was finally provided in 2007 in the Energy Security Master Plan – Electricity 2007 – 2025 (“Master Plan”). The Master Plan proposed the use of power purchase agreements. Power purchase agreements meant that IPPs had certainty that Eskom would purchase their generated capacity and thus ensured a safeguard against the risk they were undertaking in their investment. This regulatory certainty occurred only nine years after the White Paper called for market reforms in the industry. Over this time, investments in generation facilities had stopped, while demand for electricity grew as more households were electrified (which were previously not supplied with electricity). Between 1992 and 2006, the net maximum capacity fluctuated but never increased substantially. On average, the net maximum capacity increased by 0.48% per year in the period 1992–2006. In contrast, the peak demand for electricity grew by an average of 3.19% per annum.

The brief description above highlights policymakers’ thinking over time. Even though the active participation of IPPs was encouraged, the regulatory framework uncertainty regarding how the new generation capacity would enter the market, how this capacity would be procured and the amount of new capacity required effectively meant that there was no private sector generation. Together with the strong opposition by various stakeholders to private sector participation as well as Eskom lobbying against this, the reforms to the market (in terms of unbundling) were not implemented, and the intended competitive outcomes envisaged by the White Paper were not realised. However, over this period, South Africa’s industrial and residential electricity prices were found to be some of the lowest in the world (Thopil & Pouris, 2013:3) and up to 2007 Eskom was still seen as an efficient entity (Eberhard, 2005).

2.3 Supply crisis in South Africa

In January 2008, South Africa began experiencing rolling electricity blackouts. Initially, about 20% of the country’s generating capacity was unavailable. The reserve margin, which is the difference between the maximum available generation capacity and peak demand, fell from 15% in 2001 to 7% in 2007. A reserve margin of at least 20% is required to accommodate planned maintenance and unplanned breakdowns.

The possibility of shortages was expressed by experts up to 10 years prior to the 2008 crisis. In the White Paper (1998), it is stated that one of the challenges in the sector is that, by around 2007, the demand for electricity is projected to exceed generation capacity and that due to the long lead times associated with expanding capacity, strategies should be in place in the medium term.

Electricity regulations published in the New Generation Capacity (2009) provided the much-needed impetus, encouraging new generation capacity following the supply crisis of 2008. These regulations not only specified that a power purchase agreement was needed to facilitate the agreement between IPP generators and the buyer (i.e. Eskom in this case), but also provided for the development of an integrated resource plan (“IRP”) (Pickering, 2011). The IRP regulates the licensing of new generation capacity as well as the cost recovery arising from capacity generated by IPPs. Thus, even from a policy perspective, the discussion on unbundling was limited. Instead, the relevant discussion centred on providing regulatory certainty regarding government’s commitment to private sector participation in electricity generation.

Unbundling seemed to become a focus again in 2011 when the Independent Systems and Market Operator (ISMO) Bill of 2011 was promulgated. The ISMO Bill specified that the ISMO would be a state-owned company that would take on the tasks of both a systems and market operator. As

systems operator, the entity is required to serve a technical purpose and operate or coordinate operation of the transmission system. As a market operator, it acts as a centralised institution that operates the organised market for the commercial exchange for energy (Steyn, 2012:547-549). This would separate the generation and transmission functions of Eskom and ensure that generators would receive access to transmission resources on a fair basis.

2.4 The Renewable Energy Independent Power Producer Procurement Programme (“REIPPPP”)

In August 2011 the Department of Energy introduced a competitive bidding process for IPPs to supply electricity, referred to as the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). According to the Department of Energy (2012), the programme was implemented to achieve the 3 725 megawatts required to ensure the continued uninterrupted supply of electricity. The process involves rounds of bidding for the supply of energy from various renewable sources. The successful bidders then enter into a PPA with Eskom. This ensures that there is certainty that all output generated by successful bidders will be purchased at the price indicated at the time of bidding. This certainty acts to mitigate risk for the IPPs.

There have been three bidding rounds where preferred bidders have totalled in excess of 2 800 megawatts. A fourth round of bidding was expected to start in August 2014 (Eberhard, Kolker & Leigland, 2014:1). The REIPPPP has been successful in offering a transparent and well-designed mechanism for IPP participation in the generation market which provided reasonable profitability. The support of government also played a role in reducing the perceived risk of investing in such a programme. This included the PPAs between IPPs and Eskom being underwritten by the National Treasury. This acts to reassure independent producers who may have considered entering into an agreement solely with Eskom as too much of a risk.

Via the competitive bidding process, successive bidding rounds saw the price of electricity from the various renewable sources decrease. This was achieved by creating competition through limiting the amount of electricity the producers could bid to supply. In some instances price caps were imposed on electricity generated from certain sources so as to prevent prices from being set too high. Competition was also intensified by allowing a large number of bidders in each round.

The process has been successful in encouraging competition in the generation market through a process that assures investors of transparency, profitability and mitigated risks. However, it is felt that for this procurement process to remain sustainable there is a requirement for a formal institution that has built-in institutional capability to ensure the continuation of the process such as an independent system and market operator (Eberhard et al., 2014:1). Also, the total capacity on offer, while in line with IRP 2010-2030, is possibly not enough to address current urgent shortages.

Thus even though projects to expand capacity are currently underway, and IPPs have increased their participation in the generation of electricity, supply is currently below the optimal or desired level. Although the success of the REIPPPP has shown that competition is possible (particularly in the generation section), that alone may not be sufficient to bring about an adequate level of entry and competition in the entire electricity industry.

The question that remains then is whether the vertical separation of Eskom (as envisaged in the ISMO bill) in this context would bring about the desired level of competition and generate sufficient supply to resolve the market issues. The vertical separation of Eskom could bring about greater competition in generation in two ways. Firstly, should Eskom retain no control of the transmission network, there would be a guarantee of access to the transmission grid for independent producers on a fair and non-discriminatory basis. Secondly, if Eskom is not the most efficient firm in the generation market, vertical separation could encourage more entry in generation, as the purchase of electricity to be transmitted could be based on certain criteria such as the lowest price. In this case, a greater proportion of the electricity supplied could be on the basis of a competitive process similar to that observed in the REIPPPP.

3. SOUTH AFRICA'S PIPED GAS SECTOR

Two types of piped gas are used in South Africa: (i) natural piped gas sourced from Mozambique, and (ii) methane-rich gas produced by Sasol Gas Limited (Sasol Gas) in Secunda, Mpumalanga (REF). The use of piped gas in South Africa is relatively low compared to other middle-income countries. This is due to the fact that piped gas is thus far largely limited to industrial applications in South Africa (Melamu, 2011:1).

3.1 Structure of the Piped Gas sector

The functional market for piped gas is categorised as follows: transmission, distribution, reticulation or trading levels.

Transmission refers to the bulk transportation of gas by pipes supplied to a distributor, reticulator, and/or storage company, or any eligible customer.

Distribution refers to the distribution of bulk gas or transportation by pipelines with a general operating pressure of more than 2 bar gauge and less than 15 bar gauge.

Reticulation refers to the division of bulk gas supplied or transported by pipelines with a general operating pressure of no more than 2 bar gauge (Gas Act, 2001).

3.2 Market structure concerns

The gas market is highly concentrated, with Sasol Gas operating as virtually the only supplier and importer of gas in South Africa. Competition in this market is further limited at the distribution and reticulation levels of the value chain. Sasol Gas operates as a gas distributor in Gauteng, KwaZulu-Natal, North West and Mpumalanga. However, Sasol Gas also operates as a gas supplier for reticulators such as Spring Lights, NOVO Energy and Egoli Gas, which then resell this gas to their customers.

In the consent order agreement between the Competition Commission (the Commission) and Egoli Gas (Pty) Ltd (Egoli Gas), the Competition Tribunal (the Tribunal) noted that the Gas Act specifies that the distinguishing feature between a distributor and reticulators is the general operating pressure of pipelines. The difference between a gas distributor and a gas reticulator meant that, technically, Sasol Gas (as a distributor) can operate as a supplier and competitor with the downstream participants (reticulators) in the piped gas sector, as it can compete for

the same set of customers serviced by gas reticulators. Further, this type of relationship may be construed to further impede downstream competition in the domestic piped gas sector.

Indeed, the vertical integration and concentrated nature of the piped gas sector has been noted to limit downstream competition in the domestic market (NERSA, 2012:19). The Commission found evidence of (a) market allocation and price-fixing arrangements with Spring Lights Gas (Pty) Ltd (Spring Lights) relating to piped gas in the Durban South area; and (b) market-allocation arrangements with Egoli Gas with regard to piped gas in the Johannesburg area.

In both cases, the respondents operate as reticulators of piped gas in the designated areas, with Sasol Gas as their exclusive supplier. However, both respondents entered into gas supply arrangements with Sasol Gas that restrained the respondents from supplying gas purchased from Sasol Gas to any customer other than the designated customers allocated to it and prevented them from supplying gas to customers for consumption outside the allocated supply areas. Both parties were found to have contravened section 4(1)(b)(ii) of the Competition Act (1998), which prohibits firms in a horizontal relationship from engaging in conduct that amounts to dividing markets by allocating customers, suppliers, territories, or specific types of goods or service.

Egoli Gas stated that the rationale for entering into such an agreement with Sasol Gas was due to the “flux in the regulatory framework for piped gas”. Up until 2000, Egoli Gas was granted an exclusive licence to supply piped gas to customers within the municipal boundary of the Greater Johannesburg area, which excluded Roodepoort, Randburg and Sandton. This licence did not specify conditions on the operating pressure of the pipelines, as the Gas Act had not yet come into existence. The change in the regulatory regime following the Gas Act (2001) allowed Sasol Gas to obtain licences from NERSA to operate as a gas distributor and engage in gas-trading activities in various areas of Gauteng, Free State and Mpumalanga. Certain of the areas in which Sasol Gas was granted distribution and trading licences are located within the area of the exclusive licence granted to Egoli Gas. This meant that Sasol Gas and Egoli Gas were potential competitors in the geographic areas in which both had licences to operate as a distributor (in the case of Sasol Gas) or a reticulator (in the case of Egoli Gas). The threat of competition is even more real when you consider that as “an end customer it can be supplied equipment (at cost) that is used to reduce the pressure of the gas supplied from above 2 bar gauge to below 2 bar gauge and vice versa” (Competition Tribunal, case no: 016402; para 2.3). A similar situation ensued in the Durban South area between Sasol Gas and Spring Lights.

The most salient message learnt from the Egoli Gas and Spring Lights cases is that there clearly can be competitive rivalry between the vertically integrated supplier and its downstream competitors. In these circumstances, it can be thought that vertically separating Sasol Gas to allow for greater competition upstream may give rise to positive benefits to the competitive structure of this sector. This line of thought was expressed in the workshops held by NERSA with stakeholders in the piped gas sector, where several stakeholders opined that in order for competitors to be afforded an opportunity to access the pipeline, the pipeline operator should not operate as a gas trader in the same market (NERSA, 2012:19).

However, this line of thinking omits the fact that the gas industry in South Africa is still in its infancy. The fact that there are 67 production licence permits issued or under consideration for onshore exploration and production activities attests to the fact that the industry is in its early stages of development (PWC, 2012:30).

NERSA’s assessment of the impact of the vertical nature of this industry concluded that in the context of a “nascent industry”, market growth is dependent on (a) the exploration and

importation of gas, and (b) the construction of infrastructure to support the industry. NERSA further stated that the vertical separation of this industry at this early stage may serve as an additional hurdle to the development of the industry (NERSA, 2012:20).

3.3 Vertical separation and competition in the piped gas sector

Even though the South African market is vertically integrated and competition concerns have arisen due to this, there are policy measures in place to further develop competition in the market. Kate et al. (2013:32) outline the necessary conditions which need to be in place for competition to develop in the market. The figure below provides an illustrated example of the envisaged approach.

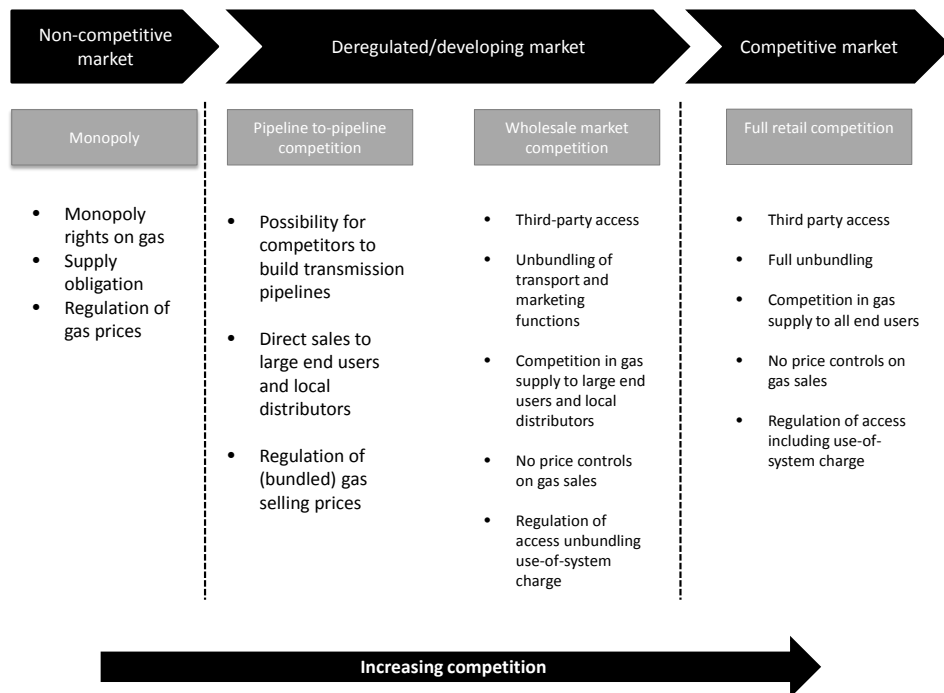


FIGURE 2: Framework to increase competition in the natural gas market

Source: Kate et al. (2013:33)

As displayed above, as part of a developing market, introducing pipeline-to-pipeline competition and wholesale market competition are the two necessary requirements in the development of a competitive market. Analysing the current legal framework in South Africa's piped gas sector shows that there are measures in place which satisfy the requirements above.

In terms of pipeline-to-pipeline competition, the possibility for competitors to build transmission pipelines may be limited, as the piped gas sector is firstly heavily dependent on foreign supply, while the demand for piped gas in the market is of such a nature that it is dependent on secured supply. Thus a circular problem occurs where in order for transmission competition to exist, suppliers have to make the necessary gas infrastructure investments. However, this infrastructure is not invested in when supply for piped gas is uncertain. Concerns revolving around supply uncertainty are the impeding factor to the required development of

distribution and transmission infrastructure in South Africa (PWC, 2012). This is because once the infrastructure is in place, industrial, commercial and domestic users may be more willing to consider converting to gas-fired energy sources.

With regard to wholesale market competition, NERSA is mandated by the Gas Act (2001) to set the maximum prices for all classes of customers of piped gas. However, NERSA is required first to determine that there is “inadequate competition as contemplated in Chapters 2 and 3 of the Competition Act, 1998”. Currently, NERSA sets the maximum price of gas on the basis of a basket of alternative fuels in South Africa. Tariff guidelines applicable to transmission, storage and reticulation of gas are also available (Mondliwa & Roberts, 2014:35).

Thus there are features of the South African piped gas sector that when measured against the Kate et al. (2013) framework are indicative of a market progressing towards a competitive situation. Moreover, the existence of an energy regulator that effectively monitors and sets the rules for the market is further evidence of an environment that has actively created a foundation where competition may develop. It can be argued that once infrastructure is established, increased competitive rivalry could ensue. However, in order for infrastructure to be developed, adequate supply of piped gas is required. The piped gas sector is currently in its infancy. This then poses the question whether the vertical separation of the distribution and transmission functions from generation would facilitate competition in a market operating at this stage.

4. UNBUNDLING AND ENTRY – THE INTERNATIONAL EXPERIENCE

The international experience with unbundling as a factor facilitating competition in electricity and gas markets has yielded mixed results. Notably, the evidence from Europe suggests that in order for a wholesale market to be competitive, potential entrants into the generation level of a network industry require access to the transmission system. This is thought to be best achieved by ownership separation of the transmission level from generation activities.

However, the experience in California and Chile suggests that the mere separation of the transmission system from generation does not always lead to outcomes encouraging entry into the market. This indicates that for unbundling to facilitate entry and increase competition, other market conditions need to be met. The case studies used in this analysis highlight the fact that one should not consider unbundling as the panacea to foster competition in regulated network industries.

4.1 Vertical separation as an ‘entry facilitator’?

The United Kingdom (UK) provides an example of the benefits and disadvantages of restructuring the electricity sector. The UK is divided into three distinct regions: England and Wales, Scotland and Northern Ireland. Each region implemented a different market reform process. England and Wales vertically separated the ownership of their generating companies from the transmission system. Northern Ireland adopted the Single Buyer Model, where the transmission and distribution company, Northern Ireland Electricity (NIE), held long-term power purchase agreements (PPAs) with the three generating companies operating in England and Wales. Scotland did not undergo any structural reforms to its electricity market. Instead, the two vertically integrated incumbents were privately owned.

Cost-benefit analyses of these three different reform models have been conducted by Newbery and Pollit (1997) together with Pollit (1998). These analyses show that even though a wholesale electricity market was created in England and Wales, the gains of unbundling remained with the generating companies. This is because for the first five years after reforms there was little entry at the generation level, and consumers still continued to face high electricity prices. It was only after additional regulatory intervention, in the form of forced divestment of capacity, was imposed that the market concentration in the generation level decreased.

Consumers in Northern Ireland and Scotland faced higher electricity prices than those in England and Wales. The lack of competitive pressure meant that by 2000 prices in Scotland were approximately 5% higher than those in England and, notably, prices in Northern Ireland also remained high despite the use of long-term PPAs. Thus, Northern Ireland's use of long-term PPAs had limited impact on the market. It was only when unbundling was implemented together with additional regulatory measures that a competitive outcome arose (this outcome was indicated by the fall in market concentration and retail prices). This suggests that unbundling is a necessary step in the reform process, but is not sufficient on its own to guarantee that competition in a regulated network industry will arise.

The experience in the EU also indicates that the unbundling regime adopted is also important to consider when analysing the impact on market entry. The EC implemented three policy directives with various unbundling approaches that have had mixed results with facilitating entry (Eskenazi, 2012).

- The EC first introduced the 1996/92/CE Directive, which allowed for the accounting unbundling (i.e. accounts separation) of the generation and retail stages of the electricity sector. Third-party operators experienced access problems under this regime when the vertically integrated entities favoured the affiliated downstream firm by granting that firm preferential access to the transmission grid.
- The 2003/54/CE Directive promulgated the regulation of third-party access and established mandatory national regulatory bodies. This Directive replaced accounting unbundling with legal unbundling, where the generating companies would retain ownership of their transmission grid assets, but the transmission company would be legally independent of generation (with its own autonomous management and under strict regulatory control).
- The EC implemented the 2009/72/CE Directive following the findings of the EC Sector Inquiry into the electricity and gas sectors. The 2009/72/CE Directive broadened the previous sector legislation by proposing the 'effective separation of networks from activities of generation and supply'. Two ownership unbundling models were originally proposed by the EC:
 - Full ownership unbundling (FOU) – networks are not controlled or majority-owned by supply companies.
 - Independent system operator (ISO) – the transmission network remains under the ownership of the supply companies, while the operation and control of the supply business is transferred to an independent systems operator.

The 2009/72/CE Directive was met with strong opposition led by Germany and France (EC, 2008). The opposing parties argued that increased competition was possible without implementing an ISO model, especially if sufficient safeguards were in place to monitor the independence, management and investment decisions of the supply companies (Massoni, 2003). The opposing parties argued against implementing the FOU model, stating that 'no correlation can be found

between implementing ownership unbundling and the levels of prices and investment decisions which are determined by other factors' (Euractiv, 2008).

Numerous studies that analyse the impact of the FOU model as opposed to the ITO model have been conducted. Zachmann (2007) conducted an econometric comparison of the responsiveness of electricity prices to cost changes in the UK (FOU) and Germany (ITO). The study found that electricity prices in the UK were more responsive to short-run cost factors as opposed to those in Germany, suggesting that competition in the German electricity market may be limited. Further, the experience in France with the ITO model implemented in the gas and electricity sectors demonstrates the disadvantages of this form of unbundling. Both sectors remain relatively concentrated at the generation level, while the transmission capacity is limited (EC French energy market review, 2011). On the other hand, Gugler et al. (2013) came to a negative conclusion concerning the dynamic effects of ownership unbundling on the transmission grid. In their cross-country study, they found that unbundling of generation from the grid stages reduces the aggregate investment rate in the sector by at least 10%.

These examples demonstrate that introducing competition in the market through vertical separation of generation from other functions in the production chain is a complex and uncertain process, as numerous other market forces are also at play. Thus, given these uncertainties, deeming vertical separation to be the panacea for market reforms is a misjudgement.

The pitfalls of vertical separation

The California case is usually cited as an example of the risks associated with restructuring. California began its reforms in its electricity sector at a time when the market faced high production costs and high retail prices. The regulatory intervention implemented by authorities in the sector merely exacerbated the problems which existed in the industry. Following the vertical separation of the three investor-owned utilities (IOUs), average wholesale electricity prices remained three times higher than those of the previous year (Newbery, 2001:11), and rolling blackouts of electricity started together with stage 3 alerts (these alerts occur when reserve margins fall below 1.5%. When this happens, disconnection is essential to protect system integrity). The implementation of price caps in response to this had little effect on the market apart from the IOUs exporting to neighbouring states, while the third-party generators stopped their supply to the domestic market (presumably, for fear of not being paid).

Several reasons for this outcome have been put forward by commentators (see Borenstein, 2001 and Newbery, 2001). These range from a poor market design that allowed for market manipulation when capacity was already constrained prior to restructuring, as well as the fact that distribution companies were dissuaded from signing long-term contracts for electricity (Newbery, 2001:12). The main lessons that can be drawn from California's experience with electricity reforms are:

- Capacity-constrained markets (where the reserve margin falls below 10%) are likely to have volatile and high prices (Newbery, 2001:12). These high prices are likely to have little effect on demand (as electricity demand is largely unresponsive to price), but contribute to creating increasing and significant market power for the suppliers.
- Transitioning from a vertically integrated utility to a separated entity is said to introduce price risks between generators and suppliers. High wholesale prices provide generators with upstream profits that are matched by the losses of downstream suppliers, who have to buy

at the high wholesale prices and sell at predetermined retail prices. This could be avoided with hedging contracts between generators and suppliers.

The California example highlights that applying a “cut and paste” approach to the restructuring of electricity markets without taking cognisance of the intrinsic factors impacting the functioning of the local market leads to an outcome that calls into question the conventional wisdom that unbundling is a prerequisite to facilitating entry.

Chile was among the first countries to reform its electricity market. By 1990, the electricity industry had undergone extensive privatisation and the generation, transmission and distribution services were partially unbundled (USITC, 2000:18–1). Under this legislation the transmission network was under regulation. Analysis by the Inter-American Development Bank (IADB) found that the inadequate regulation of the transmission network hampers competition in generation, as private sector generators will be unfairly dispatched on the transmission grid (IADB, 2006:75). At the time of the reforms, Chile’s market structure consisted of two state-owned entities, Endesa and Chilectra (IADB, 2006:76). Endesa retained the ownership and operation of the main transmission system, which was managed by Transelec, a subsidiary of Endesa, while Chilectra’s generation and distribution activities were horizontally and vertically separated (USITC, 2000:18–2).

This situation led to the National Economic Prosecutor filing a request with the Resolution Commission against Transelec, Chilectra, Endesa and Enersis to further unbundle the generation, transmission and distribution businesses (Beato & Laffont, 2002:74). The prosecutor maintained that competition at the generation level would occur when the transmission system did not limit entry to or operating in the upstream generation level.

The companies gave several reasons why vertical separation was both unnecessary and unwarranted for the Chilean electricity sector. They argued that as the industry and its prices were regulated, there were sufficient safeguards in place to prevent an abuse of dominance. Further, they also argued that the arrival of natural gas from Argentina would allow for more power plants to be built and would effectively facilitate the entry of new players upstream (Beato & Laffont, 2002:76–78). This would limit the importance of the current transmission network.

The Resolution Commission found that the prosecutor had not sufficiently proven that the companies charged had abused their market power. Even after its own investigation of the industry, the Resolution Commission did not find any evidence that the separation of companies in the sector was warranted. In fact, the Resolution Commission argued that the current ownership structure was not a significant factor in adversely affecting current or potential competition.

This example also shows that one needs to take note of the dynamic nature of the market, that entry may occur naturally through market developments (such as the importation of gas from another country) and that these market developments may also facilitate a competitive outcome.

5. POLICY IMPLICATIONS FOR SOUTH AFRICA

The examples above demonstrate mixed experiences with regard to the effects of unbundling as an ‘entry facilitator’ into the gas and electricity markets. The evidence from Europe and the

United Kingdom suggests that in order for a wholesale market to be competitive, potential entrants require access to the transmission system. This is thought to be best achieved by ownership separation of transmission from generation.

However, the experience in California and Chile suggest that the mere separation of the transmission system from generation does not always lead to outcomes encouraging entry into the market. This suggests that for unbundling to facilitate increased competition and entry, other conditions must be met. Further, this indicates that the timing of reform steps is important when assessing the impact of unbundling on competition. In particular, when drawing lessons from these international experiences, it is important to bear in mind whether the unbundling of transmission systems occurred prior to privatisation or whether unbundling took place before the introduction of incentive regulation. Thus one cannot merely consider ownership unbundling as the panacea of competition matters in regulated energy industries. All examples used above suggest that appropriate regulation. (Note: our intention with the paper was to provide considerations for policy purposes, as such we were not focused on concluding on specific types of regulation that would be appropriate) of these markets is required. Without it, there are serious risks that the benefits of unbundling may be lost and hence the reform process may be undermined.

The international experience also shows that creating an environment that is conducive to completion is not solely determined by the market structure of the industry. Factors such as incentive regulation, regulatory certainty and the stage of development of the industry are important to consider as well.

A policy recommendation arising from this analysis is that the regulatory authorities in these industries must bear in mind the level of development of the industry in question. This is to ensure that restructuring should favour the natural evolution of the electricity and gas industries. Less strenuous reforms (such as legal unbundling) may be appropriate in the early development stages of the industry, and through a gradual process reforms will change as the industry changes.

This is particularly relevant for the South African piped gas industry, which is in its early stages of development. As growth in the industry is currently dependent on (i) exploration and (ii) construction of infrastructure to support the industry, vertical separation may require further infrastructure investment to be undertaken by individual market participants. Given the scale requirements of this industry, potential entrants may find that entry is either not financially viable or it may be that entry is viable only if consumers are to pay high prices. On this basis, it may be favourable for the current market structure to remain in place until the industry is developed enough for unbundling to take place and also be beneficial.

With regard to the electricity sector, ensuring regulatory certainty from government in terms of its commitment to private sector generation is one of the key issues which needs to be addressed. This is particularly important to consider prior to the start of the vertical unbundling process as envisaged by the ISMO Bill. As the sector is in a precarious position with regard its low generation capacity and unmet demand for electricity, increased generation capacity is required for the sector to function efficiently.

This means that increasing the incentive to invest in generation and transmission capacity should be a key requirement under the new dispensation. However, implementing an unbundling regime with the current capacity constraints in the market is likely to lead to perverse effects on market prices. Thus as a policy recommendation to consider in South Africa, the capacity constraints of the market

should be addressed prior to implementing the unbundling regime stipulated in the ISMO Bill. The REIPPPP has illustrated that where regulatory certainty exists PPAs can be used as an effective tool to encourage entry and competition in the generation sector. This may be helpful in addressing the capacity issues outlined earlier. Perhaps the effective use of longer-term PPAs should be undertaken first, as this will allow for more private sector generators to enter the market.

However, it is important to note that other areas of the supply chain need to be well equipped to accommodate the increased generation capacity. It has been noted that in the case of the REIPPPP, transmission planning was not synchronised with the award of generation projects. This has created a fear that some of the awarded projects may not be able to connect to the grid as planned (Eberhard, Kolker & Leigland, 2014:35). This further strengthens the case for having an ISO as one of the reforms to be used to achieve the desired outcome in the electricity industry.

Further, should unbundling as envisaged by the ISMO Bill take place, the following conditions (in line with those provided by Newbery (2001:7-8) for a successful transition should be considered:

- Potential suppliers must have fair and non-discriminatory access to the transmission system so that the wholesale market is competitive.
- Network infrastructure should be adequate and reliable, generation capacity should be adequate and there should be security of supply of primary fuels (such as coal in the case of South Africa).
- The markets of the liberalised utilities require appropriate regulation.

The first two conditions are repeatedly addressed in the policy and the literature; however, the third condition may be especially critical in the South African case. Even after unbundling, Eskom may possess market power at any level of the supply chain in which it competes. Thus 'the potentially competitive elements still need regulatory oversight to ensure that markets are not manipulated nor market power abused' (Newbery, 2001:8).

As transitioning from a vertically integrated utility to a separated entity is said to introduce price risks between generators and suppliers, hedging contracts between the two parties should be introduced to mitigate against this (Newbery, 2001:13). The use of hedging contracts will help to insure against any perverse effects the unbundling process will have on electricity prices. As the ISMO Bill currently stands, no protective measure against this price effect is stipulated. Therefore a policy recommendation would be to include measures in the policy framework which would ensure that consumers are protected against these price risks.

It also important that the type of vertical separation as envisaged by the ISMO Bill is carefully considered and clearly articulated. As seen in the case of the 2003/54/CE Directive, a "softer" form of separation like accounts separation still left access to the transmission grid under the control of an entity that also competed in the downstream market through an affiliated firm. This created incentives to discriminate against other downstream firms by providing the affiliated downstream firm with preferential access to the transmission grid. Thus, in this case it would be critical to clearly define the extent of the control Eskom would have (if any), especially of the transmission grid, should the vertical separation of Eskom occur.

As illustrated by the international experience, this paper shows that unbundling is just one step in the reform process. On its own, it is unlikely to have a significant effect on entry. However, unbundling together with appropriate incentive regulatory measures and the use of efficient long-term PPAs are tools which are required to further facilitate entry into regulated network industries. This paper has also highlighted that unbundling should be approached with caution.

The experience in more established markets in the world is testament to this. As South Africa is in the process of establishing an unbundling regime, the lessons learnt in other jurisdictions should be borne in mind by policymakers. Instead of applying a “cut and paste” approach to unbundling, local conditions and factors which affect the market should be taken into account.

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FUELLING THE ECONOMY: A CRITICAL REVIEW OF LIQUID FUELS REGULATION IN SOUTH AFRICA

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Abstract

This article reviews the regulation of liquid fuels in South Africa over the past decade. We first briefly assess the regulatory regime and how the regulatory functions have been carried out. We then consider the influence of security of supply concerns on regulation and highlight that it has favoured local refining interests rather simply ensuring supply to local fuel customers. The record of price regulation at different levels from refinery to retail is assessed, revealing the margins which had been allowed through the way in which the import parity price calculation had been done, which set prices that were higher than actual import prices would have been. The article further highlights how regulation has failed to take into account the special position of Sasol, notwithstanding the recommendations of the Windfall Tax Task Team and the reasons why the recommendations were not adopted by National Treasury based on expectations of investment. The case of natural gas provides a contrast, being subject to a recent regulatory framework, and we consider whether learnings from regulation in other parts of the value chain have been used in setting out new regulations.

Keywords

Regulation, market power, fuel, natural gas

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1. INTRODUCTION

Economic regulation has three main rationales. First, where there is entrenched market power – most obviously where there are natural monopolies – economic regulation may be adopted to constrain the exercise of this power. Second, regulation of access may be used to place requirements on participants through licensing. Third, regulation may be used to ensure socio-economic objectives such as universal service are met.

In South Africa, as in other countries, regulation is in the main about regulating the ‘natural monopoly’ parts of the economy that were state-owned and have been privatised. In some cases, the functions of economic regulation are undertaken by government departments. The regulatory mandate and functions over the South African fuel industry largely lie with the Department of Energy, while regulation of piped gas and of petroleum pipelines is the mandate of the National Energy Regulator of South Africa, Nersa. In the case of liquid fuel, the industry is subject to scale economies, and there has been substantial state support and prior ownership of the largest producer, Sasol. These factors need to be considered alongside the pipeline network, owned by the transport utility, Transnet.

The role of economic regulation can be understood in terms of prices and access (Viscusi et al., 2000). Prices are controlled or capped because otherwise they would be set at monopoly levels. Economic regulation can also require access to be provided to essential facilities or inputs which cannot easily be replicated and are controlled by the incumbent. This is, however, a relatively narrow and static delineation of the scope of regulation, as it is focused on existing infrastructure and static considerations of efficiency. The case for economic regulation is also premised on the existence of significant market failure resulting from economies of scale and scope in production, from information imperfections in market transactions, from the existence of incomplete markets and externalities and from resulting income and wealth distribution effects (Jalilian et al., 2006). This implies that economic regulation is much more challenging in an industrialising economy where major investments are required yet institutional capacity is relatively weak. Influencing the structure of incentives, including prices, is also a critical part of industrial policy to alter the development path (see, for example, Amsden, 2003) and regulation is part of these choices.

Throughout its history the liquid fuels industry in South Africa has been granted a special status justified either through the nature of the retail petrol industry or through its strategic status post World War II. The special status led to the exemption from competition law, a range of formal and informal institutions of cooperation between industry participants and with government, and regulation to keep the status quo. The history of regulation in the refining and marketing of petrochemical products entrenched a long-standing culture of coordinated behaviour between oil companies. As a consequence the heavily supported liquid fuels value chain has been plagued by a series of anti-competitive conduct not only in the liquid fuel markets but in related product markets (Das Nair et al., 2012).

In an effort to ensure security of supply under apartheid the government of the day initially allowed the refining industry to regulate the market and control price and entry and exit. Even when the regulatory role was institutionalised it was designed to incentivise the oil companies to continue to produce in South Africa and to ensure the success of the synthetic fuel industry. Consequently, fuel regulation has generally been in favour of the industry players (Rustomjee et al., 2007).

This article reviews the regulation of liquid fuels in South Africa over the past decade at two levels. We first briefly describe the regulatory regime and how the regulatory functions have been carried out. Section 2 considers the question of security of supply and regulation, including the impact on investment and supply decisions at the level of refining, and the impact on linkages between fuel refining and chemicals production. Section 3 examines the role of regulation in terms of constraining the exertion of market power. Section 4 assesses the regulation of gas prices in light of what can be learned from the review of regulation of liquid fuels. Section 5 concludes.

1.1 Overview of liquid fuel regulation

Any assessment of the regulation system must be cognisant of what the regulation is aiming to achieve. According to the DoE, the objectives of fuel industry regulation are to: ensure internationally competitive pricing of petroleum products that will enable investment into the sector and attract new entrants, develop, maintain and implement the basic fuel pricing system, a Regulatory Accounting System and fixed retail margin for illuminating paraffin (DOE, 2012). This is in line with the objectives of the Petroleum Products Act of 1977 as amended in 2003 and 2005:

- promoting an efficient manufacturing, wholesaling and retailing petroleum industry;
- facilitating an environment conducive to efficient and commercially justifiable investment;
- creating employment opportunities and developing small business in the petroleum sector;
- ensuring the countrywide availability of petroleum products at competitive prices; and
- promoting access to affordable petroleum products by low-income consumers for household use.

The DoE regulates the fuel industry by controlling prices and access to the market. The DoE further controls the importation and exportation of crude oil, petroleum products and blending components, together with ITAC. Participation in the industry is controlled through the licensing of all activities in the industry, including wholesale, retail, operation of pipelines and storage facilities. Petroleum products' specifications and standards are also set by the DoE.

Liquid fuels prices are regulated at various levels, although not all prices are regulated and some are maximum prices. The DoE sets the licensing requirements and regulations pertaining to: the importation and exportation of crude oil, petroleum products and blending components; operation of storage facilities and loading facilities, including approval of tariff structures; manufacturing of petroleum products; wholesale of fuels, including the maximum price of diesel and illuminating paraffin; retailing of fuels, including the pump price of petrol by grade and location and the maximum price for LPG and illuminating paraffin; recovery of transport costs; retail and wholesale margins; and petroleum products specifications and standards. The petroleum pipelines tariffs are controlled by the National Energy Regulator of South Africa (Nersa) and the fuel levy is determined by National Treasury.

The structure of petrol price has remained essentially the same since the 1950s consisting of:

- the basic fuel price (BFP) (cost of importing fuel), transport component (cost of transporting fuel to a specific location in SA);

- tax component (various government levies); a wholesale margin (MPAR) – oil company margin;
- a retail margin – dealer margin and other components that have varied over time.

The biggest component of the petrol pump price is the basic fuel price (BFP) (TABLE 1).

TABLE 1: Petrol Pump Price components

<i>Component</i>	<i>Contribution (c/l)</i>	<i>%</i>
BFP	753.55	58.1%
Government duties and levies	312.65	24.1%
Zone differential	28.90	2.2%
Industry margin	31.00	2.4%
Service differential	28.80	2.2%
Dealer margin	139.10	10.7%
Incremental inland transport recovery levy	3.00	0.2%

Source: SAPIA 2013 Annual Report

Prior to the development of the indigenous refining industry, regulation of the retail fuel sector was carried out by the industry, which controlled the price as well as entry into the market. The state took over the price-setting process for petrol sales as well as retail and wholesale margins in 1946. Between 1946 and 1970 the state began to develop the indigenous fuel industry, regulated refinery gate, wholesale and retail prices and restricted imports (Price Control Act 1960) (Marquard, 2006). The development of the synthetic fuel industry in the 1950s and the beginning of the oil embargo in 1970 required modifications to regulation systems to accommodate the state's oil security strategy (Petroleum Act 1977).

In 1954 government secured the conclusion of agreements known as the Sasol Supply Agreements or the Main Supply Agreement (MSA) between Sasol and the other oil companies. These agreements effectively constituted a government-brokered and -sanctioned form of private regulation, obliging the oil companies to service their marketing requirements in the inland region by purchasing all of Sasol's production volumes pro-rata to their market shares (Competition Commission, 2012).

The price of these volumes was based on the 'in-bond landed cost' ('IBLC'), calculated on the basis of an import parity price for fuel products, that is, a price in line with the notional costs of importing fuel. The essence of the MSA was that the oil companies would purchase Sasol's production of petroleum products up to certain maximum volumes from defined sources of supply, and Sasol would not market petroleum products save for certain exceptions. The petroleum industry was also exempted from the competition law between 1988 and 2001.

There have been a number of reviews of liquid fuels regulation, including the Windfall Tax Task Team (Rustomjee et al., 2007), Moerane Inquiry (2005), and Liquid Fuels Industry Task Team (1994). Although these reviews have had different focuses, one can observe common threads

regarding their analysis of liquid fuels regulation in South Africa. The reviews have advocated for re-regulation of the fuel industry, noting that it often advantaged the industry insiders or oil majors.

2. SECURITY OF SUPPLY AND REGULATORY CHALLENGES

Liquid fuel has been viewed as a strategic necessity in South Africa given its importance to the economy. However, while obviously a critical product for economic activity it is also readily transported internationally. Under apartheid there was a rationale for increasing local production to guard against the possible effect of sanctions; however, if the feedstock (crude oil) is still imported then it does not reduce dependence on international sources. There is only a foreign exchange effect, as imports of crude oil are cheaper than those of refined product.

It is thus important to ask what security of supply means now, and how it relates to investment and increased participation.

Security of supply can be understood in non-economic terms and as an objective of energy policy. However, it can also be understood in terms of the difference between the private returns (that is, the returns to the individual producer) and the wider effect on the economy from a supply disruption. The producer simply loses sales, while the knock-on effect which is external to the producer is much greater because of the indispensable nature of fuel to much economic activity.

The difference between the private and social return implies that the private agent will under-invest. This is the case whether we are considering production capacity or storage and distribution capabilities. Why would a private agent invest in capacity that is unused 95% of the time, even though the wider economic cost of not having the capacity 5% of the time is huge?

It bears emphasising that this is not about refining capacity but about adequate sourcing of refined product and its distribution. Even if the country is self-sufficient in the capacity to make refined products, this capacity will be shut down for maintenance and when there are faults. It is also dependent on feedstock such as crude oil, which may be subject to supply disruptions or problems with transport infrastructure. Ensuring stocks of refined product to guard against unexpected disruptions would be equally necessary whether the country imports refined product or relies on imported crude for local refining. Here investment is necessary across the country in storage and transport infrastructure, from bulk storage tanks at the coast to pipelines and a network of storage facilities stretching inland. This needs to have the capacity to meet peak demand and for investments to be planned and implemented in advance of the demand growth in the country.

One approach is central coordination together with restricted licensing of access to ensure that those using it comply with the requirements of meeting demand. Another approach is to allow for rivalry between competing firms to anticipate demand, market products and craft service offerings for different customer requirements.

A distinction can be drawn between critical infrastructure, such as long-distance pipelines requiring substantial capital expenditure and advanced planning, and local depots, storage and retail facilities, which can easily be erected by different suppliers. For the first group of infrastructure there is stronger argument for coordination and regulation. For the second, access by a wider set of possible wholesale and retailers will likely increase the effectiveness of

the network by bringing in traders and retailers who are closer to customers. This relies on ensuring access to the critical infrastructure on a relatively open basis and not restricting it to the select 'insiders' who have adopted the mantle of custodians of fuel supply.

The democratic state also faces the challenge of increasing economic participation, while not being subject to the same constraints regarding international supply as the apartheid state (of sanctions). In recent years there has been a growth of new suppliers and retailers. These include suppliers linked to agricultural co-operatives and farming requisites, such as Obaro, as well as some engaged in wider wholesale and retail activities, led by Brent Oil, which has a national network of depots and fleet of tankers oriented to the commercial market. These smaller players have contributed to a substantially 'thicker' distribution infrastructure and different service offerings crafted to customer groupings. These developments were facilitated by the Petroleum Products Amendment Act no. 58 of 2003 promulgated in 2006, which provided for the licensing of persons involved in the manufacturing or sale of petroleum products to promote the transformation of the South African liquid fuels industry. This opened up space for independent wholesalers. The Liquid Fuels Wholesalers Association also claims that the oil companies wanted to move out of less attractive business, such as some segments of commercial sales and retail in rural areas, which then created a market for independent wholesalers.

Until the very recent changes, however, concerns around supply continued to be leveraged to protect the positions of the large oil company insiders. This has the further unintended consequence of maintaining very large interest groups with a stake in the status quo. Conversely, more diversified participation in supply implies less dependence on particular producers.

The evolving contestation and debates around new investment in refining have played out against the changing influence of different ideas. The belief in the importance of self-sufficiency in refined fuel has declined, and the debate is now more about the straightforward economic arguments. In these terms, the proposed new Sasol synfuels refinery (Mafutha) has apparently turned out to be much less attractive to Sasol given the capital cost and considerations such as the likely CO₂ emissions and the cost thereof. The economic benefits to fuel consumers would depend on whether the investment meant more competitive pricing – at best a moot point, as it would simply add to the market share of Sasol, which is already dominant in the inland market (as determined by the Competition Tribunal in its ruling on the proposed Sasol-Engen (uHambo) merger). The consideration of the proposed Umthombo refinery needs to be done in similar terms.

With regard to Mafutha, the National Treasury noted in rejecting the proposal for tighter regulation of Sasol's inland market power as suggested by the Windfall Tax Task Team (WTTT) that it welcomed Sasol's commitment to the feasibility of investing in Project Mafutha and possible gas to liquids refining investments and that it would 'hold Sasol to its commitment to significantly expand its synthetic fuel production capacity in support of national interest in terms of fuel security and macroeconomic stability' (National Treasury, 2007). In the same response National Treasury also indicated that in 1998 cabinet had 'effectively' released Sasol from the obligation to repay the government subsidies it had received, provided Sasol continued to develop the petrochemicals sector. The fact that major investments in expanded refining capacity have not been made by Sasol raises the question about the appropriate response in terms of regulation of market power, to which we now turn.

3. PRICE REGULATION AND MARKET POWER

We examine the evolving framework of price regulation in three main areas: first, how import parity benchmarks have been adopted to restrict pricing power overall in the country; second, the particular question of the inland market where Sasol is dominant and a low-cost producer; and, third, the influence that information exchange has had over competition.

The regulatory framework regulates prices at different levels from the refinery gate to wholesale and retail. This might suggest that there is a substantial concern about the potential exertion of market power which the DoE is seeking to remedy. However, the regulated prices are based on import parity benchmarks, including all transport and related costs, which effectively means that prices are set at the highest level that can be charged in the market. Ultimately, consumers are not much better off than they would be without regulation. Indeed, our review of the changes over time indicates that the prices set through regulation have been higher than those that could be charged at actual import prices. In addition, the prices posted under the regulatory framework also appear to have dampened competition, at least when combined with the information exchanged between firms on sales quantities (discussed later in the article).

3.1 Calculating imputed import parity prices

The aim of the initial import parity pricing system from the 1950s was to encourage import substitution. Given the small size of the economy, the oil companies wanted a guaranteed return. The mechanism of import parity implies using a price in a benchmark source country or countries, and adds to this all the costs associated with efficiently delivering that product to a particular location in South Africa to arrive at the regulated price. The economic rationale is that a seller may be expected to sell his/her product at or below the price at which the next nearest producer could deliver the product to that point of demand. If the country as a whole is short of refined product then imports would be the marginal source of supply. However, the import parity price set through regulation is an imputed price and does not necessarily reflect the price at which imports can actually be sourced.

This import parity price was calculated as an In-Bond Landed Cost (IBLC) until 2003, when there was a shift to the Basic Fuel Price calculation. The IBLC took an international product price calculated on as an average of a basket of FOB (free on board) posted prices from four international refineries, and adding a hypothetical freight, insurance, leakage and landing charges for a South African port. IBLC was the refinery gate price for coastal refineries, and a premium was added in the form of hypothetical transport from the coast for inland refineries. The rationale for the IBLC was that the refineries should get the same prices for locally produced fuel as those they would have received had they imported fuel into the country (Lloyd, 2001).

It is now evident that there were various ways in which the IBLC calculation inflated prices above a true import price, directly inflating the margins of the oil refiners.

From 1973 the international price was based on the posted prices of three refineries in Singapore and one in Bahrain, which were owned and operated by the big four oil companies operating in South Africa (Marquard, 2006). This inflated prices in three ways.

First, Singapore was an inappropriate benchmark, as it was one of the most expensive refining areas from which to buy fuel. Since the Singapore markets consume mainly diesel rather than petrol, the petrol market was less developed and thus more expensive. In the South African market petrol is the most important petroleum product. Second, as Singapore is further from

Durban than the Arab Gulf and Mediterranean Sea this increased the notional shipping cost. Third, the use of posted prices as opposed to spot prices meant higher prices. At least from 1970 on, spot prices were the standard basis for exports. This was a substantial mark-up, as posted prices were on average 10c/l higher than spot prices in 1997 (Marquard, 2006).

On the recommendation of the Liquid Fuels Industry Task Force (LFITF) in 1994, the reference refineries were changed and a Platts spot assessment was added as a fifth element (meaning one out of the five prices used was a spot price) (Marquard, 2006). The LFITF also recommended that the IBLC be calculated on a monthly basis, a practice that was adopted with the other changes in 1994.

In 2003 there was a move from the IBLC to the BFP (currently in use). A comparison between the IBLC and BFP over the period 1996 to September 2002 revealed that the BFP has on average been lower than the IBLC by four cents/litre for petrol, seven cents/litre for diesel, and 10 cents/litre for paraffin (SAPIA, 2003). The DME reported that every 1 c/litre saving in petrol and diesel was equivalent to about R150 million per year in South Africa at the time of change (Parliamentary Monitoring Group, 2003). The BFP is calculated as the average of daily spot prices from Singapore, Mediterranean (Italy) and the Arab Gulf to arrive at a monthly price for each product category. For petrol it is calculated on 50% Mediterranean (Italy) and 50% Singapore, while diesel is 50% Mediterranean and 50% Arab Gulf.

Freight, insurance and wharfage are added to arrive at the import parity price. These components are the same as those used in IBLC with the addition of the coastal storage cost and stock finance cost. The additions were at the request of the oil companies, and were an attempt to measure the true cost of importing petroleum products (Marquard, 2006).

The way in which the sea freight component has been calculated has also inflated prices over time. When the formula was devised tanker sizes were small; however, the tanker size used in the formula remained constant even though the average tanker size for transporting fuels had grown considerably larger and reduced the actual cost of transporting fuel considerably. The LFITF review led to freight charges being reduced from the levels that were in the IBLC.

The current formula for calculating BFP can be expressed as:

- Average CIF price = FOB Spot prices & Spot premiums, plus freight, including demurrage allowances and insurance)
- plus Ocean Loss Allowance
- plus Cargo Dues (Landed costs for imports at South African ports), plus Coastal Storage Cost, plus Stock Financing Cost.

The basic pricing formula in its current form has also been subject to various criticisms. The issues relate to whether BFP actually reflects the true Import Parity Price that it seeks to approximate (Rustomjee et al., 2007) and whether the BFP import parity pricing system is appropriate in the first place (Moerane et al., 2006). These issues are also recognised by the DoE, which has recently identified the need to review the BFP to determine its appropriateness (DoE, 2013). This arises mainly from concerns about the continuous increases in prices and the impact on economic growth, given that petroleum products are inputs to most business processes.

The debate about the appropriateness of the BFP must be understood in the context of the change in circumstances from the period that import parity pricing was adopted, when South

Africa was importing most of its liquid fuel demand, to the current situation, where significant domestic liquid fuel consumption is met by domestic production. The price incentivised the oil companies to make investments in South Africa and compensated them for producing locally at the time of sanctions.

There are further questions about the quality of the fuel used in the BFP calculation, leading to the belief that the local industry has been benefiting through the difference in the fuel quality locally and the benchmark countries in the BFP calculation, especially prior to the implementation of the regulations on fuel quality specifications 'Clean Fuels 1' in January 2006. The DoE has investigated this in relation to the difference between the current SA specifications versus current Euro specifications, and found that on balance the oil companies are not receiving undue benefits (DOE, 2013).

3.2 Wholesale and retail margins

To arrive at the final petrol pump price in the different fuel pricing zones (magisterial district zones), domestic costs, imposts, government taxes and margins are added to the BFP. In the current price structure this includes returns calculated for three main elements, namely, retail margin, wholesale margin and service differential. The retail margin is return on investment and cost recovery in the retail service station; wholesale margin is the return on investment and cost recovery in the wholesaling of petroleum products; and service differential is the return on investment and cost recovery in the secondary storage and secondary distribution of petroleum products to the final consumer.

These margins have been calculated on a rate of return basis. The wholesale margin is regulated and was initially in the form of the Petroleum Activities Return (PAR) mechanism, which was introduced in 1984. It applied the 15% overall return on assets managed benchmark, which had applied to the industry prior to 1984 and was intended to ensure that the industry achieved a return of around 15%. In 1990 this was replaced by the Marketing of Petroleum Activities Return (MPAR), which applied to achieving benchmark returns for marketing assets only. The formula used to determine the wholesale margin was based on the results of a cost/financial investigation by a chartered accountant firm into the profitability of the wholesale marketers. The level of the margin was calculated on an industry basis and was aimed at granting marketers a return targeted at 15% (within a range of 10% to 20%) on depreciated book values of assets, with allowance for additional depreciation, but before tax and payment of interest.

The methodology for the calculation of the margin required the consolidation and verification of results for the industry by an independent auditor, a process which historically took six to 12 months, with a significant part of the delays resulting from the industry itself being slow in delivering its results to the auditors. This would then delay adjustments to the margin; however, there was no mechanism to compensate for over/under-recovery.

Rate of return regulation has generally been criticised for inducing overspending on assets, known as 'gold-plating' (the Averch-Johnson effect). A guaranteed industry return of 10% to 20% (especially when lower inflation and interest rates meant that this was higher than risk-free returns) means that if the industry as a whole has more expensive assets than necessary then the higher return will simply be passed through to consumers.

The appropriateness of the MPAR has been questioned in the literature (see Lloyd, 2001; Moerane Investigation, 2005; Windfall Tax Task Team, 2007) and recommendations have been made for a re-evaluation of its usefulness as well as implementation. There is also an issue

regarding the lack of transparency with regard to the calculation of the wholesale margin. Though the DoE refers to guidelines to calculate the MPAR wholesale margin, these are not available on the website. The MPAR was replaced by the Regulatory Accounting System (RAS) in 2010.

The main concern with the MPAR methodology is that though it determined the margins for wholesaling, retailing, storage and transport, it located the majority of the profits in wholesale.

The implementation of RAS separates these activities according to their location in the value chain, that is, all the retail activities are allocated under retail. However, the total margin will not be affected. RAS attempts to calculate a return for each part of the value chain where costs are incurred. The RAS return is made up of two main components: the investor margin (60.4 cents/litre in December 2013) and operating expenses cost recovery (78.7 cents per litre in December 2013). The return is calculated once a year using the capital asset pricing model (CAPM) based on a replacement value of the assets. The previous year's value is indexed until such a time that the where the exact replacement value can be sourced. When replacement values of assets are not available, the previous year's value is indexed. Depreciation is not taken into account. Secondary storage, secondary distribution, service differential and retail are separated as standalone activities.

The retail profit margin is also fixed by the DoE, and is determined on the basis of the actual costs incurred by the service station operator in selling petrol. In this cost structure, account is taken of all proportionate driveway-related costs such as rental, interest, labour, overheads and entrepreneurial compensation.

Government taxes include various indirect taxes and levies applicable to fuels sold locally, for example Customs and Excise Duties, Fuel Levy, Equalisation Fund Levy, Road Accident Fund Levy, IP Marker Levy, petroleum pipelines levy and the Demand Side Management Levy.

A sum of all these components results in the price that the consumer will pay for fuel. There are other aspects to fuels regulation that do not necessarily directly impact the calculation of the fuel price but impact on the state of competition in the market, for example import/export control.

It is important to note that additional rents that can be extracted from the retail level of the value chain through franchise fees, rentals etc. RAS was designed based on the retailer-owned, retailer-operated (RORO) service stations, which represent 40% of service stations in South Africa. The remaining 60% are company-owned retailer-operated (CORO).

The investment required to purchase a CORO service station is approximately R10 million, and the typical franchise agreements between the oil companies and the retailer last for three to five years. Prior to the RAS system the return for the retailer's investment was drawn from the 'entrepreneurial compensation', which in 2012 was approximately 20.3 cents per litre. Since the implementation of RAS, fuel retailers have complained that they are no longer receiving the 'entrepreneurial compensation'.

3.3 Inland pricing

Both the Competition Tribunal in its evaluation of the proposed Sasol-Engen (uHambo) merger and the WTTT identified Sasol as being dominant and having market power in the inland market due to the logistics constraints in bringing fuel inland. This implies that Sasol can charge prices

up to inland import parity, by adding on the transport costs of bringing product from the coast. Indeed, this is part of the calculation of an inland BFP, which uses the pipeline cost.

If the inland region is short of fuel and is in effect a net importer, then product transported from the coast is meeting demand at the margin. However, Sasol's production costs are low, as reflected in the WTTT report, Sasol earns a fair return over costs when the oil price is at \$28 per barrel (WTTT citing an assessment by an independent study in 2000). The oil price has been around \$100 per barrel over recent years, meaning that Sasol has very high margins. In effect, Sasol has a location advantage from its inland position, on top of an advantage relative to crude oil refineries given the capital investments already made in synfuels and the low cost of the coal feedstock. However, it cannot necessarily command a full inland BFP, as it relies on customers with distribution infrastructure that are also the other major oil companies.

The Sasol-Engen merger hearing revealed the bargaining that occurred over the prices to be charged following the ending of the MSA, when the other oil companies were no longer required to buy Sasol's fuel (see Corbett et al., 2011). The effect was discounts off the inland BFP for a number of years, apparently until around 2007 (see non-confidential transcript of Mr MacDougall, Competition Tribunal Hearing, 2013:3585).

The WTTT identified the challenge of disciplining Sasol's ability to set prices up to the inland BFP in the absence of effective supply competition in the inland market as a target for regulation and/or appropriate fiscal measures. However, the WTTT also acknowledged the need to encourage increased investment in fuel production from local feedstock, which includes coal. It thus recommended a package of 'smart' regulation, which included regulation of inland prices inland at a level approximating competitive market prices (although this is open to much interpretation), a special levy on synfuels above a specified level and incentives for new investment in local fuels. As indicated above, no action was taken based on expectations about the investments Sasol was to make.

3.4 Information exchange

The price regulation allows for discounting off maximum prices in most cases, except for retail petrol. At the same time, the effective maximum price is posted by the DoE on a monthly basis at different levels of supply, such as through the posted Wholesale List Selling Price (WLSP) for most products. Competition between rivals will lead to discounts, while collusion has a readily available focal point.

The Competition Commission uncovered extensive sharing of information of sales volumes by the oil companies by magisterial district, customer category and fuel. What this means is that, until 2007, the oil companies could identify how much each of their supposed rivals was selling in each area. This undermines the incentives to compete through offering discounts, as the other companies will readily be able to identify this and respond (Das Nair & Mncube, 2012). The Commission lodged a case of collusion against the oil companies on 24 October 2012 based largely on the companies exchanging information monthly on individual sales volumes to different customer categories by geographic area, in order to maintain profit levels above international norms.

4. GAS REGULATION

We look at the case of natural gas in light of the review of fuel regulation. Sasol secured the rights to natural gas from the Mpande and Temane fields in Mozambique and, together with the governments of Mozambique and South Africa, has exploited this gas and constructed a pipeline of approximately 600km to transport it to Secunda. There was no specific legislation for gas projects at the time (around 2000), and thus a regulatory regime had to be negotiated. The South African government and Sasol Gas concluded the RSA Regulatory Agreement, giving Sasol Gas a special regulatory dispensation regarding exclusive rights to ROMPCO's infrastructure (mainly the pipeline) for a period of 10 years from the first gas received by Sasol (from 2004 to 2014).

Shortly after the conclusion of this agreement the Gas Act of 2001 was enacted with the primary objective of promoting the efficient, effective, sustainable and orderly development and operation of gas transmission, storage, distribution, liquefaction and re-gasification facilities and the provision of efficient, effective and sustainable gas transmission, storage, distribution, liquefaction, re-gasification and trading services. Other objectives of the Act are to:

- facilitate investment in the gas industry;
- ensure that gas transmission, storage, distribution, trading, liquefaction and re-gasification services are provided on an equitable basis and that the interests and needs of all parties concerned are taken into consideration;
- promote the development of competitive markets for gas and gas services; and
- promote access to gas in an affordable and safe manner.

Sasol Gas's special regulatory dispensation came to an end on 25 March 2014. After this date, Nersa is mandated by the Gas Act, 2001, to approve maximum prices for all classes of customers of piped-gas and enforce non-discrimination. However, the requirement to approve maximum prices is contingent on Nersa determining that 'there is inadequate competition as contemplated in Chapters 2 and 3 of the Competition Act, 1998'.

During the special dispensation, in line with the provisions of the RSA Regulatory Agreement, Sasol priced using the 'market value pricing' (MVP) principle defined in the agreement as the determination of gas price in terms of:

- the cost of the alternative fuel delivered to the customer's premises; or anticipated place of use (in the case of Greenfields Customers); plus
- the difference between all the operating costs of the customer's use of the alternative fuel and all the operating costs of using natural gas; plus
- the difference between the Nett Present Value (NPV) of the capital costs of the customer's continued use of the alternative fuel and the NPV of the capital costs involved in switching to natural gas, as would be reflected in the customer's accounts.

Schedule one to the Agreement indicated that a price above the MVP would constitute non-compliance and a breach of Sasol Gas's licence conditions. This pricing methodology produced a price cap for Sasol Gas, and it could negotiate with individual customers. The discount is based on annual quantity purchased, and there were three categories of discounts (Nersa, 2006).

Clause 8 of Schedule One of the Agreement also provides for a price cap on the average gas price that Sasol charges customers using up to ten (10) million gigajoules of gas per annum. The mechanism places a limit on Sasol's revenues from gas sales compared to a benchmark established using prices of several European countries, known as the European Benchmark Price (EBP) comprising the Netherlands, Spain, Belgium, Italy, France and Germany. The Sasol Volume Weighted Average Gas Price for customers may not exceed the EBP (Nersa, 2006). In the event that it does customers may claim refunds from Sasol Gas.

In effect, the MVP is simply the maximum price that Sasol Gas can charge while still attracting customers to switch from other energy sources to natural gas. Note, however, that attracting customers to switch means Sasol Gas bearing the costs in terms of a lower price to the customer. At no point was the weighted average price above the EBP, although the weighting means that the computed average price is almost entirely due to large customers, which includes the prices charged to customers which are associated with Sasol itself (such as Springlights Gas in which Sasol has a substantial shareholding).

Nersa did receive a number of complaints from customers about the implementation of the regulated price, and Nersa's investigations suggested that there were discrepancies in Sasol Gas's implementation (Nersa, 2007). However, it is not clear what (if any) steps were taken.

4.1 Proposed pricing from March 2014

In 2011 Nersa published its proposed methodology for the calculation of maximum gas prices from March 2014 onwards. This sets the maximum gas price against a basket of alternative fuels in South Africa. There are also tariff guidelines applicable to the transmission, storage and reticulation of gas. We focus here on the maximum gas price regulation.

Using a yardstick approach to determine maximum prices is a recognised method of price regulation and avoids the pitfalls of rate of return, such as the 'gold-plating' referred to above. Its outcome depends on the suitability of the yardstick chosen. The maximum gas price weights the prices of alternative fuels based on the total energy consumption of coal, diesel, electricity, heavy fuel oil (HFO) and LPG. This means that coal has a weight of 36.2%, diesel 24.8% and electricity 37.1%, with HFO and LPG collectively accounting for just 3%. The prices used for coal, diesel and electricity are thus critical to the outcome.

The coal price that is used in the determination is the FOB thermal coal price at Richards Bay Coal Terminal (converted into Rands per gigajoule). This is thus not the coal price that users of gas are likely to have been using as an alternative for two reasons. First, South Africa exports high-quality coal while it consumes low-quality coal, and this translates into much higher export prices than domestic prices. Second, most industry gas users are inland, and the inland coal price (for export grade coal) is lower than at Richards Bay by the transport cost to transport coal to the coast. Second, most industry gas users are in the inland region, where most coal mines are also located, and the Richards Bay price is inclusive of transport to the coast and loading cost (onto a ship), which are not incurred in delivery inland customers. There are therefore significant price differences for coal consumed locally and export coal.

The diesel price used is the basic fuel price for diesel, per litre, converted to Rands per gigajoule. The data is sourced from the Department of Energy. As the inland diesel price is higher than the (coastal) BFP this is lower than it would be for inland consumers. However, the weight of diesel reflects national energy use (mainly for road vehicles) rather than the proportion of industry users that use diesel.

The electricity price is the Eskom average tariff approved by the Energy Regulator, per kWh converted into Rands per gigajoule. The average tariff approved by the Energy Regulator is an average of all Eskom's customer groupings. Large industrial customers (a substantial proportion of consumers of piped gas) pay less than the average Eskom Tariff. This means that the electricity indicator used in the calculation of maximum gas prices is higher than it would be had an average price for industry users been adopted.

Sasol Gas Ltd has applied for, and Nersa has approved, maximum gas prices for the prescribed customer categories for a multi-year period from 26 March 2014 to 30 June 2017 (TABLE 2).

TABLE 2: Approved Maximum Piped Gas Price

	<i>G/p.a.</i>	<i>Gas Energy Price (G£) - R/GJ forecast 2014</i>	<i>Reductions %</i>	<i>Reduction (R/GJ)</i>	<i>Sasol G£ (R/GJ) (26/3/2014)</i>	<i>Nersa approved (26/3/2013)</i>
Class 1	< 400	128	7.50%	9.6	R118	R108.86
Class 2	401 - 4 000	128	7.50%	9.6	R118	R108.86
Class 3	4 001 - 40 000	128	15.00%	19.2	R109	R100.04
Class 4	40 001 - 400 000	128	22.50%	28.8	R99	R91.21
Class 5	400 001 - 4 000 000	128	30.00%	38.4	R90	R82.38
Class 6	> 4 000 000	128	37.50%	48	R80	R73.56

Source: Nersa consultation document

80% of Sasol Gas customers (by number, not volume) were expected to receive price reductions after the implementation of the approved maximum prices (Creamer, 2013). This is corroborated by the Nersa consultation document, which states that most of the small customers may receive price decreases (Nersa, 2007).

TABLE 3: Breakdown of price increases by customer size

	<i>Total</i>	<i>Total (%)</i>	<i>volume</i>	<i>Volume (%)</i>
*Small customers that may face decreases	268	58%	1 872 400	3%
Small customers that may face increases	74	16%	1 227 600	2%
*Large customers that may face decreases	66	14%	22 323 100	36%
Large customers that may face increases	57	12%	36 576 900	59%
Total customers	465	100%	62 000 000	100%
All customers facing price decreases		72%		39%
All customers facing price increase		28%		61%

Source: derived from data in the Piped Gas consultation document of 26 March 2013

Notes: *Small customers are Class 1-3; *Large customers are Class 4-6

However, it is important to break down the customers that are expected to receive price decreases relative to the total volumes sold to external customers (TABLE 3).

Although the approved maximum gas price may result in a decrease in prices for customers, it is more appropriate to look at this in terms of the volumes purchased by the customers and not simply the number of customers. This gives an indication of the impact of the balance of price increases and decreases on the economy. Sasol's application simply applies the methodology published by Nersa in 2011 and does not give any further details. We assess the outcomes by first comparing South African natural gas prices to other countries, undertake an illustrative exercise to examine what the different prices and weights would have realised had they been implemented in 2011, and then check if Sasol Gas has been profitable in the years leading to the change in methodology.

A comparison of South African natural gas prices to 15 countries, including the 6 "European Benchmark Price" countries, shows that South Africa has the second-highest gas prices out of the surveyed countries and was higher than all 6 "European Benchmark Price" Countries (FIGURE 1).

A comparison using a different data set shows the South African natural gas prices falling within the lowest third in a ranking from highest-priced to lowest-priced European Union economies (FIGURE 2). This picture is different partly because of the inclusion of a large number of higher-priced, gas-importing European countries. The gas price arrived at for Class 3 customers (industrial customers using between 4,001GJ and 40,000GJ) in South Africa compares relatively favourably with prices for larger customers in the European Union.

We consider the impact of the choice of weights and prices for alternative energy sources by considering what prices would have been realised under different scenarios for 2011. Using weights for energy sources based on industry usage has the effect of increasing the coal and electricity weights substantially to 49.55% and 44.96% respectively, while the diesel weight falls to just 5.45% (DoE, 2012). As diesel is the most expensive fuel this reduces the maximum price substantially, by 17% (TABLE 4).

Second, we consider the effect of using an inland coal price rather than the export FOB Richards Bay price, which reduces the gas price by 7% (DOE, 2012). Third, we consider the impact of using an industrial electricity tariff rather than the average Eskom tariff, and the gas price is reduced by 8% (DOE, 2011). Taken together, these changes would reduce the maximum gas price calculated following the Nersa methodology for 2014 (applied to 2011 data) from R103.40 to R87.16 (TABLE 4).

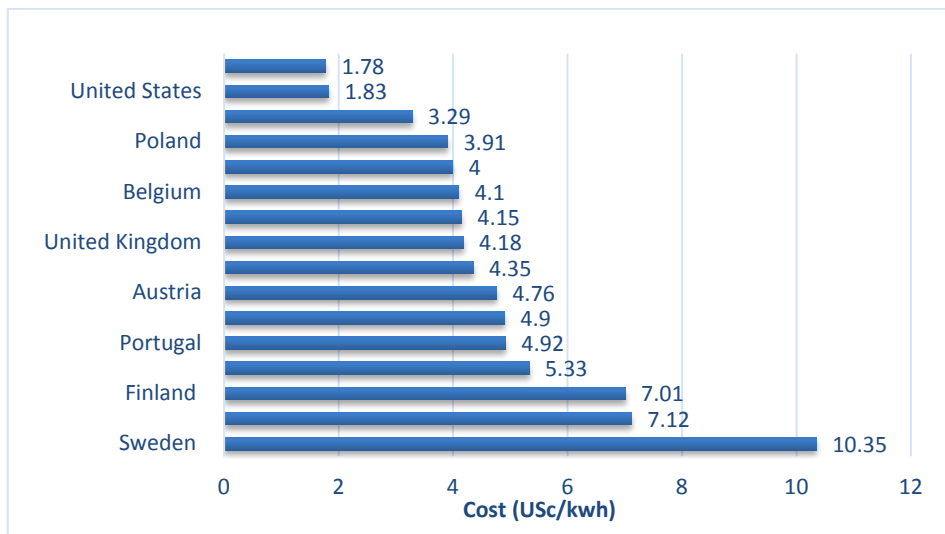


FIGURE 3: 2012 International Natural Gas Cost Comparison

Source: NUS Consulting Group's 2011-2012 International Electricity & Natural Gas Report and Price Survey

Note: The survey is based on prices as of 1 June 2012 for a natural gas supply of 1,250,000 kWh per month, in US cents excluding VAT.

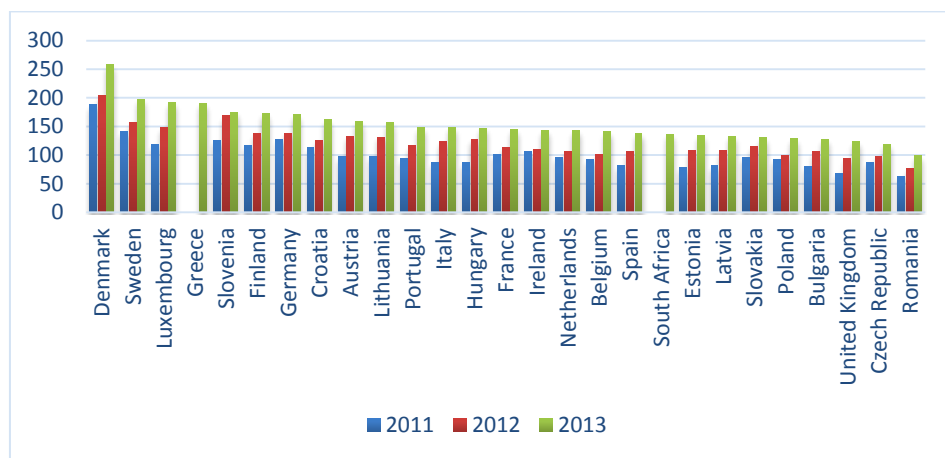


FIGURE 2: South Africa Class 3 price in Gauteng as at March 2013 (4,001Gj – 40,000Gj per annum, including Sasol tariffs) compared to EU industrial tariffs (10,000Gj – 100,000Gj per annum) (ZAR / Gj)*

Source: Eurostat

* Exchange rates: 2011: R10.06/EUR; 2012: R10.50/EUR; 2013: R12.79/EUR

TABLE 4: Illustrative calculation of maximum gas prices under different weights and prices for alternative fuels

	<i>Weights-A</i>	<i>Nersa Price (R/GJ)</i>	<i>Price-A (R/GJ)</i>	<i>Weights-B</i>	<i>Price-B (R/GJ)</i>
Coal	36.2%	11.29	2.63	49.55%	3.60
Diesel	24.8%	38.62	38.62	5.45%	8.49
Electricity	37.1%	50.97	43.40	44.96%	52.61
HFO	1.1%	1.40	1.40	0.04%	0.05
LPG	0.8%	1.11	1.11	0%	0.00
Weighted Maximum	100%	103.40	87.16	100%	64.75

Notes and sources: *Weights-A* are the weights prescribed by Nersa calculated on the overall consumption of the selected energy indicators for 2008. *Weights-B* are calculated based on the DoE's industry consumption of the selected energy indicators, for 2008. Nersa price is the maximum gas price for 2011 as per the Nersa methodology and benchmarks. Price-A is calculated using the formula stipulated in the Nersa maximum price methodology but substituting the export FOB coal price with the local FOR price and the average Eskom tariff with the Eskom industrial tariff. Both the FOR coal price and the Industrial electricity tariff are sourced from the DoE South African Energy Price Report, 2012. Price-B changes the coal and electricity prices, and the gas price is calculated using *Weights-B*.

If we assess Sasol Gas's profit margins over the last few years we observe that Sasol Gas has been making an operating profit margin in the range between 38% and 47% (TABLE 5).

TABLE 5: Sasol Gas Turnover and Operating Profit

<i>SA Energy: Sasol Gas</i>									
<i>Financial Year</i>		<i>2012</i>	<i>2011</i>	<i>2010</i>	<i>2009</i>	<i>2008</i>	<i>2007</i>	<i>2006</i>	<i>2005</i>
Turnover	R m	6931	5445	5371	5666	4697	3702	3209	2404
Operating profit	R m	2985	2578	2479	2424	1785	1936	1526	931
Operating profit margin	%	43	47	46	43	38	52	48	39

Source: *Sasol Group Limited Financial Statements*

One expects that these overall price increases will result in higher profit margins for the monopoly supplier.

To soften the blow, Sasol has committed to a transitional price mechanism whereby prices will be increased in tranches. For those with price increases between 15% and 30%, 15% will apply on 26 March 2014 and the remainder will be applied on a quarterly basis between March 2014 and March 2015. For those customers that are faced with price increases between 30% and 45%, 15% will be applied on March 2014, and the difference will be spread over the period between March 2014 and March 2016.

Large industrial users of gas have objected to the methodology and resulting prices, indicating that gas represents approximately 20% of large manufacturers' input costs, and the proposed increases will put pressure on the margins of these firms (Creamer, 2013). These customers have complained that the new pricing methodology is disadvantaging those who have invested in switching to gas, which is perceived to be more efficient and affordable (Radebe, 2013).

Nersa was reported as stating that the methodology was designed to attract investors in the gas market by offering high returns (Mail and Guardian, 2013). Nersa has to balance the desire for fair and competitive pricing with the need to ensure that the gas sector becomes more attractive for investors as per the Gas Act of 2001. In such an assessment, Nersa would have to consider whether there are likely entrants into the market for inland gas supply and in what time period, given that this new dispensation is in place for three years. If entry is indeed unlikely then regulation may be ensuring that Sasol Gas enjoys monopoly profits at the expense of the customers.

It can also be argued that the discounted gas price and not only the methodology for maximum gas prices needs to be taken into account. This is correct, although it also implies that an entrant would need to consider the discounted prices that Sasol would offer on entry, and not the prevailing price. The experience of liquid fuels regulation highlighted the importance of the choice of benchmarks to use; however, it appears as though these lessons were not taken on board when the maximum piped gas regime was established. We have shown that the outcome of the maximum gas price calculation can differ significantly as a function of choice of benchmarks to be used in calculations.

5. CONCLUSIONS

We sum up by considering the regulatory record against the objectives of ensuring security of supply, restricting the exertion of market power, incentivising investment and opening up participation in the sector. At a high level, there are strong threads of continuity.

The South African fuel pricing system based on IPP was generous during the apartheid years, ensured the profitability of the oil companies and provided an incentive to the multinationals initially to invest in refining assets, and subsequently to remain in South Africa despite pressures to disinvest due to sanctions. Although there are no longer sanctions against South Africa, local refining on the grounds of security of supply has continued to have the greatest weight, rather than a reorientation to trading and distribution to ensure customer-responsive supply.

There have been changes in terms of amendments to the import-parity-based system for liquid fuels to obtain measures closer to the actual cost of importing fuel. In addition, there has been entry into distribution and retail. However, the core challenges identified by the WTTT remain, and the apparent conditions for their recommendations to be set aside have not been met in the form of substantial investments upstream in new refining capacity. The amendments to the import parity measure reveal just how much additional margin was being made by upstream refiners. The significance of different benchmarks and sources of information also highlights how information asymmetry in favour of the industry players can advantage these interests over those of consumers. Moreover, the basis for determining the price of liquid fuels has not changed, in particular, with regard to taking into account Sasol's privileged position in the inland region and very low costs. While the gas price has moved to using a yardstick, or

benchmark approach, the choice of components in the benchmark has favoured the supplier, again apparently on the grounds of incentives for investment.

The WTTT recommended that fuel-price regulation could be reduced to price-cap regulation for a period of time to determine what aspects of regulation will be required going forward, and the prohibition of discounting and purchasing incentives should be discontinued. It also recommended that the quantitative import controls should be removed, allowing increased participation in the importation and trading of liquid fuels. Furthermore, there should be a combination of tighter price regulation in the inland market and taxation of the windfall profits of synfuels (being a windfall from the low-cost coal feedstock), coupled with investment incentives to stimulate new capacity.

Rather than relaxing regulation downstream, greater attention has been paid to trying to estimate costs and rates of return in wholesaling, storage and retail, which is very demanding in terms of information and analysis. With tighter upstream regulation and increased participation in wholesale and retail (as we have started to see), increased competition would mean less need to micro-regulate downstream activities.

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INFRASTRUCTURE DEVELOPMENT WITHIN A REGULATED ENVIRONMENT: CONCERNS FOR REGULATORS

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Abstract

Poor delivery of infrastructure leads to inefficient pricing of these assets, which is passed through to consumers. Inefficient pricing is caused by a poor selection of a funding and financing method as well as project overruns. This article used a case-study approach to investigate if South African (SA) infrastructure projects were executed efficiently. It was found that the procurement method was not a reason for inefficient infrastructure delivery. Further, SA projects overran significantly by between 5 and 58%. The case of Transnet's pipeline project was highlighted. Two case studies (Gautrain and e-tolls) are presented to highlight issues around funding. It was found that the user-pays mechanism of funding is efficient only if there is complete transparency and communication between the user of the infrastructure and other stakeholders. Given the findings, this paper ends with policy recommendations for regulators of utilities that will ensure that consumers are protected.

Keywords:

Allowable revenue, Regulated Asset Base, Weighted Average Cost of Capital, project overruns, financing, funding

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1. INTRODUCTION

“Infrastructure refers to all basic inputs into and requirements for the proper functioning of the economy” (Mutheiwana, 2014:1). Examples of infrastructure include telecommunication, bridges, schools, roads, transport, ports, electricity, piped water supply and sanitation. According to Mutheiwana (2014) infrastructure development and management are crucial for efficient development within a society, and are the cornerstone of socio-economic development. For this reason, a country needs to invest in infrastructure.

Developing economies such as South Africa's typically suffer from an under-investment in infrastructure. The infrastructure deficit in South Africa is currently estimated at R1.5 trillion (Paton, 2013). South Africa's critical infrastructure needs are in part the outcome of two decades of underinvestment (National Treasury Budget Review, 2012:92). Public infrastructure spending tailed off from the early 1980s. However, from the mid-1990s, government began to increase capital spending, with a sharp rise after 2003 as the South African government's fiscus allowed it to do so (DBSA, 2012).

South Africa's infrastructure spend has been increasing since the 2003/04 Medium Term Strategic Framework. Furthermore, investment in infrastructure is also done through the fiscal power of the government as demonstrated through the New Growth Path (Department of Economic Development, 2010). It accounted for just less than 8% of GDP in the 2012/13 fiscal year (Department of Economic Development, 2010).

FIGURE 1 provides a breakdown of South Africa's public infrastructure spending. Expenditure mostly emanates from non-financial public enterprises such as state-owned enterprises (SOEs) (with Eskom and Transnet accounting for the largest proportion), followed by provincial and local government. SOEs in South Africa provide crucial services to citizens. For example, Eskom provides electricity to its users. Therefore, infrastructure spending is vital to ensure that the demand for electricity is met.

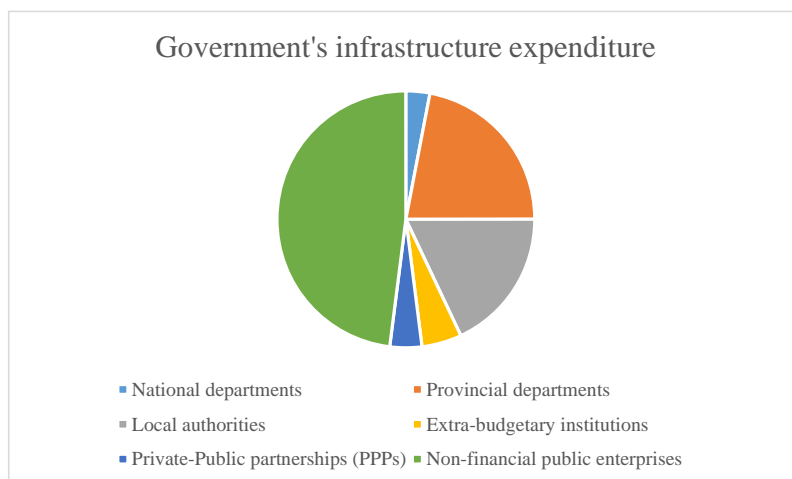


FIGURE 1: Government's infrastructure spending (2011/12 fiscal year)

Source: National Treasury (2012)

There are two crucial components to achieving successful infrastructure implementation. The first is attracting investment in infrastructure, which South Africa has done through the New Growth Path and the Medium Term Strategic Framework. The other crucial element is good governance. Kenny (2007) argues that "Governance is central to development outcomes in infrastructure." Hence the capacity to plan and execute infrastructure projects looms large as a determinant of their successful implementation.

Successful implementation of infrastructure rests on the state's ability to (Kenny, 2007):

- Collect tax and user charge revenue: This determines the resources available for infrastructure investment;
- Achieve allocative efficiency, which in turn depends on the state's capacity for integrated planning across different infrastructure sectors;
- Achieve efficacy in the way that programmes are implemented and delivered to the targeted beneficiaries (including the management of public finance, procurement, processes, contract management and effective monitoring of state-owned enterprises (SOEs)); and
- Ensure effective oversight and regulation of public and private entities that provide infrastructure, and associated services.

Notably, each outcome relies on the strength of the public institutions tasked with implementing them. If any of the four capacities are inadequate, infrastructure delivery will be compromised (Kenny, 2007).

From a theoretical perspective, inefficient infrastructure delivery, particularly from SOEs, leads to inefficient prices of the asset in question. Crucial to the pricing of these infrastructure assets is the Allowable Revenue (AR) model, which allows capital expenditures (CAPEX) for infrastructure to reflect in the SOE's asset base (AER, 2011). The institution is then able to recover its CAPEX outlay by being allowed a higher revenue, through charging higher prices. The asset base of the institution will be inflated the higher the CAPEX allowed. If the CAPEX is inflated due to imprudent costs, consumers suffer due to higher prices (AER, 2011). Two reasons for imprudent costs by an infrastructure implementing institution are:

- An inability to select a financing (procurement) and funding method which minimises costs; and
- Project overruns associated with large infrastructure projects which require additional CAPEX.

Here financing refers to the way in which money is raised to pay for the construction and/or maintenance of an asset (Deloitte, 2012) and funding refers to the way in which the asset will be paid for once it has been procured (Deloitte, 2012).

A thorough investigation is therefore needed to determine whether infrastructure projects are being efficiently implemented. This is needed to ensure that South Africa is succeeding in closing the infrastructure gap and that users of the infrastructure are paying efficient prices. This investigation will be done by means of case studies of South African infrastructure projects by looking at the efficiency of infrastructure investment on two levels:

- Through the financing (procurement) and funding methods used for infrastructure projects; and
- Project overruns associated with the infrastructure projects.

The paper is therefore organised as follows: section 2 provides a literature review. This section will discuss the importance of infrastructure in an economy. It provides the competing financing and funding models that could be used by institutions when implementing infrastructure projects. The section will end with a discussion on project overruns, which negatively affect successful infrastructure implementation. Section 3 explains how infrastructure costs are recovered by explaining the pricing of these assets. The allowable revenue is discussed in detail and will highlight the importance of optimally choosing a financing and funding model as well as avoiding project overruns so as to ensure efficient pricing. Section 4 presents case studies of infrastructure projects in South Africa to investigate whether the projects were successfully and efficiently implemented. Section 5 presents concludes with recommendations to policymakers based on the findings in section 4.

2. LITERATURE REVIEW

2.1 Importance of infrastructure within an economy

In an attempt to highlight the relationship between state investment in infrastructure and economic growth, Kessides (1993) provides empirical evidence from across the world on the requirements for effective state investment and delivery of infrastructure. He draws the following conclusions:

TABLE 1: Benefits of infrastructure

<i>Outcome</i>	<i>Reason</i>
Infrastructure contributes to economic growth	Diversifies the economy Provides access to modern technology
Infrastructure raises the quality of life	By creating amenities for citizens
Infrastructure develops economic potential	Where other inputs (labour and capital) in the production process become more productive
Infrastructure improves the macroeconomic climate	Due to efficient resource allocation
Infrastructure facilitates economic demand considerations such as service prices and demand elasticity	Reliability of services for users Quality of services for users
Efficient infrastructure ensures user charges that reflect supply and demand conditions and non-market externalities as far as possible	To ensure infrastructure will be more economically efficient and favourable to the environment.

Source: Kessides (1993)

Each of the benefits in TABLE 1 are realised only when the state has the capacity to deliver and effectively maintain infrastructure.

The next section will provide financing and funding options available to institutions investing in infrastructure. Due to the complex nature of infrastructure projects, model selection must be done with caution and must meet the requirements of the project at hand.

2.2 Financing options available when investing in infrastructure

2.2.1 Public finance

Public financing of a project refers to the financing of a project from the government's budget. Governments could raise finance for public infrastructure projects in several ways, namely (National Treasury, 2001):

- Government could issue debt (borrow), but may also contribute its own equity;
- A sovereign guarantee is given by governments to lenders to repay all funds borrowed. The problem with this is that it reflects as a liability in the government's balance sheet and that may increase government's borrowing costs in future, and
- Governments could raise funds through taxation.

However, many governments have realised that this approach is no longer sustainable as it creates highly leveraged government balance sheets given the ever-increasing needs for new and better infrastructure (National Treasury, 2001).

2.2.2 Public-private partnerships

The relationship that is formed between the public and the private sectors when procuring an infrastructure asset is called a public-private partnership (PPP) (Grimsey & Lewis, 2005). PPPs can vary significantly in terms and structure. TABLE 2 below gives a summary of the different PPP models employed around the world.

This form of financing is now common in many countries both in the developing and the developed world. It is seen as a superior alternative to other financing methods, as both governments and the private sector share the risks involved (Calitz & Fourie, 2007). The advantages and disadvantages of PPPs are listed in TABLE 3 below:

TABLE 2: Public-private partnership models

<i>Contract type</i>	<i>Specifications</i>
Service contracts	The private sector procures, operates and maintains an asset. The public sector bears financial and management risks.
Operation and management contract	The private sector operates and manages a publicly owned asset. The public sector bears the financial and investment risks.
Leasing-type contracts <ul style="list-style-type: none"> • Buy-build-operate (BBO) • Lease-develop-operate (LDO) • Wrap-around addition (WAA) 	The private sector buys or leases an existing asset from the government, renovates, modernises, and/or expands it, and then operates the asset.
Build-Operate-Transfer (BOT) <ul style="list-style-type: none"> • Build-own-operate-transfer (BOOT) 	The private sector designs and builds an asset, operates it and then transfers it to the government when the operating contract ends. The private

<i>Contract type</i>	<i>Specifications</i>
<ul style="list-style-type: none"> • Build-rent-own-transfer(BROT) • Build-lease-operate-transfer(BLOT) • Build-operate-transfer (BOT) 	partner subsequently rents or leases the asset to the government.
Design-Build-Finance-Operate (DBFO) <ul style="list-style-type: none"> • Build-own-operate (BOO) • Build-develop-operate (BDO) • Design-construct-manage-finance (DCMF) 	The private sector designs, builds, owns, develops, operates, and manages an asset with no obligation to transfer ownership to the government.

Source: *Compiled by authors from different sources*

TABLE 3: Advantages and disadvantages of PPPs

<i>Advantages</i>	<i>Disadvantages</i>
Ease the strain on government's balance sheet.	Transaction costs associated with PPP contracts are normally high and this discourages many small potential service providers from participating in the bidding process.
Introduce competition when bidding for infrastructure projects takes place.	Lack of a well-developed capital market can limit the development of a viable PPP market.
Restructure the public sector service by embracing private sector capital and practices.	Inappropriate risk transfer raising the perceived risk to investors, and resulting in a high cost of capital.
Achieve greater efficiency than traditional methods of providing public services.	PPPs hinder accountability, as PPP costs to the government are not reflected on the government balance sheet.

Source: *Compiled by authors from different sources*

2.2.3 Corporate finance

Under this financing method, project sponsors will generally use their own credit to raise funds. This approach works better if the project is small in size, shorter and less capital-intensive. The company pays for the construction of the project from its own balance sheet. However, as with public financing above, private companies avoid this option, as it results in strained balance-sheet capacity, and limits their liquidity should they decide to participate in potential future projects (National Treasury, 2001). The observation in South Africa is that many SOEs make use of this type of finance and as a result have strained balance sheets. They then rely heavily on the government for additional finance, and recover higher costs through higher prices.

The repayment of the debt used to finance the asset has to be made within a short time period, while the asset will continue to provide the service for a longer period, thus putting unnecessary pressure on consumers. Subsequently, the utility is forced to ask for a higher tariff, as the

repayment of the asset is spread over a shorter time period than the asset's lifespan. This problem is also encountered in PPP projects (National Treasury, 2001).

2.2.4 Competitive bidding

The basic idea of competitive bidding starts with some pre-qualification of bidders based on financial and technical criteria that reduce the number of bidders, but at the same time lower the risk of non-compliance by potential bidders (Mundhe, 2008). This form of procurement is associated with competition among suppliers. After specifying important parameters (technical and non-technical), the shortlisted bidders are asked to bid on various factors depending on the nature of the project (Mundhe, 2008). The supplier who meets crucial criteria (for example: lowest amount) wins the bid. The most obvious feature of this model is competition for the market, which drives down prices.

The competitive bidding approach is usually associated with engineering, procurement and construction (EPC) contracts. In an EPC contract, contractors are obliged to turn over a full facility to developers – i.e. the completion of the facility is guaranteed at a fixed price and date. This implies that contractors absorb all the risks, and that failure to meet any contractual obligations results in monetary liabilities incurred by the contractor (Cliffe Dekker Hofmeyer, 2012).

As attractive as this may seem, infrastructure projects are too large a risk for contractors to undertake. Therefore they are associated with simple project structures. For instance, these contracts are applied to projects which are easy to design, with little uncertainty about what needs to be produced, and are accompanied by high levels of design completeness (Bajari & Tadelis, 2006). In contrast, complex projects, which leave scope for project incompleteness, ought to be procured using cost-plus contracts (at the original cost plus any extra expenses incurred should there be any unforeseen expenses not included in the contract), and should be awarded through negotiation with a reputable and qualified supplier (Bajari & Tadelis, 2006). The reason for using competitive bidding is that the procurer can avoid the costly and wasteful renegotiation that follows requests for changes in the project. Thus, while competitive bidding does have the advantage of unbiased awarding of projects, it fails to respond optimally to factors not included in the contract, which have the potential to escalate costs (Bajari & Tadelis, 2006).

Each of these procurement methods must recover the cost of financing. Generally this is recovered from an end user through funding. If these costs are not recovered, this contributes towards a financing failure of the infrastructure project. Therefore a note on funding is provided.

2.3 Funding options available when in infrastructure

Once the infrastructure project is commissioned, funding comes either from the consumer, through the user-pays principle, or from the tax base (Deloitte, 2012). The term 'user pays' refers to charging customers a price that reflect the costs of providing the goods or services. It ensures efficient markets by linking producers and consumers (Fine & Chalmers, 2000). This means that both the producer and the consumer are responsible for ensuring efficient markets. Producers must charge prices which reflect appropriate costs, and consumers will benefit from the good/service provided at fair and efficient prices (Fine & Chalmers, 2000). The user-pays

principle also ensures fairness, as only users who use the infrastructure pay for it. This means that individuals who cannot afford it are excluded (Fine & Chalmers, 2000).

Funding from governments comes from paying off the asset from the fiscus. In most cases this places strain on governments' balance sheets (Deloitte, 2012). There are also competing development goals which governments should consider for the economy and money from the fiscus is allocated to more urgent objectives. This type of funding also becomes problematic when financing is done through PPPs, as private investors require higher rates of return, which the fiscus cannot support. Therefore the user-pays principle is deemed the most efficient (Deloitte, 2012). However, clear communication must be made to users of infrastructure assets and there must be willingness to pay for use of the asset. It becomes problematic for regulators, private investors and governments if the user refuses to pay for the infrastructure.

Infrastructure projects are large in nature and therefore have a long timeframe. There is a high probability that these projects incur both time and cost overruns. The next section discusses project overruns in detail.

2.4 Project overruns

Logically, any delay in implementation in itself will cause cost overruns for a project. There are two main types of costs that economists speak of: variable costs and fixed costs. Infrastructure projects will incur both. With regard to the former, since infrastructure costs are estimated for the planned duration of the project, should there be any time delays, there will be inflationary consequences and, accordingly, construction costs will increase (Singh, 2009). With regard to the latter, certain overhead and input costs have to be met as long as the project remains incomplete; such costs include salaries and wages related to extended time of construction (Singh, 2009). Project overruns are associated with both cost underestimation and time delays. They are common in most projects, irrespective of the means of procurement. A study conducted by Allen (2001) in the United Kingdom revealed that project cost overruns are experienced in both publicly and PPP-procured projects. He compared six projects, three procured through the traditional procurement method and the other three procured through PPPs. The traditionally procured projects overran by between 31 and 214%, while the PPP-procured projects overrun by between 60 and 600%. This is an indication that the financing method used for a project is not the only factor that influences a project's success. For this reason cost overruns must be analysed and understood when infrastructure is being financed. Allen (2001) found that when an infrastructure project is procured through public finance, cost projections tend to underestimate the project risks, and, as a result, budgets for major projects have sometimes been prone to optimism bias. With regard to PPP-procured projects, the cost overruns were mainly due to inflation increases and public sector procurers changing the project scope (Allen, 2001).

There are a number of reasons for project overruns. The following section discusses these reasons in detail.

2.4.1 Reasons for project overruns (time and cost)

Project overruns are caused by many factors, some of which include changes in project scope, changes in the economic environment, political factors and poorly written contracts, among other things (Singh, 2009). International evidence indicates that cost overruns occur in approximately 73% of infrastructure projects (Dahdal, 2010). Most of the cost overruns are a

result of poorly written contracts, especially in PPP projects. However, even if the PPP contract is well written, governments can still initiate changes in the project scope (Allen, 2001). Given the private sector's bargaining power, it will lobby for increased costs. Subsequently, governments have to allow this, because changing the contractor is more costly once the project has started (Hart 2003). Other reasons for project overruns include (Singh, 2009):

- Technical reasons:
 - i. Excusable delays (due to force majeure), such as contractual issues. These include planning and design deficiencies such as incorrect estimates of work quantities.
 - ii. Non-excusable delays (contractual issues), due to unforeseen circumstances. These include site conditions (which differ from the contract document), materials, equipment, and labour-related delays, which are the major cause of contractors' performance delays.
- Political reasons: When project planners misrepresent timescales as well as cost/benefit projections in order to win political favour for the project and get it started. The principal-agent problem explains that this arises because funders of infrastructure projects (users/taxpayers) have limited information about the project because they are separated by a chain of intermediaries, including contractors, consultants, local government departments and national bodies.
- Optimism Bias: Is the tendency to be overly optimistic about cost estimates, completion times and risks. If this occurs, the contractor eventually fails to achieve the perceived benefits. To correct for optimism bias one needs to understand the technical and political reasons for project overruns and perhaps adopt more accurate forecasting (Kahneman, 1979, 2003; Kahneman & Lovallo, 1993).

3. INFRASTRUCTURE PRICING: ALLOWABLE REVENUE MODEL

Allowable revenue (AR) is an important factor for regulated entities, such as SOEs, as it hugely influences the amount of revenue that a regulated entity is to receive as determined by a regulator (AER, 2011). A tariff decision of regulators is normally based on the amount of revenue that would reasonably be required to recover a set of costs included in the regulated asset base (RAB), among others (AER, 2011).

$$\text{Allowable Revenue (AR)} = (\text{RAB} \times \text{WACC}) + D + E + C + F \quad (1)$$

$$\text{Tariff} = \frac{\text{Allowable Revenue}}{\text{Quantity of output sold by the Regulated entity}} \quad (2)$$

where the RAB is the cumulative historical investment made by the utility. The weighted average cost of capital (WACC) reflects the opportunity cost of the investments made by the investor. D = depreciation of the RAB over time. E = operational expenses incurred by companies. C = claw back and F= F-Factor, which is additional revenue to meet debt obligations that may be granted by a Regulator. If the allowable revenue excluding the F-factor does not enable the applicant's regulated activity to operate with a debt service cover ratio acceptable to its financiers, then additional revenue may be allowed.

The RAB is typically the largest component of AR and it will grow by the amount of the net capital expenditure outlays (for infrastructure) made by the company (Meaney & Hope, 2012). One reason why companies increase capital outlays is to expand infrastructure capacity as the demand for services increase (AER, 2011). Therefore if capital expenditure increases, RAB increases; so does the AR and subsequently the tariff. Regulators must ensure that capital outlays allowed into the RAB must be prudently acquired. If they are not acquired prudently, it will unnecessarily inflate the RAB. Therefore potential flaws in the following will inflate the RAB and cause inefficient prices:

- i. Inefficient selection of financing (procurement), which leads to additional capital expenditure.
- ii. Project overruns (time and cost): All additional costs increase the capital expenditure needed for infrastructure which is allowed into the utility's RAB and will inflate AR. Moreover, a long delay may cause depreciation of the asset, necessitating expenses on repairs or replacement. In the regulatory environment this may significantly increase tariffs and the eventual price the consumer will face.
- iii. Incorrect choice of a contract or contracting approach. This may result in firms paying higher capital outlays to contractors.

As discussed above, inefficient pricing casts doubt on an institution in achieving efficacy. Also as mentioned earlier, the efficacy with which the programmes are implemented and delivered to the targeted beneficiaries is crucial for project success (including the management of public finance, procurement, processes, contract management and effective monitoring of state-owned enterprises) (Kenny, 2007).

The WACC is also affected by the rate of return on debt (K_d) and the rate of return on equity (K_e) for investors. In fact, there are two ways in which investors' returns may increase (AER, 2011):

- i. If there is higher capital expenditure, investors will get a higher return; and
- ii. If K_d and K_e increase, investors will naturally receive a higher return.

Therefore returns on infrastructure are also directly linked to the K_e and K_d components of the WACC. The WACC component of the AR formula is affected mainly by the amount of capital expenditure made by investors. AR must therefore incorporate efficient returns for investors. Inefficiencies may result in higher K_d and K_e , thus increasing the value of the AR for utilities and therefore prices consumers face (AER, 2011). There are two main inefficiencies worth highlighting here:

- i. Inefficient funding: if a government fails to efficiently collect tax and user charge revenue, this would lead to failure of the project (Kenny, 2007). For example, if funding on a project is delayed because users refuse to pay, this causes a delay in both the cost of finance and the interest on that cost. The total finance owed on the project will be higher as investors must receive the real value (including inflation) of the money they have invested. This will feed into a utility's AR through the WACC component and further increase prices for consumers.
- ii. Project overruns: The rate of return that the financiers of the project expect from their investment will be higher if a project overruns because the project requires additional capital outlays and becomes riskier; the higher the rate of return, the higher the value of the

asset. This then affects the WACC component of Allowable Revenue, which will eventually affect the prices consumers face.

Therefore infrastructure investment is worthy of investigation: if it is inefficient, the asset will be priced inefficiently and this gets passed through to consumers. This article now looks at case studies of infrastructure projects in South Africa to investigate whether the following inefficiencies are observed:

- Inefficient and/or inappropriate financing (procurement)/funding models adopted by the different infrastructure implementing utilities for infrastructure projects.
- Extensive cost and time overruns associated with these infrastructure expansion projects.

4. SOUTH AFRICAN INFRASTRUCTURE PROJECTS

This section will look at the recent infrastructure projects undertaken/being undertaken in the South African context and investigate the financing, funding and project overruns associated with these projects.

TABLE 4: South African infrastructure projects and the financing method

<i>Project</i>	<i>Finance/Procurement method</i>
Gautrain	PPP
Kusile	Corporate finance with government guarantees
Medupi	Corporate finance with government guarantees
Gauteng toll roads	Corporate finance with government guarantees
New multi-product pipeline	Corporate and public finance
OR Tambo international airport	Public finance
De Hoop dam	Public finance
Soccer world-cup stadia	Public finance
N4 toll roads	PPP
Standard Bank building (Rosebank)	Private sector finance and Corporate finance

Source: *Compiled by authors from different sources*

One can clearly see from TABLE 4 that in the financing of infrastructure projects no financing technique is superior to any other. It is only when these projects are commissioned that one can analyse the factors that contributed to the success or failures of these projects. A retrospective analysis might provide a clearer insight into what precautions one should take when financing infrastructure.

In the case of South Africa, no empirical studies have been done to test the success or failure of infrastructure projects. However, Baloyi and Bekker (2011) conducted surveys for the financing of the 2010 World Cup stadia in South Africa. Ten stadia were either upgraded or newly constructed for the event. The World Cup stadia were built using a public finance approach.

However, the problems discussed in section 2.2 with regard to public finance were not the prevalent problems highlighted by the results of the surveys. A close analysis of the surveys revealed the following results: nearly all projects experienced time and cost overruns, ranging from 5 to 48% (see TABLE 5).

TABLE 5: Budget vs. indicated final costs of world-cup 2010 stadia

<i>Stadium</i>	<i>Initial budget</i>	<i>Final cost</i>	<i>Cost overrun</i>
Soccer City: Johannesburg	R2.2 billion	R3.7 billion	41%
Ellis Park: Johannesburg	R240 million	R253 million	5%
Moses Mabida: Durban	R1.6 billion	R3.1 billion	48%
Mbombela: Nelspruit	R600 million	R1 billion	40%
Green point: Cape Town	R2.9 billion	R4 billion	28%
Nelson Mandela Bay: Port Elizabeth	R2.1 billion	Not known	-
Royal Bafokeng: Rustenburg	R1.3 billion	Not known	-
Peter Mokaba: Polokwane	R360 million	R483 million	25%
Mangaung: Bloemfontein	R245 million	R359 million	32%
Loftus Versfeld: Pretoria	R122 million	R131 million	7%

Source: *Baloyi and Bekker (2011)*

Furthermore, a total of 18 factors which contributed to cost overruns were analysed, with the top 10 factors contributing more than 85% of the cost overruns identified. Most of the factors stated were either external or contractual. TABLE 6 below gives the ranking of the factors which caused cost overruns on the 2010 FIFA World Cup stadia.

In terms of time overruns, a total of 34 factors were analysed, with the top 10 factors contributing more than 80% of the causes for delay. Most of the problems stated were client- and contract-related. The top five factors were: incomplete drawings, design changes, clients' slow decision-making, late issuing of instructions, and shortage of skilled labour (Baloyi & Bekker, 2011). Surprisingly, labour disputes ranked seventh; one would expect labour to be the top-ranking factor given the number of labour strikes that took place during the construction period of these stadiums.

Project overruns were experienced in every project listed in TABLE 7, which highlights the inefficiencies discussed in previous sections. The next section provides an example of a project which incurred project overruns and as a direct result prices were inflated.

TABLE 6: Factors reported to have caused cost overruns of world-cup 2010 stadia

<i>Cost overrun factors</i>	<i>Rank</i>
Increase in material costs (inflation)	1
Inaccurate material estimates	2
Shortage of skilled labour	3
Clients awarded contract late	4
Project complexity	5
Increase in labour cost	6
Inaccurate quantity take-off	7
Difference between selected bid and consultants' estimate	8
Change orders by client during construction	9
Shortage of manpower	9

Source: Baloyi and Bekker (2011)

Note: 1 = most important; 9 = least important.

Given the findings from the World Cup stadia study by Baloyi and Bekker (2011), the authors of this article have compiled a list of completed infrastructure projects in South Africa and looked at whether any project overruns occurred. TABLE 7 below reveals the shocking results of this list. Projects in South Africa overran between 21 and 1 329%.

TABLE 7: Project overruns in South Africa

<i>Project</i>	<i>Initial budget (R bil)</i>	<i>Final cost (R bil)</i>	<i>Cost overrun (%)</i>
Gautrain	25.1	30.5	21
Kusile	90	121	34
Medupi	33.6	105	213
Gauteng toll roads	6.3	90	1329
New multi-product pipeline	11.1	23.4	111
OR Tambo international airport	5.2	8.5	64
De Hoop dam	7.9	20	153
Soccer world-cup stadia	8.1	18.4	126
N4 toll roads	2	3	50
Standard Bank building (Rosebank)	1.1	2	82

Source: Compiled by authors from different sources

4.1 Transnet's New Multi-Product Pipeline

Transnet decided to construct a New Multi-Product Pipeline (NMPP) to address fuel shortages in South Africa and the inland security of supply of petroleum products (Department of public enterprises (DPE), 2012). The latter was because the Durban-Johannesburg pipeline (DJP) was old and lacked the capacity for the increase in fuel storage (DPE, 2012). A typical Corporate Finance structure was used as a procurement method (DPE, 2012). The NMPP project is not fully complete, but part of it was commissioned to transport diesel (DPE, 2012).

The project completion date was moved from year 2010 to 2013 and the estimated total cost escalated from R11.1bn in year 2008 to R23.4bn in year 2010 (DPE, 2012). Variation in costs were explained by incorrect forecasts of contract costs, incorrect choice of procurement and a mismanagement of shareholder expectations (DPE, 2012). The escalating construction costs fed into the RAB, and subsequently Transnet applied for an increase in its AR and thus the tariff. Naturally the higher tariff was passed through to consumers. Currently, there is a prudency study being conducted by the national energy regulator of South Africa (NERSA) to address the unhappiness of all parties involved.

Lastly, two examples of South African projects that illustrate a failure and success of the user-pays principle as a funding mechanism are provided below.

4.2 User-pays failure: The Gauteng Toll Roads

An improvement of Gauteng's road infrastructure was undertaken by the South African National Roads Agency (SANRAL). This was financed by SANRAL by means of corporate financing and government guarantees (SANRAL, 2012). It was decided that the funding would come from tolling rather than the tax base (SANRAL, 2012). Pienaar (2011) suggests that through tolling one gets funding quicker than by relying on taxes, which could take several years. The highways themselves cost about R18 billion to upgrade. Due to cost overruns and the installation of gantries for tolling expenses, the total construction costs increased to R23 billion. There was no referendum conducted to see if users agreed with this means of funding (The Star, 2012). This caused public resistance towards the project, as Gauteng residents are forced to use the roads without reliable/available alternatives. Communication is vital before infrastructure financing occurs. This allows users to factor future costs into their budgets. If this is not done, users will refuse to pay and the funding will be delayed. This becomes problematic, as delayed funding increases the interest repayments on the project and requires a higher pay-back. This will feed into a utility's AR through the WACC component and lead to further increase prices for consumers.

Public resistance to paying the tolls has negatively impacted the balance sheet of SANRAL, as the revenue expected from the operation of the project has not been not collected pending legal challenges between the state and the public (The Star, 2012). Toll fees remained uncollected for a long time while the public was challenging the government in the court of law about the impacts the tolling would have on the wider economy. The court eventually decided in favour of the government (SANRAL, 2012). The objections experienced in the country have affected investor confidence and as a result SANRAL's global and national ratings were downgraded in February 2012 (SANRAL, 2012).

4.3 User-pays success: Gautrain rapid rail link project

According to the Gautrain Annual Report (2013), the project started in 1998 and was completed in 2012. The project was financed through the PPP model with Mbombela being the Special-Purpose Vehicle (SPV) for the project (Gautrain Annual Report, 2013). The railway line is 80km with 10 stations, and there is a possibility that it will be extended in the future (Gautrain Annual Report, 2013). Serrao and Van Schie (2011) reported that the amount of R30.5bn which was spent during the construction phase was divided into R27.3 billion, which consists of government's contribution, and the balance from private companies.

User charges were only to cover operational and maintenance costs (Gautrain Annual Report, 2013). In this case, users are not obliged to use the Gautrain as a mode of transport and therefore this funding method was a success.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

There are two fundamental components to implementing infrastructure: attracting investors to invest, and good governance (Kenny, 2007). This enables the state to do the following (Kenny, 2007): 1) Achieve efficacy with which the programmes are implemented and delivered to the targeted beneficiaries; 2) Collect tax and user charge revenue: this determines the resources available for infrastructure investment; and 3) ensure an effective oversight and regulation of infrastructure providers. If any of the capacities are inadequate, infrastructure delivery will be compromised.

From a theoretical perspective inefficient infrastructure delivery, particularly from SOEs, leads to inefficient prices of the asset in question. The AR model is used to price infrastructure. CAPEX for infrastructure is reflected in an institution's asset base. The institution is then able to recover its CAPEX by being allowed a higher revenue through charging higher prices. The asset base of the institution will be inflated the higher the CAPEX allowed. If the CAPEX is inflated due to imprudent costs, consumers suffer due to higher prices. The AR also requires a healthy rate of return for investors, through the weighted average cost of capital (WACC). Inefficiencies in pricing arise from:

- i. Inefficient selection of financing (procurement) and incorrect choice of a contract or contracting approach. This may result in firms paying higher capital outlays to contractors.
- ii. Project overruns (time and cost): All additional costs increase the capital expenditure, inflating the RAB unnecessarily. Delays in implementation in themselves will cause cost overruns. A long delay may cause depreciation of the asset, necessitating expenses on repairs or replacement. Lastly, it will also increase the return required by investors, as the project is deemed riskier.
- iii. Inefficient funding: if a government fails to collect tax and user charge revenue efficiently this can lead to the failure of the project.

This paper presented an investigation of each of the three factors that cause inefficient pricing as well as failures that arise from infrastructure investment. The findings for each are presented accordingly:

- i. Public-private partnerships as a means of procuring an asset seem to be trending in many countries. This financing method used cannot be ignored, because it is through this method

that incentives are created to encourage proper project management. A list of projects in South Africa showed that there is no superior financing technique. However, there is empirical evidence on the World Cup stadia projects which show that incorrect choice of a contract or contracting approach significantly determines the success of infrastructure projects.

- ii. A closer look at South African infrastructure projects revealed that almost all projects overran significantly by between 5 and 58%. Furthermore, the reasons for overruns were attributed mainly to contractual issues. A case study of the Transnet NMPP revealed that the project overran both in terms of cost and time. Transnet recovered costs by applying for tariff increases with NERSA. As a result of the failure to accurately predict cost and time forecasts, consumers had to absorb the higher prices.
- iii. Two South African case studies were presented: in one the user-pays principle was a success and in the other a failure. In the case of Gauteng E-tolls, users refused to pay for the infrastructure, as it was not initially communicated. In the case of the Gautrain project, the system of user-fees has been successfully implemented.

Lastly, the following recommendations are provided:

- i. Irrespective of which financing method an institution implements for infrastructure, strong precautions must be taken before the selection of a contractor for these projects. Contractors must present clear cost and time forecasts based on thorough research. Where project structures are small, it is suggested that EPC contracts be used as a way of managing project cost overruns and other risks associated with project construction. Under EPC contracts, contractors absorb all the risks, and failure to meet any contractual obligations results in monetary liabilities incurred by the contractor. However, where projects are complex, a cost-plus structure must be used within reason.
- ii. In many cases, project overruns are reported as unexpected. This is only evaluated after project completion, as was the case of the NMPP project by Transnet. This additional capital expenditure feeds into a utility's RAB and gets passed through to consumers. A recommendation is made to regulators to first conduct prudency tests of cost and time delays and verify if the overruns are justified before the consumer is faced with increased costs. If it is done after the fact, consumers might not be protected. Regulators should also look to capping overruns at a certain percentage in order to discourage projects from overrunning. This will then create an incentive for both contractors and regulated utilities to hit targets. If a project overruns beyond the project cap, it must be followed by a prudency test before the additional expenses feed into the AR of the utility in question.

Partnerships between law bodies and regulators are crucial. If a regulator finds that costs were not prudently incurred by the utility in question for an infrastructure project, it is suggested that the regulator take the contractor/utility to task. If the escalated costs are proven to be because of a cartel formation, the buyer can use the justice system to seek damages. This will ensure consumer protection and create disincentives for contractors and utilities to unnecessarily inflate costs.

- iii. Crucial to the success of the user-pays principle is that funding methods are made transparent to all parties involved. This will avoid unnecessarily long pay-back periods, which inflate the cost of the project further. This is vital for projects which are pure public goods. The example of Gauteng roads in South Africa should be a lesson for all stakeholders involved. Efficiency and transparency are both crucial in managing the financing and

funding processes. Furthermore, research at the inception phase must be done, such that affordability not only on the financing front but also on the funding front is addressed. Lastly, clear channels of communication must also exist between all stakeholders, and affordability should be taken into account.

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LIMITING COLLUSION IN THE CONSTRUCTION INDUSTRY: A REVIEW OF THE BID-RIGGING SETTLEMENT IN SOUTH AFRICA

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Abstract

This paper undertakes a critical case analysis of the process and outcomes of the Competition Commission (CCSA) Fast Track Construction Settlement Project relative to the mandates of the CCSA and the Construction Industry Development Board (CIDB). The study reviews the information from the CCSA's settlements, analysing the breakdown by private and public projects, type of project and the nature of bid-rigging. It provides an assessment of the practices involved and considers the co-operation that is required for the successful implementation of large infrastructure projects and how these can be organized in a way that ensures rivalry while enabling co-operation. The paper further reviews the barriers to entry, and the complementary measures that can be taken to ensure greater effective rivalry and participation. Interventions that could be necessary at the regulatory, procurement and firm level to ensure that the construction sector charts a new sustainable competitive path are highlighted.

Keywords

Regulation, construction industry, entry barriers, corporate leniency, cartel behaviour

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1. INTRODUCTION

The confirmation of settlements by the Competition Tribunal of South Africa (Competition Tribunal) in July 2013 marked a major milestone in the Competition Commission of South Africa's (CCSA) investigation of bid-rigging and collusion in the construction sector. With 140 projects affected by the collusive practices eligible for settlement, the CCSA reached a settlement with firms on 57 projects for a combined administrative penalty of R1.46 billion.

Investigations of collusive practices in the construction sector are not unique to South Africa, as other countries such as the United Kingdom (UK), United States of America (USA), South Korea and Netherlands have looked into similar issues before (Haberbush, 2000; Lee & Hahn, 2002; Sohail & Cavill, 2008; Gupta, 2001; Dorée, 2004; Porter & Zona, 1983). This article focuses on the role of the Construction Industry Development Board (CIDB) including the complementary role it can play with the CCSA to ensure firms are discouraged from engaging in collusive practices in the construction industry. There is also a focus on the measures that could be introduced at a regulatory level to ensure increased rivalry in large infrastructure projects.

In order to assess the construction sector and particularly the role of the CIDB in limiting construction industry cartels, the study sought to unpack the regulatory barriers to entry in the construction industry and how the market could be open for more participation, structural factors that may contribute to bid-rigging, ways in which competition can work as well as interventions that could contribute to a transparent, yet competitive, bidding process.

Primary and secondary data was used to assess the questions of the case study. The primary data was collected through face-to-face unstructured interviews with the key informants identified from the CIDB, the South African National Roads Agency Limited (SANRAL), City of Cape Town, G. Liviero Civils and Fikile Construction. Other identified informants from the City of Johannesburg, Ethekwini Municipality, National Treasury, Giuricich Construction, GD Irons Construction, Group Five, PPC Limited (PPC) and the South African Local Government Association (SALGA) were contacted but did not respond to the request for interview. The views of the contacted informants provide a fair and balanced representation of the construction industry as they cover the regulator, a major metropolitan municipality, firms that were implicated in bid-rigging as well as a large infrastructure projects client. The secondary data was obtained from the settlements concluded between the CCSA and construction firms, CIDB regulations and articles in financial and business magazines.

The paper thus presents an overview of the investigations conducted by the CCSA in the construction sector with particular emphasis on the form of collusive practices uncovered. Although the CIDB has legislation and regulations designed to ensure that the construction sector is competitive, develops and supports emerging contractors, and encourages a code of conduct for contractors, this has not stopped the construction firms from engaging in malpractices such as collusion and other forms of procurement irregularities including submitting phony CIDB grading certificates to secure tenders. An assessment of the regulatory framework and practices in the construction sector shows some gaps that may require interventions to enhance the powers of the CIDB, improve coordination in the procurement of large infrastructure projects and incentivise the firms to compete.

The rest of the paper is organised as follows: section 2 provides a theoretical review on bidding markets as well as some examples of bid-rigging in construction elsewhere; section 3 covers the background of the CCSA's construction investigation and the enforcement of the CIDB Act;

section 4 provides an analysis of factors that may have contributed to bid-rigging and key interventions that may be considered; and section 5 concludes.

2. THEORETICAL PERSPECTIVES

2.1 Bidding markets in brief

In the basic form, bidding markets, according to Riley and Samuelson (1981:381), posit a scenario of 'thin markets characterised by a fundamental asymmetry of market position', between a single seller (the client) and numerous buyers (the bidding firms). In such a setting the seller looks to sell the goods or services at the price reflective of the rivalry between the buyers, with most bids/actions requiring a reserve price depending on risk profile of the buyer. The common auction rules are English (known as ascending bids), Dutch (known as the high bids), first-price sealed bid auction and second-price sealed bid auction (the last two known as the Vickrey auctions) (Riley & Samuelson, 1981; see also Goeree & Offerman, 2004; Klemperer, 2004).

English or ascending bids are those in which an auction runs until there is no other high bid, whereby the winner is the highest bidder. Dutch bids are run such that the auctioneer starts from the highest price and gradually lowers the price, and the first bidder to take the price wins the bid. English bids can be open or closed, whilst the Dutch bids are open.

With the Vickrey auctions, the first-price sealed bid occurs in a manner that the bidders bid independently, and the one who pitches the highest bid wins. On the other hand, with the second-price sealed bids, bidders bid independently, but the winning highest bid pays the second-best price. The award for the bid on the second-best price is done to minimise the so-called winner's curse.

The auction principles, particularly the Vickrey auction methods, equally apply to bidding for infrastructure construction projects, wherein the client (being the single procurer of services) and the bidding firms engage in a bidding process. In this instance, the client determines a budget for the cost of the service upfront and engage in a bidding process to pick the lowest credible bid within its budget. The accuracy of the client's budget would then determine if the project can be completed within the cost estimates of the winning bid.

Klemperer (2004) also notes that bidding markets are susceptible to collusion as firms can attempt to manipulate the outcome of a bid. The concluded construction sector investigations in such countries as South Africa, UK, South Korea, USA and Netherlands point to the pervasive nature of bid rigging.

2.1 Bid rigging and public procurement

It is widely accepted the world over that collusion among firms is the most egregious competition law violation. The extent of bid rigging in public procurement, a form of collusion, led the Organisation for Economic Cooperation and Development (OECD) to adopt Guidelines for fighting Bid Rigging in Public Procurement in 2009, which guidelines preceded the key recommendations made in 2012 for eradicating bid rigging (OECD, 2009 & 2012). It is expressly recognised by the OECD that an open, transparent and competitive public procurement is vital to ensure that goods and services procured by governments offer 'value for money' (OECD, 2012).

However, much as public procurement systems could be stymied by instances of bid rigging, certain procurement rules also contribute to bid rigging (OECD, 2012). It is therefore important to look into the causes of bid rigging from both the firm and regulatory perspectives.

The OECD recommends the promotion of competition in public procurement through maximising participation of bidders by focusing on the following interventions (OECD, 2012): first, establishing participation requirements that are transparent, non-discriminatory, and that do not unreasonably limit competition; second, designing, to the extent possible, tender specifications and terms of reference focusing on functional performance; third, allowing foreign firms to bid; and fourth, where possible, allowing smaller firms to participate even if they cannot bid for the entire contract.

Sohail and Cavill (2008) note the pervasive nature of corruption (including bribery, embezzlement, kickbacks and fraud) in the construction sector as a major cause of poor or non-delivery of infrastructure projects. Although there have been measures designed at a global level (like UN and OECD conventions on bribery and corruption), Sohail and Cavill (2008:734) argue that 'these top-down approaches are rarely accompanied by effective enforcement and so have proven largely ineffective', as construction sector-specific mechanisms are seen to be the more effective. In the case of South Africa, construction-specific regulations are under the purview of the CIDB, whose existence could not prevent the widespread construction collusion at least up to 2009.

To root out corruption the construction sector, the main areas of focus should include raising awareness on such matters as ethical standards and good business practices, strengthening professional institutions like trade associations, prevention of corruption, and enforcement and monitoring mechanisms (Sohail & Cavill, 2008).

Sohail and Cavill (2008) also recommend, among other enforcement and monitoring mechanisms that companies caught out bribing should be 'blacklisted'. As regards transparency and rooting out collusion in construction sector procurement, the views of Sohail and Cavill (2008) accord, in the main, with the best practices recommended by the OECD. However, instead of advocating the blacklisting of firms, as Sohail and Cavill (2008) argue, authors such as Haberbusch (2000) and Gupta (2001) advocate better-designed bid processes to reduce the incentives for firms to collude.

In assessing the cause of bid rigging in the US public sector procurement, Haberbusch (2000) noted the facilitating factors to include the practice of limiting competition from the outset of a bid (pre-qualification), sealed bid process, limited deterrents for bid rigging, difficulties in detecting bid rigging schemes and joint ventures. To counteract bid rigging in public procurement, Haberbusch (2000) recommends that procurement processes should require firms to disclose compliance programmes when bidding for work. Other measures include redesign of bid documents to move away from the requirements of awarding tenders to the lowest bid, removing restrictions on bidder eligibility to bid, improving bid evaluation processes in order to detect bid rigging patterns as well as introducing stronger punishment for firms involved in bid rigging (Haberbusch, 2000).

2.3 Rivalry in bidding markets and the profit maximisation problem

In a market with thriving rivalry, "[a] competitive bidder must determine an optimal bid given its likely costs and the probable distribution of the other firms' bids" (Porter & Zona, 1983:528).

The profit maximisation problem for each firm is of the following form (Porter & Zona, 1983; Lee & Hahn, 2002):

$$\max_b E \Pi(b) = (b - c_{it})\varphi_{it}(b) \quad (1)$$

where b is the submitted bid, c_{it} is the cost for firm i for job t and φ_{it} is the probability that the bid for firm b is the winning bid.

The higher the probability of firm i winning the bid, the larger the profits it makes, and vice versa. In the event the firm does not win the bid, it makes zero profits (and incurs minimal costs related to the preparation of the bid). Firms tend to be incentivised to collude through such schemes as bid rotation or submitting complementary bids in order to increase their probability of winning a bid, thereby garnering larger profits and at the same time dampening competition.

However, in a sector such as construction where there is repeated interaction between firms, there could be added incentives for firms to collude. As Gupta (2001:454) explains, "... cooperation results from the common wisdom that if one firm bids aggressively against its rivals, the rivals would bid aggressively on the future projects or in other markets". The interaction between bidders, as Gupta (2001) argues, can also be used by regulators to detect collusive behaviour.

Gupta (2001) established that large contracts are prone to bid rigging and that bid prices are higher when there is repeated interaction between firms in other markets than when there is none (also see Haberbusch, 2000). In the construction industry, especially for large contracts, there are generally fewer firms capable to undertake the work, as such repeated interaction between firms tends to be inevitable. The nexus of the issue should therefore be to design bids such that firms, even with repeated interactions, are incentivised to compete.

2.4 Some evidence of bid rigging

2.4.1 USA

According to Porter and Zona (1983), more than half of cases filed with the antitrust division of US Department of Justice between 1982 and 1988 involved bid rigging or price fixing in a number of auction markets, including construction. Porter and Zona (1983) looked into ways to detect bid rigging in highway construction in the US (New York state) in the 1980s. The state was required to award the bid to the lowest 'responsible' bid, provided the price reasonably accorded with the estimates for the work. The auction took a sealed bid form, where the bids were opened in one room with the bidders present and afterwards the winning bid was announced. Porter and Zona (1983) argue that this bidding practice provided a platform for firms to monitor any collusive arrangement that may have been in operation. Similarly, Gupta (2001) looked into the bids for the construction of highways in the US state of Florida between 1981 and 1986, which followed the same bidding patterns as in the state of New York. The bid rigging patterns observed in New York were also evident in Florida.

2.4.2 South Korea

Lee and Hahn (2002) looked into bid rigging in the South Korean public works construction projects by assessing contracts awarded between 1995 and 2000. The bid rigging in South Korea, like in Florida and New York, was implemented by the firms through rotational and

complementary bidding (or cover pricing). In the latter, other bidders in collusive arrangement, except one, submit the bids to lose (Lee & Hahn, 2002; Porter & Zona, 1983; Gupta, 2001).

2.4.3 UK

The UK's OFT uncovered widespread bid rigging practices in the construction sector for the investigation period between 2000 and 2006. Investigations were concluded in 2009, with 103 firms found to have been involved in bid rigging (mainly cover pricing, with instances of compensation payments) affecting 199 projects (OFT, 2010). The fines levied amounted to £129.2 million (circa R2.3 billion), although 25 of the fined firms appealed the decision (OFT, 2010). Bid rigging affected both public and private sector projects, with 57% of the projects public and the rest private (OFT, 2010).

2.4.4 Netherlands

In the Netherlands, a 2001 television documentary in which whistle-blowers detailed the extent of bid rigging in the construction industry led to a public outcry and subsequent investigations by the Cabinet, the Department of Justice and the Dutch Competition Authority (Dorée, 2004). In the main, three main factors facilitated the bid rigging in Netherlands (Dorée, 2004). First, the bid rigging scheme was such that when a new entrant was identified in an area, the colluding parties ensured that their bids were so low that they effectively excluded such an entrant from the market. Second, colluding firms had to pay each other compensation for submitting phony bids. Third, transparent selection procedures that had to be followed by public sector clients made it easier for the firms to manipulate the procurement process.

2.5 What of competition in the construction sector?

Dorée (2004:154) further argues that “[t]o improve the situation of the construction industry requires further non-conventional procurement methods and less selection based on the lowest bid”, in line with “... construction reform policies adopted around the world ...” Key drivers of the construction sector, according to Dorée (2004), should be based on value and quality-driven competition, integrated team delivery and long-term commitments. Dorée (2004:154) asserts that a sector like the construction sector is susceptible to “ruinous competition” and as such competition cannot be sustained.

The Netherlands experience, like in all other countries where there has been bid rigging in the construction sector, shows that both the firms' stratagems and procurement processes facilitate bid rigging (Haberbush, 2000; Lee & Hahn, 2002; Sohail & Cavill, 2008; Gupta, 2001; Porter & Zona; 1983). The main challenge is to ensure that such collusive practices are eradicated at all levels of the procurement chain. Therefore, assertions by others like Dorée (2004) that competition in the construction sector is not feasible suggest that without some form of cooperation between firms the benefits of competition cannot be realised. The construction sector, like any other sector with no features of a natural monopoly, can be competitive if there is rivalry between firms. And, by its very nature, competition is robust such that some firms will prosper while others will not; the solution therefore cannot be cooperation but innovation and rivalry.

3. CONSTRUCTION SECTOR INVESTIGATIONS IN SOUTH AFRICA

3.1 The investigation at a glance

The first signs of collusion in the construction industry came as a consequence of a corporate leniency application (CLP) by Murray & Roberts, through its subsidiary, Rocla, in 2007. This case exposed a cartel in the production of pipes, culverts and manholes as well as bid rigging in the supply of precast concrete products (Competition Tribunal, 2013a; Competition Tribunal, 2010). The cartel, as detailed in the case between the *Competition Commission v Southern Pipelines Contractors/Conrite Walls*, operated from 1973 to 2007 in Gauteng, KwaZulu-Natal and the Western Cape. Having endured for such a long period, the cartel was structured such that one member of the cartel was designated a 'banker' to compile a list of all contracts available during a specific period. Cartel members allocated regions and market share. The effects of the cartel were catastrophic. As the Competition Tribunal (2010:4) explained, "[c]artel members enjoyed a quiet and hugely profitable life, as evidenced by the drop in prices by between 25-30% post the disbandment of the cartel ...". Further in-depth study of the cartel showed overcharges ranging from 16.5 to 28% in Gauteng and 51-57% in KwaZulu-Natal (Khumalo, Mashiane & Roberts, 2014).

In the light of the uncovered collusion in the construction products involving some of the top-tier construction firms, CLPs in the sector as well as international trends on bid rigging, the sector came onto the radar of the CCSA. This led the CCSA to prioritise the broader infrastructure and construction sector in 2008, among other sectors. The focus on the sector was also due to the infrastructure programme government was embarking on and therefore it was vital that prices of inputs to the infrastructure programme were not inflated by anti-competitive behaviour and practices. With the sector in the spotlight, the CCSA embarked on an in-depth study of the entire value-chain of the construction sector and at the same time CLPs started flowing in.

Armed with the information on possible anti-competitive conduct in the sector, the CCSA launched investigations of bid rigging and collusion in the construction sector in 2009. During the investigations, the CCSA established that bid rigging and collusive conduct was rife in the sector. In the circumstances, the CCSA decided, in February 2011, to invite firms involved in bid rigging and collusion to settle their contraventions provided they fully disclose the extent of their involvement and, where applicable, pay an administrative penalty.

In 2013, the CCSA concluded settlements with the majority of firms that were involved in the bid rigging and collusion on various projects, for which the contraventions occurred between 2006 and 2009. The total administrative penalties out of the settlement process amounted to R1.46 billion. TABLES 1 and 2 provide the information on the projects that were affected by the scourge of bid rigging and collusion.

In total, 300 projects were affected by bid rigging and collusion for the period of at least between 2000 and 2009. Of these projects, 160 (53%) fell outside the prescription period, set out in section 67 of the Competition Act, within which a complaint can be brought against parties involved in prohibited anti-competitive practices, hence the distinction between prescribed and non-prescribed projects in TABLE 1.

TABLE 1: Projects affected by the construction cartel: Prescribed versus Non-prescribed

	Prescribed	Non-prescribed	Total
Number of projects	160	140	300
Number of projects (%)	53%	47%	100%
Value of projects	R9.9 billion	R37.1 billion	R47 billion
Value of projects (%)	21%	79%	100%
Total project settled: 57			

Source: Competition Commission SA

Notes:

- (1) Prescribed projects involved acts of collusion that occurred outside the period permissible to investigate.
- (2) Non-prescribed projects involved acts of collusion that occurred within the period permissible to investigate.

Therefore, the projects considered for settlement were those deemed non-prescribed, constituting 47% of the affected projects. At the conclusion of the CCSA's settlement process, there were settlements on 57 projects out of the total non-prescribed projects of 140, with the latter still under investigation by the CCSA.

The value of the non-prescribed projects amounted to R37.1 billion (79% of the total projects), largely accounted for by the FIFA World Cup stadia construction and the Gauteng Freeway Improvement Plan (GFIP). In terms of value, the CCSA's investigation and settlement covered a substantial portion of the projects affected by bid rigging.

TABLE 2: Projects affected by the construction cartel: Private versus Public

	Private	Public	Total
Number of projects	75	225	300
Number of projects (%)	25%	75%	100%
Value of projects	R19 billion	R28 billion	R47 billion
Value of projects (%)	40%	60%	100%

Source: Competition Commission SA

The bid rigging and collusion uncovered in the construction sector affected both private and public sector projects. However, most of the rigged projects were for the public sector (75%), while the rest was for private sector projects (25%). In terms of value, the rigged projects for the public and private sector accounted for 60% and 40% of the infrastructure spend, respectively. In total, projects to the tune of R47 billion were affected by bid rigging and collusion across the private and public sector projects.

3.2 Key large infrastructure projects affected

A number of projects in both public and private sector were affected by the bid rigging and collusion in the construction sector, details of which are found in the settlement agreements

confirmed by the Competition Tribunal. Firms that settled with the CCSA revealed information about projects in which bid rigging occurred.

In public sector projects, bid rigging affected municipalities and public entities such as Eskom and SANRAL. The major public sector projects affected were the roads (GFIP) and FIFA Soccer World Cup stadia construction.

In the construction of roads, the top construction firms, namely, Grinaker LTA (an Aveng subsidiary), Basil Read, Haw & Inglis, WBHO, Concor and Raubex, reached an agreement at the Road Contractors meetings in 2006 to allocate tenders for the construction of roads. In addition, the firms agreed that firms not interested in winning the bid or not allocated a project would submit cover bids to ensure that those interested win the bid, a practice commonly referred to as cover pricing.

Another major project was the construction of the new FIFA Soccer World Cup stadia. The bid rigging agreement was concluded in 2006 by Grinaker LTA, WBHO, Murray & Roberts, Group Five, Concor and Basil Read. These firms met twice to allocate, among each other, the construction of the stadia, namely, Mbombela (Nelspruit), Peter Mokaba (Polokwane), Moses Mabhida (Durban), Soccer City/FNB Stadium (Johannesburg), Nelson Mandela Bay (Port Elizabeth) and Greenpoint (Cape Town). The firms moreover agreed to exchange cover prices in their respective bids to ensure that the agreed allocations were realised and also agreed on a profit margin of 17.5% to be attained from the construction of the stadia.

The collusive practices on the construction of roads and stadia were instigated by the top tier of South Africa's construction firms graded for large projects in CIDB's general building and civil engineering categories for grade 9 firms. Although just over 50 firms are registered for CIDB 9 in the GB and CE categories, in reality only the top tier of these firms are capable of handling large infrastructure projects. No construction firms that have been able to challenge the stronghold of the top-tier construction firms have emerged. This made it easier for the top firms to reach an agreement, as there would be no credible threat of rivalry from the other CIDB 9 category firms.

In the private sector, projects affected included industries/sectors such as mining (Anglo Platinum, Xstrata LionOre), paper and pulp (Mondi and Sappi), university residences (Universities of Pretoria and Cape Town) as well as private residences. The bid rigging uncovered also extended to mining infrastructure projects in Burkina Faso, Zimbabwe and Botswana.

3.3 Forms of collusive tendering

The construction sector, as revealed in settlements by firms with the CSSA, has been riddled with collusive practices for a number of years. The extent of such conduct has not been fully exposed in the settlements, as more than half (53%) of the rigged contracts were not considered for settlement given that the contraventions had prescribed in terms of the Competition Act (See TABLE 1).

What has been revealed is that the collusive practices took at least four forms, namely, (1) agreement on allocating customers and profit margins to be attained from a contract, (2) cover pricing, (3) payment of loser's fee to a bidder who submitted a cover price, and (4) subcontracting as a means of compensation to losing bidders (CCSA, 2013). Each of these formulations of bid rigging and collusion is discussed in detail below, highlighting how the *modus operandi* of the firms unfolded.

3.3.1 Scenario 1: Allocating customers and fixing profit margins

This form of bid rigging occurred mainly at a high level, where firms gathered together to allocate customers for anticipated construction work. The instances uncovered in the settlements were the road contractors' meeting (for anticipated GFIP and other road construction works), FIFA World Cup stadium allocation (for construction of world cup stadia), Wade list meeting (for electrical work) and Cape club meeting (for construction works in the Western Cape).

In the meetings, firms would allocate bids and, in some instances, agree on the profit margins to be attained. The firms were found to have been involved in this form of conduct without the knowledge of the clients.

3.3.2 Scenario 2: Cover pricing

Cover pricing has been defined in the settlements as an instance of collusive tendering as follows (Competition Tribunal, 2013):

Cover pricing occurs ... when conspiring firms agree that one or more of them will submit a bid that is not intended to win the contract. The agreement is reached in such a way that among the colluding firms, one firm wishes to win the tender and the others agree to submit non-competitive bids with prices that would be higher than the bid of the designated winner, or the price would be too high to be accepted, or the bid contains special terms that are known to be unacceptable to the client.

The former CEO of Aveng explains the finer details of the cover pricing scheme as follows (Jardine, 2013):

The main practice appears to have been what is called "cover-pricing". A strong management system was clearly in place, including succession planning because when one person was promoted or left the company he would bring his successor to a meeting (according to evidence submitted, these meetings usually occurred at 5 star hotels), introduce the new person and do a formal hand-over. Some of the younger people knew that if they wanted to get ahead in their companies this was "the way it is done". The tenders were then allocated as follows: the firm not wanting the business gives a "cover price" to a competitor who then wins the award on submitting a lower price than the "cover price". In some cases, the firm submitting the "cover price" will be compensated through a "losers' fee".

The settlement by firms as confirmed by the Competition Tribunal revealed that a significant amount of the collusive tendering was in the form of cover pricing, for both public and private sector contracts. Firms, individually or as joint ventures, decided on cover prices based on capacity constraints or as an act to inflate the bid price.

Cover pricing arising from capacity constraints, often rife in private sector projects, occurs when firms are invited to bid for work and have neither available capacity nor appetite for the work. In this instance, an invited firm would then request a cover price from another firm to bid such that the invited firm does not win the tender. Some of the firms argue that this form of cover price takes place as firms are generally reluctant to turn clients away.

In instances of cover pricing as a means to inflate tender costs, firms would agree on projects they should share among themselves, and use cover pricing to ensure that the outcome is achieved. This form of cover pricing is solely designed to ensure that the rivalry in the identified projects is eliminated, thus making it possible for the firms to extract higher-than-normal profit margins.

Despite the form of the cover pricing or phony bids, it has been established in the countries that have uncovered bid rigging in the construction sector that such conduct is orchestrated to deceive the buyer that there is competition when there is not, with the ultimate goal of achieving higher prices. In essence, construction firms were able to consistently influence the outcome of bids for infrastructure projects through cover pricing. And as shown in the details of the settled projects affected by bid rigging, firms have been particularly successful in ensuring that contracts are allocated to the chosen firm. In only very few instances of cover pricing (on settled projects) did one of the firms engaged in cover pricing not win the tender (see for example the projects to construct the N2 Section 10–Gamtoos to van Staden River, Peter Mokaba Sports Stadium, Millwood Village Residential Project and Kempton Park City Mall).

Cover pricing has been the form of collusive pricing that has allowed firms to continuously rig bids to influence the outcome of a tender process. In this way firms have been able to allocate contracts, eliminate competition and achieve higher prices than would have been achieved had the bid rigging not occurred.

3.3.3 Scenario 3: Payment of losers' fee

In certain instances, cover pricing was combined with payment of losers' fee, which meant that participants to the cover pricing scheme were paid a losers' fee. This was a ploy by the construction firms to ensure that those participating in the cover pricing scheme were compensated, in some instances with payments in excess of R1 million.

According to the former CEO of Aveng, there was even fraudulent accounting to conceal the losers' fee in the companies' books. In essence, the losers' fees were accounted as follows (Jardine, 2013):

These "losers' fees" were apparently disguised through fake accounts in line items called plant and machinery, scaffolding hire or labour. Money came in and out of these accounts, they kept a score sheet to keep track of who owed monies, invoices were raised, and if another project came up offsets were applied.

This form of accounting was, obviously, designed to hide these fraudulent payments from the auditors' radar. The practice of recording losers' fees as plant hire was confirmed by a number of representatives of firms before the Competition Tribunal for settlement hearings, including Esorfranki, Murray & Roberts and WBHO.

3.3.4 Scenario 4: Subcontracting

Collusive tendering also occurred whereby participating firms were guaranteed subcontracting work for submitting false bids to clients. When the identified firm won the tender, participating firms were rewarded with subcontracting work.

In sum, the construction firms engaged in collusive tendering/bid rigging in the form described in the scenarios above. For many years, before the investigations by the CCSA, firms were rigging the procurement processes on major infrastructure projects in South Africa with impunity. As the law has caught up with the firms, the challenge for the industry will be to adapt to a competition culture by abandoning collusive tendering practices.

3.4 Enforcement of the CIDB Act

The CIDB Act established the CIDB in order to implement an integrated strategy for the reconstruction, growth and development of the construction industry. The CIDB Regulations, adopted in 2004, provide a framework for grading contractors in terms of their capabilities and the volume/nature of the projects they can undertake. Initially, the grade of a contractor was based on two methods, one based on the track record and the other on the available capital. The latter method meant that a contractor could achieve a high grading provided it had available capital, regardless of its track record. This led to the amendment of the CIDB regulations in 2013 to provide for a ranking framework based on both the track record and available capital.

The CIDB grades, from 1 to 9, determine the value of tender a firm can bid for based on its annual turnover, value of projects undertaken and available working capital. This system thus regulates the extent to which firms can participate in bids in the public sector. There are, however, provisions in the CIDB regulations to allow firms to enter into joint ventures, such that they could receive a higher grade in order to bid for certain projects, as shown in table 3.

TABLE 3: CIDB grading for joint ventures

<i>Designation</i>	<i>Deemed to satisfy joint venture arrangements</i>
3	Three contractors registered in contractor grading designation 2
4	Three contractors registered in contractor grading designation 3
5	Two contractors registered in contractor grading designation 4; One contractor registered in contractor grading designation 4; and Two contractors registered in contractor grading designation 3.
6	Two contractors registered in contractor grading designation 5; One contractor registered in contractor grading designation 5; and Two contractors registered in contractor grading designation 4.
7	Two contractors registered in contractor grading designation 6; One contractor registered in contractor grading designation 6; and Two contractors registered in contractor grading designation 5.
8	Three contractors registered in contractor grading designation 7
9	Three contractors registered in contractor grading designation 8

Source: CIDB Regulations, 2013 (as amended)

The joint venture arrangements set out in the CIDB regulations ensure that firms are provided an opportunity to bid for work that they would otherwise not qualify for individually. For instance, in the case of large projects with a value of over R130 million (grade 9), there is provision for a joint venture by three grade 8 firms, which could provide some scope for competition for grade 9 contractors.

Contractors seeking to bid for public sector contracts have to be registered on the national register of contractors. If a contractor is awarded a public sector contract, and is unregistered, it is liable for a fine not exceeding 10% of the value of the affected contract. For any other

offences, a person (legal person) who contravenes the CIDB Act and/or any of its regulations is liable for a fine not exceeding R100 000.

Since 2007, the CIDB has sanctioned a number of firms for various contraventions of the CIDB Act and regulations. Firms as well as individual directors have mainly been meted with suspensions for a specified period (generally 6 months to 12 months, and in few cases, up to 60 months), required to reapply for registration, pay a fine not exceeding R100 000 and/or downgraded. FIGURE 1 shows the total number of firms sanctioned by the CIDB between 2007 and 2013, including those that were removed from the register of contractors indefinitely or for five-year period or longer.



FIGURE 4: Number of firms sanctioned by the CIDB, 2007-2012

Source: CIDB government gazette notices, 2007-2012

Note: Statistics from the CIDB are only available from 2007.

In total, the CIDB has, between 2007 and 2012, sanctioned 98 firms (including their directors) for various forms of irregularities, eight of which were barred from registering indefinitely or for periods of at least five years. The most common contraventions are submitting falsified financial statements, forged tax clearance certificates, inaccurate track records and bogus affiliations of members of staff to various professional associations. In recent times, the CIDB has also sanctioned public sector clients such as government departments for not publishing tenders or for appointing firms that are not on the register of contractors.

4. ANALYSIS

There are various measures that could be considered for the South African construction sector to rid it of its collusive tendering practices and move towards realising a competition culture. Due consideration ought to be given to the regulatory environment, procurement management and the behaviour of firms.

For the construction sector to be competitive, there has to be effective regulatory oversight, transparent procurement practices and competitive rivalry among firms.

4.1 Regulatory level

The CIDB is empowered to regulate the construction sector to promote the growth and development of the sector. There are regulatory requirements that firms have to adhere to, particularly with respect to the register of contractors, which the CIDB keeps and uses to grade firms according to their capacity to carry out construction work. The stakeholders engaged cite the CIDB grading of contractors as a necessary tool to ensure that firms in the sector meet certain minimum requirements to undertake projects (Marsden, 2013; Mofokeng, 2013; Ntiisa & George, 2013; Cloete, 2013; Smit & Van der Walt, 2013).

There are, however, two main deficiencies in the CIDB grading system.

First, the grading does not provide sufficient information to clients on the capacity and ability of firms to undertake construction works (Smit & Van der Walt, 2013). It could assist clients if the grade of the contractors matched the capacity and ability of the contractor concerned to undertake a construction project at a given point in time, which information can be made available by the CIDB. For instance, the CIDB grade 9, which is the highest grading a contractor can attain, has more than 50 firms than can potentially qualify to undertake the large infrastructure projects, but in reality only the top firms like Group Five, Aveng, Murray & Roberts, Basil Read, Raubex, Stefannuti and WBHO can deliver such projects. The number of firms in the CIDB grade 9 category gives a false impression that there is a high number of large construction firms, whereas competition for large infrastructure firms occurs only between the top firms.

Second, the provisions in the CIDB regulations for joint venture arrangements to allow firms to compete for CIDB grade 9 projects limit that possibility to only a consortium of three grade 8 firms at a time. There is thus no flexibility to allow a group of emerging contractors, at different stages of development, to form consortia to compete for large infrastructure projects. For this reason most of the emerging contractors rely on subcontracting work, thus limiting their potential to grow.

There is also a concern, as indicated by Ntiisa and George (2013), on the penalties provided for in the CIDB Act, in the event of contraventions by firms. At best, the CIDB can deregister a firm from the register of contractors or levy a fine not exceeding R100 000.

Therefore, to ensure that there are fewer incentives for firms to engage in collusive tendering, the following regulatory interventions can be considered:

- Enhancing the powers of the CIDB to deal with procurement irregularities by contractors. This will require that there are appropriate and tougher sanctions such as increasing the quantum of possible fines, to meet the gravity of the procurement irregularities.
- Review of the CIDB grading system to take into consideration the ability of a contractor to execute the work as well as past performance. The thresholds have to be revised to be based on the allowable annual turnover thresholds to ensure that contractors do not take work beyond their capacity to perform. As per the current formulation, the thresholds do not provide a limit on the number of projects a firm can take within a grade, that is, a firm may simultaneously take multiple projects of equal value but lack the capacity to deliver on all.

- Introducing support measures (e.g. deepening contractor development) and a regulatory framework to enable emerging firms to participate and bid for large infrastructure projects, instead of this being the province of only the top firms.
- Cooperation between the CCSA and CIDB on investigations, particularly on cases involving bid rigging in the construction sector.

The CIDB, with enhanced powers, can contribute to a competitive and efficient construction sector, thus contributing to the attainment of the objectives of both the CIDB Act and Competition Act.

4.2 Procurement level

On the procurement level, much of the bid rigging in the large infrastructure projects that were undertaken in South Africa, according to the City of Cape Town and SANRAL, is a result of the way government planned the projects. During the CCSA's investigation period for bid rigging, 2006 to 2009, government launched construction projects for roads (GFIP), FIFA World Cup stadia and Eskom power stations. At the time, there was only a handful of firms that had the proven track record to embark on such large-scale projects. For instance, in roads construction, SANRAL divided the work into packages and invited specific firms to bid for each individual package. As revealed in the Competition Tribunal settlements, the firms (Grinaker/Aveng, Basil Read, Concor/Murray & Roberts, WBHO, Raubex and Haw & Inglis) met to discuss the cover pricing scheme such that those firms not interested in the bids submit phony bids. It can be inferred that the availability of other lucrative construction opportunities such as the FIFA World Cup and Eskom power stations provided room for the firms to sacrifice other work. In this regard, most of the stakeholders noted this infrastructure projects glut as the main reason firms sought to collude in order to extract the greatest profit.

In addition, there are noted concerns about the capacity of the government institutions to manage the procurement of large infrastructure projects (Mofokeng, 2013). There is said to be a lack of requisite skills to procure services for large infrastructure projects, such that engineering consulting companies are retained to manage the process on behalf of a government institution. This, in the view of some of the stakeholders is another main contributing factor to bid rigging, as the management of the procurement process is often outsourced to third parties (Marsden, 2013; Mofokeng, 2013).

As indicated by Smit and Van der Walt (2013), the nature of the procurement process for public sector projects, particularly the requirement that projects must be awarded to the lowest qualifying bid, also contributes to bid rigging, since firms can easily pick whose bid should be the lowest. In most instances where cover pricing was found, the tender was awarded in line with the cover pricing scheme devised by the firms. This may call for a consideration of other criteria to evaluate prices. It has also been found that the lowest qualifying bid principle invariably leads to the winner's curse, as some firms would price too low to secure a project but with no available capacity to undertake such work.

There are also concerns noted in private sector infrastructure projects, particularly as regards the role of consulting engineering firms tasked to manage procurement (Mofokeng, 2013; Cloete, 2013). As there is no express requirement for a public procurement process in private sector projects, the consulting firms are often provided the latitude to identify and recommend suitable contractors for a project. When firms are contacted by the consulting engineers for such projects, they tend to agree to participate in the tender process even in instances where they do

not have the available capacity to undertake the work. The lack of capacity in some of the firms identified to participate in a tender process results in them requesting their competitors to provide a cover bid such that the outcome of the bidding process is manipulated.

To counteract future acts of bid rigging in large infrastructure projects at the procurement level, the following potential key interventions are necessary (see also OECD, 2012):

- Government should consider spreading out the expenditure on large infrastructure projects over a longer time horizon. The local construction industry did not have the capacity to undertake the number of large projects such as GFIP and Eskom power stations and FIFA World Cup stadia that were initiated in the same period. In essence, the expenditure should be aligned with the capacity of local construction industry to absorb the work.
- There has to be consideration on the options to split large construction projects into packages to allow for broader participation by construction firms. This would ensure that contractors that would otherwise not qualify for one large project could successfully bid for individual packages. However, such packaging of projects should be designed in a manner that does not compromise the quality of a given project.
- Instead of rules that require projects to be awarded to the lowest qualifying bid, a consideration should be given to the benchmarking model (or other alternative models) whereby the winning bid is based on a range of the prices of the bids at some percentile (see also Haberbusch, 2000). The benchmarking model is similar to second-price sealed bids (one type of Vickery auctions) in which bidders bid independently, but the winning highest bid pays the second-best price. In the case of construction type bids, the second-best price would be second lowest. The benchmarking model could make it difficult for colluding firms to determine the price that would win the tender, thus negating the effects of a cover pricing scheme or complementary bids, and this is currently being considered by SANRAL and National Treasury.
- Transparent tender evaluation and adjudication processes. It is important to have a good tender document to avoid scope for bidders to manipulate the process. It should be a standard requirement that the supply chain management framework is structured such that there are separate committees managing the development of specifications, evaluation of bids and the award of tenders. And that the decision for the tender award, and reasons thereof, should be communicated to all firms that bid.
- Improved project management capacity in the public sector to ensure that projects are completed within the specified cost, quality and time. This has to be complemented by a clear governance framework with strict monitoring and evaluation of projects.

4.3 Firm level

For there to be a culture of competition in the construction sector, firms have a pivotal role to play. Competition, in essence, should take place between firms rather than the culture of cooperation through collusion and bid rigging. The cause of bid rigging, as most stakeholders noted, has been the entrenched culture of collusion that had for many years infiltrated the top tier of South African construction firms. The top-tier construction firms thus engaged in bid rigging to the detriment not only of clients but also the participation of emerging firms. As noted by Munshi (2013), “[e]merging contractors believe collusion robbed them of the opportunities to grow, for which they are entitled to restitution.” In the absence of bid rigging, which occurred

at least from 1999/2000 among the top-tier construction firms, it is conceivable that new firms could have emerged.

For instance, there are contracts that involved the construction of residential properties, roads and convention centres that would have provided the needed experience and exposure to the emerging firms in order to achieve higher CIDB grading. In the case of the Netherlands, for example, firms involved in bid rigging engaged in predatory bidding to exclude emerging firms. Perhaps if some of the cases in South Africa are prosecuted, there could be better insights on the modus operandi of the bid rigging scheme. There is a need for a shift in the manner firms compete for projects, such that the culture of collusion and bid rigging is eradicated.

The firms involved in bid rigging on large infrastructure projects were, in the main, Group Five, Murray & Roberts, Aveng, Stefanutti, Basil Read and Raubex. These are, historically, the established construction firms in South Africa. Most emerging contractors are not implicated in the bid rigging, as they are mainly roped into projects for limited subcontracting work. The top-tier firms, having the wherewithal to undertake large infrastructure projects, opted to collude rather than compete, as the stakes were deemed high given the magnitude of the projects.

Despite the enactment of the CIDB Act in 2000 with the view to promote participation in the construction sector, construction firms that can grow to compete at the level of the top-tier firms have not emerged, which points to the challenges for emerging firms. Although there are over 50 CIDB grade 9 construction firms, this has not translated into an increased level of competition in the space for large infrastructure projects. Some stakeholders ascribe this to the lack of an entrepreneurial culture among emerging construction firms, which tend to focus less on growing and building their businesses, and more on short-term financial gains. Others point to the lack of transformation of large construction firms, skills transfer and empowerment of the emerging construction firms (Munshi, 2013). The solution for meaningful participation by emerging firms in the construction sector can be found both in contractor development, as advocated by the CIDB, and in inculcating an entrepreneurial culture both for emerging and established firms.

Measures can be introduced to promote competition and participation in the construction sector such that the level of competition improves, including:

- Procurement integrity management system to improve transparency. In addition to the Certificate of Independent Bid Determination for public sector tenders, firms should be required to declare that there has been no instance of corruption in the bidding process such as kick-backs to clients, payments to other firms in relation to the bid, bribes etc.
- Adherence to the CIDB code of conduct for all parties involved in construction procurement.
- Promotion of emerging construction firms through skills transfer and empowerment by the large construction firms.
- Promoting competition by involving foreign construction firms in large infrastructure projects.

According to Dorée (2004), there is a risk that construction firms, in the case of the Netherlands, will revert to collusive practices if appropriate structural and behavioural remedies are not adopted. However, firms ought to be aware that there are potential costs of engaging in collusion, with far-reaching consequences. There are costs for firms that engage in bid rigging, as this takes management time to productively work on the business to increase productivity,

innovate and grow the business. Firms have to do more than comply with regulations: they need to change their behaviour in order to eradicate the culture of collusion in their businesses.

5. CONCLUSION

Efficient procurement of construction services in large infrastructure projects hinges on the competitiveness of the construction sector as well as procurement practices. Bid rigging in construction has been uncovered in many countries, which points to the need for robust regulation to ensure firms are incentivised to compete and that conditions are favourable for emerging firms to compete. The challenge of bid rigging is also more pronounced in large infrastructure projects, where there are generally few firms with the capacity to compete for such projects.

The CIDB can play a more active role in limiting construction sector cartels in large infrastructure projects, particularly if it is granted sufficient powers to sanction firms that may be involved in collusive practices and also promote the participation of emerging firms to challenge the stranglehold of the top-tier construction firms. The sanctions should be complementary, rather than supplant the mandate of the CCSA.

This article proposed interventions that could be necessary at the regulatory, procurement and firm level to ensure that the construction sector charts a new sustainable competitive path. The interventions could ensure that a sound regulatory framework is designed for firms to compete fairly and that infrastructure projects clients get value for money.

With the mix of the proposed interventions at the regulatory, procurement and firm level, the South African construction industry could be less susceptible to collusive practices and, to a large extent, any other procurement irregularities.

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A CRITICAL EVALUATION OF THE PROPOSED TREATMENT OF SPECIAL COST ADVANTAGES IN EXCESSIVE PRICES LAW

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Abstract

Firms have a special cost advantage when they receive a discount or subsidy without assuming any risk or without being innovative. It is thus a received benefit, rather than an earned benefit, which results in a cost below the normal competitive level. The treatment of these special cost advantages has been a complicating factor when the firm in question is a dominant firm accused of charging an excessive price. The relevant benchmark against which to assess the price charged by the firm is the notional competitive market price, which in turn is linked to the cost of production under competitive conditions. This led to the Competition Appeal Court recommending that special cost advantages should be excluded from the cost build-up of the dominant firm when assessing excessive prices allegations. This would artificially inflate the dominant firm's costs and reduce the likelihood of a finding against the firm. This recommendation by the CAC has a number of theoretical and practical problems, and it remains unclear how special cost advantages should be treated in South African competition law cases.

Keywords

Excessive prices, special cost advantages, competition law, abuse of dominance, monopoly, exploitative abuse

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1. INTRODUCTION

A special cost advantage is a specific type of cost advantage which is not earned by the firm but rather received from an external stakeholder. It is thus neither a reward for assuming risk nor a return for past innovation. A common source of special cost advantages are state interventions in strategic markets which the state is trying to develop. Irrespective of the source of the special cost advantage, the result is a cost structure which is below that which would result under normal competitive conditions. Where the market is sufficiently competitive, this would result in lower prices to the benefit of downstream firms or consumers. However, where the market is not competitive, a portion of these special cost advantages will be transformed into additional profits.

The issue of special cost advantages has particular relevance in the assessment of excessive prices cases in competition law. This is because these cases require the assessment of the competitive counterfactual price, and hence the level of costs under competitive conditions. Critical to this evaluation then, as it was in the excessive prices case against ArcelorMittal South Africa (AMSA), is how to construct the notional costs which would have existed under competitive conditions.

AMSA was previously the South African state-owned iron and steel company which both extracted iron ore and produced steel. The two functions were split in 2001 and the steel production company was privatised in 2003 (AMSA, 2013). AMSA, the new owners of the steel production assets, retained a deal to purchase iron ore from its former sister company at a steep discount, and also negotiated tax incentives with the Department of Trade and Industry.

In 2002 Harmony Gold and Durban Roodepoort Deep complained to the Competition Commission of excessive prices for flat steel in South Africa. The case was heard only in 2006 after the complainants took their case independently to the Competition Tribunal. One of the issues raised in the case was that AMSA received special cost advantages and, in return, the Department of Trade and Industry expected there to be developmental pricing, which never transpired (Competition Tribunal, 2007). While this was not important to the Tribunal's decision to uphold the complaint and levy an administrative penalty of R692m against AMSA, the Competition Appeal Court (CAC) did make a suggestion on this issue when deciding AMSA's appeal of the Tribunal's decision (CAC, 2009).

The argument used by the CAC is that the economic value against which a firm's price should be compared, if the cost build-up method is used, should not be the costs of the monopolist. Rather, it should be the costs of a notional competitive firm. If the monopolist enjoys a special cost advantage, it follows that the cost a competitor firm would pay should replace the especially low cost when conducting the cost build-up. Section 2 delves deeper into the CAC's arguments, and section 3 examines how to follow the CAC's suggestion to 'disregard' the special cost advantage. Sections 4 and 5 describe complications in the analysis firstly with regard to measurement issues and then with regard to the difference between a special cost advantage and a cost advantage. Lastly, section 6 concludes.

2. SUGGESTED TREATMENT FOR SPECIAL COST ADVANTAGES

As one of its reasons for the decision to set aside the decision of the Tribunal in the Harmony Mittal excessive prices case, the CAC (2009) gave various suggestions on how to approach

excessive prices cases. In particular, the CAC identified various methodologies of estimating economic value. The economic value of a product is essential to an excessive prices investigation, because it is the benchmark against which actual prices are compared in deciding if the difference is excessive or not.

The CAC interpreted the term economic value as the price that would have prevailed in the long run under competitive conditions (CAC 2009: para 40). The CAC gives further clarity by stating that the market does not necessarily have to be perfectly competitive in the short run; however, in the long run all supracompetitive returns are eliminated. This is a very rigid interpretation by the CAC, because in holding that economic value is equal to the long-run perfectly competitive price, it also follows that economic value is the economic cost at minimum efficient scale. A monopolist is not held to pricing at this level, however, but is required to price at a level which bears a reasonable relation to this level.

Interestingly, none of the suggested tests by the CAC reflect this rigid definition of economic value. Price cost tests and profitability analysis are most closely related to this definition of economic value; however, they don't fully adjust the market structure from monopoly to perfect competition. Two attempts are made to move closer to perfectly competitive cost levels: (i) eliminating inefficiencies from the monopoly costs and (ii) adjusting costs where the firm enjoys special cost advantages. It is with the terms of the suggested treatment for this second adjustment that this paper is mainly concerned.

Other tests suggested by the CAC and discussed in the literature on excessive prices (see Motta & De Streel, 2007) include comparing the price charged by the dominant firm between different markets, over time in the same market, or to different customers in the same market. These tests don't make any attempt to construct a perfectly competitive counterfactual but instead are short-cuts to understanding what economic value might be, or at least an upper limit of economic value.

When performing the price cost tests and profitability analysis the firm's accounting costs need to be transformed into economic costs. A pertinent issue here, as previously mentioned, is whether and how to adjust costs for cost items where the firm has received a special cost advantage. This is different from a competitive advantage gained from innovation or fortune and which might result in a cost advantage. Rather, a special cost advantage is one which the firm received from the outside, such as an incentive from the state. The CAC explains how these special cost advantages should be addressed:

[I]n determining the economic value of a good or service, the cost savings to the firm resulting from the subsidised loan or the lower than market rental – or indeed any other special advantage, current or historical, that serves to reduce the particular firm's costs below the notional competitive norm ought to be disregarded. (CAC, 2009: para 43)

This suggestion is made because the Act identifies that what needs to be excessive for a finding of excessive pricing is not the difference between the price charged by the firm and the cost of producing that product, but rather the price charged and the economic value of that product. If the firm were to acquire inputs at a price which is lower than the economic value of those inputs, it does not reduce the economic value of the dominant firm's output.

It seems that the CAC arrived at this conclusion on the advice of amici curiae, specifically the submissions of Robert Petersen SC, Hamilton Maenetje and Michelle le Roux (2008). The amici curiae link a definition for economic profit to the issue of economic value in explaining how input costs should be calculated. The definition used is from the Penguin Dictionary of

Economics, which the amici curiae modify to: ‘accounting profit and economic profit will be the same only where all factors of production have been credited with their full (one should add, competitive) opportunity costs’ (Petersen et al, 2008: para 22).

Implicit in this definition above is that accounting costs and economic costs will differ where the opportunity cost is different to the accounting cost. Thus, where shareholders invest funds in a business which they could have invested for a positive return elsewhere, the opportunity cost of not investing the funds elsewhere needs to be included as an economic cost. This is the reason why a reasonable return on capital is included in economic profitability analysis (although the CAC explains that the term ‘reasonable return’ should not be used). By the same logic, the amici curiae continue, any special cost advantage for a certain input enjoyed by the firm should be valued at the opportunity cost rather than the actual amount paid. The amici curiae state it thus:

The cost savings to the firm resulting from the subsidised loan or the lower than market rental – or indeed any other special advantage, current or historical, that serves to reduce the particular firm’s costs below the notional competitive norm – ought to be disregarded when determining the “economic value” of the goods or services which it supplies. (Petersen et al, 2008: para 23.1)

The first observation to make is that the CAC’s conclusion on the issue (CAC, 2009: para 43) is an almost verbatim copy of this conclusion by the amici curiae. The only difference is that the amici curiae focused on the issue of opportunity cost extensively in their reasoning leading up to their conclusion, while the CAC makes no mention of opportunity cost, retaining only the term ‘notional competitive norm’. This difference is not simply a point of semantics. Opportunity cost is a firm-specific measure which asks what the next best alternative to the firm would be if they did not use the input or factor for its primary purpose. The notional competitive norm suggests some market related price for the input which is independent of firm specific realities.

The example of a subsidised loan is used both by the amici curiae and by the CAC and illustrates well the difference between opportunity cost and notional competitive norm. To be fair to the CAC, the amici curiae must also have applied the notional competitive norm concept rather than opportunity cost, which is peculiar given the lengths they go to in explaining that costs should be valued at opportunity cost. Here the idea is that the government offers a firm a subsidised loan in order to incentivise it to build a production facility. The firm benefits because it pays a lower interest rate on the debt than it would have had to had it raised the capital on the open market.

In the situation described above, using the notional competitive norm would suggest increasing the interest costs of the firm to what it would have paid had it had to borrow on the open market rather than receiving a subsidised loan from the government.

Using the opportunity cost concept instead would require an answer to the question of what else the firm could have done with the funds borrowed at the subsidised interest rate. Had the firm been able to borrow the money at the lower interest rate from the government and then lent it out on the open market at the prevailing interest rate, then the opportunity cost would indeed have been the prevailing interest rate, as was the case when applying the notional competitive norm concept. If, however, the government had lent the firm the funds on condition that it used them for a specific purpose, then the firm would not have had the option of then lending the money out on the open market. Indeed, the firm would only have had two options: borrow at the subsidised rate and spend it as per the condition; or, do not borrow the money at all. The opportunity cost is the value of the second best option, which, in this case, is to not borrow the funds at all. The value of not borrowing the funds is that the firm does not have to pay the

agreed interest. Thus the opportunity cost where the preferential loan is conditional upon a specific use is the same as the actual or accounting cost: the agreed interest payable on that loan.

There may be a significant difference in results depending on which standard to adopt: the opportunity cost standard or the notional competitive norm standard. The amici curiae seem to erroneously conflate the two, while the CAC seems to focus on the notional competitive norm but does not explicitly state that the opportunity cost method is invalid. Indeed, given that the CAC bases its conclusions on those of the amici curiae, it may not have contemplated any difference between the two and thus not identified any conflict requiring clarification.

Not only is the CAC's conclusion confusing in terms of the standard it suggests should be applied, but it is also very broad in its coverage. It includes all characterisations of costs irrespective of when they advantaged the firm: both 'current and historical' (CAC 2009: para 43). This means that the model of the counterfactual cost would also need to take account of changed incentives when an investment decision is made. Had variable or fixed costs been different historically, plant sizes and the technology mix used by the firm might be different in the period under review. This raises a new dimension to trying to implement the CAC's suggestion.

3. HOW TO DISREGARD SPECIAL COST ADVANTAGES

Perhaps the first interpretation of the CAC's suggestion is simply to use the competitive market price in place of the actual price paid for the discounted cost item when calculating the cost build-up for the product. In this way the special cost would be 'undone', and the notional competitive cost could then be used when performing price cost and profitability tests.

This seems to be the logic followed by Langbridge and Mackenzie (2010) in their review of the CAC's decision. Here they understand the CAC to be suggesting that 'a market based value determination, rather than one based on the individual firm's cost structure' ought to be used when estimating economic value (Langbridge & Mackenzie, 2010:5). Next they suggest that, where a firm does enjoy a special cost advantage, it would be appropriate simply to add the value of the cost advantage to the cost of the firm in order to arrive at a good approximation of economic value.

This interpretation is, however, correct only under strict assumptions. The problem with this simple interpretation arises because the cost of production is not altered to the competitive level. Maximising profits in a competitive industry is synonymous with minimising costs, because no economic profits can be earned in the long run. A monopolist's decision to maximise profits, however, is somewhat different and needn't coincide with cost minimisation. Simply adding the cost advantage to the monopolist's costs and claiming those to approximate the competitive cost either contradicts fundamental economic understanding of costs, or rests on extraordinary assumptions (for example: perfectly inelastic demand or constant average total costs).

Note that the above commentary is not concerning monopoly inefficiency but rather economies and diseconomies of scale. FIGURE 1 illustrates this point by showing that a monopolist need not produce at minimum efficient scale and that simply adding the value of the special cost advantage back onto the firm's actual costs does not produce any meaningful result.

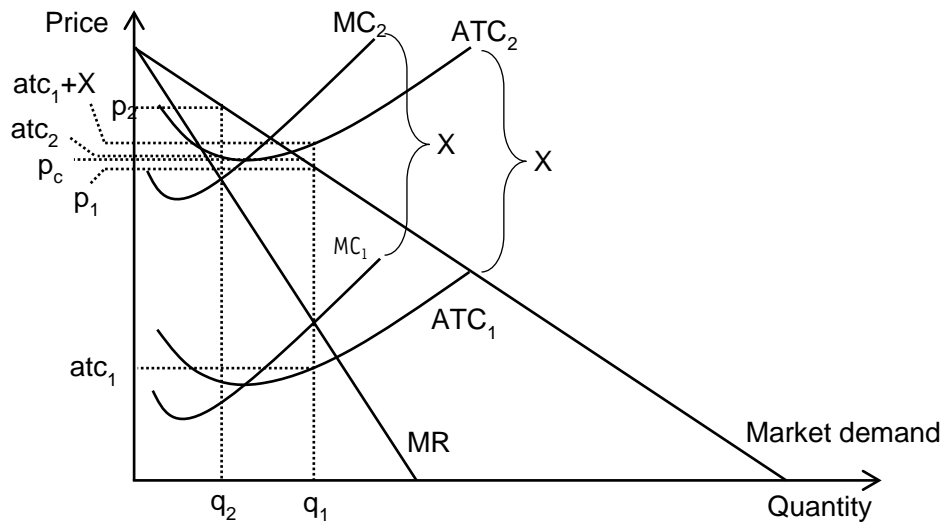


FIGURE 1: Unconstrained monopoly with a special variable cost advantage and increasing marginal costs

Source: Author's construction

This monopoly currently receives a special cost advantage on a variable cost equal to X per unit. It has increasing marginal costs and would have average total costs ATC_1 with the special variable cost advantage of X and ATC_2 without the special variable cost advantage. To maximise profit when it has the special cost advantage it will produce q_1 output priced at p_1 and average total cost of atc_1 . Using the approach that simply adds the cost discount received to the firms' average total costs would result in using $atc_1 + X$ as the proxy for the notional competitive norm. This value, in the extreme case presented in FIGURE 1, is higher than:

- the price charged by the monopoly of p_1 ;
- the average total cost of the monopoly had they never received the special cost advantage in the first instance of atc_2 ; and,
- the average total cost and price under competitive conditions of p_c .

The whole purpose of adding back X is to estimate the notional competitive norm, or, to phrase it differently, to estimate costs produced if the market had a larger number of suppliers competing with one another for both customers and inputs. However, it is evident that the result not only overestimates the costs (and prices) that would result under a competitive market structure, but may also overestimate the costs were the monopolist not given the special cost advantage in the first instance. It is important to note that, while FIGURE 1 is purposely depicted for a large value of X , the conclusions hold for smaller values of X too.

The outcome that the average total cost plus the special cost advantage is greater than the cost were the monopoly to have paid the higher cost and arrived at a different output and pricing decision is an outcome of the shape of the cost curves. If marginal cost (and hence average total cost) is upward-sloping, as in FIGURE 1, then the observed outcome will hold. If costs are downward-sloping, which would be the case in a natural monopoly where there are very large

fixed costs, then the outcome would be reversed. However, what is constant is the fact that adding the special cost advantage does not produce the counterfactual cost level in either instance. Indeed, the only two cases where adding the cost advantage to the monopoly's costs does result in the competitive cost is where average total costs are constant or where demand is perfectly inelastic.

The fact that a monopoly operates off a different point on its cost curve to that of firms in a competitive market is only the first complication in evaluating the CAC's suggestion. The second complication arises if the special cost advantages alter investment decisions. To disregard historical cost advantages which changed the cost of investment one would need to determine a counterfactual plant size. Put differently, some special cost advantages change the shape of an industry, indeed sometimes even create an industry where there otherwise would not be any activity. For example, the special cost advantages in the form of import rebates offered to motor vehicle producers through the Motor Industry Development Programme (MIDP) has resulted in the creation of motor vehicle assembly facilities in South Africa where firms would otherwise not have been incentivised to build large facilities or perhaps any facilities at all.

This point is perhaps more clearly shown in FIGURE 2, where incentives have resulted in a 'dominant firm' with completely different cost structures to smaller firms in the 'competitive fringe'.

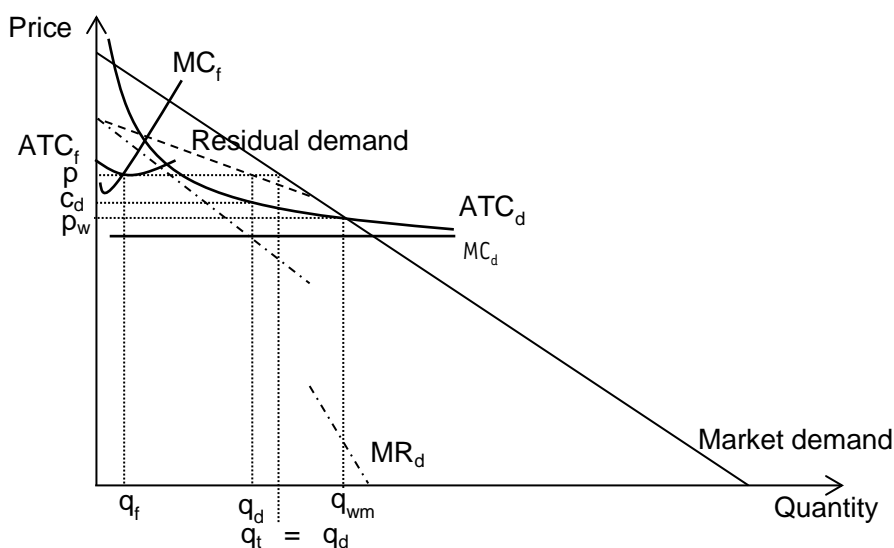


FIGURE 2: Dominant firm with a competitive fringe

Source: Author's construction

FIGURE 2 is an example where the government has incentivised a firm to invest in a large plant and so has a cost structure shown by MC_d and ATC_d . Here the government might have used a combination of fixed and variable cost incentives. Had the firm not received these cost advantages it would have not have had the expected profits required to induce it to invest in a

plant of this scale, and so may have built a plant similar in size and cost structures to those that make up the fringe.

Firms without these incentives will produce at a higher cost if the price at which the dominant firm supplies the market is sufficiently high. The aggregation of these fringe firms' cost structures is shown by MC_f and ATC_f . The dominant firm, taking into account market demand and the demand that would be satisfied by fringe firms at high prices, identifies the residual demand over which it can act as a monopoly and sets its output accordingly. In the example in FIGURE 2 the marginal cost of the dominant firm intersects its marginal revenue function above the discontinuity, resulting in the dominant firm supplying q_d and the fringe firms supplying q_f in total.

In such an example it is even less clear how one ought to implement the CAC's suggestion. If the data is available it would be possible to apportion the fixed cost advantage over time and over output and add that advantage to the variable cost advantage to get the total value of special cost advantages received by the firm. This could then be added to the average total cost. The value of this exercise remains unclear, because the cost that results is unlikely to be the cost that would have resulted from a competitive market. Thus, such a process does not achieve the purpose of the CAC's suggestion of calculating some notional competitive norm of costs.

The central issue with the simple interpretation of the CAC's suggestion is that adding cost advantages to actual costs examines ex-post outcomes after constructing a counterfactual where ex-ante incentives are altered. This theme is discussed in detail in the literature in the context of how to enforce excessive pricing regulations in highly innovative markets. The conclusion here is that innovative firms need the incentive of large potential profits in the future should their innovation be successful in order for them to invest in the innovation. Enforcing excessive pricing regulations here needs to calculate the ex-ante risk and incorporate this into the ex-post pricing. Failure to do so would chill innovation. Furthermore, in highly innovative industries, this exercise is ordinarily impossible to undertake with any degree of confidence. Ultimately the suggestion is that excessive prices cases should be confined to industries which are not innovative (see, among others: Evans & Padilla, 2005; Vickers, 2006; Fingleton, 2006).

One question then that does not get asked by the CAC's suggestion, but that possibly should, is: to what extent are the special cost advantages compensation for assuming some ex-ante risk? This question might be difficult or impossible to answer in the context of highly innovative industries; however, it might be easier to answer in the context of an industry where the method of business has not changed for a long period of time.

If one cannot use a simple interpretation of the CAC's suggestion and simply add the cost advantage to the actual cost of production, and the firm is not in an innovation industry, the question returns to how to calculate costs when trying to make a comparison between prices and economic value. Little clarity is added if one is tempted to alter the ex-post outcomes to adjust for the altered ex-ante incentives. Here the cost would be that which would have been incurred by the firm had it produced the profit-maximising output given a cost structure which does not include any cost advantages. In FIGURE 1 this would have been at atc_2 . The problem with this solution is that, although it takes into account how the changed incentives will alter what output the firm chooses to produce and hence where they lie on its cost curve, it is not a method to find the notional competitive norm but rather simply a different monopoly outcome.

A third method of trying to apply the CAC's suggestion might be to use the cost that would result absent special cost advantages and if the market were competitive. This might provide a good approximation of the notional competitive norm; however, it involves calculating a cost based on altered cost curves and a different market structure. Modelling both these changes is difficult to do in practice. This is even more difficult in diminishing cost (natural monopoly) scenarios when a notional competitive outcome is not even theoretically possible.

Ultimately, then, there does not seem to be a practical method to implement the CAC's suggestion as it is currently understood. This conclusion would be different if the question were a firm-specific question about opportunity cost, because the analysis would simply need to quantify the value of the next best alternative use of those resources by the firm rather than attempting to model an entirely different universe of incentives, costs and market structures.

4. WHAT IS THE SIZE OF THE SPECIAL COST ADVANTAGE

In the discussion in the previous section it was neatly assumed that the value for the special cost advantage could be easily identified. This is not necessarily the case, because the price that the firm might pay in a contestable market for that input might be different to what firms are currently paying. Thus using the open market price for the competitive cost of the input would be inaccurate.

The reason why current market prices might be a poor proxy for what a firm might pay absent special cost advantages is because its bargaining position might be different. The costs of selling to a large customer are lower per unit than to small customers. Also the supplier's outside option of selling to the large customer might be below the average market price. In the case of this second point the value of the marginal sale should be taken as the cost rather than the market price. In a small market like South Africa this might mean that the export parity price is more often the valid counterfactual cost than the market price of that input. Furthermore, if the customer is very large, it might require investments in order to make that increase in exports possible.

These factors act to strengthen the large customer's position vis-à-vis the other smaller customers of the input producer, and ultimately imply that the price the large customer would receive would be lower than the market price. While this consideration is isolated to instances where the monopolist is a large customer of the input supplier, it might ring true with relative frequency in the types of industries that are prone to excessive prices cases. Overcompensating for these special cost advantages means that the monopoly would receive additional protection from excessive pricing laws (increase in type II enforcement errors).

Another measurement issue arises when the input market is supplied by a dominant firm and there is a vertical relationship between the dominant downstream firm and the dominant upstream firm. If the dominant downstream firm uses significant volumes of the dominant upstream firm's output, then the dominant upstream firm can price-discriminate to the remaining fringe customers. This price is unlikely to be indicative of a competitive market price were the downstream market to be competitive and have no relationship to the dominant upstream supplier. Measuring the competitive norm again becomes problematic.

5. ARE INDUSTRY ADVANTAGES SPECIAL COST ADVANTAGES

The CAC's suggestion was specific to special cost advantages. This implies that other firms and indeed potential entrants are not given this advantage. This then necessitates a distinction to be made between whether the cost is applied broadly to an industry, or directed to a chosen firm. This distinction still needs to be made even if the industry structure is a monopoly.

Governments in developing countries specifically seek to advantage an industry in order to attain some developmental or national security goal. Such is the case where subsidies are placed on physical inputs to the production, skills development and indeed tax incentives for specific industries. The MIDP in South Africa allocates import credits to firms in order to incentivise them to produce motor vehicles in South Africa when they would otherwise have done so to a lesser extent if at all. This is an advantage given to any motor vehicle producer and, given the structure of the industry, there are many firms who receive this advantage. This then is not a special cost advantage, even though it would be a cost advantage.

This distinction becomes important when the cost advantage is allocated to an industry, and where the structure of that industry is a monopoly. Here the advantage might appear to be specific to a particular firm and hence a special cost advantage although the intention was to advantage the industry as a whole. In such cases it could be argued that the cost advantage is not special and hence should not be disregarded. It is thus important to establish whether or not the cost advantage would be available to entrants, or available to entrants at the time the cost advantage was made available to the industry.

The AMSA case provides a good example of the two different ways of conceptualising cost advantages in the case of a monopoly. At the time AMSA received iron ore at an especially low price of cost plus 3%. AMSA received this special cost advantage from its historic position as being in the same company as the iron ore supplier (now Kumba). When Iscor was privatised and the iron ore and iron and steel works divisions were separated, the iron and steel works division received a contract for the supply of iron ore at cost plus 3%. Using the CAC's suggestion, one could either advocate for the South Africa open market price or the export price instead of the cost plus 3% price.

The problems with adjusting AMSA's iron ore prices to either the South African price or the export price are numerous. Firstly, neither of these alternatives presents true opportunity costs of iron ore to AMSA. AMSA is by far the largest consumer of iron ore in South Africa, and so could not simply sell the iron ore it purchases from Kumba to the open market, certainly not at prevailing market prices. Secondly, the transport infrastructure could not support the increase in exports of iron ore that would occur if AMSA tried to export its iron ore instead of using it to produce steel. There may also be contractual obligations on AMSA to process the iron ore it receives at the preferential price rather than selling it to other customers of Kumba (this last point is speculative and only made for the purpose of illuminating an earlier point).

There are also problems at the underlying theoretical level. When Iscor was privatised and broken up it was not feasible to create many iron and steel companies. Indeed, this is still unlikely to be feasible. But, hypothetically, if the firm and market were large enough, Iscor could have been unbundled into a number of iron and steel companies. In this thought experiment, it is also likely that each of these iron and steel producers would have received its own contract with Kumba for iron ore to be supplied at cost plus 3%. Thus the cost advantage would have been

industry-wide rather than firm-specific, and thus not a special cost advantage but rather an industrial policy decision.

If the jurisprudence on this topic develops to identify all cost advantages to monopolies as special cost advantages, then this will severely restrict government's ability to develop downstream markets which are supplied by a monopolist. It is not entirely undermined, because even a monopolist which prices to the full extent of its market power will increase output and reduce price when its costs decrease. However, depending on price elasticity, it will be able to expropriate a portion of the cost advantage for itself. The more price-inelastic the demand, the greater the proportion of the cost advantage to the monopolist, and the smaller the price reduction.

6. CONCLUSION

The CAC's suggestion on special cost advantages stems from a conflation of opportunity cost and competitive norms. The two approaches can yield the same results, but this is not a foregone conclusion.

The result of simply adding the per unit value of the cost advantage to the firm's per unit costs does not result in the cost of production that would have resulted in a competitive market; it in fact results in a cost level which has no meaning or application whatsoever irrespective of market structure. It may be above the counterfactual monopoly cost if costs are increasing with output, and below the counterfactual monopoly cost if the costs are decreasing with output.

The issue with special cost advantages cannot be solved with as simple a solution as the CAC suggested. Rather it needs to be a carefully considered issue on a case-by-case basis that finds answers to questions as to why the cost advantage was offered in the first instance, whether or not other firms could hypothetically have received the benefit were they present in the market at that time, and what the opportunity cost of the subsidised factor or input is.

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INTERNATIONAL TRADE ADMINISTRATION

COMMISSION TARIFF INVESTIGATIONS: AN ANALYSIS OF THE POULTRY AND PAPER CASES

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Abstract

This paper critically evaluates the role and performance of the International Trade Administration Commission of South Africa (ITAC) with a focus on tariff investigations. The paper analyses ITAC's poultry and paper tariff investigations. For both of these cases, we analyse the economic context, assess parties' submissions and perceptions of the tariff investigation processes and outcomes, evaluate the duration of the investigation, consider the balancing of the various interests involved, and analyse ITAC's recommendations. From these two important cases it appears that ITAC has changed its approach to tariffs in line with developments in South Africa's trade policy. The findings also indicate that ITAC is not yet consistently meeting the stipulated tariff investigation timeframes. Possible policy implications arising from the analysis are discussed.

Keywords:

Trade policy, tariffs, imports, institutional performance, poultry, paper

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1. INTRODUCTION

In 2009 there was a significant shift in South Africa's trade policy, away from the liberalisation of the earlier post-democracy period to selective and strategic trade policy. The recently released 20-year Review aptly captures this shift in policy: 'From the late 2000s, trade reforms shifted to more targeted efforts, with considered use of safeguard measures, local procurement and other interventions geared to fostering industrialisation and job creation' (Presidency of the Republic of South Africa, 2014:96). In the post-2009 tariff-setting regime, tariffs would be either increased or decreased depending on particular industries' circumstances and other considerations.

What is not clear from the existing literature is the extent to which the International Trade Administration Commission of South Africa (ITAC), as the institution mandated to implement trade policy in South Africa, has managed to implement these trade policy changes in its work. The objectives of this study are therefore to review and evaluate the tariff-setting role of ITAC, with reference to the poultry and paper cases. It investigates the robustness of ITAC tariff decisions given the changes in trade policy. The first is the 2006 paper case which covers the tariff liberalisation phase. The second is the 2013 poultry sector, which is set in the period when tariff liberalisation was no longer the general policy framework. This study evaluates the decision reached by ITAC in these two cases from an economic standpoint, and considers the implications for the overall role and performance of ITAC. ITAC plays a crucial role in the implementation of South African trade policy, and this analysis has important policy implications.

ITAC was established on 1 June 2003 in terms of the International Trade Administration Act (Act 71 of 2002) (the ITA Act), which replaced the Board on Tariffs and Trade Act (Act 107 of 1986). The responsibilities of ITAC lie in three areas: tariff investigations, trade remedies and import and export control. The focus of this study is on the tariff investigation role.

ITAC is not responsible for setting trade policy but rather for implementing trade policy that is set by the Department of Trade and Industry (DTI). ITAC carries out its mandate within the broader economic policy framework of the South African government, in particular as articulated by the Economic Development Department (EDD) and DTI. The South African Trade Policy Review (TPR) draft document calls for a strategic review of tariffs to support industrial development (DTI, 2010). The TPR states that trade policy needs to be in compliance with the National Industrial Policy Framework (NIFP) for it to promote diversification, which helps sectoral tariff determination. South African trade policy is thus seen as an important instrument of industrial policy.

The primary contributions of this study are twofold. Firstly, a detailed micro-level analysis is undertaken of ITAC's role in undertaking investigations and making tariff recommendations for the poultry and paper sectors. Unlike existing studies that focus on the impact of tariff liberalisation on the economy as a whole or on individual sectors using econometric methods (see for instance Harding & Rattsø, 2010, Fiandeiro & Rankin, 2008, Thurlow, 2006), the focus here is primarily at the micro-level as to how tariff decisions are actually undertaken and give possible evaluations taking into account the evolution of South Africa's trade policy and institutions capabilities. This study tracks specific products at Harmonised System (HS) 6 digit tariff lines, shedding light on microeconomic issues that might be not revealed by macro or broader sectoral studies. Secondly this study is unique in combining institutional analysis with empirical analysis of specific sectors and cases. While there are a number of existing empirical

analysis related to trade in South Africa, and there are various existing institutional analysis (although not necessarily of ITAC), this article contributes to the literature by bringing together these two angles. Linked to this, the study examines the recent evolution of South Africa's trade policy and the implementation thereof, through the lens of the specific cases of the poultry and paper tariff investigations.

This article is structured as follows. The next section sets out the methodology. Section 3 provides relevant background on ITAC's tariff investigations process and the relationship with South African trade policy. Sections 4 and 5 analyse the paper and poultry industry cases respectively. These case studies examine the economic context of the investigations, the submissions made by stakeholders, how ITAC took various considerations into account in arriving at their recommendations and a critical analysis of the ITAC decisions. Review and discussion of the relevant literature is integrated throughout the document where appropriate rather than being in a separate section. Section 6 concludes and offers some recommendations, drawing from the analysis in sections 4 and 5.

2. METHODOLOGY

Both qualitative and quantitative methodologies are used in this research. Relevant documents were sourced and analysed, including documents in the public domain as well as those made available to the authors for the specific purposes of this research.

A number of interviews were conducted, including with ITAC staff, government departments, experts, and stakeholders involved in the two cases analysed. The appendix lists the interviewees. The study employs the purposive sampling procedure, since it focuses only on those who are knowledgeable and directly linked to the decision-making of ITAC. The study thus utilises key informant interviews. None of the interviewees requested anonymity. The interviews were conducted in a semi-structured manner, based on a guiding set of questions but allowing for free discussion and the sharing of additional information.

This qualitative data obtained through interviews is complemented with the analysis of secondary data obtained from the poultry and paper industry associations, ITAC, Quantec and the South African Revenue Services (SARS).

3. BACKGROUND

3.1 The process of tariff investigations at ITAC

ITAC receives and evaluates cases from local industry applications for tariff reductions or increases. ITAC obtains information by sending templates which companies are required to complete, indicating financial information, costs, inputs and any other information that support the application. ITAC also visits companies in order to verify the information submitted. Local industry submits cases for duty increases, in order to seek relief from external competition, or tariff-reduction cases to lower duties on goods such as raw materials and intermediate inputs that are not manufactured locally (this is to allow domestic companies to become more competitive). ITAC investigates these cases, analysing the impact on the economy and effects on employment, growth and investment in particular. ITAC forwards its recommendations to the Minister of Trade and Industry for a final decision, which is then forwarded to the Deputy

Minister of Finance and once approved the tariff changes are submitted to SARS for implementation. The tariff investigation timeframe was revised from the previous twelve months to four months for sectors in distress and six months for normal investigations (ITAC, 2013a). The tariff investigation process is illustrated in FIGURE 1.

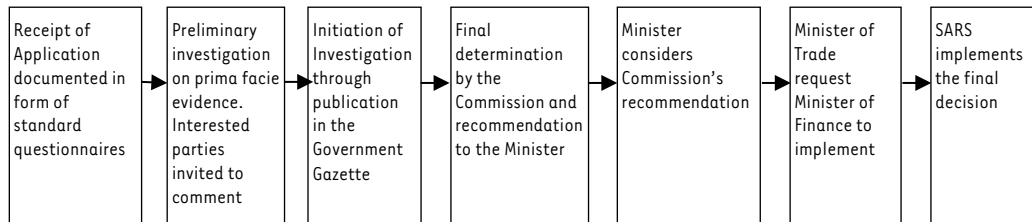


FIGURE 1 ITAC investigation process

Source: ITAC, 2013a

The International Trade Administration Act provides the legal basis for undertaking investigations and making recommendations regarding customs duty amendments. The ITA Act (sections 38–45) provides the legal basis for ITAC's powers of investigative search and inspection. The High Court or regional magistrate or a magistrate may issue a warrant to enter and search any premise (ITA Act, section 43). ITAC has powers to enter and search without a warrant (ITA Act, section 44). ITAC also operates under the Tariff Investigation Regulations, which provide clarity and assist parties that wish to bring a customs duty amendment application.

Section 60 of the ITA Act accords ITAC the power to put out Tariff Investigation Guidelines, which provide guidelines on the procedures that parties need to follow when applying for tariff changes. The purpose of the guidelines is to operationalise the regulations. The Tariff Investigations Guidelines are revised in the context of changing policy as well as changing domestic and global conditions. The focus of the revised guidelines is on thoroughness and strengthening analysis in support of the rationale behind any recommendations. They set out a systematic and coherent approach to analysing tariff applications, facilitating more effective comparison and focused assessment of applications (Interview with Chief Economist).

3.2 Tariff investigations in the context of changing South African trade policy

ITAC reviews its tariff investigation guidelines to align these to government policy. Currently, ITAC is following a 'developmental or strategic approach to tariff setting with the objective of promoting domestic manufacturing activity, employment retention and creation, and international competitiveness' (ITAC, 2013:11).

According to the ITAC Chief Economist, ITAC has increasingly adopted a hands-on approach in investigating tariffs changes demands by the local industries. The tariff application assessment and adjudication is not based only on information provided by an applicant (a company-specific approach). Investigations now entail an industry-wide approach, analysing relevant industry information. ITAC's tariff investigations are evidence-based, and are carried out on a case-by-case basis, employing simple trend and comparative methodology in assessing applications.

ITAC now makes tariff support conditional on reciprocal commitments by applicants. These are intended to ensure that beneficiaries of tariff decisions contribute to advancing the policy objectives of increased domestic manufacturing, investment, value addition and competitiveness. The reciprocity assessment approach entails that if the government changes tariffs it expects a reciprocal positive contribution to the economy, such as increasing employment, investment and domestic manufacturing activities.

ITAC has changed its outlook and decision-making in response to the changes in trade policies. The Chief Commissioner of ITAC has noted that, whereas previously the push was towards tariff liberalisation, the approach now is evidence-based on a case-by-case basis, with no priors about whether tariffs should be increased or decreased. Instead, recommendations as to whether to increase or decrease tariffs are informed by a weighing up of strategic objectives and considerations on particular products.

The interviewee from EDD notes that changes in trade policy over the past five years and the resultant changes in ITAC's mandate have the effect of requiring ITAC to be significantly more active and activist in its work, in particular more active in using import duties as a tool and much more strategically than previously. In his assessment, ITAC is sufficiently aware of the changes in mandate; they are indeed doing things differently from previously and are essentially managing to achieve the current mandate.

4. PAPER CASE STUDY

4.1 Background

The Printing Industries Federation of South Africa (PIFSA) made a request to ITAC for a reduction in the rates of duty on paper and paperboard covering 81 tariff subheadings. The printing, publishing and packaging companies are involved in value addition of paper by converting it into a variety of products such as books, magazines and packaging material. The industry is composed of 844 members, which are small to medium-sized companies. This is the opposite of the paper industry, which is dominated by Sappi and Mondi.

The paper industry contributes about 0.6%, 3.9% and 27.5% to gross domestic product (GDP), manufacturing GDP and agricultural GDP respectively in 2011 (Paper Manufacturers Association of South Africa (PAMSA), 2013). FIGURE 2 shows the production and import of total paper from 2001. Production has been fluctuating, apart from for 2008 that shows a marked decline possibly due to the global crisis. It shows that imports were not very high pre-2006. This might be a reason why PIFSA requested a tariff reduction.

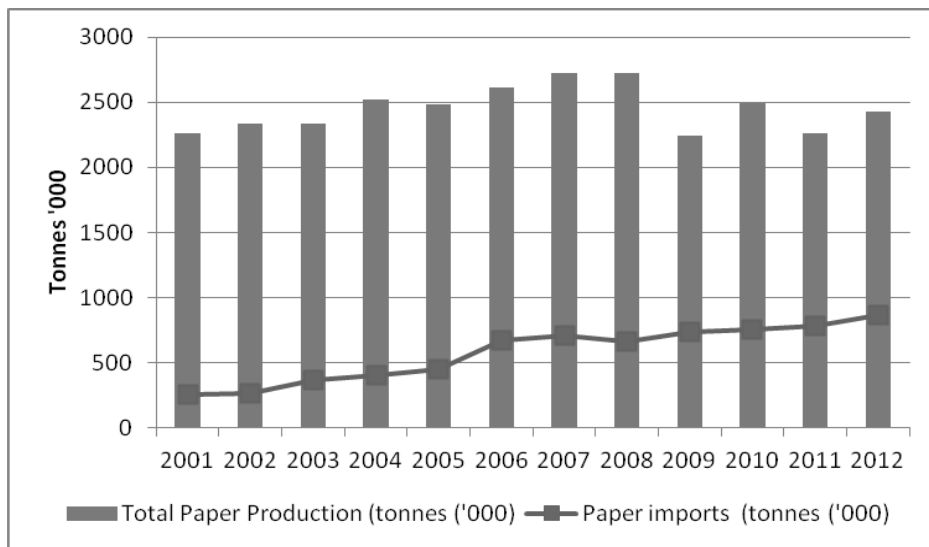


FIGURE 2: Trends of total paper production and imports

Source: Derived from PAMSA, 2013

4.2 PIFSA application and stakeholder concerns

The PIFSA application was published in Government Gazette No. 27579 (20 May 2005), and interested parties were invited to make submissions. Four companies in the industry and PIFSA supported the application, while one company and PAMSA objected to the application.

PIFSA and other companies gave various reasons for the need for tariff reductions on paper and paperboard. They argued that the domestic paper manufacturing industry was highly concentrated, hence the need for imports to provide an alternative form of competition. The five largest manufacturers are Sappi, Mondi, Nampak, Gayatri and Kimberly-Clark. The combined output of these five manufacturers was about 96% of pulp, paper and paperboard production in South Africa. The largest among these five is Sappi, which is ranked 20th by turnover, and Mondi, ranked 15th on the list of the largest pulp and paper companies in the world.

The grouping in favour of the reduction of duties provided evidence in relation to the projected impact of a tariff reduction on employment, growth and sustainability of the industry across the value chain industry. It was argued that those who were against the duty reduction were interested only in protecting their uncompetitiveness, since the industry was highly concentrated with high barriers to entry. They believed that a reduction in tariffs would have a cost-cutting effect on the downstream industry, which is a major exporter. PIFSA provided an argument around a growth strategy for the industry in the form of employment, investment and sustainability of the agricultural sector. They also argued that either some products were not manufactured in SACU, or that sufficient time had passed for those large international corporations to become competitive in these markets. Another reason advanced by PIFSA was the long-term contracts that paper manufacturers enter into with local printing, packaging and publishing companies, which creates inflexibility in the face of increased demand.

Those who were against the duty reduction cited the evolution of custom duty dispensation in the industry since 1992, non-tariff barriers in some overseas countries and the price trends and the effects of import tariffs on the prices.

ITAC's analysis was largely based on developments in the duty structure of the SA-EU tariff phase-down. The import analysis showed that the EU and SADC accounted for 76% of imports for tariff headings 48.01, 48.02, 48.05, 48.07, 48.08, 48.10 and 48.11. These imports were either duty-free or their duties were in the process of being phased down to duty-free by 2012. ITAC therefore aligned its recommendations in tandem with the evolution in the duty structures of the EU. ITAC also took into account the competitive advantage of the domestic industry; cost raising effects on downstream industry; the investigation by the DTI on import parity pricing; and tariff policy in respect of input materials on raising prices.

The existing tariffs on some products in 2006 before the tariff reduction were 5% on newsprint products under tariff subheadings 4801.00.10, 4801.00.20, 4802.54.20, 4802.54.20 and uncoated kraft paper and paperboard under tariff subheading 4804.11, 4804.19, 4804.21, 4804.52 and 4804.59; 10% on carbon paper and self-copy under tariff subheadings 4816.10 and 4816.20; 15% on paper and paperboard and cellulose wadding under tariff subheadings 4811.10.10 and 4811.90.10; and 20% on paper and paperboard, cellulose wadding under tariff subheading 48114190 (PAMSA, 2006).

4.3 The outcome

ITAC recommended a differential gradual reduction of duties on different paper products to a duty-free rate. For example, reduction of products at 5% ad valorem to duty-free immediately, those products at 10% and 15% to duty-free by 2012, and finally those products charged duty of 20% (for HS4811.41.90) to duty-free by 2015. Following the SA-EU tariff phase-down the recommended different tariff categories are as shown in TABLE 1.

TABLE 1: SA-EU tariff phase-down

<i>Year</i>	<i>Products at 20%</i>	<i>Products at 15%</i>	<i>Products at 10%</i>
2005	20%	13.2%	8.8%
2006	18%	11.25%	7.5%
2007	16%	9.45%	6.3%
2008	14%	7.50%	5.0%
2009	12%	5.70%	3.8%
2010	10%	3.75%	2.5%
2011	8%	1.95%	1.3%
2012	6%	Free	Free
2013	4%		
2014	2%		
2015	Free		

Source: PAMSA, 2006

ITAC's recommendation led to tariff reductions on paper and paperboard products based on this tariff phase-down schedule, with backing from import data. For example under tariff heading 48.08 all duties were 5% with 94% of paper and paper board being imported from the EU and SADC. Because of the free trade area with the SADC and the EU, they saw no justification for retaining the 5% duty, hence the duty was removed. A similar analysis was applied to all products.

4.4 Analysis

The evaluation of ITAC on the paper case is based on the following considerations: using imports analysis to decide on tariff reduction (considering the developments in the duty structure of EU); time taken by ITAC to make final decision on cases; bias in favour of small companies against big companies; and the need for deeper understanding of different tariff lines of paper.

Imports of paper products have been increasing at 3.5% per annum since 2006 (PAMSA, 2013). PAMSA is therefore concerned about the effect of this on the paper sector, as this might continue leading to further company closures. The 2008 global crisis led to a temporary reduction of imports, but these however have grown to 30% since 2008 (PAMSA, 2012). In their view, these developments are exerting increasing pressure on local production. The negative balance of trade rand value of paper and board (excluding pulp) has more than doubled since 2008. FIGURE 3 shows that from 2006 imports of printing paper are greater than exports; this is similar to tissue paper and opposite from packaging papers. This shows that after the reduction of duty rates on different HS lines imports have been increasing for printing and writing paper.

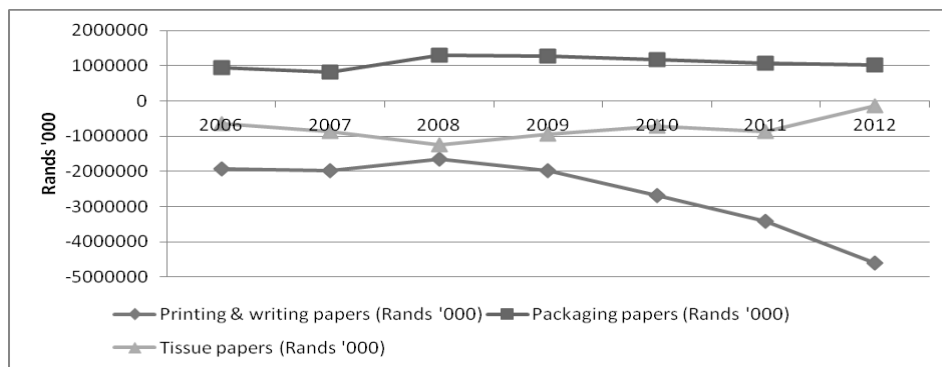


FIGURE 3: Balance of Trade (exports-imports)

Source: Derived from PAMSA, 2013.

A possible weakness of ITAC's technical analysis in this case lay in the strong basing of their decision on import analysis and trade agreements. The reduction of all tariffs over a number of years because of a trade agreement consideration may take insufficient account of other important economic considerations. Although ITAC also considered factors such as the DTI's investigation on import parity pricing, the competitive advantage of the domestic industry, cost raising effects on downstream industry, and tariff policy in respect of input materials on raising prices, these considerations appeared to be secondary to issues around trade agreements.

However, it needs to be borne in mind that this investigation was done nine years ago, at a time when the policy was still to reduce duties and only consider increases as an exception. ITAC was

therefore following the direction of South Africa's trade policy at that time. The tariff reduction phase was the existing framework that gave context to this particular investigation and recommendation.

PAMSA takes the view that the decision to unilaterally decrease tariffs on paper and paperboard based on the SA-EU tariff phase-down was flawed. It argued out that this is one of the reasons why it applied for this tariff reduction reversal (Interview with PAMSA). In 2013 PAMSA applied to ITAC for tariff reversal on some of these products on which tariffs were reduced in 2006. For example, PAMSA submitted an application for the increase of tariffs on uncoated paper and paper classified under tariff subheadings HS4802.56.90 and HS4802.56.20 (Government Notice of 18 October 2013). The other application is on tariff line HS4810.19.90 (dated 9 October 2013). TABLE 2 shows applications by PAMSA on some products for tariff reversals. ITAC is still to make final decisions concerning these products.

TABLE 2: Tariff lines for duty reversal

<i>HS line</i>	<i>2006 action (from demands by PIFSA)</i>	<i>2013/14 demands by PAMSA</i>
48025620	Reduction of duty from 5% to duty-free rate	Demand to reinstate duty of 5% (from duty-free)
48025690	SA-EU tariff phase-down (from 15% to duty-free by 2012)	Demand for increase from duty-free to 20%
48101990	From 5% to duty-free	Demand for provisional duty

Source: ITAC, 2006, 2013

Analysis as to whether this change in tariffs brings diversification in terms of the number of countries from which South Africa imports shows that this number did not change much on the selected products. The range of countries per product remained in the band of 5 to 25 countries per product as shown in FIGURE 4.

This suggests that what was changing over time is not primarily the number of new countries (geographical extensive margin) that South Africa imports from, but rather the volume and value of already traded products (intensive margins). It shows that the increase in imports may have come from new countries that replaced other countries, or an increase in the volume of imports from existing trading partners

Disaggregating the analysis by countries with positive imports shows that imports are increasing from countries outside the EU. FIGURE 5, showing the HS48025520 product line (uncoated paper and paperboard), shows that imports are increasing from China, India and Singapore. This may suggest that recommending tariff reductions based on the SA-EU tariff phase-down is misleading given the surge in imports from countries for which South Africa has no obligation to reduce tariffs.

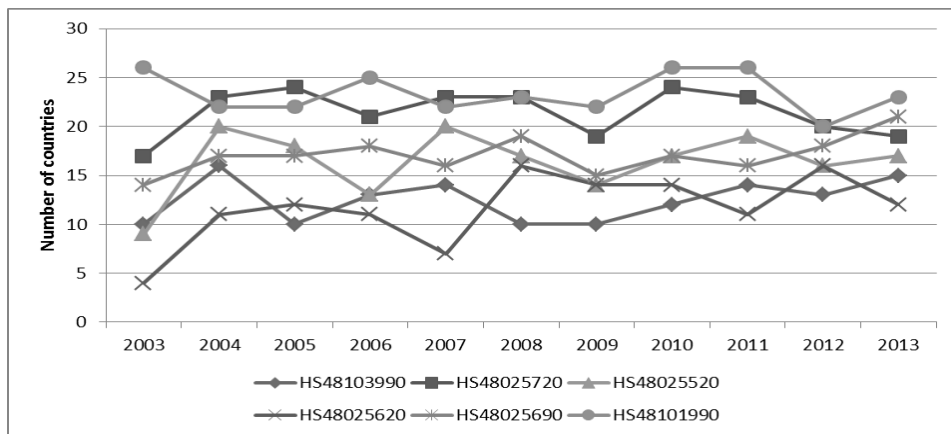


FIGURE 4: Number of countries where imports come from

Source: Data from Quantec, 2014

This trend is also evident for product line HS58101990, for which SAPA initiated an application for tariff reversal. Disaggregating imports by country shows that major imports come from non-EU member countries such as the Republic of Korea, China and Indonesia. This underscores the point that opening up to imports based on the SA-EU tariff phase-down has allowed for a rapid increase in imports from non-EU countries. It suggests that in their analysis ITAC may have neglected the potential expansion in imports from these other emerging countries resulting from a tariff reduction.

PAMSA believes that at times ITAC takes too long to conclude a tariff investigation (Interview with PAMSA). This was raised mainly in relation to its application concerning tariffs on A4 paper, which has taken almost two years to be concluded. This tends to be costly to companies, particularly given changes in companies' cost structures and in variables such as the exchange rate and electricity costs. PAMSA also noted that there is a need for common relations among the government departments, as in PAMSA's view it seems that these departments work independently yet their objectives are interdependent. This is especially so given that tariff data is highly disaggregated and requires a deep understanding of the tariff book. Such enhanced co-operation could assist in reducing loopholes, which are often utilised by other players to 'cheat' the system by evading the tariffs using similar tariff lines.

This paper case study should be understood as a historical reflection of a case from almost nine years ago. A lot has changed since then, as seen in how ITAC changed its tariff policy, guidelines and adjudication criteria in line with the evolution of South Africa's trade policy.

5. POULTRY CASE STUDY

5.1 Background

The importation of poultry into the South African / *Southern African Customs Union* (SACU) market has been the subject of longstanding contestation. Policy reversals and disputes concerning tariffs have characterised the poultry sector since at least the year 2000.

Before the current tariff regime on poultry, ITAC imposed provisional anti-dumping duties on imports from Brazil. These ranged between 46.59% on boneless cuts and 62.93% on whole birds in January 2012. These were challenged by the Brazilian government under the WTO's dispute settlement system and were subsequently reversed by South Africa's Minister of Trade and Industry on 8 March 2013 (ITAC Notice 173 of 2013). Instead the Minister called for a comprehensive strategy to deal with these imports from Brazil.

The poultry industry employs 48 000 employees directly and another 60 000 indirectly in supporting sectors. The poultry industry is vital to South Africa, as it is the largest agricultural subsector, contributing almost a quarter of agricultural gross domestic product. Poultry accounts for more than 65% of consumed animal protein in South Africa (SAPA, 2013b).

TABLE 3 shows domestic production and imports of chicken, in both levels and market share (percentage) terms. After declining from 2006, the share of imported chicken increased substantially from 2008 to 2012.

5.2 SAPA application and stakeholder concerns

The South African Poultry Association (SAPA) applied for an increase in the rate of customs duty on poultry meat on 27 March 2013 (ITAC, 2013b). Since government designated the poultry sector as a sector in distress, the timeframe for ITAC's tariff investigation was four months instead of the usual six. ITAC followed the required tariff investigation process by first publishing a Notice in the Government Gazette (12 April 2013) inviting all interested parties to comment on the SAPA application.

TABLE 3: Comparison of domestic production and imports of chicken

<i>Year</i>	<i>Domestic production (tonnes)</i>	<i>Imports (tonnes)</i>	<i>Domestic market share</i>	<i>Import market share</i>
2006	1 474 952.58	181 397	89.05%	10.95%
2007	1 534 417.87	144 888	91.37%	8.63%
2008	1 639 277.33	98 845	94.31%	5.69%
2009	1 652 353.27	123 230	93.06%	6.94%
2010	1 718 616.42	138 219	92.56%	7.44%
2011	1 736 492.73	201 696	89.59%	10.41%
2012	1 758 772.04	238 958	88.04%	11.96%

Source: Data from SAPA, 2013a

Interested parties commented and made oral presentations (on 11 June 2013) concerning the proposed request. After considering the concerns and issues raised by all parties, on 5 August 2013 ITAC submitted to the Minister of Trade and Industry a request for an increase on import duties on five poultry products. The Minister granted the request on 29 August 2013, and it was subsequently implemented on 30 September 2013 by SARS (Notice 715, Government Gazette No. 36876).

It is important to review what transpired in this sector that led to ITAC's decisions. The SAPA application was supported by poultry associations in the other SACU countries, namely Namib Poultry Industries (Pty) Ltd, Swazi Poultry Processors, Botswana Poultry Association and Basotho Poultry Farmers Association. This process was also supported by the Animal Feed Manufacturers Association, representing animal feed manufacturers in South Africa. SAPA requested an imposition of tariffs due to an increase in the volume of cheap frozen chicken imports, from almost 99 000 tonnes in 2008 to almost 239 000 tonnes in 2012. The reasons given by SAPA for tariff increases include jobs losses that had already occurred and the prospect of continued job losses due to company closures cases by increases in imports. They also cited the negative impact of low priced imports on further investment in the poultry industry, arguing that this could compromise SACU food security (Government Gazette No. 36358).

SAPA also used five major SACU producers in their justification. Five companies alone (Rainbow, Astral, Sovereign Food, AFGRI Poultry and Supreme Poultry) employ almost half (22 166) of the direct employees. These five companies claimed that 11 995 direct jobs and 14 892 indirect jobs were likely to be created if tariffs were to be imposed to their maximum rates of 82%. The poultry producers argued that they were in distressed financial situations due to low-priced poultry imports. According to SAPA, the industry was in crisis and the (then-latest) company audited results show that Rainbow, Country Bird and Astral suffered 103%, 150% and 180% losses respectively (SAPA, 2013b). (All losses results are to June 2013 except for Astral, whose loss results are to March 2013.) SAPA attributed these losses to traditional exporters such as Brazil, Argentina and Thailand continuing to grow, whereas other countries were experiencing a global recession, while traditional importers such as Russia and China were becoming self-sufficient. This led to Africa becoming the greater target for the developed world's unwanted surpluses and those meat portions that developed countries do not want.

SAPA also argued that feed costs had increased by 20% for two consecutive years. Another reason cited is the increase in energy/electricity costs, which they said had more than doubled in four years. The request to increase tariffs was thus framed as being necessary in order to save the SACU poultry industry. SAPA presented projections as to the threatened losses in employment, restrictions on South Africa poultry exports to trading partners, cost disadvantages to the local industries, regulatory disadvantages of producers versus importers and the consequences that South Africa would face if imports were not halted and reversed. They argued that the imposition of duties would lead to benefits such as increased investment, employment and grain production, compared to costs such as increases in the prices for domestic consumers.

On the other hand, the Association for Meat Importers and Exporters (AMIE) opposed SAPA's call for a tariff hike. AMIE argued that imports from non-EU countries had declined by 35% from 2006 to 2013, indicating no need for protection. They also submitted that the cost calculations by SAPA were wrong. According to AMIE, the depreciation of the rand had already provided 25% protection for local producers from January 2012 to June 2013 (AMIE, 2013).

AMIE regarded existing import duties on poultry and poultry parts, most of which were at 27%, as being relatively high by international standards. Furthermore, AMIE characterised the domestic poultry industry as inefficient. By implication, tariff increases would be financing a bad business model of the poultry industry. The view presented by AMIE is that the poultry sector's problems derive from factors such as high input costs, including labour, electricity and animal feed, rather than from increased imports in recent years. From their perspective, tariff increases or trade remedies would thus not solve the poultry sector's problems.

The view of the Competition Commission was that the poultry industry was not competitive (Ramburuth, 2013). From their investigations in 2009, the Competition Commission found elements of collusion among domestic chicken producers (Vecchiato, 2013; Ramburuth, 2013). Their view was that the vertically integrated market structure which characterises the poultry industry incentivised anti-competitive behaviour, tie-in, supply agreements, information exchange and price-setting behaviour (Ramburuth, 2013).

5.3 The outcome

SAPA's request was granted at the end of September 2013, with tariff increases varying between 12% and 82% on all products as shown in TABLE 4. Though ITAC increased the duties, it did not agree on customs duty combined with quantity restriction, as it did not find evidence of under-invoicing as claimed by SAPA. Further, ITAC recommended a slight increase of tariffs on offal and carcasses, given that they are an important source of protein for the poor (see TABLE 2). These increases, however, did not apply to European Union (EU) and Southern African Development Community (SADC) countries due to the existing free trade agreements (Government Gazette No. 36876).

TABLE 4: Increase in the rates of customs duty on frozen poultry

<i>Tariff subheading</i>	<i>Product description</i>	<i>General duty before the increase on 30 September 2013</i>	<i>Duty proposed by SAPA</i>	<i>Type of duty requested</i>	<i>New general duty</i>	<i>EU and SADC</i>	<i>EFTA</i>
0207.12.20	Carcasses with all cuts removed	27%	991c/kg with a maximum of 82%	Specific duty capped with the bound rate	31%	Free	31%
0207.12.90	Other, whole bird	27%	1111c/kg with a maximum of 82%	Specific duty capped with the bound rate	82%	Free	82%
0207.14.10	Boneless cuts	5%	12% or 220c/kg with a maximum of 82%	Combination duty capped with a bound rate	12%	Free	12%
0207.14.20	Offal	27%	67% or 335c/kg with a maximum of 82%	Combination duty capped with a bound rate	30%	Free	30%
0207.14.90	Other: bone-in portions	220c/kg	56% or 653c/kg with a maximum of 82%	Combination duty capped with a bound rate	37%	Free	37%

Source: Government Gazettes No. 36358, 12 April 2013 and 36876, 30 September 2013.

In accepting the ITAC recommendation, the Minister of Trade and Industry stipulated five conditions that should hold for the tariff to remain in the future (DTI, 2013). Firstly, there is a need for an early review of the new tariffs to assess their impact. Secondly, the Minister expects

that the question of brining will be satisfactorily addressed through new regulations. Thirdly, the Minister expects that the established poultry industry would make meaningful undertakings to support the development of small-scale poultry farmers. Fourthly, the Minister expects that providing this support will enable the poultry industry to work to encourage fair competition in the domestic market. Finally, these measures are designed to support and promote the poultry producers across the entire SACU market to ensure a sustainable and competitive industry that is able to provide greater food security to the region's people.

5.4 Analysis

ITAC's decision can be evaluated on the basis of the time taken to reach the decision, information used to evaluate different positions advanced by stakeholders, the position of EU imports, the general view of industry stakeholders, and the balancing of competing considerations.

One issue is the impact of import duties on possible competition within the domestic poultry industry. The duties could enhance anti-competitive behaviour, which has already been identified by the Competition Commission. From the perspective of the Competition Commission, imports are necessary to force competition in the domestic poultry market, since an increase in tariffs would reduce choice and result in higher prices for consumers (Ramburuth, 2013).

Grimbeek and Lekezwa (2013) argue that an increase in domestic competition from domestic producers (not foreign competition) may reduce profit margins. For instance, they show that profit margins had been increasing up until 2007, when Country Bird exited the Elite partnership and introduced some form of competitive pressure. This could indicate that as more imports enter, profit margins might decline further, which could support the views raised by SAPA. However, the fact that most recent poultry imports are from the EU – which would not face import tariff increase due to the Free Trade Agreement – suggests that tariff increases would not be fully effective, as the import tariff would affect only a fairly small percentage of imports.

In addition, vertical integration in the local industry reduces domestic competition. Five producers – Rainbow Farms, Astral Operation, Sovereign Food investment, AFGRI Poultry and Supreme Poultry – account for approximately half of total SACU production.

Some of the points raised by SAPA for justifying tariff increases are not directly related to imports but rather to inefficiencies or other problems in the poultry industry. For example, the high cost of electricity, high input costs such as from grain feed and fuel, high logistics cost between urban centres and an ineffective rail system has nothing to do with increased imports. Reduction in imports would not lessen these high costs. Instead, interventions in other spheres would be needed to address these problems.

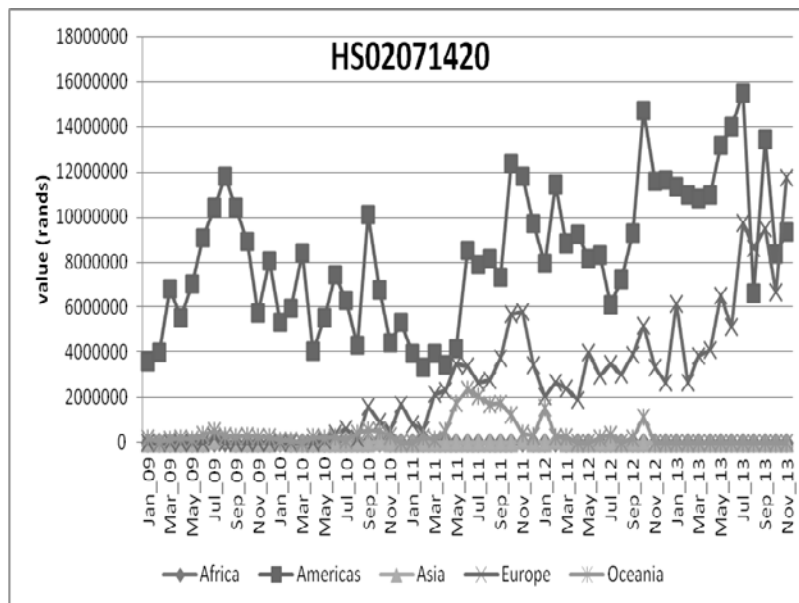
In terms of duration, the investigation was not concluded by ITAC in the stipulated four months. The tariff investigation process started on 27 March 2013 and ended on 30 September 2013, which is about six months, which is the timeframe for standard tariff investigations, whereas the poultry sector had been designated a sector in distress. This delay in reaching and announcing the decision has undesirable implications. According to AMIE, this delay in announcing the final tariff decision led to speculation, causing real market distortions (AMIE, 2013). Further, the delay in announcing the final tariff decision might have been overtaken by macroeconomic events such as the depreciation of the rand. This depreciation alone acts as a protective measure, since imports become more expensive for South Africans, and as such the depreciation

might have already changed the import position/status of the poultry products into South Africa and hence affected the appropriate recommendations.

As part of its investigation ITAC carried out a consumer impact assessment. ITAC found that tariff increases would have price-raising effects (albeit relatively low and varying with the level of tariff increases). Fourie (2013) found that a tariff increase would lead to increases in the costs to consumers, especially to the poor. The point was supported by AMIE, who argued that an increase in import tariffs would have net effects of raising food prices by about 30%. To AMIE, the increase in poultry prices was further necessitated by the fact that the domestic poultry industry was controlled by large vertically integrated local participants. SAPA did not dispute the possibility of price increases as a result of a tariff increase, but they argued that it would be less than a 10% price increase (SAPA, 2013b). Even the Competition Commission points out that increased import tariffs may mean less product choice and higher prices, which might deny consumers the benefits of increased import competition (Ramburuth, 2013).

The fact that EU and SADC imports are duty-free (which is beyond the control of ITAC) points to a possible loophole. There is a strong possibility of imports to South Africa being diverted through these regional blocs. Evidence also shows that imports of poultry have of late been coming through EU countries rather than Brazil. About 55% of all poultry imports now come from the EU, and only 29% come from Brazil. Imports of frozen chicken legs from the EU increased by 72% in 2012. This was possibly due, at least in part, to the tariff already imposed on Brazil (Ramburuth, 2013). This implies that the imposition of the tariffs will not be fully effective in curbing increased imports of poultry products into South Africa. Furthermore, according to AMIE these protectionist activities might also result in retaliatory measures by some trading partners, as had already begun occurring with some agricultural products.

As shown in FIGURE 6, Europe has overtaken the Americas in supplying other bone-in portions (tariff line HS02071490) to South Africa. With offal (tariff line HS02071420) Europe is almost overtaking the Americas.



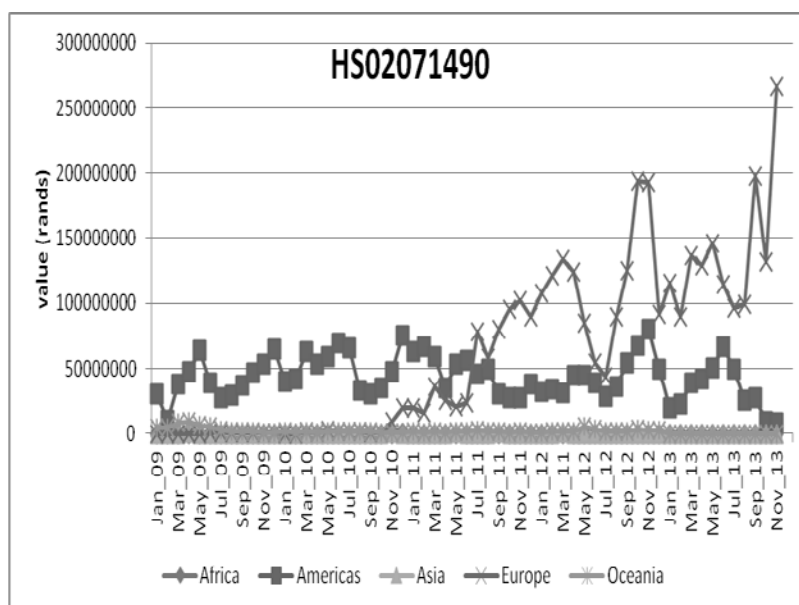


FIGURE 6: Trends in import structure of offal and other bone-in portions across continents

Source: Data from Quantec, 2014

Note: Tariff line HS02071420 is offal, tariff line HS02071490 is other bone-in portions.

Despite this trend, Brazil still dominates in other poultry products. At country level Brazil was the major exporter to South Africa until May 2011, when it was overtaken by the Netherlands. There has also been an upward surge in imports from EU countries such as Germany and United Kingdom of tariff line HS02071490 as shown in FIGURE 7.

Increasing tariffs for other countries and trading duty-free with EU countries may not result in the intended benefits from the protection. Based on this analysis it is evident that increasing poultry import tariffs may lead to a shift or diversion of imports (through the EU instead of through South America) rather than an overall reduction in poultry imports, hence the desired benefits of tariff increase will be diminished. If the free trade area between South Africa and EU continues to hold, the longer-term solution for the growth of the poultry industry lies in increasing competitiveness and reducing high feed costs, electricity, and transport costs. Tariffs (and other trade-related measures) nevertheless retain an important role, particularly for the retention of employment in the domestic poultry industry.

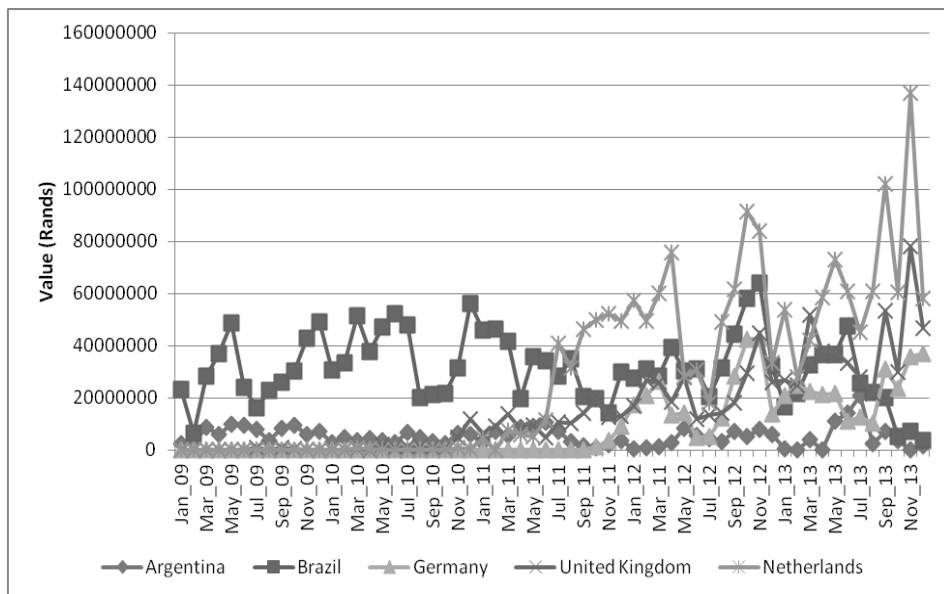


FIGURE 7: Trend in import structure of other bone-in portions across countries

Source: Data from Quantec, 2014

The differentiated outcomes for different types of poultry products are an important demonstration of the attempt at achieving a balance between different and often competing objectives by ITAC. A central challenge with which ITAC needs to grapple in every case is how to balance the different interests along the value chain, as well as how to balance the interests of producers and consumers. The extremely high rate of unemployment in South Africa means that the retention and creation of employment features as a central consideration in any decision, with this being balanced against other considerations such as access to affordable products for consumers. ITAC attempted to achieve an appropriate balance by recommending differentiated tariffs for different types of poultry products, with those consumed predominantly by low-income consumers being subjected to lower tariffs than those consumed predominantly by high-income consumers (see TABLE 4). Such differentiated tariffs are an important way of balancing the interests of producers (including employment retention and creation) with those of consumers (especially for foodstuffs consumed predominantly by low-income consumers).

6. CONCLUSION

The results of this study indicate that ITAC managed to follow and implement the changes in government trade policy in the cases analysed. Before 2009 the South African government was pursuing trade liberalisation, hence the decline in tariffs on paper products. After 2009 the government put more emphasis on promotion of industrial growth and the retention and creation of employment through trade policy, hence the increase in tariffs on poultry products.

Our findings also suggest that ITAC does undertake thorough and nuanced analysis before recommending changes in tariff regimes, as evidenced by differential increase of tariffs on poultry products. However, ITAC should conduct a rigorous analysis of global trade dynamics and

the implications of existing trade agreements. This is evident for instance with the tariffs imposed on poultry imports while there is duty-free with the EU and SADC, providing a possible loophole for the circumvention of the tariffs. This weakness is also evident in the paper case study, where countries not covered by the SA-EU trade agreement emerge as the largest exporters to South Africa after the decline in paper products tariffs.

The findings also demonstrate that ITAC should work closely with other government departments and other regulators – notably the Competition Commission – to ensure policy consistency. This is evidenced by the divergent views of ITAC and the Competition Commission concerning the poultry sector.

It is important that ITAC expedites tariff investigations. As discussed here with reference to the poultry and paper cases, lengthy tariff investigations can be overtaken by relevant changes, such as in the macroeconomic environment. Delays can also have deleterious effects on investment and employment. This is particularly important for a sector in distress, such as poultry. A well-trained and appropriately skilled investigation team, with an adequate staff complement and capacity, is therefore crucial. Additional policy implications and recommendations, focused on the institutional dimension in particular, are discussed in the companion article to this one, titled 'An Institutional Analysis of the International Trade Administration Commission of South Africa'.

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APPENDIX: LIST OF INTERVIEWEES

The following persons were interviewed for the purposes of this research.

Mr S Tsengiwe, Chief Commissioner, ITAC, 3 December 2013

Ms Z Xabendlini, Senior Manager: Trade Remedies II, ITAC, 3 December 2013

Ms R Theart, Senior Manager: Tariff Investigations I, ITAC, 3 December 2013

Mr T Chauke, Director, DTI, 3 December 2013

Prof S Roberts, Director, Centre for Competition, Regulation and Economic Development, 12 December 2013

Ms L Mndebela, Senior Manager: Human Resources, ITAC, 17 December 2013

Dr M Obinyeluaku, Chief Economist, ITAC, 17 December 2013

Ms J Molony, Chief Executive Officer, PAMSA, 24 January 2014

Mr P Bortolon, Business Manager Paper, Sappi, 24 January 2014

Mr L Kelvin, Chief Executive Officer, SAPA Chief Executive Officer, 31 January 2014

Mr E Vlok, Trade Specialist, Economic Development Department and Part-time Commissioner at ITAC, 14 March 2014

AN INSTITUTIONAL ANALYSIS OF THE INTERNATIONAL TRADE ADMINISTRATION COMMISSION OF SOUTH AFRICA

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Abstract

This article analyses the role and capacity of the International Trade Administration Commission of South Africa (ITAC), focusing on ITAC's tariff investigation function. ITAC's institutional setting is compared to that in other developing countries. An assessment of legal challenges to ITAC decisions shows that the proportion of ITAC's decisions overturned by the courts has declined over time, suggesting increased robustness of these decisions. ITAC's current human resources and capacity-building are reviewed. Key institutional issues are discussed and policy recommendations put forward concerning: the appropriate institutional location for tariff-investigations; the current positioning of ITAC under two departments; co-operation between ITAC and other institutions; the strengthening of reciprocity commitments; the role and capacity of part-time Commissioners; the duration of tariff investigations; joint capacity-building among the economic regulators; the extent to which research at ITAC should be undertaken in-house; economics and inspections capacity at ITAC; and the grading of positions at ITAC.

Keywords

Trade policy, tariffs, institutional capacity, training

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1. INTRODUCTION

This article analyses the role and capacity of the International Trade Administration Commission of South Africa (ITAC), with a view to making recommendations for enhancing the capacity and performance of the organisation. The objectives of the study are to compare ITAC's institutional setting to that in a sample of other developing countries, to evaluate the robustness of ITAC's tariff decisions to legal challenges, to assess ITAC's current human resources and capacity, and to analyse various aspects of ITAC as an institution in order to develop appropriate policy recommendations. The article is thus strongly policy-oriented.

This is a companion article to the one titled 'Analysing International Trade Administration Commission tariff investigations: case studies from poultry and paper' in this special edition. That article undertakes an assessment of ITAC's work through case studies of two specific tariff investigations, which also shed light on the issues discussed here.

ITAC was established on 1 June 2003 through the International Trade Administration Act (71 of 2002), which replaced the Board on Tariffs and Trade Act (107 of 1986). The aim of ITAC is to foster economic growth and development in order to raise incomes, promote investment and employment in South Africa and within the Common Customs Union Area (ITAC, 2013). ITAC intends to facilitate an efficient and effective system for the administration of international trade. The core functions of ITAC are customs tariff investigations, trade remedies and import and export control. To achieve these functions, ITAC is therefore composed of three main divisions or units: tariff investigations, trade remedies and import and export control. As of March 2014 it has produced 464 reports on investigations on various trade and tariff-related issues.

ITAC is a very important institution in South Africa's trade policy architecture. Tariff levels have significant economic consequences, in particular for the prices of goods for domestic consumers and the production levels, investment and employment of domestic producers. There are typically trade-offs between the economic interests of these groups in tariff levels, especially in the short to medium term, rendering the setting of tariffs a complex and sensitive exercise. The high rate of unemployment in South Africa, as well as the need for affordable basic goods for low-income consumers in particular, makes this balancing of different interests especially difficult. Tariffs set at inappropriate levels can have significant negative implications for South Africa's growth and development; thus ITAC has an important responsibility in undertaking tariff investigations and making tariff recommendations. It is thus important that tariff investigations are conducted expeditiously and use appropriate and accurate information and suitable methodologies. It is also important that tariff investigations and recommendations be both economically and legally valid, to minimise the chances of decisions being overturned through legal challenges, as such reversals are likely to be economically costly and to create uncertainty. These considerations underscore the significance of the institutional analysis of ITAC undertaken here, and the importance of policy recommendations designed to improve ITAC's role and capacity.

ITAC takes its mandate from government's trade policy. As such, changes in government policy affect ITAC's tariff investigations and recommendations. There have been distinct shifts in trade policy since the establishment of ITAC, as well as during the time of its predecessor the Board on Tariffs and Trade (BTT). ITAC periodically reviews tariff investigation guidelines to align these to government policy. Currently, ITAC is therefore following a 'developmental or strategic approach to tariff setting with the objective of promoting domestic manufacturing activity, employment

retention and creation, and international competitiveness' (ITAC, 2013:11). Tariff decisions are evidence-based and are evaluated on a case-by-case basis. The focus here is on the tariff-setting function of ITAC rather than all the activities of ITAC.

Several methodologies were used in this research. A literature review was conducted. Various documents were sourced and analysed, both documents in the public domain and those provided to the researchers for the specific purposes of this research. A number of interviews were conducted, including with ITAC staff, government departments, experts and stakeholders. The interviews were conducted in a semi-structured manner, using a guiding set of questions while allowing for the free flow of discussion. The interviewees are listed in the Appendix. Some information sourced from the interviews was of a factual nature while other information was respondents' opinions.

The next section compares the institutional setting for tariff-setting in South Africa with that in some other developing countries. This analysis contextualises ITAC's institutional position and sheds light on possible alternative institutional arrangements. Section 3 examines the robustness of ITAC decisions in terms of legal challenges to these decisions. This is important in evaluating the performance of ITAC and in assessing possible capacity-building needs. ITAC's human resources and existing capacity-building initiatives are discussed in section 4. Section 5 assesses some key issues facing ITAC and offers policy recommendations, as well as serving as a conclusion.

2. INTERNATIONAL COMPARISONS OF THE INSTITUTIONAL SETTING OF TARIFF-SETTING

What is the best way for a country to set its tariff structure and levels? There are various conceivable institutional arrangements. Tariffs could be set directly by a government department. Alternatively, this role could be mandated to an independent or semi-independent body. Apart from institutional arrangements, there are also different options as to what rules should govern the tariff-setting process, what criteria and considerations should inform decisions, and so on. The current institutional arrangements and processes for tariff-setting in South Africa represent one set of possibilities in this regard.

This section compares ITAC's tariff investigation process to the equivalent process in three other countries: Brazil, India and Pakistan. Like South Africa, these are all developing countries. The fact that two of these countries are also members of the Brazil, Russia, India, China and South Africa (BRICS) grouping renders the comparison particularly germane. This comparison is important in terms of understanding the institutional setting of ITAC and alternative possibilities in this regard. Different institutional arrangement, processes, criteria, and so on, will imply different capacity needs, so this part of the analysis also has important implications for the subsequent discussion of ITAC's capacity.

TABLE 1 provides a summary comparison of tariff investigation processes in South Africa, Brazil, India and Pakistan. The table shows the institutional setting of tariff investigations, the degree and nature of institutional 'independence', a brief summary of the process involved, and the number of days stipulated for the completion of a tariff investigation case.

TABLE 2: International comparison of tariff-setting processes

<i>Country</i>	<i>Institutional Setting</i>	<i>Institutional Independence</i>	<i>Process</i>	<i>Timeframe</i>
South Africa	ITAC falls under the Economic Development Department (EDD) and derives its trade policy mandate from the Department of Trade and Industry (DTI). Tariff changes are effected through the South African Revenue Service (SARS).	ITAC is independent but falls under DTI	ITAC makes investigations and recommends to DTI which recommends to Treasury and the South African Revenue Service implements the changes	Four months for sectors in distress and six months for normal investigations
Brazil	Department of International Negotiations (DEINT) falls under Ministry of Development, Industry and foreign trade (MIDC) and The Board of Foreign Trade (CAMEX) makes the final decisions.	DEINT is a department under the Ministry of Development, Industry and Foreign Trade	DEINT undertakes investigations and submits to CT-1 which will then submit to CAMEX for implementation in Brazil	CAMEX Resolution allows for changes to be made on 1 January or 1 July of every year
India	Tariff Commission, Ministry of Commerce and Industry	Tariff Commission is Independent but falls under Ministry of Commerce and Industry	Tariff Commission undertakes tariff investigations and makes recommendations to Ministry of Commerce and Industry	-
Pakistan	National Tariff Commission, Ministry of Commerce	NTC is an independent board but it falls under Ministry of Commerce	NTC makes investigations and submits its recommendations to Ministry of Commerce	120 days

Source: Authors' compilation (information sourced from the following: ITAC website: www.itac.org.za; Ministry of Development, Industry and Foreign Trade: www.mdic.gov.br; Tariff Commission website: www.tc.nic.in; and National Tariff Commission website: www.ntc.gov.pk.)

From this tabular comparison, it is evident that tariff investigations in South Africa, India and Pakistan essentially follow similar processes. The respective commissions are independent and are separate bodies that undertake investigations after which they make recommendations to the Ministry of Industry and Commerce for approval and enforcement of duties. As in South Africa, in India and Pakistan the equivalent bodies are located under the Ministries of Commerce and Industry and Commerce respectively. This allows for the respective Ministries to convey their trade and industrial policy objectives to the Commissions' tariff investigation mandate, while also time allowing the Commissions to exercise independence in conducting their investigations.

In South Africa ITAC replaced the Board on Tariffs and Trade; similarly, the Indian Tariff Commission replaced the Tariff Board. However, an interesting aspect of the Indian Commission's institutional setting is that it was merged with the Bureau of Industrial Costs and Prices in 1999. This can allow for the timely provision of accurate information on pricing behaviour. They however both have separate Competition Commissions.

The Brazilian case is different in the sense that the Department of International Negotiations is responsible for investigating tariff changes. This is a department in the Ministry of Development, Industry and Foreign Trade. It therefore implies that it is not independent or outside of government as in the aforementioned cases. The Board of Foreign Trade (CAMEX) is responsible for making the final decisions and enforcing the changes made. Furthermore, the Brazilian case is also different in the fact that tariff changes can only be made twice a year: on 1 January or 1 July of each year.

In terms of the number of days taken to complete investigations, the Pakistan Commission is relatively fast as it takes 120 days on all cases, whereas ITAC takes between four to six months to complete investigations depending on the state of the sector concerned. In Brazil it can take up to six months to complete an investigation and effect a tariff change.

ITAC's institutional arrangements, and the merits and possibilities of shifting to an arrangement more akin to the Brazilian one, are discussed further in section 5.

3. ROBUSTNESS OF ITAC DECISIONS TO LEGAL CHALLENGES

The extent to which ITAC decisions hold up in court when subjected to legal challenge can be seen as an important indicator of ITAC's performance. Twenty-three ITAC decisions have been challenged in court since the establishment of ITAC in 2003. Of these 23 cases, the outcome was in favour of ITAC in twelve cases and against ITAC in seven, one was settled out of court in favour of ITAC and in a further three cases the outcome was subject to a confidentiality agreement.

Considering the trend over time, there is an improvement in the proportion of ITAC decisions that are upheld by the Courts when subjected to challenge. For the period 2004–2008, seven ITAC decisions were challenged in court, of which five went against ITAC. For the period 2009–2013, 16 ITAC decisions were challenged in court, representing a significant increase in legal challenges. However, of the 13 of these where the outcome is not subject to a confidentiality agreement, only two went against ITAC (and in one of these two cases the consequence of the order was in favour of ITAC). This trend represents an increase in the robustness of ITAC decisions when subjected to legal challenge, and indicates an improvement in ITAC's performance over time. TABLE 2 summarises the outcomes of cases in which ITAC decisions have been challenged in court. Further details on each of these cases are provided in TABLE 3.

TABLE 2: Outcomes of court challenges to ITAC decisions

<i>Year</i>	<i>Number of cases</i>	<i>Number in favour of ITAC</i>	<i>Number in favour of applicant</i>	<i>Other outcome</i>
2004	1	1	0	
2006	3	1	2	
2007	2	0	2	
2008	1	0	1	
2009	2	2	0	
2010	7	4	1	2 - confidentiality agreement between parties
2011	1			1 - confidentiality agreement between parties
2012	2	1	1	
2013	4	3	0	1 – settled out of court in favour of ITAC
TOTAL	23	12	7	

Source: Derived from information provided by ITAC (In some cases the respondent was ITAC together with another institution such as SARS or the Minister of Trade and Industry. Regarding the 2012 case in which the order went against ITAC, ITAC has indicated that the consequence of the order is in favour of ITAC.)

TABLE 3: Details of court challenges to ITAC decisions

<i>Product</i>	<i>Parties</i>	<i>Court</i>	<i>Date</i>	<i>Outcome</i>
A4 paper – 5yr expiry date	Progress Office vs ITAC/Min	High Court	2004	In favour of ITAC
Carbon Black – export price in sunset reviews	Algorax vs ITAC/Min	High Court	2006	In favour of Algorax – ITAC ordered to reconsider recommendation
Shock tubes – termination of investigation	AEL vs ITAC	High Court	2006	In favour of AEL – ITAC ordered to re-initiate investigation
Electric Cable	Association of Electric Cable Manufacturers vs ITAC	High Court	2006	In favour of ITAC
Lysine –imposition of	Degussa vs ITAC	High Court	2007	In favour of

<i>Product</i>	<i>Parties</i>	<i>Court</i>	<i>Date</i>	<i>Outcome</i>
provisional measures				Degussa: Interim order and therefore no precedent.
A4 paper	Progress Office vs ITAC/Min	Supreme Court	2007	In favour of Progress Office
Wire Rope – interdict to recommend termination of duties to Minister	Scaw vs ITAC/Min	High Court	2008	In favour of Scaw
Wire Rope – separation of powers	ITAC vs Scaw	Constitutional Court	2009	In favour of ITAC
Unlawfully imported trucks seized	Clear Enterprise v ITAC/SARS	High Court	2009	In favour of ITAC
Tyres – market economy status	SATMC vs ITAC/Min	High Court	2010	In favour of SATMC
Tyres	ITAC/Min vs SATMC	Supreme Court	2010	In favour of ITAC
Tyres – claim for damages	SATMC vs ITAC	High Court	2010	In favour of ITAC
5 year expiry date – declaratory judgement	ITAC/Others vs 74 others	High Court	2010	In favour of ITAC
Wire Rope – confidentiality	Scaw vs ITAC/others	High Court	2010	Confidentiality agreement between parties
Wire Rope – confidentiality	Casars vs ITAC/others	High Court	2010	Confidentiality agreement between parties
Copper scrap	Sungwong/ ITAC	High Court	2010	In favour of ITAC
Wire Rope – confidentiality	Bridon vs ITAC/others	Supreme Court	2011	Confidentiality agreement between parties
5-year expiry date	Aranda/others vs ITAC/Min	High Court	2012	In favour of ITAC
5-year expiry date	AMIE v ITAC/Others	Supreme Court	2012	In favour of AMIE (but the consequence of the order is in favour of ITAC)
Determination and confidentiality of information	AMIE v ITAC	High Court	2013	Settled out of court in favour of ITAC
Price Preference– interdict from implementing the guidelines	MRA v ITAC/Min	High Court	2013	In favour of ITAC

<i>Product</i>	<i>Parties</i>	<i>Court</i>	<i>Date</i>	<i>Outcome</i>
Sugar –interdict from finalising the investigation	ASASI v ITAC	High Court	2013	In favour of ITAC
Scrap metal permit	SA Metal Group v ITAC	High Court	2013	In favour of ITAC

Source: Information provided by ITAC.

Of the seven cases in which ITAC's decision was overturned by the courts (that is, the courts ruled in favour of the applicant), in two of these the issue was essentially procedural. In a further two cases the matter was around differing interpretations of the law, in one case the issue concerned the interpretation of information and method of calculation used by ITAC, and one case involved both the interpretation of the law and the interpretation of information and method of calculation used by ITAC.

While it would be ideal to have no successful legal challenges against ITAC decisions, in practice there will inevitably be differing interpretations of the law and of appropriate economic methodologies. The number of cases in which ITAC's decision was overturned by the courts is small, and decreasing over time. Enhanced legal capacity may be relevant in minimising challenges to or the eventual overturn of decisions on procedural grounds and on matters of legal interpretation, while enhanced capacity in economic analysis may be helpful regarding challenges related to methods of calculation and related issues.

4. ASSESSMENT OF ITAC CURRENT HUMAN RESOURCES AND CAPACITY-BUILDING

4.1 ITAC staff structure and human resources

The Chief Commissioner is the Chief Executive Officer and head of ITAC. The Chief Commissioner is assisted by a Deputy Chief Commissioner (currently vacant) and up to 10 part-time Commissioners. There are Senior Managers responsible for specific areas, a Chief Economist, as well as managers, senior investigators, investigators, administrators and secretaries. ITAC currently employs 154 staff in total. Of these, 54% hold degree-level qualifications. FIGURE 1 illustrates the educational qualifications and number of years' experience (at ITAC) of staff.

The high level of experience of staff is positive for maintaining continuity and institutional memory. It is also important, as some of the skills needed in ITAC work are learnt on the job. However, the Chief Economist of ITAC has suggested that a possible disadvantage of excessive staff longevity is that at some times staff may become 'too rigid'. They tend to use an 'experience-based' approach in analysing the cases rather than 'technical-based' methods, which may hamper new approaches to assessing tariff cases (Interview with ITAC Chief Economist, 2013). In the view of the authors, this observation is not necessarily an argument against experience or staff retention per se, but rather highlights the need for ongoing training and up-skilling. This includes the training of even experienced personnel with current technical methodologies as necessary and appropriate. This is discussed further in section 5.

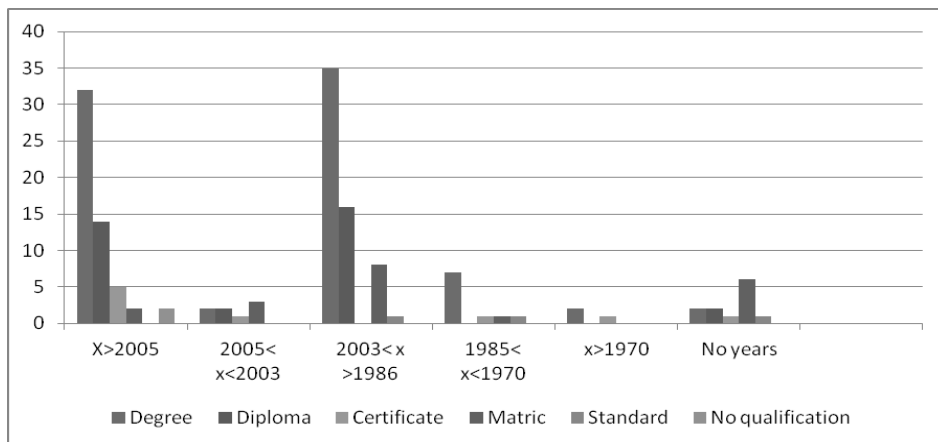


FIGURE 1: Comparing experience across qualifications of ITAC staff

Source: ITAC Senior Manager: Human Resources, 2013

Note: x indicates the starting date of the employees.

The Chief Commissioner and senior management of ITAC identified a few human resource-related issues that they believe need review. Firstly, they consider the staff complement to be too small. They would want the creation of additional positions, which they believe would assist in speeding up the investigation process. Secondly, the Chief Commissioner and senior management put forward a view that a number of important positions at ITAC are 'under-graded' relative to equivalent positions at the DTI and elsewhere, which poses a problem for staff retention. Thirdly, and related to the aforementioned point, staff vertical mobility within ITAC is limited in that employee growth and promotion prospects are constrained once they reach a certain level, for example the level of Senior Managers. In a contrary view, ITAC's Senior Manager for Human Resources has stated that staff turnover at ITAC is not a big threat (Mndebela, 2014). In support of this she indicates that 'only [29] employees ... terminated their services [from 1 April 2012 to date] and the reasons for termination of service are different'.

As regards the reasons for staff turnover, of the 29 staff that left ITAC during the period April 2012 – March 2014 the contract came to an end in five cases, one staff member passed away, one was pensioned, one left ITAC because of misconduct and 21 resigned. TABLE 4 summarises the departure of ITAC staff (for whatever reason) during this period, by level. The levels range from administrative assistants at level 2 to General Manager and above at level 14.

According to the Senior Manager for Human Resources, different reasons were given for resignations but most of the employees left ITAC for better work opportunities and career advancement (Mndebela, 2014). Some of the reason given for those who resigned is lack of employee growth prospects within ITAC. She indicates that 'according to our exit trend analysis report, none of the employees who were interviewed during their exit cited under-grading of positions as their reasons for leaving ITAC'. The Senior Manager for Human Resources argues that salary grading is not a problem, since ITAC is using the Equate System that is used by all government entities to grade positions and that the policy framework and guidelines governing job evaluation are those that are provided by the Department of Public Service and Administration, as with other government departments.

TABLE 4: Departure of ITAC staff, by level, from 1 April 2012 to date

<i>Level</i>	<i>Number</i>
14	2
13	2
12	4
10	7
9	1
7	2
6	1
3	2
2	2
Temporary and interns	6
Total	29

Source: *Derived from information provided by ITAC by email*

A rather high proportion of the staff departures were at senior levels, as shown in table 4. In particular, six Senior Investigators (at level 10) departed during this period, of whom five resigned. This is potentially of concern given the importance of these staff in the core work of ITAC, as well as the fact that significant skills for these roles are acquired on the job.

There appears to be a discrepancy between the view of the Senior Manager for Human Resources and her interpretation of the exit interview data, and the view put forward by the Chief Commissioner and other member of senior management, regarding whether under-grading of positions is a factor in the turnover of ITAC staff (especially senior staff). However, it is worth noting that implicit in the reason of 'better work opportunities and career advancement' cited by the Senior Manager for Human Resources could potentially be an issue of under-grading of positions, even if that is not explicitly cited as such in the exit interviews. That is, staff may hypothetically be able to obtain better opportunities elsewhere if their positions at ITAC are 'under-graded'. This issue is discussed further in section 5.

In terms of stakeholder perceptions, both the Paper Manufacturers Association of South Africa (PAMSA) and Sappi have pointed to what they consider to be insufficient capacity at ITAC. An example cited was that at one point ITAC had to change the dates three times for verification in the case of A4 paper, which in the view of the party is indicative of capacity problems. Sappi also suggested that at times ITAC shows some inconsistencies, which they believe points to lack of experience or the use of inexperienced staff for verification processes. The Chief Executive Officer of the South African Poultry Association (SAPA) has argued that investigation teams need to understand the dynamics of the market, and has recommended that they should learn more about the sector they will be investigating before starting their investigation. SAPA also raised an issue of what they regard as inadequacy of skills in some cases, in particular among staff who do company visits for verification, and have recommended that these staff need continual up-skilling.

4.2 ITAC skills development and capacity-building

ITAC has a Skills Development Plan as well as a Workplace Skills Plan, which it submits to the Department of Public Service and Administration, and with which it needs to comply every year. ITAC also submits an Annual Training Report every year. ITAC undertakes a range of staff training programmes. ITAC has trained a total of 117 staff. Twenty-eight economists were trained in areas varying from customs clearing and project management to advanced computer courses. Human resources staff were trained in skills ranging from project management and planning to labour relations. There is also ongoing 'on-the-job' training. Furthermore, internship programmes were introduced in 2012.

Specialised training has also been outsourced on tender and developed specifically to meet the needs of ITAC. There is a two-week intensive certificate-level course, leading to a Certificate in Trade and Financial Analysis, which has been co-developed by DNA Economics and the University of the Witwatersrand. The basic aims of the course are to equip ITAC investigators with a common level of understanding of key economic and accounting concepts and to provide them with the necessary tools and data to conduct comprehensive economic analysis of trade policy interventions.

Policy recommendations concerning ITAC human resources and capacity-building are put forward in the next section.

5. DISCUSSION AND POLICY RECOMMENDATIONS

5.1 Institutional location of tariff-setting

Locating the roles of tariff investigations and of making recommendations as to tariff changes in a semi-independent institution such as ITAC is one possible institutional arrangement. An alternative is to locate these roles directly inside a government department, for example as a directorate of the DTI. Brazil is an example of the latter case, as discussed in section 2.

The decision as to the most appropriate institutional location for these functions depends in part on a perspective as to how tariff-setting fits into broader economic policy, as well as on the types of the considerations that should inform tariff decisions. If tariff-setting is viewed as a technical economic process that should be purely objective in nature, then it could be considered appropriate to locate this in an independent institution outside of government. Conversely, if tariff-setting is viewed as inherently political, with no right answers but with winners and losers associated with every possible outcome, then it could be considered appropriate to locate it directly within a government department. Such an arrangement could also have a benefit of allowing for public policy objectives to be directly translated into tariff-setting without intermediation.

The South African institutional arrangement could be understood as attempting to achieve some sort of balance in this regard. On the one hand, public policy is brought into the orientation and work of ITAC in several important ways. Senior appointments are made by government. The institution as a whole is accountable to government. There is ongoing communication of government's strategic economic objectives to ITAC. Crucially, ITAC's tariff recommendations are subject to approval of the Minister of Trade and Industry. It is noteworthy that the Minister does not always approve ITAC's recommendations, indicating the active role played by the

Minister in ensuring that government's policy objectives are consistently at the forefront. In the authors' assessment, however, there currently does not seem to be a disjuncture between ITAC's work and government's policy objectives, and ITAC does appear to be advancing these objectives.

On the other hand, ITAC's location outside of government does give it a degree of distance and independence. The role of the part-time Commissioners, who are mostly employed outside of government, brings an additional measure of independence.

There could be advantages and disadvantages to locating the functions of ITAC directly within a government department. We raise this issue here for further debate. In the view of the authors, there are not compelling reasons for altering the current institutional arrangement at present.

5.2 Position of ITAC under two line departments

The current institutional setting is essentially that ITAC falls under the Minister and Department of Economic Development, but the mandate around trade policy and any changes therein derives from the Minister of Trade and Industry, with such changes being communicated through Economic Development, and with the Minister of Trade and Industry having the power to take final decisions on tariffs. The positioning of ITAC under two line departments, while understandable, is not ideal. On the one hand, ITAC is central to South Africa's trade policy, which falls squarely under the DTI. On the other hand, the EDD is responsible for other economic regulators, whose close co-ordination with ITAC is important, as well as the broader development and co-ordination of economic policy within which ITAC operates.

Some stakeholders interviewed, such as PAMSA, have expressed dissatisfaction with this arrangement and believe that it may delay processes. However, the view from the interviewee from the EDD is that, while the arrangement is slightly cumbersome and may lead to slower communication in certain instances, it is basically working. The arrangement also has some benefits. One of these is enhanced policy co-ordination, and related to this the communication of government's strategic economic priorities and refraction of these in ITAC's work. The EDD has also been able to link ITAC up with the Industrial Development Corporation (IDC) where ITAC is working on a particular sector that the IDC has existing specialised knowledge and research on.

Consideration could be given to simplified lines of accountability while ensuring the coherence of trade policy (including coherence between tariff-setting and other aspects of trade policy), coherence between trade and industrial policy, and optimal coordination between ITAC and other economic regulators.

5.3 Increased co-operation with other economic regulators and relevant institutions

It does not appear that there is sufficient communication and co-operation between ITAC and other economic regulators with related mandates. An obvious case is between ITAC and the Competition Commission.

PAMSA has also expressed the need for closer relationships between ITAC, the EDD, the DTI and SARS in order to speed up the implementation of decisions. They raised the following example: the imposition of a tariff on a certain line may see traders diverting their products to another

product line with a lower tariff, which can be partly mitigated by the relevant departments working closely with each other.

ITAC acknowledges that there is scope for increased co-operation with other economic regulators, in particular with the Competition Commission. The Chief Commissioner of ITAC noted the example of the poultry sector, where ITAC increased the duty while the Competition Commission raised the issue of the anti-competitive behaviour in the sector, as an illustration of the need for increased co-operation. ITAC plans to improve communication and co-operation with the Competition Commission.

5.4 Strengthening of reciprocity requirements

ITAC may include reciprocity requirements as part of its recommendations on tariffs. These measures can require companies that are in some way 'beneficiaries' of a particular tariff decision to reciprocate with specific commitments of, for example, investment or employment.

Reciprocity agreements can be a key tool of industrial policy and an important link between trade and industrial policy. They are essential for ensuring that gains from tariff protection do not just become windfall gains that are privately accrued by individual companies, but rather become broader economic gains that contribute to national economic objectives such as increasing employment. Reciprocity agreements can be understood as part of 'rent management' in the sense of the state managing rents that would otherwise be captured by private agents. The fact that ITAC has the legal power to pursue reciprocity agreements is a powerful policy tool that, needs to be fully utilised.

A view expressed by the interviewee from the EDD is that ITAC is not always strong enough in negotiating sufficient commitments from industry and in pushing industry hard enough. In some instances industry may present a plan to ITAC for what it would have done anyway, without really making any substantial new commitments directly linked to the gains from tariff protection.

Negotiating stronger reciprocity commitments needs specific types of skills, notably in negotiations. Training could assist in this regard, but it may also require the employment of people who already have those sorts of skills and mentality. This needs to be complemented with strong economic analytical skills in order to assess what sorts of commitments from industry are feasible, and to distinguish between what industry may have done in any event and net new commitments.

5.5 Duration of tariff investigations

The timeframes taken in completing tariff investigations are important, for several reasons. Firstly, where domestic industry is under pressure from imports it is essential that any decisions to protect industry through tariff increases be made speedily in order to minimise negative effects on production, production capacity and employment. Secondly, domestic and international economic conditions that are germane to tariff decisions change rapidly, so the longer the duration of a tariff investigation the less accurate the economic information upon which the decision is eventually based is likely to be. Thirdly, while tariff investigations are in progress, there is uncertainty for business, which may hamper investment.

Concerns have been raised by some stakeholders interviewed for this research about the length of time taken in ITAC tariff investigations. According to these parties, the time between companies submitting their information on the template provided by ITAC and ITAC coming for

company visits is too long. SAPA is of the view that the time between ITAC completing its investigation process and the time when the Minister announces the decision is excessive. PAMSA raised a concern that sometimes it takes quite long for a decision to be made, and all the while the industry is suffering. They cited the example of it taking two years for the application for a tariff increase on an A4 bond paper tariff to be heard. Another challenge which has been noted by parties is with regard to scheduling of the next meeting from the day of visit, which has been said to be too long. For example, regarding the A4 paper verification, the visit was done in December and next meeting was convened only in February. The interviewee from EDD also mentioned that, while ITAC has succeeded in reducing the time of investigations over the past five years, there is still room for improvement in this regard.

A related concern raised by companies is around the implications of changing market dynamics in the course of cases. While cases are underway there are relevant changes in exchange rates, input costs such as electricity prices, and so on. This means that if ITAC asks for resubmission subsequent to such changes it will mean restarting the whole process in data collection, since market-related information will have changed. Revising the figures can be costly and time consuming for the firms concerned.

ITAC recognises the importance of concluding tariff investigations within as short a time period as possible. Progress has been made in reducing the timeframes of tariff investigations. Currently about 75% of investigations are concluded within the required timeframes (Tsengiwe, 2014).

There is still room for improvement, in particular in terms of ensuring that all investigations are completed within the stipulated timeframes. Of course, this cannot compromise the rigour of investigations or the following of due process.

Enhancing capacity within ITAC could be one way of speeding up investigations. This capacity-building could take the form of increasing the number of staff in specific 'bottle-neck' areas that may be delaying or prolonging the pace of the investigations. It could also take the form of up-skilling of existing staff so as to increase productivity and thence the speed of investigations.

5.6 Part-time Commissioners

Part-time Commissioners play an important role at ITAC. One aspect of this lies in bringing a fresh and 'independent' perspective on ITAC's recommendations before these are brought to the Minister. This can improve the rigour and quality of ITAC recommendations. The fact that recommendations have been subject to this additional layer of 'independent' scrutiny can also be of relevance in any subsequent legal challenges.

The part-time ITAC Commissioners come from a range of backgrounds and bring a diversity of skills, experiences and perspectives. This seems to be a positive feature, and the authors' impression is that this part of the organisation is working well.

There may be scope for additional specialised capacity-building among the part-time Commissioners. Given their different backgrounds, some may for example lack legal expertise, while others may lack knowledge of trade economics. While collectively they possess all the requisite skills, each individual Commissioner ideally needs some knowledge in all the core areas of ITAC's work.

ITAC has run some training for incoming Commissioners, but this does not appear to be conducted on a regular basis. A thorough analysis of the needs in this regard could inform what additional training might be needed to address gaps in knowledge or skills among Commissioners. Such training could for example be divided between those needing additional training in the legal and economic domains. Training could also be undertaken at different times on different topics, including at increasing levels of advancement, rather than being once-off. Of course, it needs to be recognised that part-time Commissioners have full-time employment elsewhere and hence are likely to have limited time available for training.

5.7 Joint capacity-building among the economic regulators

ITAC has identified its primary weakness in current capacity as being in the detailed analysis of corporate financial information, and has identified this as an area in which capacity-building could be needed. ITAC takes the view that this expertise is highly specialised and specific to their particular role, such that any training in this area would need to focus on ITAC specifically.

The authors share ITAC's view as to the importance of ITAC having strong in-house capacity in analysing corporate financial information. Without this capacity, ITAC staff would be unable to make rigorous and accurate assessments of companies' financial positions. This is essential for assessing the potential impact of alternative tariff decisions on companies, and for weighing up the validity and veracity of companies' arguments in this regard.

However, our view is that the need for these skills is not restricted to ITAC but is shared by several other economic regulators. In particular, the Competition Commission, the National Energy Regulator of South Africa (NERSA) and the Independent Communications Authority of South Africa (ICASA) all require such skills in order to play their roles effectively. For instance, the Competition Commission must analyse detailed company financial information in order to make assessments of costing and pricing, and the presence of uncompetitive practices and the effects thereof. NERSA must make assessments about appropriate price structures in the energy sector based in part on financial information of the companies involved.

This suggests that there is scope for some common training where particular skills are required by more than one of the economic regulators. Instead of the regulators procuring such training individually, this could be jointly provided, either using existing in-house capacity or external training providers (or a combination thereof). This would reduce the costs of such training. It could also provide for a fruitful interaction among staff who are working on related issues or using similar skills in the different economic regulators. Naturally, in order to address the particular needs of individual regulators there may be a need for further specialised training in addition to the common training.

Based on the needs identified by ITAC, training in financial accounting – specifically the reading and critical analysis of companies' financial information – presents itself as one strong possibility for common training. This could be done jointly with economic regulators such as NERSA, the Competition Commission and ICASA. Common training in this area could be supplemented by advanced specialised training in this area, tailored to the specific needs of the individual regulators.

5.8 In-sourcing of research, strengthening of research capacity and strengthening of economics capacity

ITAC currently utilises both in-house and outsourced research. Most of the research activities at ITAC are done by the Policy and Research Unit. A limitation facing ITAC is an organisational structure that does not allow it to employ more staff to speed up the research process. ITAC has far fewer researchers and less research capacity than for example the Competition Commission.

Much of ITAC's research has hitherto been contracted out. According to the Chief Economist it also typically usually make use of consultants to verify company information such as input costs and Free on Board (FOB) prices.

ITAC requires rigorous and reliable research as part of its investigations and to contribute to informing its findings. ITAC also provides research-based technical and policy analysis to the EDD and DTI in relation to the work of ITAC. For instance it is required to give feedback to government on jobs that could be created after the implementation of tariff changes to specific sectors, and research findings on whether the reciprocity commitments have been met.

ITAC also conducts impact assessments in order to provide feedback to government as to whether the support has led to changes in employment, investment, value addition and competitiveness. These economic variables are assessed for three years before and three years after the intervention. It also reviews tariff investigation guidelines to align these with government policy. Ultimately from the research output it should advise on the alignment of ITAC policies, regulation, guideline and practices to the New Growth Path (NGP), Industrial Policy Action Plan (IPAP) and South Africa's Trade Policy and Strategic Framework (SATPSF).

One issue pertaining to ITAC's research is the extent to which it should be externally commissioned as opposed to conducted in-house. Commissioning research from outside an organisation does have certain advantages. These include the opportunity to engage skills that are not available within the organisation and that are unnecessary or unaffordable for an organisation to employ internally on an ongoing basis.

However, excessive reliance on outsourced research has several drawbacks. Firstly, it does not facilitate skills and knowledge being built up within an organisation. Secondly, an outside service provider may not share the same understanding of policy and views of the organisation, which can have implications for the types of methods and assumptions utilised. For example, a private economics research company may have its own views about trade liberalisation, which may differ from government's policy stance, and the consultant company's views could implicitly or explicitly find their way into research commissioned from them. Thirdly, commissioning research externally can be costly, as payments must be made to service providers who are conducting research as a business enterprise.

ITAC has expressed a desire to build up its own internal research capacity. Already, ITAC is doing more research in-house than was previously the case, and the employment of a Chief Economist has assisted in this regard.

The authors are of the view that most research should be conducted in-house, with outsourced research being the exception. This is likely to imply the need for additional posts to be created. While this would have cost implications, these could be offset against cost savings from a reduction in commissioned research. Improving research capacity could also potentially

strengthen the quality of ITAC investigations and recommendations and enhance its robustness to legal challenges.

Closely related to the above is the need for an overall strengthening of research capacity and improving the quality of research. The interviewee from the EDD, who is also a part-time Commissioner at ITAC, suggested that there could be more rigour and accuracy in ITAC's research work. This is particularly in the context of ITAC's decisions now being potentially more controversial than previously, due to shifts in their mandate. These changes mean that ITAC's work is compelled to be more rigorous and of higher quality. One suggestion which he made in this regard is that work done by junior staff needs to be subject to stronger screening and quality control by middle and senior staff.

A related issue is the need to increase ITAC's economic capacity in particular. Our sense is that ITAC's capacity is currently stronger on the legal side than on the economic side. The appointment of a Chief Economist has significantly improved ITAC's economic capacity compared to previously. However, it is arguably still not strong enough given the nature of the work which ITAC is involved in and the economic capacity of parties (and their consultants) that appear before ITAC. Excellent in-house economic capacity is essential for ITAC to be able to evaluate the validity and veracity of economic evidence presented before it, to reach its own judgements, and to be able to assess the economic impact of alternative decisions. It would also be helpful in obtaining stronger reciprocity commitments from companies, as discussed earlier.

ITAC has begun conducting impact assessments, and these appear to be becoming an increasingly important part of ITAC's economics and research work. Impact assessments are not easy to undertake. If not done accurately, they are virtually worthless (and may actually be damaging if inaccurate or misleading). The skills needed for doing impact assessments are highly specialised and are not necessarily fully taught in the standard academic training of economists. Concrete evidence-based empirical analysis is fundamental. ITAC has already made progress in developing a methodology for impact assessments, although as acknowledged by the Chief Economist this still needs further improvement.

5.9 Strengthening of inspections capacity

Company inspections form an important part of ITAC's work. One aspect of this is ensuring that companies are indeed fully complying with requirements, such as compliance with labour legislation and Bargaining Council agreements (where relevant). Tying companies that are benefiting from tariff protection to such requirements is a good way of improving compliance with the laws of the land. The efficacy of this, however, depends on the degree to which such requirements are enforced in practice. Inspections are essential in this regard.

Views have been expressed by some stakeholders that ITAC's inspection capacity is currently not strong enough. Inspectors need to have a clear idea of what they are looking for and how to obtain or ascertain it. It is unclear whether improving ITAC's inspections could require additional staff, additional training of existing staff, or simply better management and organisation of existing staff.

5.10 Review of the grading of ITAC staff levels

ITAC management has raised a strong concern around the grading of positions within ITAC. The view of the ITAC Chief Commissioner and senior management is that a number of important

positions in the ITAC staff structure are graded at too low a level, in particular relative to the DTI and related institutions. From their perspective, this is a significant cause of staff turnover and the loss of important skills that have been developed through experience and capacity-building at ITAC. A different view was however expressed by the Senior Manager for Human Resources, as discussed earlier.

Staff turnover at managerial and professional levels is of concern given the importance of on-the-job training at ITAC. Even if suitably qualified replacement candidates are found, additional time and training are required to render them proficient in the required competencies. Under-grading of positions may indeed be a problem at ITAC, but it must also be recognised that the staff of an organisation may have a direct interest in the upgrading of positions, hence an independent review would be valuable.

It is recommended that an organisational review of the ITAC staffing structure take place. Of particular importance is to benchmark positions at ITAC to positions at similar regulatory bodies and the DTI, in terms of *inter alia* the levels of skills required and the responsibilities entailed in specific positions. Such a review could also systematically examine the reasons for the departure of senior staff at ITAC, utilising exit interviews among other sources. This could be informative as to the reasons for turnover and the extent to which inappropriate grading of positions is a factor in this regard. The findings of such a review could provide a basis for identifying the merit, if any, for regrading of specific positions at ITAC.

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APPENDIX: LIST OF INTERVIEWEES

The following persons were interviewed for the purposes of this research.

Mr S Tsengiwe, Chief Commissioner, ITAC, 3 December 2013

Ms Z Xabendlini, Senior Manager: trade Remedies II, ITAC, 3 December 2013

Ms R Theart, Senior Manager: Tariff Investigations I, ITAC, 3 December 2013

Mr T Chauke, Director, DTI, 3 December 2013

Prof S Roberts, Director, Centre for Competition, Regulation and Economic Development, 12 December 2013

Ms L Mndebela, Senior Manager: Human Resources, ITAC, 17 December 2013

Dr M Obinyeluaku, Chief Economist, ITAC, 17 December 2013

Ms J Molony, Chief Executive Officer, PAMSA, 24 January 2014

Mr P Bortolon, Business Manager Paper, Sappi, 24 January 2014

Mr L Kelvin, Chief Executive Officer, SAPA Chief Executive Officer, 31 January 2014

Mr E Vlok, Trade Specialist, Economic Development Department and Part-time Commissioner at ITAC, 14 March 2014

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Langus, G. & Motta, M. (2007). *The effect of antitrust investigations and fines on a firms valuation*. European University Institute Florence. [Online] Available: <http://www2.dse.unibo.it/mmotta/Papers/FinesFebruary2007REV.pdf>. (Accessed 24 August 2010).

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☞ For all *foreign-language sources*, an English translation of a title is needed. This follows the original title and is enclosed in brackets (not parentheses), without italics or quotation marks:

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