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Growth and Strategies of Large and Leading firms - Metals, Machinery and Equipment Sector Assessment¹

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Abstract

The strategies and investments of large firms can impact the growth and industrial development trajectory of economies. In the context of South Africa's deindustrialisation and the current policy direction towards growing the manufacturing sector, this study assesses the investments and strategies of large firms in the metals, machinery and equipment sector, one of the largest contributors to GDP and exports and a key producer of inputs into downstream economic activities. These investments are assessed to understand the companies' strategies in terms of investments made (and not made), to inform the development of appropriate policy levers and incentives to enhance industrial development. The study considered 25 listed firms in the metals, machinery and equipment sector from 2011 to 2016, considering the location of those investments, and the rationale for these investments given by the companies.

Three main cross-cutting observations arise from the analysis. The first is that there is a significant number of mergers and acquisitions, and consolidation in the sector in the period considered. Based on the available data, there is a relatively even distribution between mergers taking place within South Africa and those involving acquisitions of companies outside of Africa. The second theme is that there are 'pockets of excellence' where firms are investing in developing capabilities and technologies that can drive development and industrialisation. This marks an important area for policy consideration, whereby measures to support continued investment and upgrading of capabilities would be of significant value in terms of enabling the companies to sustain operations. Third, firms continue to face challenges in terms of sustaining their operations in the context of low investment, low downstream demand (including a decline in government projects), and a challenging cost environment which can limit further growth.

JEL classification

D21, L2, L3, O14, O25

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1. Introduction

1.1. Background to the study

Industrialisation has long been identified as the way by which nations develop and grow. Industrialisation and structural transformation refers to the shift of factors of production such as labour and capital from the production of lower productivity goods to the production of more complex and sophisticated products and services (Newman et al., 2016). These shifts can occur within sectors through capital accumulation, technological development or increased efficiency of allocation across plants or could grow through the transfer of these factors of production from low-productivity sectors such as agriculture to high productivity sectors such as manufacturing (Rodrik, 2011; McMillan, Rodrik and Verduzco-Gallo, 2014). Although manufacturing generally consists of more complex and higher productivity activities, the shift to more advanced activities can take place in services such as design, engineering services and use of more developed techniques of production.

Large firms have been at the heart of the industrialisation process of countries. The history of industrial development in countries which grew rapidly from the 1880s to 1980s highlights that large businesses were key microeconomic agents that, through employing productive assets on a large scale, such as machinery and equipment, human resources and technology and know-how, have been at the centre of the industrial development of nations (Chandler *et al.*, 1997). Firms developed processes, human capital, management and organisational structures to achieve scale economies in exploiting existing technologies and the physical capital accumulated (Amsden, 1992; Chandler et al., 1997). Firms also create a focus on product-specific technology development in order to maintain competitiveness in international markets. And, in order to ensure the offtake of output, large firms developed, partnered with, or integrated into networks for distribution such as retailers and shipping, and integrated backwards or vertically to ensure the security of supply of scarce inputs and distribution (Tregenna, 2011).

Industrialisation is also a key route for countries to 'catch up' with the more advanced economies by adopting technologies and thus expanding productive capacities and diversifying their production and industries of operation (Nübler, 2010). Particularly important is the potential for firms through the process of industrialisation to develop capabilities in the production of different products or services using the skills and resources utilised in the current production in order to diversify and expand the range of value-added products. The success story of the South East Asian countries in the 1980s and 1990s reinforces the importance of industrial policy in enabling developing countries to catch up with more advanced economies.

African countries such as South Africa have an important advantage in pursuing industrialisation as a means for growth as their economies are characterized by large productivity gaps between different sectors of the economy from which factors of production can shift (McMillan, Rodrik and Verduzco-Gallo, 2014). However, rather than benefiting from the large productivity gaps between sectors, Africa (South Africa included) has in many cases gone through a process of premature deindustrialisation (McMillan, Rodrik and Verduzco-Gallo, 2014; Tregenna, 2015). In South Africa, the contribution of manufacturing dropped from 20% of the GDP in 1994 to 14% in 2008, and 12% in 2016 (TIPS, 2017). Employment in the manufacturing sector has also dropped by 28% between 2008 and 2016 (TIPS, 2017). The poor performance of the manufacturing sector in South Africa can be explained by a number of factors including the slowdown in global growth (Makgetla, 2017). In the past five years,

only India and the United States of America have maintained reasonably strong growth. Nevertheless, the South African experience provides evidence of the failure of the liberalisation agenda implemented through the Washington consensus to help economies diversify and upgrade productive activities (Stiglitz, 2008).

Following from the limitations of the Washington consensus paradigm and in the face of the premature de-industrialisation of the South African economy, there is a need to develop policy and strategies to reverse this trend and grow the manufacturing sector. Large and leading firms within South Africa's industrial sector can act as catalysts for this growth. Firms as producers or distributors of important inputs to downstream manufacturing activities can make investments to improve production processes as well as build up capacities that were lost due to the premature de-industrialisation. Large leading firms can, therefore, play an important role in the process of 'reindustrialisation' in South Africa which may in some cases require some intervention and support in terms of government policy. This makes it important to understand the orientation of (large) firms and the decisions they make in terms of production and the nature and location of production.

As such, the central research theme of the Industrial Development Research Programme (IDRP) is to consider firm decision making and investments as they relate to industrial development in South Africa. Tight control by large business groupings of key resources and productive assets in the South African context, also makes it critical to understand their decision making and strategies. These corporate strategies and decisions are in themselves driven by companies' own interests and government policy. Large firms may also employ various competitive strategies (including anti-competitive conduct) which limit the ability of entrant firms to expand and grow in the economy. For example, (pre-emptive) new plant investment by incumbents can deter investments or entry by rivals particularly where there are scale economies associated with new plant investment (Gilbert and Lieberman, 2013). In addition, firms may only make investments in sectors in which they can build and maintain a position of market power and where there are high barriers to entry, or exclusive rights, such that returns from those investments can be fully appropriated.

In South Africa, and globally, lead firms govern the trajectory and access to value chains. However, clearly 'dynamic' firms which invest in new products and technologies may also be entrants, maverick firms or unlisted medium-sized enterprises, and large incumbent firms may not necessarily be leaders of growth, investment and employment as 'custodians' of industries' development (Makhaya and Roberts, 2013; Banda et al., 2015).

Equally important is understanding export composition and the intrinsic capabilities in an economy which are embodied in exported products, which has been identified as critical for understanding the potential which exists for diversifying the product space and economic complexity of goods a country produces (Hausmann, Hwang and Rodrik, 2007; Hausmann and Hidalgo, 2010). To the extent that the firms considered in this paper are amongst the lead exporters of manufactured goods and inputs, and where these firms hold capabilities which are critical to enhanced manufacturing activity, employment and output, it is critical to understand their orientation, investments and decision making.

In this context, the focus of this research is on large and lead firms in the metals and machinery sector which, in this case (although not necessarily), are considered to be those listed on the Johannesburg Stock Exchange (JSE). The metals and machinery sector is, along with the chemicals and plastics, and food and beverages sectors, the highest contributor to GDP

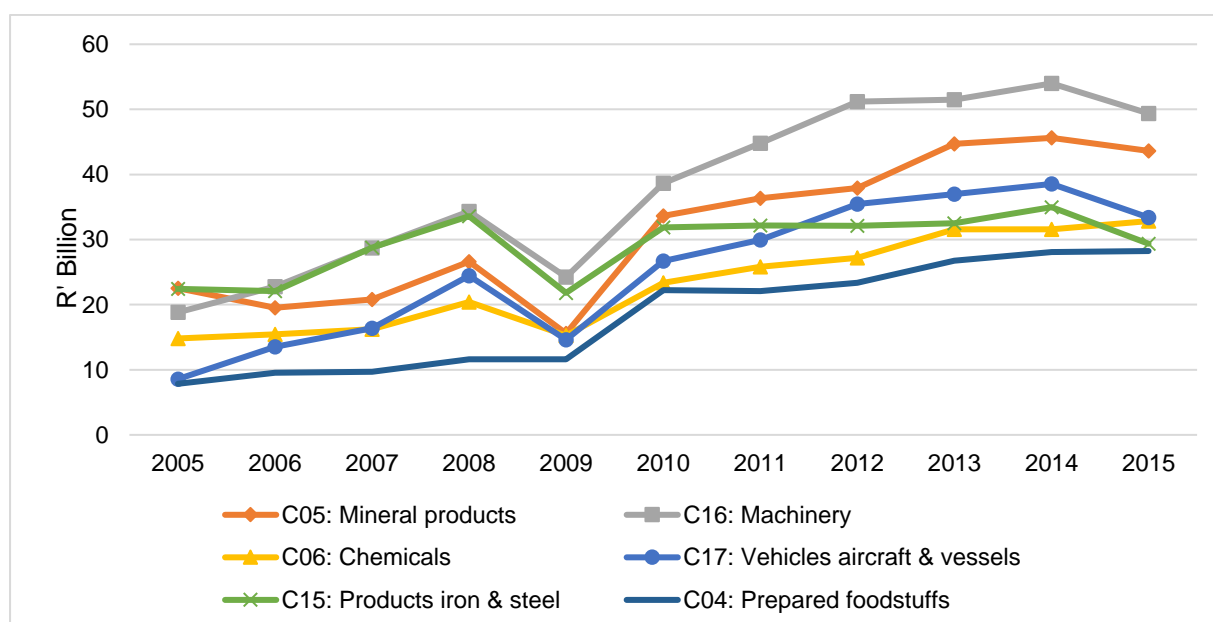
among the manufacturing industries. It is also, as explained below, one of the largest exporters in terms of value from South Africa to the southern African region. Understanding the strategies, investments and interests of the large firms in this sector is critical to assessing their interactions with the state and the efficacy of hard and soft policy interventions.

1.2. Overview of the metals and machinery sector

The metals and machinery sector is one of the leading sectors in the economy. Machinery, vehicles and iron and steel components which form part of this sector are some of South Africa's top exports to the rest of Africa. Between 2006 and 2015, machinery made up the largest proportion of total exports (by value) to Africa with an average of 17% (Figure 1). Additionally, the metals, metal products, machinery, and equipment sub-sector is one of the highest contributors to employment in the manufacturing sector with a share of 23%.²

The relevance of trade with Africa, and the role that the sector plays in exports draws from the emphasis in recent debates on South Africa's (declining) manufacturing performance and the impetus to maximise opportunities which exist to increase exports to the region (Fessehaie, Roberts and Takala-Greenish, 2015). Countries across southern Africa, for example, have experienced considerable growth in levels of GDP and strong performance in mining and related activities which presents clear opportunities for South Africa to participate as a supplier of inputs, (engineering and technical) services and finished products. A discernible upward shift in the proportion of South Africa's manufactured exports³ which goes to Southern African Development Community (SADC) countries from 18% in 2000 to around 28% in 2014, led by exports of machinery and equipment and food products, points to the need for sustained investments and expansion of South African manufacturers to leverage growth in neighbouring countries (Fessehaie, Roberts and Takala-Greenish, 2015).

Figure 1: South African exports to the rest of Africa



Source: Quantec data using HS-code classifications

Note: Real prices adjusted for CPI inflation

² Quantec Data. Available here: <http://www.quantec.co.za/>

³ Considered in terms of SIC-code classifications.

The importance of the sector drawing from the discussion above is also expressed in the expenditure on government initiatives relating to it. For example, between April and November 2015, the Industrial Development Corporation (IDC) dispensed R934 million in funding to the machinery and equipment sectors. Additionally, the automotive and transport equipment sector received R295 million while heavy manufacturing industries received R201 million (DTI, 2016).

Capital equipment as an intermediary sector is one of the five sectoral focus areas set out in the Industrial Policy Action Plan (IPAP) for the year 2016-2017 (metal fabrication, capital and rail transport equipment) (DTI, 2016). The metal fabrication, capital and rail transport equipment cluster as set out in the IPAP is made up of four main sectors: ferrous metals, non-ferrous metal, capital equipment and rail transport equipment. The ferrous metals sector includes the upstream and downstream activities involved in the production of iron, steel and fabricated metal products. The non-ferrous metals sector consists largely of upstream and downstream activities around aluminium and copper amongst other non-ferrous metals. Products from these industries are used in the electrical and building materials industry, amongst others. The rail transport equipment consists of activities involved in the design, manufacture, and maintenance of the equipment used in the operation of transport services. The capital equipment sector also manufactures and supplies the components used in a number of activities including materials handling, drilling, excavating, earthmoving and manufacturing.

The sector is supported by the ferrous and non-ferrous metal sectors to manufacture required tools including pumps, valves, metal sheets, castings and forgings. Products from this sector are used in several sectors including but not limited to mining, packaging, construction, agriculture and furniture. Demand in the sector is therefore derived from investment in these key sectors.

The assessment herein considers investments made by large listed firms in this sector from 2011 to 2016, the location of those investments, and the stated rationale by companies.

2. Methodology

For the purposes of this study, the 25 firms considered are those listed on the Johannesburg Stock Exchange (JSE) under the Industry Classification Benchmark (ICB) sectors of Industrial Metals and Mining; Construction and Materials; Electronic and Electrical Equipment; Industrial Engineering; Automobiles and Parts; and Technology Hardware and Equipment. Under the Construction and Materials sector, the cement companies or companies that produce ready mix building products were excluded in favour of firms that manufacture *equipment* necessary for construction given a focus on firms involved in the manufacture of machinery and equipment. Kumba Iron Ore while a large company under the Industrial Engineering sector was also excluded because its primary activity is mining and not the secondary production of products from iron ore. Ferrum Crescent was excluded for the same reason. Mine Restoration was excluded because it changed ownership a number of times within the six year period. Trellidor Holdings had only listed in 2014 which provided little data to assess for the purposes of this study. Its primary activity is the mining of lead-zinc. Table 1 below lists the 25 firms identified for assessment.

Table 1: Capital equipment companies listed on the JSE, 2017

Company name	Product line (Brands/products)	Countries of operation	Listing (& market cap ranking 2017)
ArcelorMittal SA Ltd	ArcelorMittal South Africa is a leading producer of steel and supplies the continent.	*South Africa , DRC, Kenya, Tanzania, Malawi, Zimbabwe, Zambia, Botswana and Namibia	JSE (91)
Reunert Ltd	Reunert manages a portfolio of businesses in the fields of Electrical Engineering, Information Communication Technologies (ICT) and Applied Electronics.	*South Africa , Australia, Lesotho, Sweden, USA, Zambia and Zimbabwe.	JSE (98)
Invicta Holdings Ltd	Invicta is a holding company with a portfolio of firms involved in engineering consumables, capital equipment and building supplies.	*South Africa , Mozambique, Tanzania, Singapore, Mauritius, Zimbabwe, Botswana, Malawi, Zambia and DRC	JSE (130)
Metair Investments Ltd	Metair holds and manages a portfolio of companies that manufacture and distribute parts and components predominantly for the automotive industry.	*South Africa and Turkey	JSE (154)
Consolidated Infrastructure Group Ltd (CIG)	CIG is an infrastructure holding company with a focus on the power industry. It develops and installs high-voltage electrical sub-stations and high voltage, electrical protection and automation systems and has a renewable energy business.	*South Africa , Nigeria, Ghana, Middle East, Angola and Mauritius ⁴	JSE (158)
enX Group Ltd	The manufacture, supply, installation and maintenance of products in the power, petrochemicals and wood segments.	*South Africa , Namibia, Zambia and DRC	JSE (172)
Master Drilling Group Ltd	Provides specialised drilling services in the mining, civil engineering, building construction and hydroelectric sectors.	*South Africa , DRC, Zambia, Mali US, Peru, Brazil, Chile, Mexico, Ecuador, Colombia, Guatemala Sweden and China	JSE (184)
Hulamin Ltd	Mid-stream aluminium semi-fabricator and fabricator of aluminium products.	*South Africa	JSE (202)
Howden Africa Holdings Ltd	Manufacture and market specialised air and gas handling solutions to a wide range of industries.	*UK , South Africa, Brazil, Chile, China, India, Australia, Russia, Taiwan, Canada, US, Vietnam, Korea and Spain	JSE (206)
ARB Holdings Ltd	A holding company concerned with the trading and distribution of electrical lighting and related products to key sectors in South Africa	*South Africa	JSE (217)
Bell Equipment Ltd	Manufacturer and distributor of heavy equipment for a variety of	*South Africa , Swaziland, Namibia, Australia,	JSE (223)

⁴ Mauritius acts as the head office for the company's international operations. The company operates in at least 19 countries, however these are not clearly outline on its website or annual reports.

	sectors including mining, quarrying, construction, road building, forestry and agricultural industries worldwide.	Mozambique, DRC, Malawi, Zambia, France, Germany, Spain, USA, Russia, New Zealand and Singapore	
Allied Electronics Corp A	Develops technology used in the multimedia and information technology spaces; manufacture power electronics and electronic components e.g. cables, automotive batteries, power transformers and multimedia set boxes	*South Africa , Kenya, Namibia, Botswana, Lesotho, Mauritius, Mozambique, Tanzania, UK, Germany, France, Italy, Portugal, Spain, Hong Kong, United Arab Emirates, India and Australia	JSE (230)
Ansys Ltd	Specialises in the design and development of engineering solutions for the defence and information security, mining and industrial, rail and telecommunications industries	*South Africa	AltX (267)
Distribution and Warehousing (DAWN)	The DAWN group manufactures and distributes quality branded hardware, sanitaryware, plumbing, kitchen, engineering and civil products.	*South Africa , Mozambique, Zimbabwe, Zambia, Tanzania, DRC, Mauritius, Angola	JSE (283)
Insimbi Ref & Alloy Sup	Insimbi provides the steel, aluminium, cement and foundry industries with resource-based commodities like ferrous and non-ferrous alloys, as well as refractory materials.	*South Africa	JSE (291)
Alaris Holdings Ltd	Holding company consisting of companies that design, manufacture, and sell broadband antennas; as well as providing end-to-end turnkey solutions for radio and television broadcasters.	*South Africa , Finland, Africa	JSE (301)
BSI Steel Ltd	Stockist, trader, and exporter of steel products.	*South Africa , DRC, Zambia, Zimbabwe, Ghana, and Mozambique	JSE (304)
Mazor Group Ltd	Mazor has specialist expertise in the design, supply and installation of structural steelwork and aluminium façades. The group currently services the industrial, construction and infrastructure markets	*South Africa	JSE (314)
Kaydav Group Ltd	KayDav is a trading and distribution company operating in the wood-based panel and packaging industries. The firm operates in SA.	*South Africa	JSE (316)
Ellies Holdings Ltd	Manufactures, wholesales, imports and distributes electrical equipment to diversified sectors including consumer goods, renewable energy, power management, water and telecommunications infrastructure.	*South Africa , Namibia, Botswana and Swaziland	JSE (324)
Labat Africa Ltd	The company is an investment holding company, which, through its	*South Africa	JSE (327)

	subsidiary, is engaged in the design and marketing of integrated circuits.		
Accéntuate Ltd	Manufactures and distributes Infrastructural supplies and maintenance solutions into the flooring sector and chemical cleaning and collateral supplies.	*South Africa	JSE (330)
PSV Holdings Ltd	A specialised industrial group focused on specialised valves, engineering linings, industrial supplies and cryogenics	*South Africa , Botswana, Zambia, DRC, Namibia	JSE (335)
South Ocean Holdings Ltd	A holding company in the Electronic and electrical equipment sector. It has four subsidiaries that supply mainly the building and construction industries	*South Africa	JSE (349)
Cafca Ltd	Owned by Reunert Ltd. Manufactures and supplies cable and allied products for the transmission and distribution of electrical energy and information primarily in Southern and Central Africa	*Zimbabwe , South Africa	JSE (353) Zimbabwe Stock Exchange, London Stock Exchange

**Country of incorporation*

Source: Company annual reports and websites

The companies reviewed in this study are involved in various levels of the metals and machinery equipment value chain, from casting of metals to metal fabrication of both ferrous and non-ferrous metals, to the manufacture of intermediate and final products used in a number of sectors including energy, agriculture, mining, construction, automotive, transport, forestry and engineering. These firms together produce the components, parts and machines used to produce the goods and services in other key sectors of the economy. Due to the dependent nature of the metals and machinery equipment sectors, the decline in demand or production in other manufacturing sectors in the economy appears to have affected the performance of these firms, as considered further below.

The analysis involved the collection and review of all of the annual reports of all 25 firms for the period 2011 to 2016. 2016 data was unavailable for only one firm, South Ocean Holdings. The review was necessary to gain an understanding of the type of firms, products produced, challenges faced and trends in the sector. Data on investment activities, capital expenditure as well as mergers and acquisition was obtained from the cash flow statements and business combination notes of the various company financial statements. The information on key performance metrics such as total assets, revenue and profitability were sourced from INET BFA, a financial database with stock market data on listed firms.

The assessment to follow focuses on understanding key characteristics of the subset of firms considered, understanding key differences and trends in business models and performance, and assessing investment behaviour including whether growth (locally or outside of South Africa) is through organic investment or acquisitions.

3. Sector analysis

Of the 25 firms analysed, only two were in the top 100 of the JSE in terms of market capitalisation: ArcelorMittal (91) and Reunert (98). The consideration of firms that are listed on the JSE does not mean that these are the only firms involved in the sector, and there are

of course a number of unlisted firms not considered here, which is perhaps an area for further research. However, those firms listed on the JSE are relatively large firms about which extensive information can be drawn and analysed from published annual reports and investor presentations.

The following section reviews some of the key observations made from a study of the chosen firms. It discusses the grouping of the firms in terms of the International Classification Benchmark (ICB), the nature of the companies, the type of commercial activity as well as their operating environment in order to provide an understanding of the differences and similarities between the firms and factors which appear to affect their decision making and investments.

3.1. Categorisation of the firms

The ICB sector classifications of the firms form a useful lens by which some of the firms can be grouped with regards to their production activity. However, a closer examination of the firms reveals significant variability in terms of the products and services offered that confounds the comparison within and across sectors. There is significant diversity in the group of firms considered, such that the ICB sectors are potentially limiting for understanding in detail the activities and market dynamics of each firm and how this drives investment behaviour. For instance, Invicta Holdings categorised under industrial engineering has a building supplies division in which various building materials are produced, imported and supplied including pipes, fittings, tiles, plumbing, sanitary ware and other building hardware. Similar products are also produced by companies such as DAWN (hardware, sanitary ware, plumbing etc.) categorised separately under the ICB sector, construction and material. Similarly, Alaris which is categorised under the ICB sector for Technology Hardware and Equipment manufactures items such as antennas and other telecommunication equipment, which both Ellies and Allied Electronics produce although the latter firms are categorised under ICB sector electronic and electrical equipment.

This makes a comparison of the firms using these sector classifications difficult. In this context, caution is exercised in relying only on ICB classifications, and the analysis throughout considers in detail the activities of each firm, firms' modes of operation (i.e. whether they are largely manufacturers or distributors, for example), geographical footprint and whether they are holding or singular companies. By relating these different company characteristics with their performance metrics, a better understanding of the companies' strategies is developed as is illustrated below.

3.1.1. Holding firms

Approximately ten of the firms considered are investment holding companies with interests in various companies and sectors, many outside the scope of the ICB sector they are listed under. In some cases, the holding firms have limited involvement in the actual operations of the companies. Cafca Ltd, one of the companies reviewed is in fact owned by Reunert, another company included in the study. Invicta Holdings, as mentioned, is involved with a wide range of products from gear boxes, to heavy earthmoving machinery to plastic pipes and tiles through different divisions and subsidiaries. CIG, also primarily a holding company, has activities through different entities which range from the installation of electricity transmitters, and provision of building supplies to waste management in the oil and gas sector.

A holding company exists for the purpose of controlling or owning companies through ownership of shares and can provide important strategic advantages to the entity and those

related subsidiaries. For example, a holding company has the advantage of having a number of different firms operating across different sectors in its control thereby enabling it to diversify its portfolio and manage risk. Should any one company under its umbrella perform poorly, the losses may be balanced out by the company's shares in better performing firms. A holding company may also be able to acquire a firm in either the downstream or upstream level of the value chain of a subsidiary thereby creating either a supplier or customer for its products on advantageous terms. For instance, Invicta's rationale for acquiring Man-Dirk in 2012 was for the cross-selling opportunities between Man-Dirk and BMG, another subsidiary of the group.⁵ Importantly, the ownership of firms in the same sector also creates an enabling environment for tacit collusion or potentially reduces competition as managers of competing firms owned by the same holding company may have little incentive to compete (Lewis, 1995).

The data on total assets and revenues below shows that large and diversified holding companies such as Invicta and Reunert are amongst the largest of the subset considered.

3.1.2. Manufacturing vs distributorship

The companies may also be assessed in terms of whether they are actual manufacturers or if they essentially operate as distributors for global manufacturers although even here there is considerable diversity within firms (through different divisions or subsidiaries) such that companies that manufacture some products are also involved in the distribution of related products. The primary activity of each of the firms was therefore considered. It is relevant for the purposes of this assessment to consider these distinctions. Firms which have a manufacturing base in South Africa, including design and investment in new technologies, can be viewed as particularly important to the extent that this increases domestic manufacturing value added. Firms that are primarily distributors may face lower incentives to further invest in research and technologies or improving product offering in South Africa if exclusive distribution agreements mean that international suppliers control supply and technology rights.

Only two firms are distinctly distributors: ARB Holdings and KayDav. However, all the other firms to a certain extent, are involved in the importation and distribution of products under their various divisions. For instance, at least nine of the companies under the Invicta group have sole distributorship of capital equipment in southern Africa. Some of these products include; Hyundai earthmoving equipment, New Holland agricultural equipment, Northmec agricultural equipment, and TCM forklifts.⁶ At least one of Invicta's subsidiaries, BMG has sole assembly and distribution rights of Sumitomo and Hansen branded industrial gearbox units throughout Africa. Another company, enX Group is the sole distributor of ExxonMobil lubricants in southern Africa and of Biesse, Felder and Leitz wood working equipment.⁷

These distributor agreements often take the form of sole distributorships or exclusive agreements in particular geographical areas. Sole distribution agreements give the distributor permission to be the only supplier of particular products in a given territory. This often means the distributor cannot sell a competitors' products and that the main supplier cannot deal with any other supplier. This could give the firms significant market power in the markets for the products they distribute, although there may, of course, be competitors that distribute other competing brands.

⁵ Invicta Holdings 2012 annual report.

⁶ Invicta Holdings [website](#).

⁷ enX Group [website](#).

The different types of agreements can have important effects in terms of dampening competition. By having sole or exclusive agreements, the distributors are guaranteed demand with little competition, raising the incentive to raise prices and removing the incentive to improve the quality of service as there is no rival in the region. In the case of exclusive agreements, parallel trading in which cheaper products can be bought from one geographical area and sold in another may be impeded as distributors may not be allowed to sell products to consumers from another geographical area in which there is another exclusive distributor of the same product regardless of whether there is a considerable price difference. On the other hand, there are some efficiency benefits from these distribution agreements in which upstream companies can concentrate on the innovation, research and development of key products while the distributor companies concentrate on the effective distribution of the end-product. However, to the extent that these agreements limit competition between firms and result in high prices and/or fewer choices for consumers, they may have negative welfare implications which should be considered further in terms of their impact on competition.

3.2. Anti-competitive conduct

The metals and machinery sector, by virtue of the substantial capital requirements and general high barriers to entry, is significantly concentrated. Moreover, the presence of holding firms and several distributor agreements makes the sector particularly susceptible to anti-competitive conduct. The high barriers to entry make it difficult for entrant firms to penetrate and succeed in the sector which leaves a select few firms the opportunity to gain and maintain large market shares. Furthermore, as mentioned earlier, holding firms often have under their umbrella, a number of firms that produce similar products. Having the same ownership often reduces the incentive of the firms to compete vigorously and may even facilitate collusion amongst the firms. The distributor agreements may also serve to further entrench and spread this market power across South Africa and into the region by limiting the ability of other unaffiliated distributors from selling the product.

The concentrated nature of this sector, as well as the combination of the above factors, may explain the high number of competition cases in the sector. ArcelorMittal, the largest steel producer in the country has, for instance, had five cases of anticompetitive conduct referred to the Competition Tribunal by the Competition Commission of South Africa (CCSA) in 2013. In August 2016, the Competition Commission reached an agreement with ArcelorMittal that the company would pay an administrative penalty of R1.5 billion for its involvement in various cartels. ArcelorMittal admitted to having been involved in the long steel and scrap metal cartels and admitted that it engaged in collusion with CISCO, Scaw and Cape Gate by fixing prices and discounts, allocating customers and sharing commercially sensitive information in the market for long steel products. In this regard, ArcelorMittal undertook that for a period of five years it will limit its EBIT (earnings before interest and tax) margin to a cap of 10% for flat steel products sold in South Africa. In addition, ArcelorMittal committed to a R4.6 billion capital expenditure over the next five years. The Commission has, in turn, agreed that the settlement will cover all pending cases against ArcelorMittal including those that are still under investigation (Competition Commission South Africa, 2016).

One of Allied's subsidiaries, Altech Netstar was also the subject of a complaint concerning alleged anti-competitive conduct in 2015, although Altech Netstar successfully defended the claim in the Competition Appeal Court. Within the same year, 2015, the Battery Importers Association lodged a competition-related complaint against a number of local battery

manufacturers, including Allied's Willard Batteries. The matter was also successfully defended before the Competition Commission but the association later referred its complaint to the Competition Tribunal. In 2015, the CCSA initiated an investigation into the alleged cartel conduct of electric cable manufacturers. The investigation involved members of the Electric Cable Manufacturers of South Africa including Allied's Aberdare Cables and another of company considered in this study, South Ocean Holdings.⁸ The investigation is still in progress.

A Reunert subsidiary, ATC (Pty) Ltd was one of the parties involved in a formal complaint initiated by the CCSA against firms in the cable industry. In November 2014, ATC reached a settlement with the Competition Commission in which they were issued an administrative penalty amounting to R81 million (Cokayne, 2014). Cafca, another subsidiary of Reunert is currently being investigated by the Zimbabwean Competition and Tariff Commission for anti-competitive behavior in a deal in which it is the sole supplier of aluminium electricity conductors to Zimbabwe Electricity Transmission and Distribution Company (ZETDC) (Mandizha, 2017). In another case, Distribution and Warehousing Network (DAWN) is appealing against a Competition Tribunal decision that one of its subsidiaries colluded with Sangio Pipe between 2007 and 2012 (Allix, 2017).

Current and past cases in the sector involve the same firms (ArcelorMittal, Allied and Reunert) or firms dealing in the production of similar products i.e. electric cables, pointing to a certain disposition towards anti-competitive behaviour. There might be a need for the state to monitor this sector to ensure that it is competitive especially since it is one of the leading sectors of the economy with the ability to drive industrialisation. This might involve prioritisation of the sector and the lodging of much more stringent penalties to discourage further anti-competitive behaviour by the firm, its subsidiaries and the rest of the firms in the sector.

3.3. Operating environment

Despite the variance in the kind of activities in which these firms participate, they in one way or the other either supply or are customers in the mining and manufacturing sectors of the economy. This means that they are often subject to the operating environment and conditions of these sectors. Factors such as low commodity prices in the commodity market, droughts affecting the agricultural sector, load shedding and strikes in the mining sector have a significant impact on their own performance. Also, due to the necessity of importing components or exporting products, the capital equipment sector is exposed to currency fluctuations. The weakening currency over the last three years has had a negative effect on firms assessed in this research. Where the manufacturing or mining sector faces a poor operating environment, the firms considered are likely to face declining demand from their clients.

For the period under review, a combination of the mentioned negative effects has prevailed in the economy resulting in the retrenchment of significant proportions of employees by a number of the companies. *At least 12 of the 25 firms considered retrenched employees between 2011 and 2015. One company, Labat Africa a black-owned firm, has closed down its manufacturing operations in South Africa and completely transferred into China between 2013 and 2014.*⁹ *PSV, following a decline in demand from its mining customers, sold off its Turbo Botswana*

⁸ Allied Electronics 2015 Annual Report

⁹ Labat Africa 2013 and 2014 Annual Report.

subsidiary and closed down the Turbo DRC subsidiary in 2014.¹⁰ Allied is considering leaving the manufacturing sector completely due to the high risk involved and labour instability to focus on the development of technology and intellectual property.¹¹

4. Investments and acquisitions

As mentioned earlier, the investments of large firms are important as they significantly influence the patterns of growth of manufacturing capacity and domestic production. It is also important to understand where companies invest and the type of investments, the rationale for investments made and not made, and factors which affect this. In this regard, this section considers the capital expenditure of the subset of firms and public information on mergers and acquisitions. On the latter, it is important to understand whether the firms are growing organically through investments in increased capacity or by acquisitions and effectively 'buying' market share. *Where the greater proportion of expenditure is on mergers and acquisitions, there are implications in terms of greater concentration of industries, and in some cases the removal of potential effective rivals or maverick firms. On the other hand, there are important efficiencies which arise from mergers and acquisitions which should not be ignored to the extent that they are realised by the firms.*

Under capital expenditure, where possible a distinction was made between expansion and replacement capital although there are limitations to this approach as many companies do not report disaggregated information on capital expenditure in this way. Expansion capital expenditure considered here involves growing operations through, for example, acquiring new machinery, or expanding or adding to existing production capacity. Replacement capital refers to expenditure on repairing or replacing old machinery. Although there are several factors which can affect the decisions of firms in this regard, the presumption is that expansion capital expenditure is preferable to simply making acquisitions of existing firms or maintenance of existing capacity from the perspective of industrial development. However, some caution is exercised in interpreting this information, particularly where companies do not explicitly state their rationale publically, given that an investment in replacing aging or outdated capacity is also likely to increase productivity.

Under mergers and acquisitions, as far as possible, distinctions were made in terms of the location of the mergers, whether they were local, within the South African Development Community (SADC) but outside SA, within Africa but outside SADC or outside Africa. Again this is important because it is important to understand where firms are investing, whether within South Africa in the southern African region or outside the continent and their reasons for it. While it is important for policymakers to understand how to incentivise firms to invest within the country, it may also be that large-scale investments in new production capacity outside South Africa contribute to more integrated regional value chains and increase the productivity of companies overall.

The data was acquired by looking through the annual reports of the various firms, particularly their cash flow statements for data on capital expenditure and on their business combination notes to find information on their mergers and acquisitions. The information used is information that could be found in the annual reports and publically available sources. While it was relatively easy to find locations for the mergers and acquisitions, it was much more difficult to

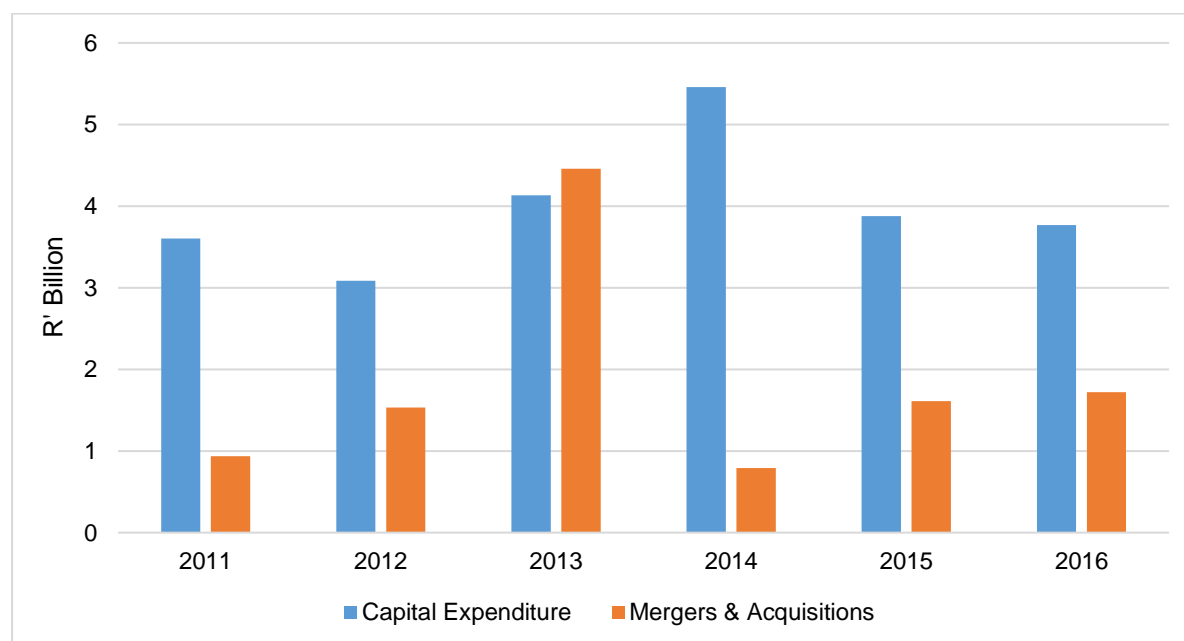
¹⁰ PSV Group 2014 Annual Report.

¹¹ Allied Electronics Corp 2016 Annual Report.

find information on the 'location' for capital expenditure as this was not specifically outlined in the majority of the annual reports. The same is true for the distinctions between expansion and replacement capital. All the companies reported their total capital expenditure and as such data for total capital expenditure was available for all the firms. However, it was more difficult to determine what amount was spent on expansion versus replacement. Data on expansion capital was only available for 11 of the 25 firms considered while data for replacement capital was only available for 10 of the 25 firms considered.

The total value of capital expenditure for the firms between 2011 and 2016 has in general been higher than their expenditure on mergers and acquisitions except in 2013 when high value acquisitions were made as discussed below (Figure 2). This points towards more organic growth taking place, i.e. through expansion of operating capacity rather than through acquisition of existing businesses. It is also worth noting that there appears to be an upward trend in capital expenditure overall in the period considered.

Figure 2: Value of capital expenditure and mergers & acquisitions (2015 constant prices)

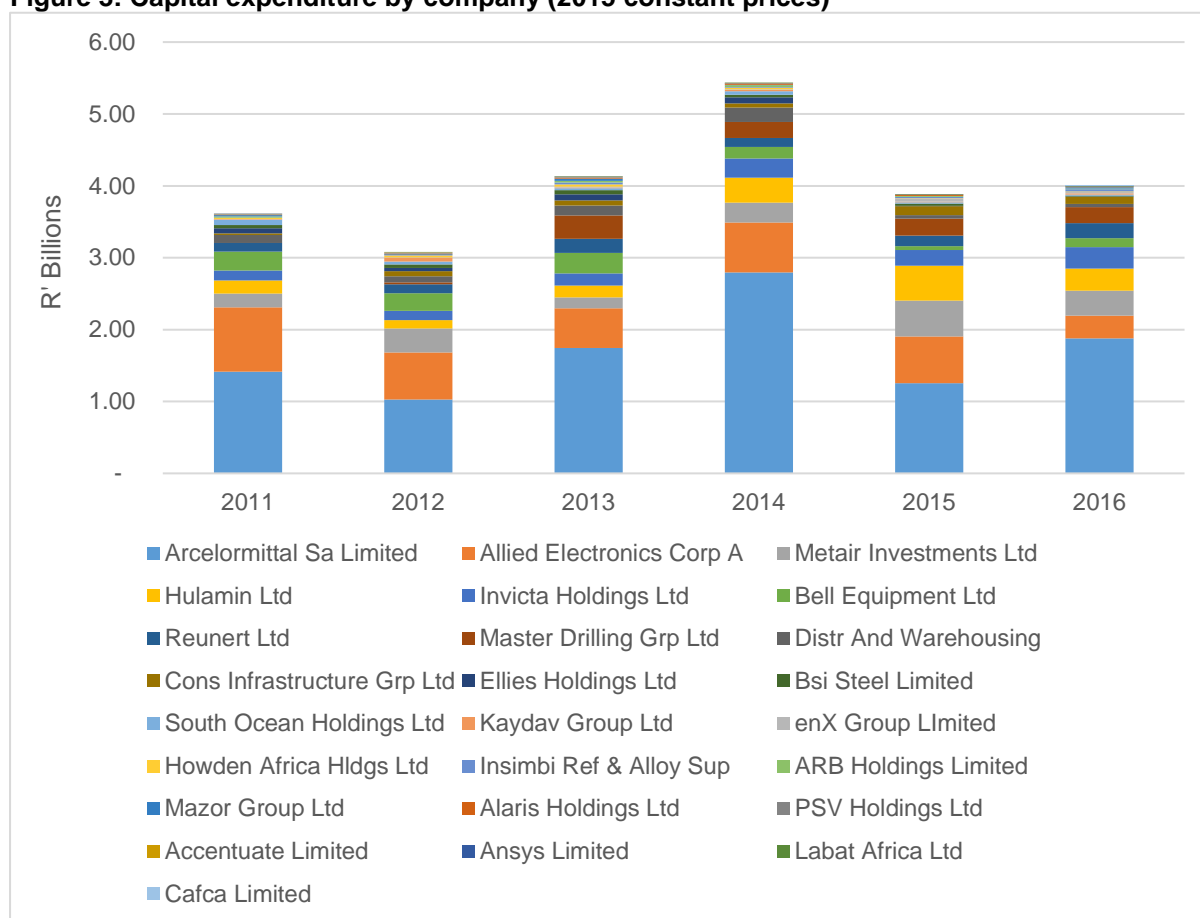


Source: Company Annual Reports

4.1. Capital expenditure

Between 2011 and 2014 capital expenditure had on average been growing. Most of the growth, however, in some periods is attributable to large investments by particular firms. For example, between 2013/4 Allied made significant investments including a R162 million expenditure on intellectual property while Invicta opened five new branches through one of its subsidiaries. *Between 2015 and 2016, however, there appears to have been a drop in capital expenditure by most firms excluding ArcelorMittal. During this period a number of operational challenges including strikes, a general slowdown of the economy, reduced government spending and volatility of the exchange rate are provided as reasons for the reduced capital expenditure.*

Figure 3: Capital expenditure by company (2015 constant prices)



Source: INET BFA

Allied had the highest amount of capital expenditure after ArcelorMittal of over R3 billion in the period reviewed. Metair and Hulamin also had expenditure of over R1 billion, while the majority of firms fell below this level.

Table 2: Top five companies ranked by total capital expenditure (2011-2016)

Company	Total value of capital expenditure ('000)
ArcelorMittal Sa Ltd	9 608 000
Allied Electronics Corp A	3 469 000
Metair Investments Ltd	1 719 858
Hulamin Ltd	1 549 517
Invicta Holdings Ltd	1 173 784

Source: Company Annual Reports

Interestingly, when capital expenditure is compared to total assets, Alaris with one of the lowest contributions to capital expenditure during the period under review has the second highest ratio of capital expenditure to total assets of 8% (Table 3).

Table 3: Ratio of capital expenditure to total assets (2011 - 2016)

Company	Ratio of capital expenditure to total assets
Master Drilling Group Ltd	9%
Alaris Holdings Ltd	8%
Kaydav Group Ltd	6%

Metair Investments Ltd	5%
ArcelorMittal Sa Ltd	5%

Source: Company Annual Reports

ArcelorMittal has also had the highest expenditure in terms of expansion capital in the six year period spending about R900 million (Table 4). Invicta, Metair and Bell Equipment and Invicta had a capital expenditure of about R700 million each. Bell Equipment spent a significant portion of its expansion capital on the construction of four new Customer Service Centres in Middleburg, Nelspruit, Rustenburg, and Kitwe in Zambia.¹² Invicta was involved in a number of projects including opening five new branches in BMG's sales network in 2013. Two branches were opened in South Africa, a further two in Mozambique and a dedicated projects branch for coordination in South Africa.¹³ In 2015, Invicta subsidiary, BMG also expanded its central facilities in Johannesburg to a new 9000m² assembly facility worth R350 million to house the electro-mechanical drives and belting division.¹⁴

Table 4: Top five companies ranked by expansion capital expenditure (2011-2016)

Company	Total expansion capital ('000)
ArcelorMittal Sa Ltd	901 000
Invicta Holdings Ltd	790 338
Metair Investments Ltd	739 000
Bell Equipment Ltd	728 255
Reunert Ltd	524 900

Source: Company annual reports

Note: Ranking is skewed by the fact that not all companies report detailed information

In terms of replacement capital, ArcelorMittal had the highest expenditure of over R8 billion, R7 billion more than the total replacement capital of the remaining eight firms for which data was available. Metair's high replacement expenditure is likely due to the fact that in 2011 and again in 2014, its plants in Benoni and East London had fire incidents resulting in damage that had to be repaired and restored to operational levels.¹⁵ Cons Infrastructure injected a large amount of replacement expenditure on its AES Soyo site in Angola in 2014 contributing to its substantial replacement expenditure.¹⁶

Table 5: Top five companies ranked by replacement capital expenditure (2011-2016)

Company	Total replacement capital ('000)
ArcelorMittal SA Ltd	8 710 000
Invicta Holdings Ltd	383 446
Metair Investments Ltd	373 000
Reunert Ltd	347 500
Bell Equipment Ltd	248 543

Source: Company annual reports

Note: Ranking is skewed by the fact that not all companies report detailed information

Because ArcelorMittal's contribution to capital expenditure is substantial, it distorts the analysis of the composition of capital expenditure. In Figure 4 below, a comparison of the expansion capital and replacement capital shows that for the period under review, the majority

¹² Bell Equipment 2014 annual report.

¹³ Invicta Holdings 2013 annual report.

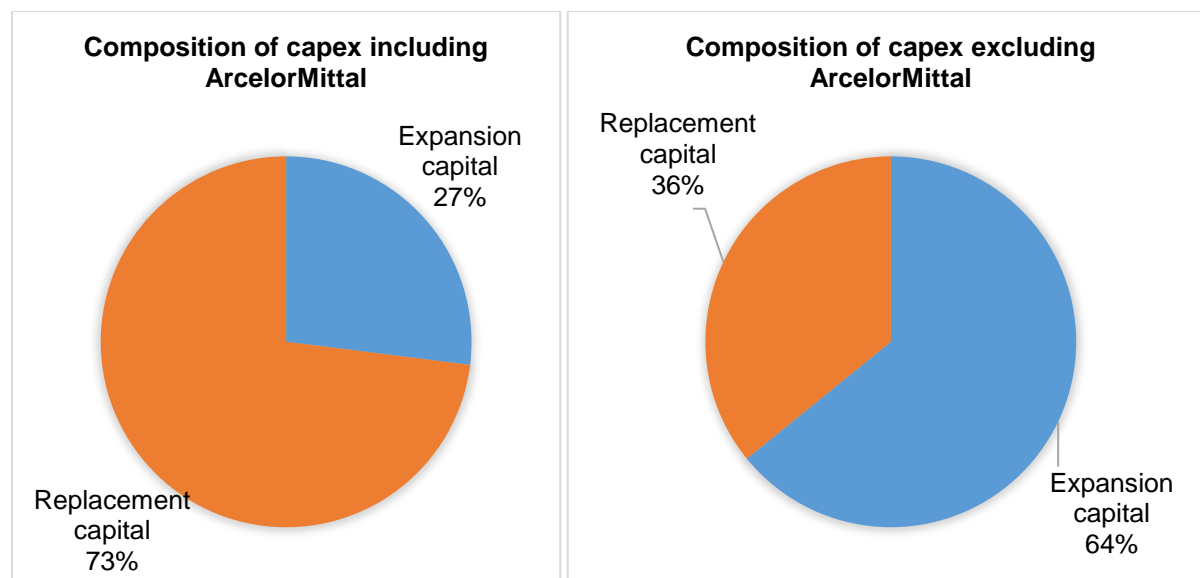
¹⁴ Invicta Holdings 2015 annual report.

¹⁵ Metair 2011 and 2014 annual reports.

¹⁶ Consolidated Infrastructure Group 2014 annual report.

of capital expenditure was spent on replacement (73%) compared to the 27% on expansion when including ArcelorMittal. However, if the analysis is conducted excluding data from ArcelorMittal, the greater proportion of capital expenditure of remaining firms was spent on expansion (64%) rather than replacement 36%).

Figure 4: Composition of capital expenditure by firms (2011-2016)¹⁷



Source: Company annual reports

Note: Only 9 firms for which both expansion and replacement capital expenditure was available are considered in the above figure.

It was not possible to reliably determine the geographical locations of all investments made for most of the companies as this was not publically available in the annual reports or investor presentations.

4.2. Mergers and acquisitions

In 2013, Metair and Invicta were involved in acquisitions of significant value. Metair acquired Mutlu Aku, the largest battery manufacturer in Turkey in a transaction valued at R2.2 billion.¹⁸ The acquisition was made to give Metair access to the market in Eastern Europe. Invicta also made a number of significant acquisitions including Kian Ann Engineering in Singapore, all of which were worth about R1.5 billion (Figure 5).

¹⁷ The information represented in the table reflects data available from the annual reports.

¹⁸ Metair Holdings 2013 Annual Report.

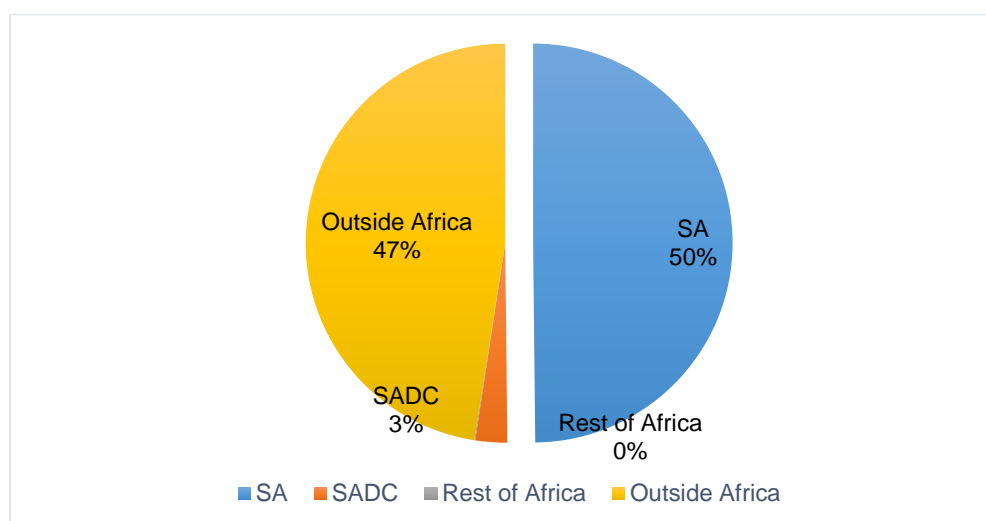
Figure 5: Mergers and acquisitions (2015 constant prices)



Source: Company Annual Reports

The available data shows that the mergers and acquisitions are largely taking place within South Africa or outside the continent. That is, few acquisitions of significant value were made within SADC or in the rest of Africa for the period under review (Figure 6).

Figure 6: Mergers and acquisitions by location (2015 constant prices)



Source: Company annual reports

Note: 73% of the value of M&A could definitively be allocated by location

In terms of the value of mergers and acquisitions between 2011 and 2016, about 50% of the value is spent within South Africa, 3% in the SADC region while 47% was spent outside of Africa. This reveals important information about the trends in expenditure by firms involved in metals, machinery and equipment production. Large-scale investments outside South Africa may point to a challenging environment domestically for firms as discussed above. It could indicate that while few mergers and acquisitions are taking place within the continent, firms are choosing to expand into the region rather than acquire already existing firms, also given that there may not in fact be existing firms to acquire in some sub-sectors.

The companies that had the largest expenditure on mergers and acquisitions for the period under review are Metair, Invicta, Cons Infrastructure, Reunert and Allied, most of whom spent over R1 billion in large, one-off acquisitions (Table 6).

Table 6: Total value of mergers and acquisitions by top five companies (2011-2016)

Company	Total value of mergers and acquisitions
Metair Investments	2 785 084
Invicta Holdings Ltd	2 625 892
Cons Infrastructure	1 278 515
Reunert Ltd	1 219 300
Allied Electronics	1 065 913

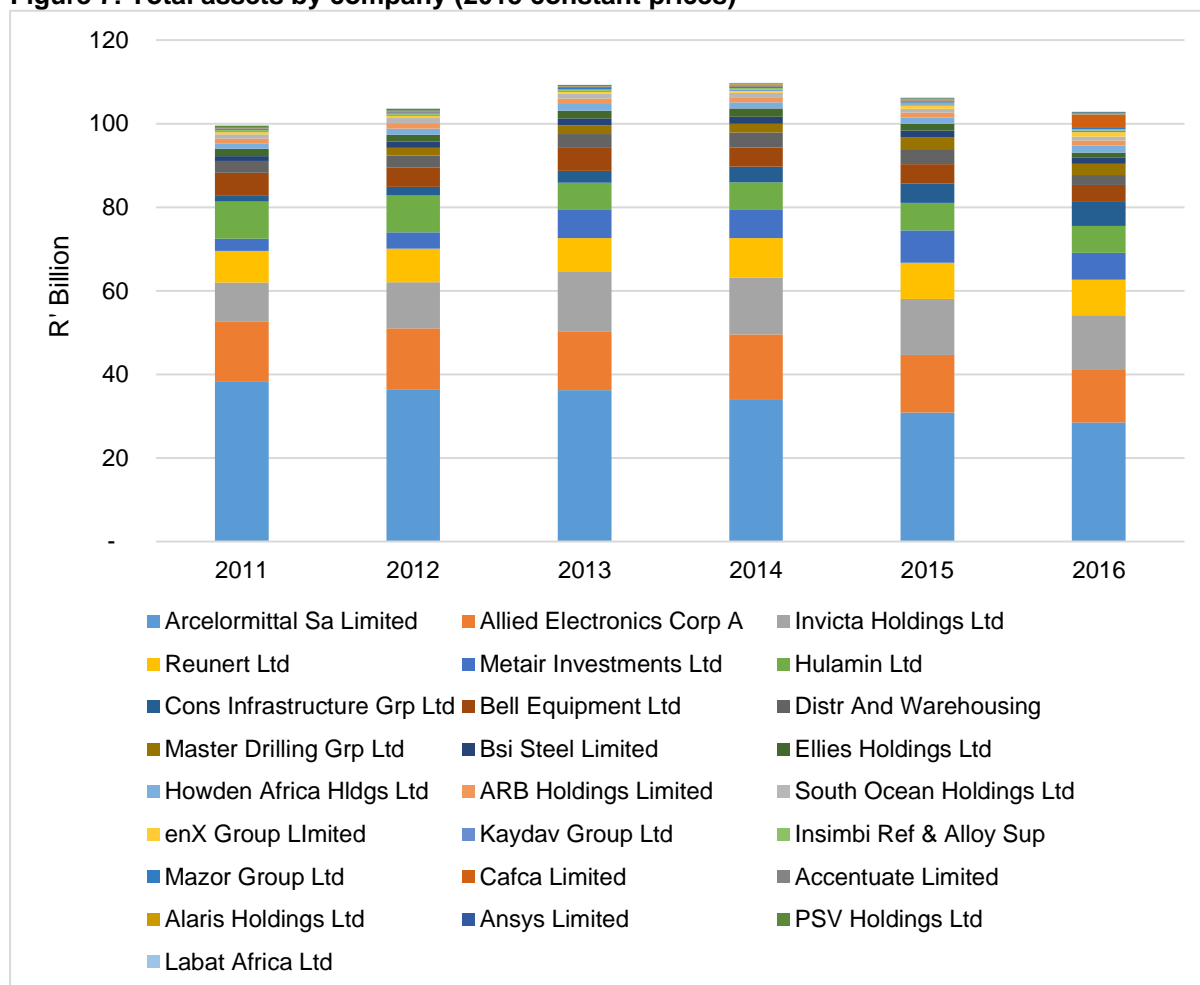
Source: Company annual reports

5. Key performance metrics for sector

5.1. Total assets

Perhaps unsurprisingly, the firms that are also involved in heavy industry and mining activity have some of the highest values of total assets in the sector. ArcelorMittal had the highest value of total assets as of 2016 (R30.5 billion), more than twice the amount held by the second highest company, Invicta (R14.06 billion). Allied had the third highest value of total assets of R13.4 billion.

Figure 7: Total assets by company (2015 constant prices)



Source: INET BFA

Allied Electronics total assets include subsidiaries it owns which operate in at least 19 countries worldwide. Allied is a technology company that owns brands such as Bytes People Solutions and Altech Netstar. Invicta and Reunert have a large value of assets respectively, due to the fact that they are holding companies with ownership in a number of firms. Table 13 below has a more detailed breakdown of the asset values of selected firms.

Table 7: Total assets of top five firms

Company	Value of total assets (2016) ('000)
ArcelorMittal	30 543 000
Invicta Holdings Ltd	14 062 997
Allied Electronics	13 405 000
Reunert	9 057 000
Metair Investments	7 029 689

Source: INET BFA

While ArcelorMittal, Invicta, Allied, Reunert and Metair have the highest amount of total assets in terms of absolute value, the companies that have experienced the highest compound annual growth rate (CAGR) in total assets are Ansys (technology company, 52%), Alaris (a telecommunications manufacturer, 44%) and CIG (electronic and electrical manufacturer, 36%) with CAGR of over 30% (Table 13).

Table 8: Compound annual growth rates of total assets of top five companies (2011-2016)

Company	CAGR of total assets (2011-2016)
Ansys	52%
Alaris	44%
Cons Infrastructure	36%
Metair Investments	23%
enX Group	22%

Source: INET BFA

5.2. Revenue

In terms of revenue, ArcelorMittal, Allied Electronics, Invicta, Hulamin and Metair had the highest value in 2016.

Figure 8: Revenue by company (2015 constant prices)



Source: INET BFA

Despite ArcelorMittal and Allied having the highest revenue in absolute terms, their compound annual growth rates between 2011 and 2016 have been 1% and 0%, respectively (Table 10). ArcelorMittal's poor growth in revenue was partly a result of competition with cheaper imports from China (Nkabinde, 2015). Between 2009 and 2015, China had been experiencing an oversupply of steel prompting dumping of steel in other countries, including South Africa. The increase in dumping led to a decrease in steel prices globally, negatively impacting competing firms such as ArcelorMittal. The International Trade Administration Commission of South

Africa (ITAC) intervened in 2015 by imposing a 10% duty on imported steel (van Rensburg, 2015).

Table 9: Revenue of top five firms

Company	Total revenue (2016) ('000)
ArcelorMittal	32 737 000
Allied Electronics	26 592 000
Invicta Holdings	10 635 850
Hulamin Ltd	10 099 349
Metair	8 953 710

Source: INET BFA

Allied's low revenue growth might be due to the large number of acquisitions totalling over R1 billion for the period under review. The most costly acquisition of which was Allied's repurchase of the minorities in Bytes South Africa from Kagiso Tiso Holdings for R669 million in 2015. Furthermore, Allied had an average capital expenditure of over R500 million. These expenses might have had an adverse impact on the firm's CAGR and there may some lag before returns are realised.

Table 10: CAGR of revenue of top five companies (2011-2016)

	CAGR of revenue (2011-2016)
Master Drilling	75%
Ansys	27%
Alaris	25%
Cons Infrastructure	21%
Mazor Group	21%

Source: INET BFA

Master Drilling had considerable CAGR of 75% while Ansys and Alaris, two relatively small companies also experienced significant CAGR in revenue of 27% and 25%, respectively. Labat had the lowest revenue CAGR of -17%. The losses they experienced were attributed to adverse market conditions and the fact that their metering products were at the end of the product life cycle. Sales were expected to pick up once new products were introduced from the beginning of 2014 and onwards.¹⁹ The poor growth was also likely due to the costs involved in closing and *shifting operations from South Africa to China* as they did in 2014. However, their profitability following the shift improved significantly as explained below.

5.3. Profitability

Labat, Howden, ARB, Master Drilling and Reunert have the highest return on assets. Labat had the highest ROA and profit margin in 2016 of 36% and 59%, respectively. This suggests that Labat's move to shift operations to China was very profitable for the company and highlights how much cheaper costs of operations are in China compared to South Africa.

Table 11: Return on assets of top five firms (2011 – 2016)

Company	Return on assets (2016)
Labat Africa Ltd	36%
Howden Africa Holdings Ltd	12%
ARB Holdings Ltd	12%
Master Drilling Group Ltd	11%
Reunert Ltd	11%

¹⁹ Labat Africa 2013 Annual Report.

Source: INET BFA

Ellies had the lowest profit margin and ROA in 2016 of -29% and -39%, respectively (Table 15 and Table 16). Ellies' poor performance could be due to other losses experienced by one of their subsidiaries Megatron that had to be placed in business rescue at the end of the year.²⁰ Their revenue also declined due to the cancellation of key projects in Nigeria and Côte D'Ivoire. ArcelorMittal had a profit margin and ROA of -15%. There are a number of reasons that could explain this poor performance including the reduction in commodity prices, increased competition from imports and long periods of inactivity during strike action. In 2016, the company was issued a R1.5 billion penalty for price fixing.

Table 12: Profit margin of top five companies (2015)

Company	Profit margin (2015)
Labat Africa Ltd	59%
Master Drilling Group Ltd	19%
Howden Africa Holdings Ltd	14%
Reunert Ltd	11%
Cons Infrastructure Group Ltd	9%

Source: INET BFA

A key observation that can be made from the performance indicators of the firms is that the top five companies in terms of revenue, asset, profit margin and rate of return are companies that are greatly diversified in terms of product offering or geography of operations. Allied, Invicta, Metair and Reunert have some of the highest values in terms of total assets and of revenue in 2016. All four companies are large global companies with various interests and presence in several countries.

Allied, for instance, is a designer and manufacturer of semi-conductor rectifier equipment, battery chargers, inverters, variable speed drives, DC motor controls, DC power supplies, electronic signal equipment and transformers. Currently, Allied through its subsidiaries, Allied Technologies, Bytes Technology Group and Power Technologies, is invested in the telecommunications, multi-media, information technology and power electronics industries. It also maintains a number of key strategic, technology-based partnerships with leading international corporations such as ABB, Alcatel-Lucent, Arrow Electronics, Cisco Systems, Datacard, Dell, Dongyuan Electrical, Eaton, Enersys, Gemalto, HP, IBM, Kronos, Metastorm, Microsoft, Motorola, NCR, NetApp, Oracle, SAP AG, Teradata, Tyco, Unisys, VMWare, Weidemann, Xerox Corporation and several others.²¹

Invicta, similarly, is an investment holding and management company operating in three business segments: capital equipment, engineering consumables and building supplies. The capital equipment segments include agricultural segments, construction and mining, and equipment and spare parts. Invicta has a leading position in the distribution of agricultural equipment, distribution of construction and forklift equipment, international sourcing and distribution of OEM branded parts and components in southern Africa, and international sourcing and distribution of alternative parts and components for the replacement market in southern Africa and South East Asia. The company's building supplies segment produces, sources and distributes building supplies. Metair manufactures, distributes and retails products produced in South Africa, Turkey and Romania into Africa, Europe, Turkey, the

²⁰ Ellies 2016 Annual Report.

²¹ Allied Electronics [website](#).

Middle East and Russia. Reunert has a number of smaller operations in Australia, Lesotho, Sweden, the USA, Zambia and Zimbabwe but manages a portfolio of businesses in the fields of electrical engineering, information communication technologies (ICT) and applied electronics.

In terms of growth of revenue and assets as well as profitability, two smaller companies emerge in the top five despite being small in size in absolute terms: Alaris and Ansys. What stands out about these two companies is that they operate in the technology space and specialise not only in manufacturing but in the actual design of the solutions they offer their consumers. Ansys, for instance, is a black-owned and controlled technology company specialising in the design and development of engineering solutions for the security, mining and industrial, rail and telecommunications sectors. Alaris is also involved in the manufacture of telecommunications products for cellular, wireless data and defence and security sectors.

Another company showing extraordinary growth is Master Drilling having grown 75% in terms of revenue. The company specialises in various methods of drilling geared towards the mining and civil engineering sectors. A key part of their product offering, however, is the design and creation of equipment used for this purpose. There is an emphasis on research, development and improving technology in order to provide high quality end-products to their users. *The high growth rates of some of these companies appear to suggest that improved technology and development of solutions for various markets is a strong contributor to growth.*

6. Main observations and discussion

In the context of South Africa's deindustrialisation and the current policy direction towards growing the manufacturing sector, this study assesses the investments of some of the large firms in the metals and machinery sector, one of the largest contributors to GDP and exports. These investments are assessed with a view to understanding the firm strategies employed and to enable the government to develop appropriate levers and incentives to spur reindustrialisation. The study, therefore, analysed the investments made by 25 large listed firms in the metals and machinery sector from 2011 to 2016, considering the location of those investments, and the rationale for these investments given by the companies.

An important observation can be made from the above analysis. That is, although there are constraints to growth and continued threat of deindustrialisation, some of the firms assessed are investing in capabilities and technologies that could drive development and industrialisation. *These firms stood out in terms of size of or mode of operations, type of products or rates of growth. The second is that the poor operational environment could serve to drive industrialisation as exemplified by two major companies.*

Top performing firms

The firms that performed best in terms of the key performance metrics were either diversified in terms of production or geographical location. These firms included Allied Electronics, Bell Equipment, Invicta Holdings and Metair Investments. *The firms that stood out in terms of growth were those that were involved the more than just production but also the design and creation of these products.* Although ArcelorMittal also appeared in the top five, it is excluded in the analysis below because its performance is determined by the nature of its activity as the largest steel producer in the country with an 88% market share.²²

²² ArcelorMittal 2016 Annual Report.

Each of the leading firms is profiled in detail below to draw out some important preliminary lessons, trends and areas for further research.

Allied Electronics (Allied)

Allied Electronics Corporate Ltd is a large diversified electronics company that was established in 1965 and listed in 1975. It began as a designer and manufacturer of semi-conductor rectifier equipment, battery chargers, inverters, variable speed drives, DC motor controls, DC power supplies, electronic signal equipment and transformers. Currently, Allied through its subsidiaries, Allied Technologies Ltd, Bytes Technology Group (Pty) and Power Technologies, is invested in the telecommunications, multi-media, information technology and power electronics industries. Allied's Aberdare Cables company is one of the largest electric cables manufacturers in southern Africa. Investments by the firm, therefore, have the potential for spillover into greater, high technology production in this and other economic sectors.

Although Allied is a large scale manufacturer, it prioritises the role it plays in designing products and in the intellectual property it develops. In 2014 alone, Allied invested about R162 million in intellectual property. The scale of the company's operations, as well as its strategic decision to grow its research and development division, places it in a unique position to develop necessary capabilities in the production of goods or the creation of more efficient production processes. There is a need, however, to provide support in terms of creating a conducive environment to reduce costs and provide skilled labour particularly since the company has been experiencing low growth rates and is considering closing down its manufacturing division. Even as this support is provided, care needs to be taken to ensure that anti-competitive behaviour does not result from the growth of companies of this nature into industry leading positions, given the company's poor record in this regard. This involves measures to ensure the participation of challenger firms, also investing in high technology capabilities and distribution systems, in highly concentrated machinery and equipment production sectors.

Bell Equipment Ltd (Bell)

Bell, a manufacturer and supplier of heavy duty equipment and articulated vehicles, was established in 1954 and is the only manufacturer of its kind in South Africa. Products manufactured by the firm are utilized in the mining, construction and forestry sectors. The firm has subsidiaries in South Africa (Bell Equipment Co. SA (Pty) Ltd, United States of America (Bell Trucks America, Inc.) and United Kingdom (Bell Equipment (UK) Ltd). Bell has largely benefitted from the mining markets in South Africa and Zambia to which it supplies necessary heavy machinery and equipment. *Even as the mining industry in South Africa declines, it has continued to benefit from the growth of mining activity in Zambia, especially in the copper mines.* The South African operations are essentially used as a platform for continued supply to regional markets.

Invicta Holdings

Invicta is an investment holding and management company which was founded in 1966. The firm has three main business segments, Engineering Consumables, Capital Equipment, and Building Supplies and a number of subsidiaries. The firm is a leading distributor of engineering consumable products, technical services and solutions in southern Africa.

Invicta's main investments across the region in recent years have largely consisted of expanding storage space and opening new branches and distribution centres. For the period under review, Invicta opened up two more branches in its agricultural machinery division (Northmec) while New Holland, another subsidiary acquired a number of implement franchises. It also increased its spare parts joint venture outlets. In 2013, five new branches were added to BMG's sales network in the year, two branches locally in Ceres and Lichtenburg, a further two in Mozambique in Beira and Tete, and a dedicated projects branch to coordinate cross-division collaboration and integration of the Group's offering to project houses in South Africa and Africa. Northmec opened two new branches, and New Holland opened two spare parts outlets. In 2015, Invicta expanded BMG's central facilities worth R350 million in Johannesburg to a new 9000m² assembly facility to house electromechanical drives and belting division. In 2016, Invicta invested in doubling the size of Northmec's assembly plant and in expanding its Landboupart's warehouse size. MacNeil, another subsidiary, in 2016, commenced a R150 million development of an 18 000 m² distribution facility.

Invicta's substantial investment in warehousing and assembly makes it one of the largest distributors of agricultural, construction and engineering supplies in Africa. The storage space enables it to maintain its large number of distributor agreements in which it imports and distributes machinery from around the world. The pattern of growth of Invicta raises important policy considerations. There is value in the company expanding its distribution infrastructure and making large investments in this regard. However, to the extent that exclusive supply agreements and a lack of actual domestic development of technologies and R&D are a feature of this market, the gains domestically in terms of development of new, high technology local production capacity may in fact be limited.

Metair

Metair Investments Ltd (Metair) holds and manages a portfolio of companies that manufacture and distribute products predominantly for the automotive industry. The company started in 1948 and began to supply automotive components in South Africa in 1964. Metair manufactures, distributes and retails products produced in South Africa, Turkey and Romania through a dedicated retail network and to original equipment manufacturers mainly in Africa, Europe, Turkey, the Middle East and Russia.

Ansys and Alaris

Throughout the analysis of the firms in the sector, two small firms stood out (Ansys Ltd and Alaris), as being involved in the design and manufacture of technology related equipment. Ansys is a black-owned and controlled technology company founded in 1987 and specialising in the design and development of engineering solutions for the defence and information security, mining and industrial, rail and telecommunications industries. The company has been listed on AltX, since June 2007. Alaris Holdings Ltd designs, manufactures and sells antennas and telecommunications products to the cellular, wireless data, and defence markets. The core strength of the business lies in its R&D capabilities, especially in the Defence Division.

The growth of these firms shows that there are some firms within the metals and machinery sector dealing in technology products that have been seeing significant growth and that could benefit from support from the government in terms of financing and procurement. These firms are involved in the design and manufacture of key components used in rail, defence, technology and have the potential to develop capacities for the creation and development of

other important components for a variety of sectors. Their emphasis on research and development further increases the opportunities for new technologies and processes to develop.

Operational challenges and key trends

Another main observation that arises from the study was how the operational challenges in the economy were contributing to continued deindustrialisation. High costs of production have, as mentioned before, caused Labat Africa to shift operations from South Africa to China. Labat is a local black-owned and managed investment holding company that listed under the Venture Capital Market on the JSE in 1999. Labat housed SAMES, the only chip manufacturing plant in South Africa, a leader in the design, manufacture and distribution of electronic chips for a range of products from water metering devices to security devices. Before Labat moved operations to China, it was experiencing strong profit margins that could have been reinvested into the South African economy (Table 16). During the company's move to China, profit margins declined but soon rose once the move was completed. Labat's profit margin in 2016 was the highest of the assessed firms at 59%. *The important point to note here is that disinvestment of firms such as Labat means productive capabilities are exiting South Africa, which is especially problematic in the context of policies to actually stimulate domestic investment, employment and structural transformation.*

In 2016, Allied Electronics made a decision to dispose of Aberdare Cables and Altech Autopage which were manufacturing subsidiaries. An agreement to sell off Aberdare Cables, which as mentioned earlier is currently the largest cable company in South Africa, to a Chinese firm has recently been concluded.²³ *The leadership at Allied has also made the strategic decision to make all of their remaining manufacturing divisions non-core and only maintaining its design and intellectual property divisions as core. The rationale for these decisions has been the poor operating environment caused by high operating costs and increasing competition from cheaper imports.*

In the same vein, Alaris which as discussed above has been experiencing significant growth has nonetheless experienced challenges due to high costs, a shrinking of the local supply chain and lack of skilled labour. The company eventually chose to outsource the manufacture of some of the products in its commercial division from China.²⁴ Due to the lack of skilled labour, the company also acquired a firm based in Finland (COJOT) in order to gain access to a wider talent pool and supply chain.

Conclusion

There appears to be a need for a two-pronged strategy in which the large firms such as the firms identified above are encouraged to make further investments in South Africa and where small black-owned companies showing potential for growth are supported. While large firms may have the ability to access consultants and organize access to financing, there is a need for such support to be facilitated for the smaller companies to enable reduced costs of operation and increased investment.

An important area for further research is in identifying appropriate policy levers to stimulate continued investment. What is clear from the assessment is that firms that have managed to

²³ Allied Electronics 2016 Annual Report.

²⁴ Alaris Ltd 2016 Annual Report

sustain their operations and grow their capabilities have been those which are companies that are greatly diversified in terms of product offering or geography of operations. This has likely assisted the companies to balance the impacts of low growth and poor performance in certain sub-sectors. The challenge however is that these leading companies tend to be large internationalised groups with interests across many activities and 'deep' pockets to invest in distribution throughout southern Africa, for example. This is difficult to replicate for smaller or entrant firms. Furthermore, the reliance on international exclusive supply agreements by many of these firms also means that barriers to entry are raised for potential rivals. This is an important limitation. For competition to take place, there needs to be competitors, which is an important role for industrial policy. However, given already declining manufacturing which is partly 'slowed' by the continued growth of more diversified large companies, it is difficult to make an argument for dealing with potentially anti-competitive arrangements in the short term. The competition authorities have nonetheless taken up cases involving several of the leading firms, which is an important mechanism for controlling any potential abuse of market power.

Important economic factors have affected firms across the sample. Notably, between 2015 and 2016, there appears to have been a drop in capital expenditure by most firms. During this period a number of operational challenges including strikes, a general slowdown of the economy, reduced government spending and volatility of the exchange rate are provided in company documents as reasons for the reduced capital expenditure.

One strategy for growth that has employed by different companies is the acquisition of new interests. The available data shows that mergers and acquisitions are largely taking place within South Africa or outside the continent. In terms of the value of mergers and acquisitions between 2011 and 2016, about 50% of the value of transactions by firms in the metals, machinery and equipment sector is spent within South Africa, 3% in the SADC region while 47% was spent outside of Africa. While this has been an important avenue for firms to grow their businesses and shareholder value, it is notable that many transactions involve the outflow of value to acquire companies in other more attractive investment locations. In South Africa, increased acquisitions may mean further concentration of economic sectors. This is to some extent balanced by the fact that certain firms have retained the incentive to invest in design and research and development activities, which has yielded significant returns based on the available data. Notably, very few of the lead firms are black-owned. This is a concerning finding of each of the assessments of large and lead firms across economic sectors forming part of the IDRP research.

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8. APPENDIX A: ICB Categorisation of the companies

ICB sector	ICB Subsector	Definition	Listed company
Industrial Metals & Mining	Aluminium	Companies that mine or process bauxite or manufacture and distribute aluminium bars, rods and other products for use by other industries. Excludes manufacturers of finished aluminium products, such as siding, which are categorized according to the type of end product.	Hulamin Ltd
	Nonferrous Metals	Producers and traders of metals and primary metal products other than iron, aluminium and steel. Excludes companies that make finished products, which are categorized according to the type of end product.	Insimbi Ref & Alloy Sup
	Iron & Steel	Manufacturers and stockholders of primary iron and steel products such as pipes, wires, sheets and bars, encompassing all processes from smelting in blast furnaces to rolling mills and foundries. Includes companies that primarily mine iron ores.	ArcelorMittal SA Ltd
			BSI Steel Ltd
Construction & Materials	Building Materials & Fixtures	Producers of materials used in the construction and refurbishment of buildings and structures, including cement and other aggregates, wooden beams and frames, paint, glass, roofing and flooring materials other than carpets. Includes producers of bathroom and kitchen fixtures, plumbing supplies and central air-conditioning and heating equipment. Excludes producers of raw lumber, which are classified under Forestry	Mazor Group Ltd
			Kaydav Group Ltd
			Accentuate Ltd
			Distribution and Warehousing
Electronic & Electrical Equipment	Electrical Components & Equipment	Makers and distributors of electrical parts for finished products, such as printed circuit boards for radios, televisions and other consumer electronics. Includes makers of cables, wires, ceramics, transistors,	Reunert Ltd
			Cons Infrastructure Group Ltd
			ARB Holdings Ltd
			Allied Electronics Corp A
			Ellies Holdings Ltd
			South Ocean Holdings Ltd

		electric adapters, fuel cells and security cameras.	Cafca Ltd
	Electronic Equipment	Manufacturers and distributors of electronic products used in different industries. Includes makers of lasers, smart cards, bar scanners, fingerprinting equipment and other electronic factory equipment.	Ansys Ltd
			Labat Africa Ltd
Industrial Engineering	Commercial Vehicles & Trucks	Manufacturers and distributors of commercial vehicles and heavy agricultural and construction machinery, including rail cars, tractors, bulldozers, cranes, buses and industrial lawn mowers. Includes non-military shipbuilders, such as builders of cruise ships and ferries.	Bell Equipment Ltd
	Industrial Machinery	Designers, manufacturers, distributors and installers of industrial machinery and factory equipment, such as machine tools, lathes, presses and assembly line equipment. Includes makers of pollution control equipment, castings, pressings, welded shapes, structural steelwork, compressors, pumps, bearings, elevators and escalators	Invicta Holdings Ltd
			enX Group Ltd
			Master Drilling Group Ltd
			Howden Africa Holdings Ltd
			PSV Holdings Ltd
Automobiles & Parts	Auto Parts	Manufacturers and distributors of new and replacement parts for motorcycles and automobiles, such as engines, carburetors, and batteries. Excludes producers of tires, which are classified under Tires.	Metair Investments Ltd
Technology Hardware & Equipment	Telecommunications Equipment	Makers and distributors of high-technology communication products, including satellites, mobile telephones, fibre optics, switching devices, local and wide-area networks, teleconferencing equipment and connectivity devices for computers, including hubs and routers.	Alaris Holdings Ltd

9. APPENDIX B: Tables

Table 13: Total assets by company ('000)

Company	2011	2012	2013	2014	2015	2016	CAGR
ArcelorMittal	32 296 000	30 777 000	32 569 000	32 891 000	30 850 000	30 543 000	-1%
Invicta	7 769 540	9 369 826	12 724 891	13 112 981	13 452 087	14 062 997	13%
Allied Electronics	12 057 374	12 443 052	12 639 179	14 909 403	13 777 000	13 405 000	2%
Reunert Ltd	6 372 284	6 840 375	7 300 423	9 173 981	8 675 000	9 057 000	7%
Metair	2 459 408	3 318 668	6 205 795	6 664 756	7 683 369	7 029 689	23%
Hulamin Ltd	7 471 596	7 417 857	5 691 779	6 209 601	6 589 623	6 887 352	-2%
Cons Infrastructure	1 342 173	1 755 727	2 546 679	3 630 786	4 671 180	6 201 484	36%
Bell Equipment	4 508 619	3 976 841	5 128 604	4 446 015	4 639 755	4 290 529	-1%
Cafca Ltd	94 502	130 997	156 718	174 408	253 778	225 865	19%
Master Drilling		1 575 980	1 857 245	2 002 520	2 768 675	2 869 574	13%
Distr And Warehousing	2 340 698	2 423 607	2 802 987	3 437 510	3 551 959	2 619 211	2%
Howden Africa	1 099 736	1 263 121	1 399 685	1 431 165	1 538 179	1 816 484	11%
BSI Steel	965 222	1 302 969	1 536 527	1 671 173	1 715 333	1 560 161	10%
ARB Holdings	931 837	1 068 877	1 182 193	1 191 107	1 196 448	1 355 557	8%
Ellies Holdings	1 511 077	1 321 896	1 631 880	1 890 365	1 560 108	1 234 867	-4%
enX Group	418 529	470 164	408 673	433 478	735 556	1 144 588	22%
South Ocean	884 818	1 023 800	1 043 256	1 030 425	900 884	943 142	1%
Kaydav Group	185 611	219 405	243 932	311 624	362 070	399 715	17%
Insimbi Ref & Alloy Sup	251 651	271 000	280 656	343 350	338 523	372 159	8%
Mazor Group	252 917	249 190	335 829	330 487	281 871	325 894	5%
Ansys Ltd	38 090	48 580	46 776	71 053	134 961	304 563	52%
Alaris Holdings	34 932	40 057	50 530	159 349	169 495	213 250	44%
Accentuate Ltd	162 591	167 144	151 928	202 465	192 059	200 858	4%
PSV Holdings	283 981	287 136	192 341	154 634	118 674	96 170	-19%
Labat Africa	55 013	49 103	38 550	27 532	21 985	23 531	-16%
Grand Total	51 492 199	57 035 370	65 597 055	73 010 168	75 328 572	107 182 641	16%

Source: INET BFA

Table 14: Revenue by company ('000)

Company	2011	2012	2013	2014	2015	2016	CAGR
ArcelorMittal Sa Ltd	31 453 000	32 291 000	32 421 000	34 852 000	31 141 000	32 737 000	1%
Allied Electronics	27 109 779	27 796 324	27 884 341	28 772 423	27 623 000	26 592 000	0%
Invicta Holdings Ltd	5 397 382	6 605 463	8 413 391	10 841 471	10 459 567	10 635 850	15%
Hulamin Ltd	6 957 080	6 541 997	7 560 007	8 038 918	8 394 986	10 099 349	8%
Metair Investments	4 294 152	5 273 370	5 227 426	7 278 815	7 732 479	8 953 710	16%
Reunert Ltd	12 741 121	13 512 531	12 162 065	11 228 621	8 541 000	8 511 000	-8%
Bell Equipment	6 036 648	6 688 893	7 034 375	6 846 603	5 901 431	6 002 341	0%
Cons Infrastructure	1 720 900	1 832 627	2 268 019	2 730 659	3 603 953	4 531 640	21%
Distr And Warehousing	3 792 631	4 228 261	4 588 344	5 192 228	5 268 428	4 235 160	2%
Cafca Ltd	162 171	219 920	246 517	258 651	352 194	268 356	11%
BSI Steel Ltd	1 856 448	2 130 147	2 804 940	3 347 039	3 278 713	2 677 092	8%
ARB Holdings	1 293 461	1 846 514	2 164 647	2 296 509	2 150 764	2 489 791	14%
South Ocean Holdings Ltd	1 498 726	1 658 976	1 882 319	1 777 028	1 657 358	1 777 190	3%
Master Drilling		104 856	1 285 596	1 483 870	1 531 367	1 736 431	75%
Ellies Holdings Ltd	1 555 519	2 018 695	2 221 990	2 181 956	1 803 150	1 643 177	1%
Howden Africa	1 176 667	1 553 848	1 873 315	1 645 227	1 483 276	1 604 535	6%
enX Group Ltd	460 836	492 545	559 612	606 080	882 835	1 150 951	20%
Kaydav Group Ltd	483 644	550 920	666 218	761 739	864 568	967 752	15%
Insimbi Ref & Alloy Sup	732 453	844 717	839 518	938 980	958 016	955 106	5%
Mazor Group Ltd	186 769	229 530	441 488	470 669	371 840	491 711	21%
Ansys Ltd	131 423	120 431	90 457	68 173	251 121	437 599	27%
Accentuate Ltd	249 390	282 671	284 213	308 101	318 609	322 714	5%
PSV Holdings Ltd	449 785	544 566	424 247	405 210	281 928	277 520	-9%
Alaris Holdings Ltd	81 625	80 970	93 743	132 126	218 223	248 499	25%
Labat Africa	35 613	18 337	14 749	10 300	13 104	14 312	-17%
Grand Total	158 410 221	162 914 111	177 913 537	180 070 397	161 220 910	129 360 786	-4%

Source: INET BFA

Table 15: Return on assets by company

Company	2011	2012	2013	2014	2015	2016
Labat Africa Ltd	93%	61%	1%	-21%	6%	36%
Howden Africa Holdings Ltd	7%	20%	34%	23%	17%	12%
ARB Holdings Ltd	-23%	13%	14%	16%	15%	12%
Master Drilling Group Ltd	0%	1%	13%	15%	13%	11%
Reunert Ltd	28%	23%	18%	7%	12%	11%
Alaris Holdings Ltd	14%	18%	19%	-67%	-1%	10%
Mazor Group Ltd	4%	2%	9%	9%	-14%	9%
Metair Investments Ltd	18%	15%	6%	10%	8%	8%
Insimbi Ref & Alloy Sup	5%	6%	3%	6%	8%	8%
Kaydav Group Ltd	10%	9%	10%	9%	9%	7%
Ansys Ltd	-23%	15%	-22%	-9%	11%	6%
Cons Infrastructure Group Ltd	5%	9%	8%	7%	7%	6%
Hulamin Ltd	1%	2%	-24%	6%	2%	6%
Invicta Holdings Ltd	7%	8%	8%	8%	7%	4%
Accentuate Ltd	-38%	6%	6%	3%	2%	4%
BSI Steel Ltd	4%	5%	2%	2%	1%	4%
Cafca Ltd	-34%	17%	14%	17%	12%	3%
Allied Electronics Corp A	10%	4%	-3%	8%	2%	3%
Bell Equipment Ltd	11%	10%	7%	4%	6%	1%
South Ocean Holdings Ltd	7%	-9%	-10%	8%	0%	0%
enX Group Ltd	8%	-31%	1%	5%	4%	-6%
ArcelorMittal Sa Ltd	0%	-2%	-7%	0%	-28%	-15%
PSV Holdings Ltd	-1%	-5%	6%	-1%	-16%	-20%
Distr And Warehousing	-1%	3%	6%	0%	17%	-28%
Ellies Holdings Ltd	8%	19%	20%	7%	-15%	-39%

Source: INET BFA

Table 16: Profit margins

Company	2011	2012	2013	2014	2015	2016
Labat Africa Ltd	35%	163%	-7%	-36%	11%	59%
Master Drilling Group Ltd		11%	13%	13%	17%	19%
Howden Africa Holdings Ltd	13%	12%	19%	17%	15%	14%
Reunert Ltd	12%	9%	9%	18%	12%	11%
Cons Infrastructure Group Ltd	2%	9%	8%	10%	9%	9%
Alaris Holdings Ltd	6%	9%	10%	-81%	-1%	9%
ARB Holdings Ltd	-12%	5%	5%	5%	5%	6%
Metair Investments Ltd	11%	9%	7%	9%	8%	6%
Mazor Group Ltd	5%	3%	7%	6%	-11%	6%
Invicta Holdings Ltd	8%	9%	9%	6%	6%	5%
Ansys Ltd	-12%	8%	-15%	-11%	4%	4%
Hulamin Ltd	1%	2%	-18%	5%	2%	4%
Insimbi Ref & Alloy Sup	2%	2%	1%	2%	3%	3%
Kaydav Group Ltd	4%	4%	4%	4%	4%	3%
Accentuate Ltd	-25%	4%	3%	2%	1%	2%
Cafca Ltd	-27%	7%	6%	9%	6%	2%
BSI Steel Ltd	2%	3%	1%	1%	1%	2%
Allied Electronics Corp A	2%	1%	-1%	2%	0%	1%
Bell Equipment Ltd	5%	4%	3%	1%	3%	1%
enX Group Ltd	44%	-37%	2%	4%	2%	-6%
PSV Holdings Ltd	-2%	-4%	-6%	0%	-10%	-7%
ArcelorMittal Sa Ltd	0%	-2%	-7%	0%	-28%	-14%
Distr And Warehousing	-1%	2%	3%	0%	12%	-15%
Ellies Holdings Ltd	5%	10%	11%	4%	-18%	-29%
South Ocean Holdings Ltd	4%	-8%	-7%	2%	-1%	-

Source: INET BFA

Table 17: Capital expenditure by company ('000)

Company	2011	2012	2013	2014	2015	2016	Total
ArcelorMittal	1 190 000	872 000	1 569 000	2 713 000	1 256 000	2 008 000	9 608 000
Allied Electronics	751 000	557 000	499 000	674 000	650 000	338 000	3 469 000
Metair	162 146	286 163	135 027	266 567	496 955	373 000	1 719 858
Hulamin Ltd	151 944	97 940	147 824	335 564	487 838	328 407	1 549 517
Invicta Holdings Ltd	116 341	109 276	152 276	258 661	217 855	319 375	1 173 784
Bell Equipment	221 084	206 633	255 880	157 748	54 194	135 453	1 030 992
Reunert Ltd	99 400	106 500	176 400	122 100	146 000	222 000	872 400
Master Drilling	-	24 262	294 858	213 889	235 478	240 550	768 487
Distr And Warehousing	94 410	71 060	124 816	194 075	46 414	45 381	576 156
Cons Infrastructure	20 000	60 000	62 600	56 392	127 784	105 879	432 655
Ellies Holdings	56 503	38 900	74 720	81 156	3 679	6 898	261 856
BSI Steel	37 698	42 637	53 294	34 304	33 166	13 183	214 282
South Ocean Holdings Ltd	61 936	32 748	23 333	48 427	15 002	13 300	194 746
Kaydav Group	5 142	43 579	10 065	16 306	9 580	17 049	101 721
enX Group	5 140	7 366	13 130	11 920	42 454	20 135	100 145
Howden Africa	10 698	21 040	27 792	19 789	7 209	10 275	96 803
Insimbi Ref & Alloy Sup	4 352	5 828	21 344	9 000	15 115	31 443	87 082
ARB Holdings Ltd	16 721	968	19 300	24 700	13 900	10 300	85 889
Mazor Group	12 409	9 363	29 444	6 435	2 853	19 353	79 857
Alaris Holdings	4 038	7 157	10 715	14 516	10 308	5 327	52 060
PSV Holdings	7 606	11 144	8 417	4 386	2 472	3 812	37 837
Accentuate Ltd	3 007	2 613	3 858	4 029	3 869	3 749	21 125
Ansys Ltd	254	-	152	324	645	4 688	6 063
Labat Africa	-	328	11	13	69	669	1 091
Cafca Ltd	-	-	-	-	-	610	610
Grand Total	3 031 829	2 614 505	3 713 257	5 267 301	3 878 839	4 276 836	22 782 567

Source: Company Annual Reports

Table 18: Expansion capital by company ('000)

Company	2011	2012	2013	2014	2015	2016	Total
ArcelorMittal	266 000	66 000	69 000	73 000	92 000	335 000	901 000
Invicta Holdings Ltd	63 886	62 676	128 188	247 801	209 812	77 975	790 338
Metair Investments	-	-	-	133 000	325 000	281 000	739 000
Bell Equipment	212 757	167 387	204 215	139 810	-	4 086	728 255
Reunert Ltd	36 800	79 900	37 900	92 300	104 000	174 000	524 900
Ellies Holdings Ltd	-	-	74 720	81 156	3 679	68 989	228 544
Cons Infrastructure	-	43 000	-	-	-	-	43 000
Mazor Group	112	8 223	9 446	3 442	813	19 400	41 436
PSV Holdings	7 448	11 144	8 417	4 386	2 472	3 812	37 680
ARB Holdings	16 721	-	-	15 400	5 100	-	37 221
enX Group	5 140	-	13 130	-	-	-	18 270
Allied Electronics	-	-	-	-	-	-	-
Hulamin Ltd	-	-	-	-	-	-	-
Distr And Warehousing	-	-	-	-	-	-	-
Accentuate Ltd	-	-	-	-	-	-	-
Alaris Holdings Ltd	-	-	-	-	-	-	-
BSI Steel Ltd	-	-	-	-	-	-	-
Cafca Ltd	-	-	-	-	-	-	-
Howden Africa Holdings Ltd	-	-	-	-	-	-	-
Insimbi Ref & Alloy Sup	-	-	-	-	-	-	-
Kaydav Group Ltd	-	-	-	-	-	-	-
Labat Africa Ltd	-	-	-	-	-	-	-
Master Drilling Group Ltd	-	-	-	-	-	-	-
South Ocean Holdings Ltd	-	-	-	-	-	-	-
Ansys Ltd	-	-	-	-	-	-	-
Grand Total	1 459 663	359 429	454 538	1 426 984	972 991	2 016	4 675 621

Source: Company annual reports

Table 19: Replacement capital by company ('000)

Company	2011	2012	2013	2014	2015	2016	Total
ArcelorMittal Sa Ltd	924 000	809 000	1 500 000	2 640 000	1 164 000	1 673 000	8 710 000
Invicta Holdings Ltd	52 455	46 600	24 088	10 860	8 043	241 400	383 446
Metair Investments Ltd	-	-	-	117 000	172 000	84 000	373 000
Reunert Ltd	62 600	26 600	138 500	29 800	42 000	48 000	347 500
Bell Equipment Ltd	8 327	39 246	51 665	17 938	-	131 367	248 543
Cons Infrastructure Group Ltd	-	17 000	55 300	56 392	68 512	-	197 204
Mazor Group Ltd	12 297	1 140	19 998	2 992	2 040	-	38 467
ARB Holdings Ltd	-	-	19 300	9 300	8 800	-	37 400
enX Group Ltd	-	7 366	-	-	-	-	7 366
Distr And Warehousing	-	-	-	-	-	-	-
Accentuate Ltd	-	-	-	-	-	-	-
Alaris Holdings Ltd	-	-	-	-	-	-	-
Allied Electronics Corp A	-	-	-	-	-	-	-
Ansys Ltd	-	-	-	-	-	-	-
BSI Steel Ltd	-	-	-	-	-	-	-
Cafca Ltd	-	-	-	-	-	-	-
Ellies Holdings Ltd	-	-	-	-	-	-	-
Howden Africa Holdings Ltd	-	-	-	-	-	-	-
Hulamin Ltd	-	-	-	-	-	-	-
Insimbi Ref & Alloy Sup	-	-	-	-	-	-	-
Kaydav Group Ltd	-	-	-	-	-	-	-
Labat Africa Ltd	-	-	-	-	-	-	-
Master Drilling Group Ltd	-	-	-	-	-	-	-
PSV Holdings Ltd	-	-	-	-	-	-	-
South Ocean Holdings Ltd	-	-	-	-	-	-	-
Grand Total	1 059 679	946 952	1 808 851	2 884 282	1 465 395	2 177 767	10 342 926

Source: Company annual reports

Table 20: Mergers and acquisitions by company ('000)

Company	2011	2012	2013	2014	2015	2016	Total
Metair Investments	-	443 149	2 204 246	-	15 703	121 986	2 785 084
Invicta Holdings Ltd	134 646	330 333	1 496 282	99 126	483 107	82 398	2 625 892
Cons Infrastructure	-	135 115	111 100	182 300	-	850 000	1 278 515
Reunert Ltd	469 200	116 400	-	236 700	-	397 000	1 219 300
Allied Electronics	68 000	100 000	86 000	-	773 000	38 913	1 065 913
enX Group	-	10 026	-	-	39 598	253 548	303 172
Alaris Holdings	-	-	1 000	180 924	-	25 596	207 520
ARB Holdings	-	139 500	59 642	-	-	-	199 142
Distr And Warehousing	62 057	-	-	42 200	43 800	7 000	155 057
Master Drilling	-	14 775	2 685	-	68 262	57 242	142 964
Hulamin Ltd	-	-	-	-	100 170	-	100 170
Ansys Ltd	-	-	-	700	81 733	-	82 433
Mazor Group	32 915	-	16 256	-	-	-	49 171
BSI Steel	-	-	10 000	12 000	-	-	22 000
PSV Holdings	10 574	9 097	-	-	-	-	19 671
Insimbi Ref & Alloy Sup	9 775	-	-	-	-	8 385	18 160
Kaydav Group	-	-	-	7 996	7 218	-	15 214
Accentuate	-	-	10 719	-	-	-	10 719
Ellies Holdings	-	1 774	7 000	1 565	-	-	10 339
ArcelorMittal	-	-	-	-	-	-	-
Bell Equipment Ltd	-	-	-	-	-	-	-
Cafca Ltd	-	-	-	-	-	-	-
Howden Africa Holdings Ltd	-	-	-	-	-	-	-
Labat Africa	-	-	-	-	-	-	-
South Ocean	-	-	-	-	-	-	-
Grand Total	787 167	1 300 169	4 004 930	763 511	1 612 591	1 842 068	10 310 436

Source: Company annual reports

Table 21: Ratio of capital expenditure to total assets

Company	Total Assets	Capital Expenditure	Ratio of CE to TA
Master Drilling Group Ltd	11 073 994	1 009 037	9%
Alaris Holdings Ltd	667 613	52 060	8%
Kaydav Group Ltd	1 722 357	101 721	6%
Metair Investments Ltd	33 361 685	1 719 858	5%
ArcelorMittal Sa Ltd	189 926 000	9 608 000	5%
Insimbi Ref & Alloy Sup	1 857 339	87 082	5%
Mazor Group Ltd	1 776 188	79 857	4%
Allied Electronics Corp A	79 231 008	3 469 000	4%
South Ocean Holdings Ltd	4 883 182	194 746	4%
Grand total	588 085 863	22 702 647	4%
Hulamin Ltd	40 267 808	1 549 517	4%
Bell Equipment Ltd	26 990 362	1 030 992	4%
Distr And Warehousing	17 175 972	576 156	3%
PSV Holdings Ltd	1 132 936	37 837	3%
Ellies Holdings Ltd	9 150 194	261 856	3%
enX Group Ltd	3 610 987	100 145	3%
BSI Steel Ltd	8 751 385	214 282	2%
Accentuate Ltd	1 077 045	21 125	2%
Reunert Ltd	47 419 063	872 400	2%
Cons Infrastructure Group Ltd	20 148 028	352 735	2%
Invicta Holdings Ltd	70 492 322	1 173 784	2%
ARB Holdings Ltd	6 926 019	85 889	1%
Howden Africa Holdings Ltd	8 548 369	96 803	1%
Ansys Ltd	644 023	6 063	1%
Labat Africa Ltd	215 715	1 091	1%
Cafca Ltd	1 036 269	610	0%

Source: Authors' calculations