

HOW IMPORTANT ARE REGIONAL EXPORTS FOR FIRM PERFORMANCE? CASE STUDY ON AEROTON AND INDUSTRIA WEST

Lauralyn Kaziboni and Genna Robb

Centre for Competition, Regulation and Economic Development (CCRED)

lauralynk@uj.ac.za; genna.robb@dnaeconomics.com

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Abstract

This paper draws on a study that was carried out by CCRED to understand the nature of economic activity in the City of Johannesburg for the City of Johannesburg Metropolitan. The industry composition of Johannesburg over the years has shifted from the primary sector towards secondary and tertiary sectors as is evidenced by the declining contribution of manufacturing to GDP and the shift of activity towards services. Recognising and appreciating the nature of local economic activity and the challenges faced by firms can assist policymakers to devise interventions which can stimulate growth and job-creation. One of the key objectives of the DTI's Industrial Policy Action Plan (IPAP) is to stimulate greater economic growth and the development of labour-absorbing sectors. In line with this, the manufacturing sector is an important economic driver and the sustainability thereof is key. However, the manufacturing sector in Johannesburg has faced a number of challenges while the services sector seems to be contributing more and more to GDP. The decline of the manufacturing sector and growth of the services sector is termed deindustrialisation, and in South Africa's context it is often argued to be a form of premature deindustrialisation which has cost the country jobs and economic growth. Therefore in order to boost the manufacturing sector, it is useful to understand the challenges that firms are facing and how these can be mitigated.

The paper will conduct a case study of two industrial areas in Johannesburg, based on a firm-level survey of Aeroton and Industria West which are located in the South and West of Johannesburg respectively. These nodes were chosen due to the high proportion of labour-intensive activity taking place there as well as their proximity to the City's "*Corridors of Freedom*" which are key areas of interest for the City. The survey findings will be discussed in conjunction with an analysis of export data patterns looking at the volumes and nature of exports into the SADC region. The survey data analysis will assist in describing firm performance, competitiveness and the challenges faced. More importantly, the paper will delve into analysing the direction and magnitude of exports into the region and discuss the importance of regional exports for firms' performance. This will assist in understanding how the growth and success of firms in industrial nodes is dependent on regional trade links and also how this can assist in the reindustrialisation of South Africa. The study intends to offer recommendations to address these issues and a way forward particularly for these areas, and stress the need for wider research to be carried out in other industrial areas in Johannesburg.

1. Introduction

The City of Johannesburg accounts for 17% of South Africa's economic output and is the leading metro for most of the country's key sectors (City of Johannesburg Economic Strategy Roadmap, 2014). However, the character of economic activity in Johannesburg over the years has shifted from the primary sector towards secondary and tertiary sectors. Economic activity is unevenly spread across the city and not well aligned with areas where the majority of the population lives (City of Johannesburg Economic Strategy Roadmap, 2014). Furthermore, the challenges of poverty, unemployment and inequality are acute. There is need to increase competitive local production as a basis for exports, job creation and sustainable services growth. Recognising and appreciating the nature of local economic activity and the challenges faced by firms can assist policymakers to devise interventions which can stimulate economic growth and job-creation.

Between 2002 and 2005 South Africa experienced a commodity boom which led to growth in the manufacturing sector and the economy as a whole (Hawthorne, das Nair and Bowen, 2005:1). However, the South African economy is not immune to the world economy and as such, the economy was heavily affected by the financial crisis of 2008. There was an overall decline of 13.8% in manufacturing volume. The decline of volume production resulted in the increase of unemployment levels and increase in prices which had a ripple effect on the economy as a whole. To curtail the impact of the crisis on the manufacturing sector industrial policies were formulated in order to revive the labour-absorbing sectors, more so, the manufacturing sector (The Department of Trade and Industry, 2007).

At the moment, the manufacturing sector continues to perform dismally. In the third quarter of 2014, Statistics South Africa (2015b) indicated that there was a decline of 3.4% in manufacturing production. A further decline was noted in January 2015 as production decreased by 2.4%. The decrease was due to poor performance in motor vehicles, parts and accessories and other transport equipment (-8.9% or -R5 390 million) and basic iron and steel, non-ferrous metal products, metal products and machinery (-3.2% or -R3 302 million) (Statistics South Africa, 2015b). The rate at which production in the manufacturing industry is decreasing is concerning, and it is imperative that the government implements actions that can curb this decline as it has negative effects on employment.

The poor performance of manufacturing is of concern for the country as a whole, but also at local level. It is well recognised that the purpose of local economic development is to build up the economic capacity of an area. Johannesburg has a number of industrial nodes that offer economic development potential, however, there is much to be understood about what is required to improve economic development activity in these areas. A better understanding of these areas will allow the City to have a targeted approach to interventions and leverage resources in the direction of greatest potential return. For this reason, the City appointed the Centre for Competition, Regulation and Economic Development (CCRED) to conduct research to provide a deeper understanding of the economy of Johannesburg and the ways in which the City can best use the tools at its disposal to drive Johannesburg towards an inclusive, job-intensive, resilient and competitive economy.

This paper draws on the data which was collected as part of this project, to analyse in more detail the links between firm performance and exporting trends for firms in Johannesburg's industrial nodes. The paper is structured as follows. Section 2 will review the current literature on industrialisation and how exports can address the problem of deindustrialisation. Section 3 will then describe the approach and methodology that was used to carry out the study and

Section 4 will explore the findings from the data collected using the survey approach. Furthermore, there will be analysis of regional export data as a comparator to the data that was gathered through the survey. Section 5 will conclude this study and suggest policy recommendations..

2. Literature review

2.1 Deindustrialisation in South Africa

The decrease of the manufacturing industry in South Africa is akin to deindustrialisation. Since the 1980's, developing countries including South Africa have experienced deindustrialisation – with deindustrialisation occurring prematurely in South Africa (Tregenna, 2011).

McCormick (1999) defines industrialisation as building up a country's capacity to transform raw materials to new products including the system that enables this transformation to occur. However, Green (2009) simply states that deindustrialisation describes the development of industry. Tregenna (2011) notes that industrialisation, deindustrialisation and reindustrialisation denote the changes in the proportion of the manufacturing sector in the Gross Domestic Product (GDP) and/or employment levels. These notions demonstrate that there is a relationship between industrialisation and manufacturing sector contributions where value addition occurs. An increase in the contribution of manufacturing to GDP and/or employment levels implies industrialisation (and in some cases reindustrialisation) and an inverse thereof implies deindustrialisation. Furthermore, industrialisation implies efficient employment of labour and capital; and this can be signalled through increased productivity.

In the in-depth study alluded to above, Tregenna (2011) analyses deindustrialisation in South Africa and internationally through decomposing changes in the share and level of manufacturing employment with respect to GDP. In this study, it was established that deindustrialisation in South Africa was a result of the decrease in the manufacturing share of value added and share of employment levels. The deindustrialisation occurred at income per capital levels that are significantly lower than those at which deindustrialisation occurred in developed countries and can thus be termed premature deindustrialisation. This form of premature deindustrialisation can also be attributed to policy changes such as trade and financial liberalisation.

Deindustrialising prematurely is likely to have negative effects on the economy as the benefits from industrialisation are foregone (Tregenna, 2011). The effects of premature deindustrialisation can be seen in South Africa through retarded economic growth, high unemployment levels, poor performance of companies and the inability to compete at international standards. Trade as such plays a pivotal role in assisting to minimise the effects of premature deindustrialisation and bettering firm performance and realising the by-products thereof (Palma, 2014).

2.2 Regional exports: A remedy to boost firm performance?

The use of trade policy to counter the effects of premature deindustrialisation is gaining in popularity. Regional cooperation in Africa is motivated for as firms are set to gain from regional value chains where value addition plays a key role. However, there are arguments that exporting does not necessarily result in the growth of firms, and suggest firms that export are already established firms and would perform well regardless. Recent studies do indicate that

given the size of the economies in Africa, it is important for countries to encourage their local firms to increase their market base through exporting to neighbouring countries.

There are a number of potential advantages to be gained from exporting, one of which is the opportunity for learning by firms. These learnings result in firms experiencing higher labour productivity, higher total factor productivity and lower unit costs. Kraay (1997) conducted a study on a sample of 2105 Chinese industrial firms between 1988 and 1992 to analyse whether firms that export learn from exporting. Following entry into the export markets, firms exhibited better performance. Given this relationship, he deduced that learning is prevalent among established¹ exporting firms. Furthermore, established exporting firms exporters tend to be larger and more efficient than non-exporting firms. These firms account for a larger share of employment, and gross output compared to non-exporters in China (Kraay, 1997). Thus the study suggests that there are benefits to be gained from exporting particularly for well-established firms. However, new entrants may take time to realise the same benefits.

On the other hand, there are arguments that firms self-select into export markets where more productive firms have a higher probability of exporting. Productive firms tend to be competitive in the local and international market which influences their propensity to export. In addition, the exposure to trade increases their likelihood of exporting more due to the rapport that is created when firms trade. Conversely, less productive firms are unable to compete locally let alone internationally and are therefore likely to trade less. Less productive firms may therefore die and exit the industry (Melitz, 2008). This stresses the need for policy intervention among less productive firms.

Exporting involves huge investments, research and development and planning and these costs are usually categorised as sunk costs. Thus, exposure to trade can have negative or positive effects on a firm. Productive firms can increase their capacity to meet these needs through employing retrenched skilled employees and exploit the knowledge about the market from previously exited firms (Melitz, 2008). Therefore, self-selection of firms results in the betterment of the performance of already productive firms, while firms that perform poorly eventually exit the industry. Even though at a firm-level exposure to international trade may be negative, it is still likely to be positive for the economy as a whole. However, given the particular challenges faced by new entrants in exporting, there is an argument in some cases for less productive firms to be somewhat protected in the local industry soon after entry, so that they can better their productivity and efficiency before exporting.

A further benefit of exporting is that it can act as a hedge against economic conditions. Firms that export can benefit from access to different markets such that when the demand in one country decreases, the firms can export to another countries. The creation of trading agreements has been the driving force for larger export markets. This advantage has largely been absorbed by already productive firms that are performing well, and not necessarily firms whose productivity is low. Furthermore, larger markets enable the productive firms to realise economies of scale according to (Whalley, 1998:82).

¹ Established firms are firms that have been exporting for more than 5 years; while non-exporters do not export at all, and entrants are those that have been exporting for 0-5 years.

2.3 Conclusion

South Africa has experienced premature deindustrialisation which has resulted in the poor performance of firms, high unemployment rates, high inequality rates as well as poor economic growth. Regional exports play a key role in the reindustrialisation of South Africa and this can be an avenue for manufacturing firms to grow. However, when firms are exporting they need to exercise caution particularly if they are not productive. Exporting can expose least productive firms and do them more harm than good, and they may end up exiting the market. For already productive firms, new exporting areas need access to a broader market base.

3. Approach and Methodology

The approach and methodology is based on a firm-level survey conducted in 2014 in Aeroton and Industria West which are located in the south and west of Johannesburg respectively. The survey data will assist in describing firm performance, competitiveness and the challenges faced and in understanding the relationship between the growth and success of firms in industrial nodes and regional trade links. In this section, we will describe how the industrial nodes were chosen, the selection of firms and data collection methods.

3.1 Industrial node selection

The City of Johannesburg has 26 industrial nodes including Industria West and Aeroton. The characteristics for the two areas will be described in more detail below.

Industria West is a well-established industrial area located west of the Johannesburg CBD. It is bound by Commando Road, Albertina Sisulu Road and Nobel Street. The area is well served by public transport with access to the Rea Vaya, Metrorail and bus services nearby.

Aeroton is an industrial area located south of the Johannesburg CBD. It is bound by Nasrec Road, Rand Show Road, Aerodrome Road and Old Potch Road. The area is well connected to the rest of Gauteng as it is situated near a highway network formed by two branches of the N1 and the Southern Bypass (N12). Aeroton is within the proximity of Diepkloof and Soweto where there is a large unemployed population base. Most firms in this industrial node pull the majority of their labour force from Diepkloof or Soweto. From a public transport perspective, however, Aeroton is not so well connected (City of Johannesburg, 2010).

Industria West has one of the largest contributions of labour intensive industry to Gross Value Added (GVA) in Johannesburg in absolute terms, following only Johannesburg CBD, Randburg and Aeroton. Furthermore, Industria West has the highest contribution of labour intensive industry as a proportion of total GVA (31%). It has one of the highest contributions of high-value manufacturing to GVA (13%), second only to Wynberg (City of Johannesburg, 2010).

Aeroton is in the top 5 areas in terms of the contribution of high value manufacturing to GVA. It performs better than Industria West with respect to absolute contribution to GVA, and slightly worse in terms of proportion of GVA. Aeroton is located adjacent to undeveloped property which may be suitable for expansion. If developed, this area could become more competitive at attracting medium-sized firms that need highway access and relatively low-cost land over the long-term (City of Johannesburg, 2010).

For these reasons, Industria West and Aeroton are useful industrial nodes in which to get an understanding of the challenges being faced by labour intensive industry and particularly in the manufacturing industry.

3.2 Firm Selection

The boundaries of the survey target areas were informed by the formal boundaries of the two chosen suburbs according to the City of Johannesburg regions. Once the industrial nodes to be targeted for the firm survey were chosen, it was necessary to identify and gather contact details for all the firms in the area in order to create a sample frame. Firms were identified through a street-by-street scoping activity/observation procedure which gathered information on the name, address and contact details of each firm. Where possible, the main activity of the firm was also captured by field workers. Three firms refused to provide their details to the field workers and in these instances the field workers were only able to note down the name and any details of the firms displayed on the street.

73 firms were identified in Industria West and 49 firms in Aeroton. Once firms were identified, 10 firms were selected in each industrial node for in-depth interviews to complement the survey responses such that the interviews would cover firms in different sectors and of different sizes.

Given the small sample size in the two areas, the survey was sent to all the firms that were identified in the scoping exercise, with the exception of bank branches, fast food outlets, a betting shop and a post office. These firms were excluded as the aim of the survey was to collect and analyse primary data on patterns of economic development and performance at the firm level and to understand constraints to entry, growth, and employment creation. This will assist in the formulation of recommendations in terms of interventions that the City can implement in order to more effectively stimulate dynamism and growth in the Johannesburg's economy.

3.3 Structure of the survey instrument

The survey was administered electronically via email. The themes that were addressed were background information, information on the firm's operation and performance (including whether or not the firm exports, and to which region), advantages and disadvantages of the firm's location, quality of the local infrastructure, skills and training, research and development and their interaction with the City of Johannesburg.

With the exception of the final question, the survey was made up of multiple choice questions. Realistic ranges were made possible by using secondary sources, such as the threshold for micro, small and medium enterprises. Pilot interviews with firms in the two areas were held in order to inform the questionnaire design. Options were offered for firms to answer "other" or "not applicable" wherever relevant. Where they entered "other" they were required to specify an answer. Where relevant, questions were preceded by a qualifying question in order not to lead responses.

The data was captured in an Excel sheet. In Aeroton, the email was sent to 44 out of the 49 firms. In Industria West, 45 firms were emailed out of 55 eligible firms. The lower sample number was due to lack of a contact number and/or email address for the other firms, incorrect email addresses and in some instances refusals by firm to participate. Thus in total, the survey was successfully sent to 89 firms.

3.4 Limitations

Whilst efforts were made to identify every firm in Aeroton and Industria West and to ensure they were given the opportunity to participate in the survey, there are some potential sources of bias in the data, largely arising from self-selection by firms. As the survey was administered by email and online, this could have prevented the participation of smaller businesses or less IT-literate firm owners. However, the vast majority of firms identified were able to provide an email address, suggesting that they were comfortable with the approach. Only two of the firms contacted indicated that they had no email address.

The complexity of the questions in the survey was deliberately minimised and, as discussed above, most of the questions were in the form of multiple choice. This was intended to increase the ease of responding to the survey and therefore reduce the chance of people giving up half way through if they were confused by the questions. In order to ensure that the respondents completed the survey truthfully, sensitive questions were structured in broad categories. Categories ensure that the data was collected without influencing the respondent to overstate or understate their response. Nevertheless, there were a number of incomplete responses, ranging from respondents who had missed one or two questions, to those who had started the questionnaire but given up after only a small number of questions.

4. Data Analysis

All firms were surveyed by email and follow-up calls. Across both industrial nodes the response rate was 52.8% were a total of 35 firms that were in the manufacturing sector. In this paper we will focus on the findings in terms of firm performance and exports. The survey findings will be discussed in conjunction with an analysis of export data patterns looking at the volumes and nature of exports into the SADC region. The survey data analysis will assist in describing firm performance, competitiveness and the challenges faced. This will contribute in understanding how the growth and success of firms in industrial nodes is related to their propensity to export.

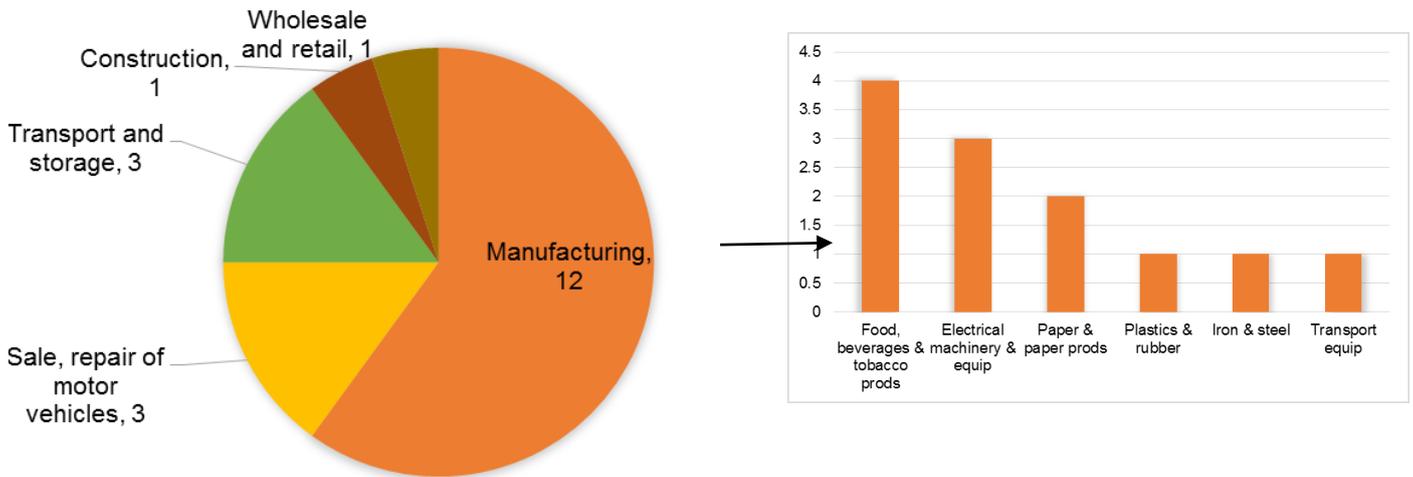
4.1 Industrial Nodes Analysis

Aeroton

The main land use in the area is labour-intensive industry and there are a wide variety of industrial activities taking place. There are a number of manufacturing firms present and the products being manufactured include food, packaging, pharmaceuticals, mining equipment, glass, bricks and greetings cards. Another major area of activity is in distribution where there are firms distributing imported and locally manufactured products such as forklifts, trucks and construction equipment. There are also logistics and transport companies in the area. Finally, there are a small number of firms in the construction sector focussed on waterproofing and painting and four which conduct automotive repairs.

The figure below illustrates the distribution of the firms that responded to the survey. It is evident that there is a high concentration of manufacturing firms. 12 out of 20 the firms are manufacturing, with food, beverages and tobacco; and electrical and machinery and equipment being the larger sub sectors. This is illustrated in the graph below.

Figure 1: Distribution of 20 respondents in Aeroton



Source: Survey data, own calculations

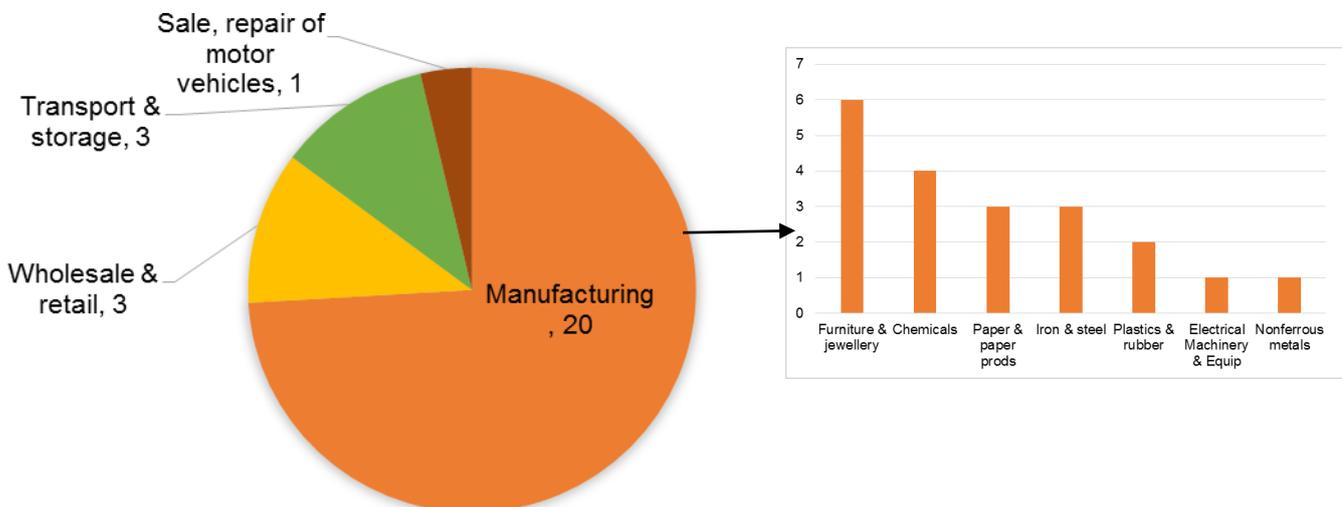
1.1 Industria West

The main activity taking place in the area is again manufacturing as per the scoping activity. The main products being manufactured are furniture, chemicals, machinery and equipment and metal products.

There are also a small number of stationary, packaging and foam products firms. There are several financial services firms in the area as well as a number of wholesale and retail firms. The remainder of the firms are engaged in printing and publishing, transport, motor repairs and recycling. This is illustrated in Figure 2.

Aeroton and Industrial West as expected, are highly manufacturing oriented industrial nodes.

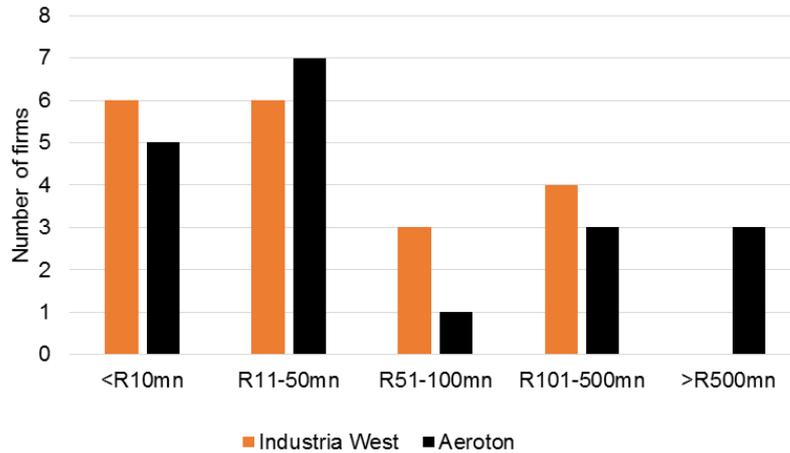
Figure 2: Distribution of 27 firms identified in Industria West



Source: Survey data, own calculations

In the survey the previous years' sales turnover were consulted in order to assess the size of the firms. 24 firms reported annual sales revenue of less than R50 million, which indicated that they fall into the category of micro to medium scale firms. The remaining 23 firms indicated that they earn more than R50 million, hence they are large firms. These are the thresholds stipulated by the National Small Business Amendment Act of 2003. Aeroton, however, tends to be comprised of larger firms compared to Industria West: Aeroton has twice as many firms that earn more than R100 million.

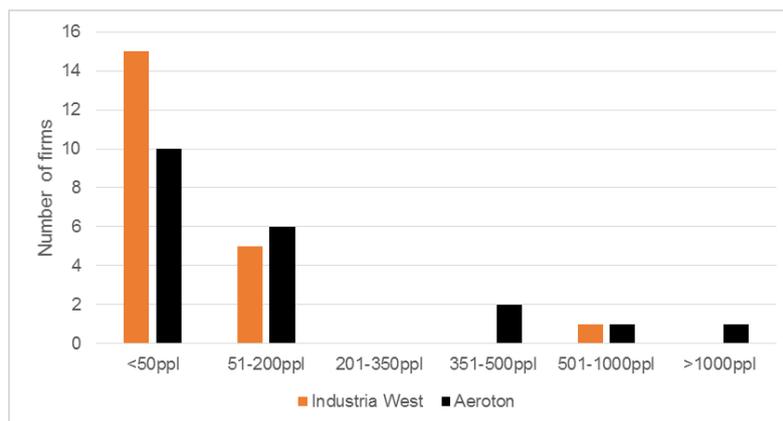
Figure 3: Total value of sales in 2013



Source: Survey data, own calculations

On the other hand according to the number of employees, most of respondents range from micro to medium scale firms. Out of 47 firms, 25 firms had 0-50 employees, while 10 had 51-200 employees. This shows that more than 74% of firms had less than 200 employees which indeed qualifies them as micro to medium scale firms. The remaining 5 firms had greater than 350 employees, with the exception of one firm which had more than 1000 employees. These statistics are illustrated in Figure 4 below. This illustrates the importance of small and medium firms in both areas.

Figure 4: Employees at the current site (part-time and full-time)



Source: Survey data, own calculations

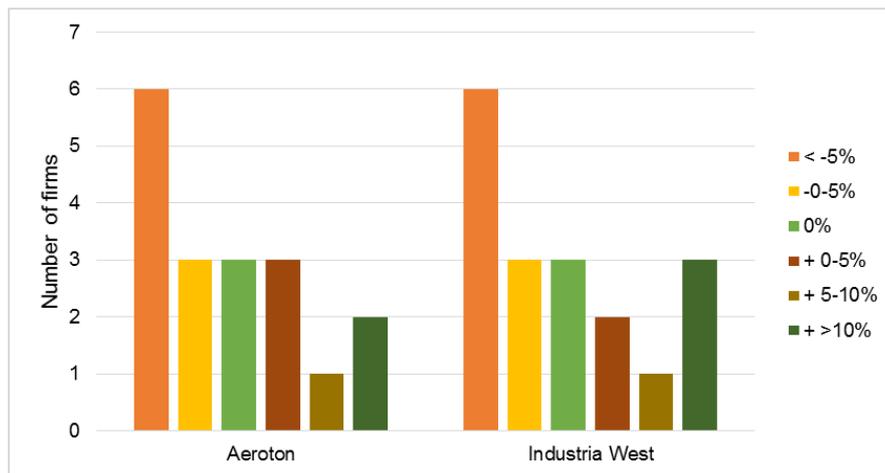
4.2 Company performance

Sales growth

Firms were asked to report whether their average annual sales over the past three years had increased (by 0-5%, 5-10% or +10%), decreased (by 0-5% or +5%) or stayed the same. 37

respondents answered the question, 18 from Aeroton and 19 from Industria West. Figure 5 below illustrates the responses received. The majority of firms in both areas are not growing and an alarming proportions are shrinking by more than 5% per year in terms of sales volumes. One third of firms have seen their sales shrink by more than 5% per year on average for the past three years. Half of firms have seen their annual sales shrink on average for the past three years. Firms which are shrinking are likely to also be employing fewer people and are less likely to be able to make investments in developing new products or expanding capacity.

Figure 5: Annual average growth in sales volumes, 2012 – 2014



Source: Survey data, own calculations

The responses for Aeroton and Industria West were very similar as illustrated above. The results correspond to the insights from the firm interviews, where the majority of the firms claimed to be facing difficult economic conditions and low levels of customer demand. However, three firms in Aeroton and four firms in Industria West reported growing at more than 5% per year on average for the past three years. This is an exceptionally good performance despite the overall negative picture. There are some firms which have been able to grow strongly despite difficult circumstances.

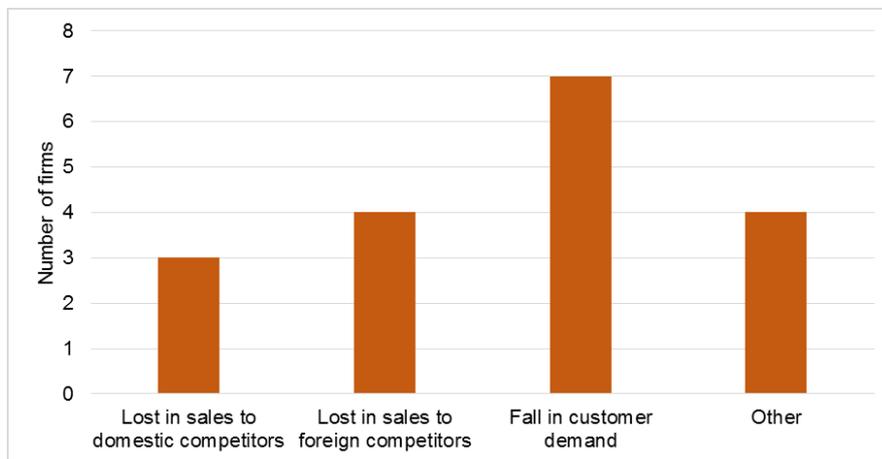
The in-depth interviews reported that 4 of the firms had a strong growth rate of more than 5% per year. Most of these firms are relatively young and dynamic with one established firm. One firm explained that its strong growth was due to supplying niche products which are in high demand from foundries and car manufacturers. It also suggested that its small size and efficiencies achieved as a result have helped it to be successful in the market. The other firm explained its success was due to experience in the industry and the focus of management on the business. This firm has recently expanded its plant as a result of growing demand. The established firm experienced growth greater than 10% in the past three years and the growth was achieved through improved capacity output. 3 of the 4 firms that have been growing strongly are also exporting to neighbouring countries.

However, some of the firms interviewed experienced challenging operating conditions with depressed levels of demand from domestic customers. Both areas were affected by a recent metal workers strike, mainly in terms of difficulties in getting hold of inputs from suppliers whose workforces were on strike. Firms seem to have mainly experienced a slowdown in demand from domestic customers, while demand in the region is still strong. Some firms explained that they have therefore attempted to grow their business in the region in order to mitigate the effects of the slowdown in South Africa.

A number of firms noted that they had reduced their staff complement in the past 3 years. One firm had actively retrenched and others had reduced the number of employees by not replacing those who left the organisation. Two firms cited mechanisation as the reason for employing fewer people. This was done to reduce costs. One particularly successful manufacturing firm noted that it had grown employment by 100% over the past 10 years. In the time that employment had doubled, sales had tripled. Another said that it had hired more people in the past 3 years but only because it had moved into new product areas, as there had been no growth in its traditional product areas.

Those firms who reported declining sales were asked to explain the main reason for the decrease in sales. 7 out of the 18 responses answered that falling customer demand was the main reason for falling sales as illustrated below in Figure 6 below. This is in line with the firm interviews mentioned above where a number of firms complained of poor economic conditions and a lack of customer demand. This is particularly in terms of domestic demand, and a number of interviewees noted that they have been expanding into regional markets in order to try to mitigate the impact of low demand from local customers.

Figure 6: Main reason for the decrease in sales



Source: Survey data, own calculation

The firms that answered “other” offered a variety of explanations for their poor performance. However, most cited general economic conditions, stating answers like “business outlook has gone down”, “political reasons”, “macro-economy, exchange rate”, “recession”, “closure of companies, companies moving” and “market instability”. This presents further evidence that the economic conditions in the country and consequent low levels of customer demand are largely responsible for the observed poor performance of firms.

The firms interviewed generally cited a challenging operating environment. In general, manufacturing firms tended to have similar concerns. The manufacturing firms identified the factors which have a significant impact on their competitiveness as operational efficiencies which are in turn dependent on input costs such as labour, electricity and water, raw materials.

Another trend that was evident from the interviews was that in general demand from customers in South Africa has been flat or declining. This was for a variety of reasons. Firms supplying to the mining sector had been affected by the difficulties in the sector over the previous year. Manufacturers supplying to other sectors noted the influx of cheap imports as a challenge affecting their performance. On the other hand, demand from the southern African region has generally been growing. A number of firms noted that they have been trying to grow their customer base in the region in order to reduce the impact of stagnant domestic demand on the business. Others had counteracted the decline by moving into new product areas in order

to grow sales. One firm noted that since it was not expecting much growth in demand it was focussing on winning business away from competitors.

One South African firm which manufactures low-end mattresses and other furniture noted that it is losing ground to low cost competitors which are able to manufacture their own inputs (foam). The firm had lost 50% of its KZN business to Chinese competitors, and now low cost manufacturers have moved into Gauteng and are eroding that business too. The firm claims that these low cost competitors are able to produce very cheaply by avoiding compliance with rules and regulations, and by paying very low wages to worker.

In this context, a number of firms cited problems with the local infrastructure as key challenges affecting their competitiveness and the performance of their business.

Main markets

Firms were asked to indicate what proportion of the company's sales (in %) from production at the site is sold to customers in Gauteng, South Africa including Gauteng and the rest of the world (i.e. exports). 35 firms responded to the question, but of these, 10 did not make sense because their South African sales plus exports did not add up to 100%. The 10 responses were therefore excluded from the analysis. The reported proportions were then averaged in order to calculate an average proportion of sales to different markets across all firms. On average, firms supply 62% of their sales to Gauteng, 29% to the rest of South Africa and 10% to the rest of the world².

Averages were then calculated for firms in Aeroton and Industria West separately, for firms which have been growing and firms which have not been growing. These are reported in the table below. The number of firms which fell into both categories is indicated in the column on the far right.

Table 1: average proportion of sales to different markets

	Gauteng	Rest of SA	Exports	Number of firms
Total	62%	29%	10%	25
Aeroton	60%	31%	10%	11
Industria West	63%	27%	10%	14
Growing	61%	30%	9%	8
Not growing	59%	29%	11%	16

Source: survey data, own calculations

As illustrated in the table above, there was not a lot of variability in the proportion of sales that firms sell to customers in different regions depending on their characteristics. Firms in Industria West sell a slightly higher proportion of sales to customers in Gauteng (3%) than firms in Aeroton do. Firms that are not growing appear to export slightly more than firms that are growing which is counter to what was expressed in the interviews, however, this is unlikely to be a significant difference given the small sample size.

The firms that reported that they were growing (i.e. experienced +0% growth) are in manufacturing, construction, sales, maintenance and repair of motor vehicles and transport and storage. However, the manufacturing firms that reported significant growths of more than 5% are in the manufacture of chemicals, manufacture of plastics and rubber, manufacture of iron and steel and manufacture of furniture and jewellery. Conversely, the firms that indicated

² Note: percentages do not add up to 100% due to rounding.

that they were performing poorly with negative to zero growth rates were in the manufacture of electrical machinery and equipment, manufacture of food, beverages and tobacco products, wholesale and retail, and the manufacture of iron and steel.

Given the differing responses from the firms, we carried out statistical analysis to determine if indeed there is a relationship between whether firms export and their performance. The table below tests the hypothesis that firms that export are likely to experience growth in sales compared to firms that do not export.

Table 2: Change in sales and export relationship

	<5% (non-growing)	>5% (growing)	Grand Total
Non-exporting	6	5	11
Exporting	7	14	21
Grand Total	13	19	32
		X ² p-value	0.2459

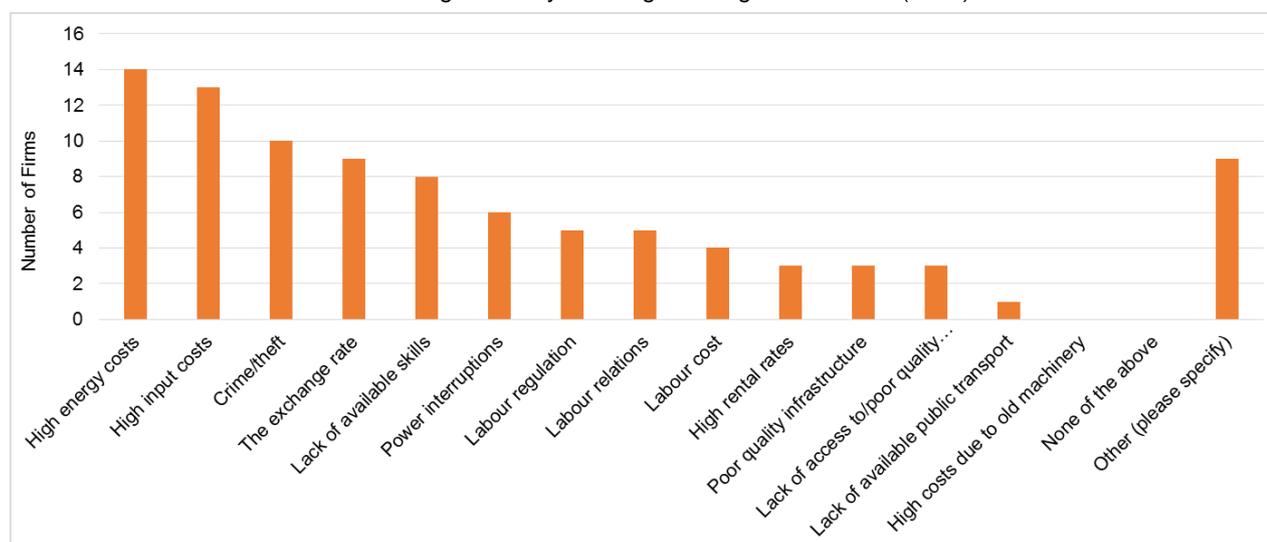
Source: survey data, own calculations

The table above reports firm growth cross-tabulated with whether firms are exporting or non-exporting. Interestingly, the responses in terms of non-exporting were almost identical in terms of proportions for growing or not growing. However, exporting firms were much more likely to be growing than not growing. Thus when evaluating the null hypothesis that firm growth is independent of exporting, it was not possible to reject the null at the 5% level. Thus we cannot reject the hypothesis that there is a relationship between the two variables, based on the responses received. This provides tentative support for the proposition noted in the literature review and confirmed in the firm interviews, that exporting is positive for industrial performance.

Challenges faced

Respondents were asked to choose up to three key challenges facing the business from a list provided in Figure 7. They could also mention additional challenges which were not listed. 36 firms responded to the question. The number of times each possible answer was chosen is shown in the figure below. High energy costs and high input costs are the most commonly identified challenges, followed by lack of available skills and crime and theft.

Figure 7: key challenges facing the business (n=37)



Source: survey data, own calculations

The firms that answered “other” suggested that they faced a variety of challenges. Once again, poor economic conditions were cited as a challenge by some as well as key costs such as fuel, rates, road tolls and product development and ISO grading. One firm cited a lack of competitiveness with established firms as a key challenge and another lack of infrastructure. Finally, one firm noted a shortage of raw materials.

The survey results in terms of company performance suggest that many firms in Aeroton and Industria West are facing poor economic conditions and consequently are running at relatively low levels of capacity utilisation. On average, around 90% of sales are to customers in South Africa, and given the weak economic environment domestically, this explains why firms are facing low levels of demand. High energy costs and other input costs are seen as challenging in this environment.

In the next section we shall analyse the export pattern in a range of sectors to establish whether there has been an increase in exports into the region and other countries. This will assist in determining whether the growth of exports can be matched by the performance of firms.

4.3 Export Data Analysis

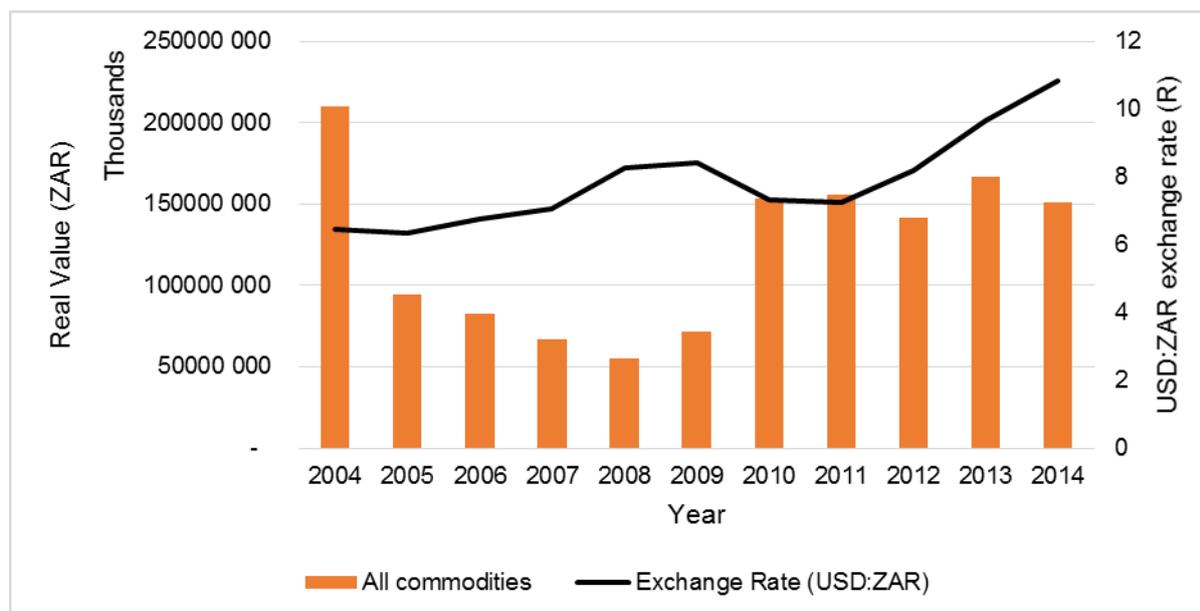
The analysis of the survey data provides a mixed view of relationship between exporting firms and the performance thereof. The aim of this section is to discuss the direction and magnitude of exports from South Africa into the region and try and decipher if regional exports are important for firms' performance. This will assist in understanding how the growth and success of firms in industrial nodes is dependent on regional trade links and also how this can assist in the reindustrialisation of South Africa.

Interestingly, South Africa's trade is highly concentrated with 5% of the firms in South Africa accounting for 90% of the trade. The factors that may influence the relationship between regional exports and firms' performance, other than the firms' performance itself, broadly speaking are the exchange rates, tariff setting, trade agreements and prevailing economic conditions (Competition Commission of South Africa, 2015).

Even though minerals dominate the exports in South Africa, there seems to be an increasing trend in manufacturing exports. The African Growth and Opportunity Act (AGOA) was implemented in 2001 and is supposed to end in 2015. The aim of this Act is to create trading opportunities between the United States of America and 48 Sub-Saharan African countries including South Africa. This has resulted in close trade links with this country where U.S accounts for 22% of SSA's total trade and trade links within Africa being lower compared to other regions. In South Africa, AGOA has been favourable for 25 South African products. These products include aluminium and articles thereof, organic chemicals, carpets and other textile floor coverings and copper and articles thereof (Obinyeluaku, 2013).

Over the last decade, the value of the rand has been quite erratic. It is important to understand the reasons behind some of the movement of the rand so that these can be isolated from the movement of exports into the region between 2004 and 2015. Figure 8 below illustrates that between 2004 the rand was stable. However, the weakening of the rand followed the decline in exports. Both the decline in exports and the weakening of the rand continued to prevail and was at its worst in 2008 when the financial crisis occurred. The rand then stabilised in 2011, but thereafter it weakened further as exports increased. However from 2012, the value of the rand has been deteriorating, reaching its climax (so far) in 2015 with an exchange rate pegged at just over R14 to the dollar (South African Reserve Bank, 2015).

Figure 8: The exchange rate movement of the rand to the dollar and total exports of South Africa, 2005-2014



Source: South African Reserve Bank, 2015 and Trade map, 2015

Since 2008, South African exports have experienced a general upward trend following the commodity boom. China and the United States of America remain the leading exporters for South African products with a share of 9.6% and 7.1% respectively. The role of China as previously mentioned is unquestionable as a trading partner. However, regional countries have also increased in importance particularly Zambia, Mozambique, Zimbabwe and the Democratic Republic of the Congo (Maia, 2013).

The table below indicates the total proportion of exports from South Africa at the end of 2014 that were destined for various African countries. Overall, exports to Africa make up 30.2% of South Africa’s exports, with Botswana, Namibia, Mozambique and Zambia being the leading exporter destinations.

Table 3: Export proportions from South African to African countries, 2014

Country	Proportion
Botswana	5.3
Namibia	5
Mozambique	3.3
Zambia	3
Zimbabwe	2.5
Rest of Africa (26 countries)	11.1
Total	30.2

Source: Trade map

The table reaffirms the notion stated earlier that increasingly Africa is South Africa’s most important export destination. Mozambique experienced import growth of 25% from 2010 – 2014 and of 92% from 2013 – 2014. The share of the imports in these countries is owed not only to the presence of the SADC agreements which have initiated the Tripartite Free Trade Agreement among South Africa, Mozambique, Zambia, Zimbabwe and Botswana, but also to the economic growths of these countries. Mozambique and Zambia in the last decade have experienced average growth rates of more than 7% per annum (World Bank Data, 2015). The economic growth indicates that there is need for products particularly iron and steel, machinery

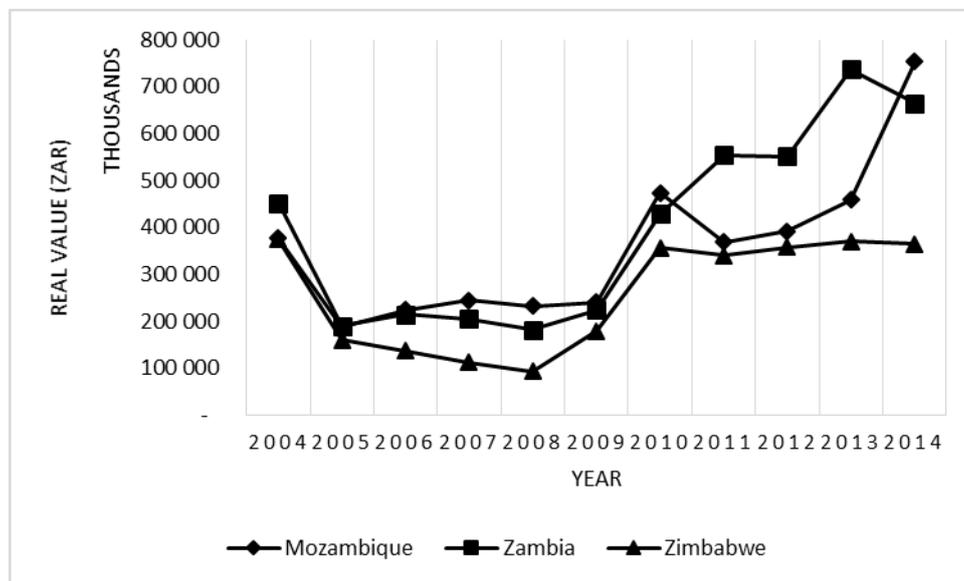
and electrical equipment, food and food products and other goods in order to meet the expansion projects and the demand for consumer goods. Other factors that have contributed to increasing regional exports are the proximity of the countries and their accessibility by road and/or rail (IDC, 2014).

Furthermore, in other countries, such as Mozambique, there is a concerted effort by the South Africa High Commission in Mozambique to encourage and assist the importing of iron and steel between the two countries. This is done through trade leads, tenders, facilitation of trade shows, and other special trade promotion initiatives (Department of Home Affairs, 2015).

In the context of the overall increasing trend of exports from South Africa to the region, a number of firms from our survey, both growing and declining, indicated that they export to the region. The manufacturing firms that reported significant growth of more than 5% per year in the last three years are in the manufacture of chemicals, plastics and rubber, furniture and jewellery. Conversely, the firms that indicated that they were performing poorly with negative to zero growth rates were in the manufacture of electrical machinery and equipment, food, beverages and tobacco products, wholesale and retail, and iron and steel. To link the export data analysis to the survey information, we have therefore analysed exports of iron and steel (declining), plastics and rubber (growing) and electrical equipment and machinery (declining) in more detail, particularly focusing on Mozambique, Zambia and Zimbabwe. These countries were selected primarily because of the fairly substantial exports that have been directed in these countries as identified above.

Figure 9 below illustrates the exports of iron and steel from South Africa to Mozambique, Zambia and Zimbabwe. There was a decrease in demand preceding the financial economic crisis in all three countries. Following the financial crisis the exports to these destinations began to increase.

Figure 9: Exports of iron and steel into Mozambique, Zambia and Zimbabwe from South Africa, 2005-2014



Source: Easy data by Quantec

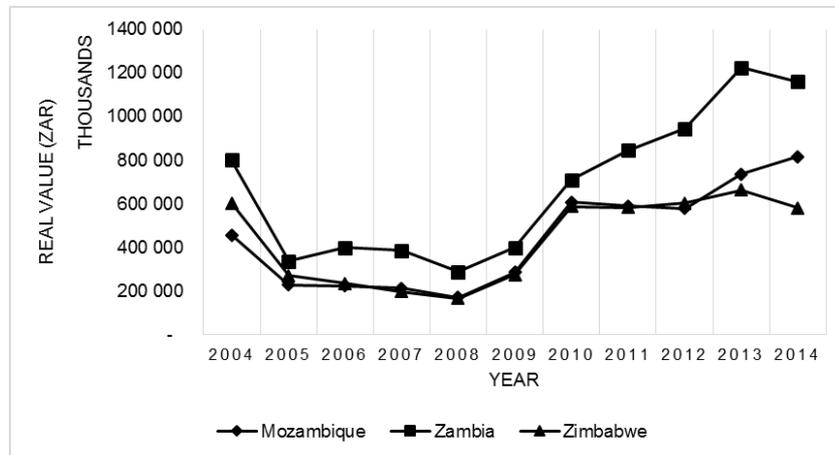
However, with the slowdown in economic growth in Zambia and more so in Zimbabwe, the level of iron and steel exports are beginning to slow down. In the case of Zimbabwe they have even started to decrease. Zimbabwe in 2014 recorded retarded economic activity as economic growth decreased year on year by 1.5%. Furthermore, the Zimbabwean iron and steel market

has been flooded by cheaper imports from China. Mozambique continues to exhibit an upward trend as economic growth increases.

Machinery and equipment export data indicates that post the financial crisis there is an upward trend which is very similar to the trend of iron and steel, even though the magnitudes are different. The demand for machinery and electrical equipment is substantially higher than that of iron and steel. The region tends to be mineral sector intensive and as such requires machinery and electrical equipment for mining and extraction.

Zimbabwe and Zambia are beginning to exhibit much slower rates of demand for machinery and equipment due to reduced economic activity in these countries. Between 2011 and 2012 the demand was almost stagnant, with a sharp decline experienced in Zimbabwe. Zimbabwe is experiencing economic downturn with the mining sector growth decreasing from 37.40% in 2010 to -2.10% in 2014. As such the demand for machinery and equipment has decreased substantially (Kwesu, 2015).

Figure10: Exports of Machinery and Electrical Equipment to Mozambique Zambia and Zimbabwe, 2005-2014

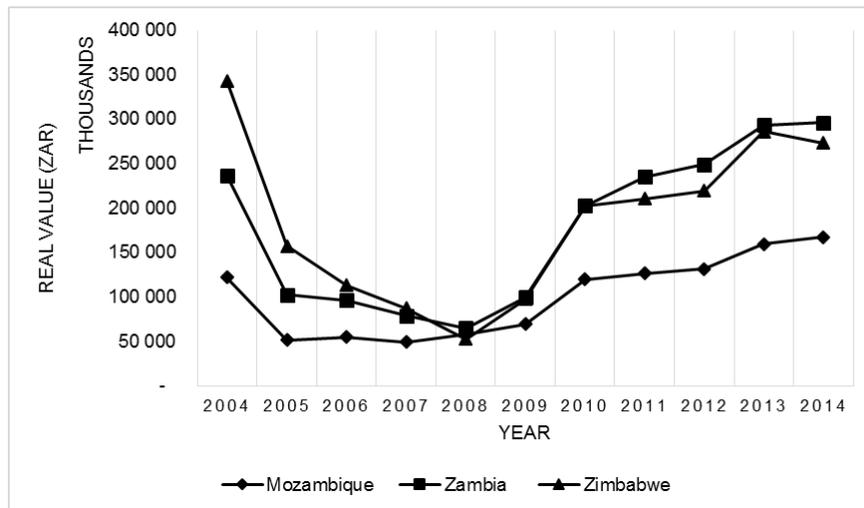


Source: Easy data by Quantec

The exports for plastics and rubber were also affected by the financial crisis. The exports for plastics, similar to iron and steel and machinery and equipment, also show in an increasing pattern. Figure 11 shows that exports to Zambia and Zimbabwe are substantially higher than exports to Mozambique.

The local market for South Africa's plastic has been facing competition against imports of better quality products. Zambia, Mozambique and Zimbabwe have also been to some extent importing from China. This indicated the lost opportunity to South Africa that needs to be realised particularly in the automotive sector interior, food packaging and medical products. In line with this, Plastics South Africa is looking into initiatives that can boost the exports of plastic into the region while stimulating productivity in the local market.

Figure 11: Exports of plastics and rubber into Mozambique, Zambia and Zimbabwe from South Africa, 2005-2014



Source: Easy data by Quantec

Conclusion

The firms in these areas are facing a plethora of challenges. These challenges range from the lack of adequate infrastructure to facing competition from imports, particularly from China. Poor Infrastructure, power shortages, poor infrastructure, strikes and lack of skills have all contributed to the poor performance of firms in these regions. Since demand growth has been low in South Africa, there is an opportunity for firms to export into neighbouring countries where growth is stronger and increase their market base.

Widening the market base can be a safety net when the demand for goods in South Africa is depressed. The export market can enhance the performance of firms as there is scope to learn and increase efficiency and productivity. The export data indicates that trends in manufacturing exports into the region have been mixed. Despite the flooding of the imports from China it appears that firms are still able to export to other countries, although exports in the iron and steel and chemicals and plastics sectors have struggle to regain their pre-financial crisis levels. As noted above, the firms in our survey reported poor performances and depressed exports in the iron and steel and machinery and equipment sectors. This export data for South Africa may partly explain the reason why.

The underperformance in exports in these sectors indicates the need for firms to widen their market base and take full advantage of other export markets. As such policy makers need to explore interventions as to how to assist firms that are located in these industrial nodes. There is need to take advantage of the prevailing performance of the rand as a weak rand implies that exports from South Africa are cheaper.

Given the concentration of exports among the 5% of firms in South Africa, the firms that reported to have experiencing low levels of exports and slow growth are most probably small and medium firms. These firms likely require assistance form the government in terms on marketing strategies and incentives to enter regional markets.

5. Conclusions and Recommendations

The study intends to offer recommendations to address the issues mentioned above and a way forward particularly for these areas, and stress the need for wider research to be carried out in other industrial areas in Johannesburg.

First there are a set of area-based recommendations which work towards removing the bottlenecks which are affecting firm competitiveness and setting up the enabling conditions for firms to grow and for the areas to become vibrant, modern, successful industrial nodes. Secondly there is scope for interventions aimed at assisting firms to take advantage of new opportunities, particularly in export markets.

The area-based recommendations are aimed at removing bottlenecks are rather obvious, and are mainly aimed at addressing the infrastructure challenges faced by firms in specific areas and solving existing problems. Key areas for possible intervention based on the research into Aeroton and Industria West include upgrading and maintaining electricity infrastructure, increasing the availability of public transport, assisting firms to provide useful skills and training, improving safety and security and upgrading the business environment through more regular street cleaning and other initiatives. There is also a very important coordination role for the City with regard to tackling the above-mentioned challenges, where the City can act as a catalyst by engaging with firms to find common solutions to their shared problems. In this way, the City can ensure that economies of agglomeration are realised for each industrial node.

Assisting firms to take advantage of new opportunities

It is important that the City should first remove the bottlenecks preventing growth and concentrate on providing an enabling environment in which firms can thrive. The second set of recommendations therefore builds on the first and suggests interventions which involve a more pro-active approach by the City in fostering industrial development in specific sectors. It is clear from the research that, with a few exceptions, demand for industrial products is not growing in South Africa and is not likely to do so at least in the short to medium term. There is quite a different trend occurring in the rest of the Southern African region, however, where a number of countries are growing strongly and where demand as a result is also growing such as Mozambique, Zambia and Zimbabwe. Firms based in Johannesburg should be well-placed to capitalise on this expansion, given their advantages of location and sophistication, but appear to be doing so only to a limited degree. An obvious area of intervention by the City therefore, is to assist firms to diversify sales into the region and so become less dependent on the stagnating domestic market.

The research has shown that there are a number of sectors with a strong presence in Aeroton and Industria West which also happen to produce goods which are in demand in the region. In Aeroton there is a small cluster of food processing firms as well as a number of capital equipment firms. Both of these are areas which are in demand in the region as consumer demand grows (food products) and mining and construction activity expands (capital equipment). Capital equipment is also a strong sector in Industria West, as are chemicals and furniture manufacturing, both of which also have the potential to expand to satisfy regional demand. Thus it seems that in both nodes the key areas of manufacturing activity correspond to the types of products which should be seeing growing demand, but it seems that this opportunity is not being fully taken advantage of.

In this context, another possible area in which the City could assist firms is to coordinate export promotion efforts for the area. This would be especially useful for small firms with limited resources which cannot necessarily afford to market themselves individually. This would work best where there is a cluster of firms in the area serving common types of customers. For example, the firms providing products and services to mines could be grouped together and joint marketing materials produced to be sent to potential customers in the region or handed out at regional trade fairs. The firms in this area continue to invest in such efforts independently with limited assistance from government, which means that the cost to firms is greater than it

could be if there was greater coordination in their activities. Ideally the City should coordinate these activities for firms across the City, but this would require a similar understanding of the activities being undertaken across Johannesburg's industrial nodes.

Very few of the firms interviewed were aware of any incentives or assistance programmes which they would qualify for or how to apply for these. This suggests that the City could do a better job of raising awareness of existing city programmes amongst existing firms and potential new investors. The City could also engage with firms in order to inform them of any assistance available from provincial or national government, such as the DTI's manufacturing incentives for example. In designing assistance programmes, the City should engage with firms to understand what would make a real difference to their competitiveness. A suggestion arising from the interviews is that assistance to upgrade machinery and equipment may be useful, given that several firms noted that their plants are less efficient than they could be due to outdated machinery.

Another possible area of coordination by the City is in setting up joint facilities and support for research, product development and testing for specific sectors. Johannesburg is well-located in terms of access to skills and proximity to higher education institutions which could lead to fruitful partnerships with local further and higher education institutions. This would need to be investigated at a sector-specific level, however, as needs are likely to vary across sectors and even sub-sectors.

The required interventions will vary depending on sector and area. Different sectors require different enabling conditions and, therefore, different interventions. Activities that work well in one sector/area may not be appropriate in another due to, for example, differences in land use patterns, and access to key inputs and transport links. In addition, there is a need for a greater understanding of the industrial areas of Johannesburg as a whole, as trends in other areas may be quite different to that in our case study areas. The next phase of research which CCRED will be conducting for the City of Johannesburg aims to gather data on a wider range of industrial areas, as well as to study certain key sectors in greater detail.

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