



MANUFACTURING SUBSECTORS

Capital equipment

December 2017

Industrial policy aims to promote diversification and tailor interventions to the needs of individual manufacturing industries. To support evidence-based policymaking, TIPS has completed a series of notes on the main manufacturing subsectors in South Africa. These notes provide information on the contribution to the GDP, employment, profitability and assets, the market structure and dominant producers, major inputs and international trade. They bring together data from Statistics South Africa, Quantec and Who Owns Whom to provide a more detailed overview of each sector.

This note summarises key data and information on the capital equipment subsector as of December 2017. It will be updated as information becomes available.

Capital equipment comprises machinery and equipment used in production. While it does not equate to a standard statistical category, it mainly falls under machinery and electrical equipment. Machinery refers to the production of machine tools, engines, pumps, handling equipment, armaments and similar complex equipment; electrical machinery covers electric motors and transformers as well as cables and lights. These categories exclude transport equipment, appliances and precision equipment, for instance for medical use. The line between these classes of equipment has however become increasingly blurred as digital controls grow in importance.

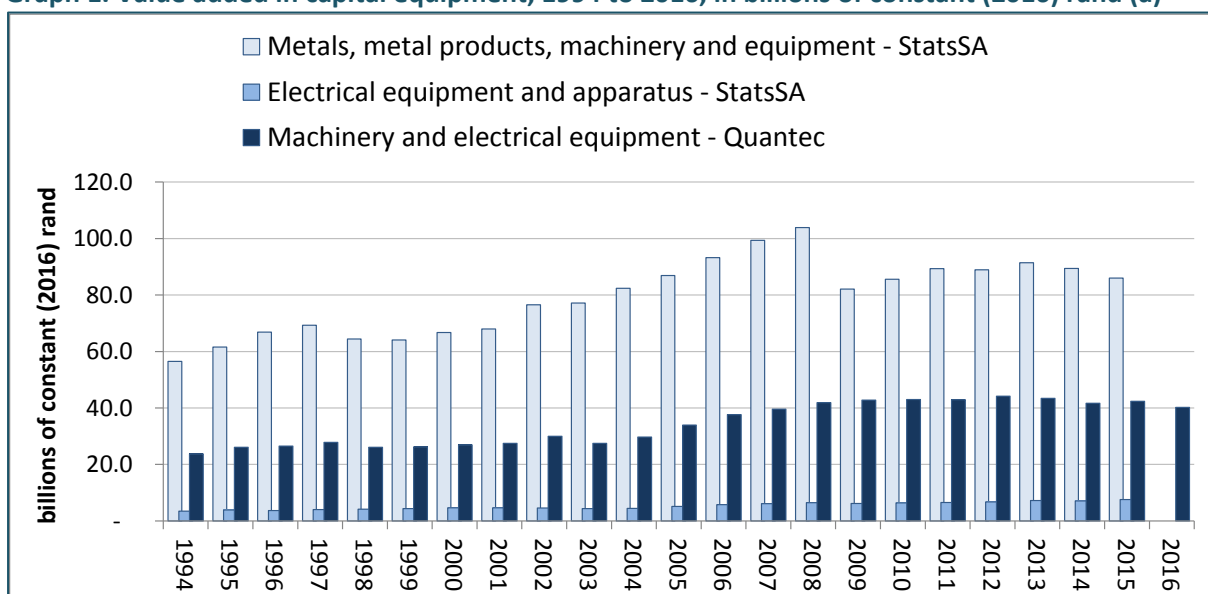
1 Contribution to GDP

Data for the contribution of manufacturing industries to the GDP (that is, for value add by industry) comes from two sources: the GDP data published by Statistics South Africa, and Quantec, which develops estimates based on the Statistics South Africa figures for sales, production and employment by industry and sub-industries. The figures are not identical, although they typically show the same trends. This note provides both.

Statistics South Africa aggregates machinery with metals production, although it provides electrical equipment and apparatus separately. Quantec estimates figures for machinery separately from metals. It puts the share of machinery in the metals and machinery industry at around 40%, but it finds that the trend for machinery diverges from basic metal products, especially during the global financial crisis in 2008/9.

According to Quantec estimates, production of capital equipment grew, in aggregate, by almost 6% a year from 2000 to 2008. After the global financial crisis in 2008/9, growth levelled out, as Graph 1 shows. From 2012, with the end of the metals price boom and the slowdown in the economy overall, production began to fall, dropping 2,3% a year from 2012 to 2016 according to Quantec.

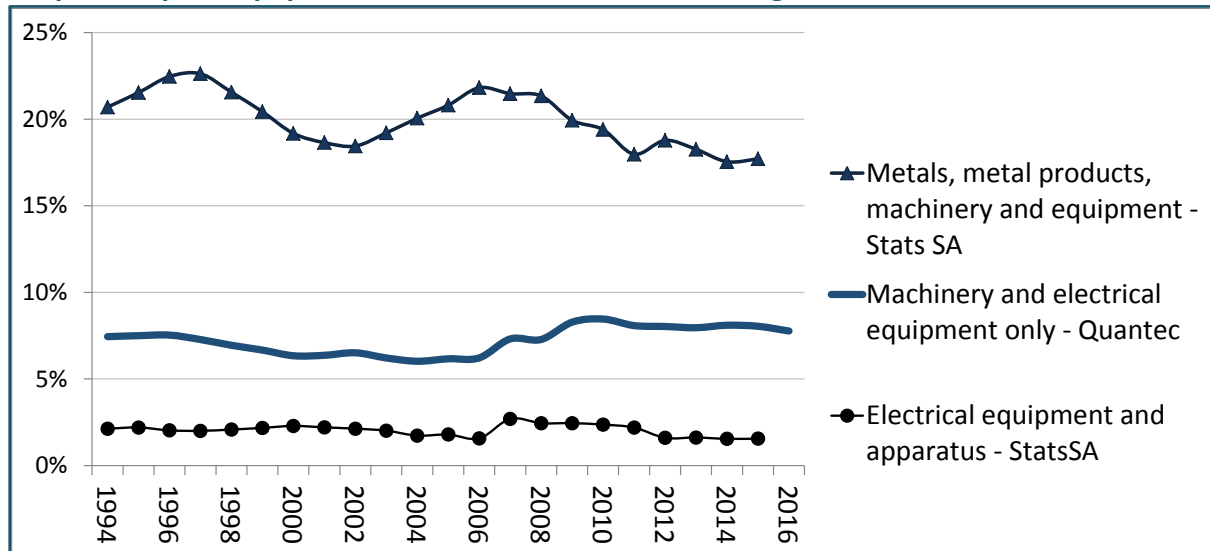
Graph 1. Value added in capital equipment, 1994 to 2016, in billions of constant (2016) rand (a)



Note: (a) Deflated by calculating the deflator used in the sources from figures in current and constant rand, and then rebasing to 2016. Source: Statistics South Africa, GDP P0441. Annual quarter and regional revisions. Q4 2016. Excel spreadsheet. Series on manufacturing subsectors in current and constant rand. Downloaded from www.statssa.gov.za in September 2017; and Quantec EasyData. Standardised regional data. Database in electronic format. Series on value added in current and constant rand. Downloaded from www.quanis1.easydata.co.za in September 2017.

Capital equipment lagged the rest of manufacturing during the metals price boom until the global financial crisis in 2008. From the financial crisis the industry essentially stabilised while the rest of manufacturing, led by metals, saw a decline. As a result, the share of capital equipment climbed from 6% in 2006 to 8% in 2010, and then levelled out despite its falling production.

Graph 2. Capital equipment contribution to manufacturing value added



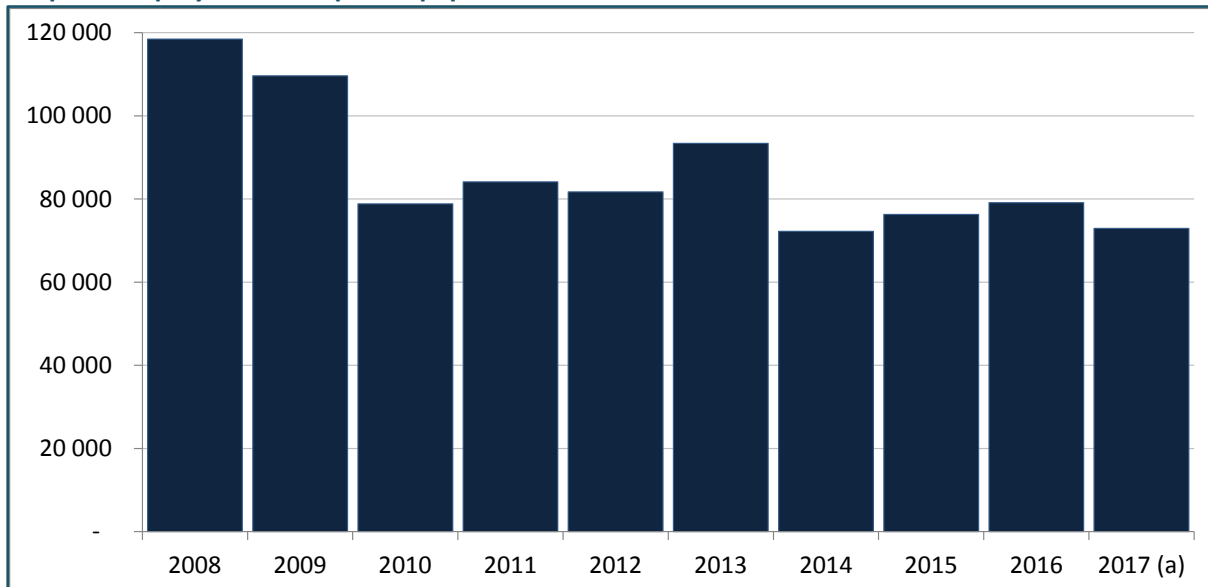
Source: Calculated from Statistics South Africa, GDP P0441. Annual quarter and regional revisions. Q4 2016. Excel spreadsheet. Series on manufacturing subsectors in current rand. Downloaded from www.statssa.gov.za in September 2017; and Quantec EasyData. Standardised regional data. Database in electronic format. Series on value added in current rand. Downloaded from www.quanis1.easydata.co.za in September 2017.

2 Contribution to GDP

Employment data provided in this section draw on Statistics South Africa’s Quarterly Labour Force Survey, which was introduced in 2008. Its annual figures, in the Labour Market Dynamics, are averages of the quarterly findings. This methodology is used to derive annual data for total employment by industry in 2016 and the year to the third quarter of 2017.

Employment in capital equipment dropped by a third in 2009/10, presumably due to the global financial crisis, and then essentially stabilised at between 75 000 and 80 000.

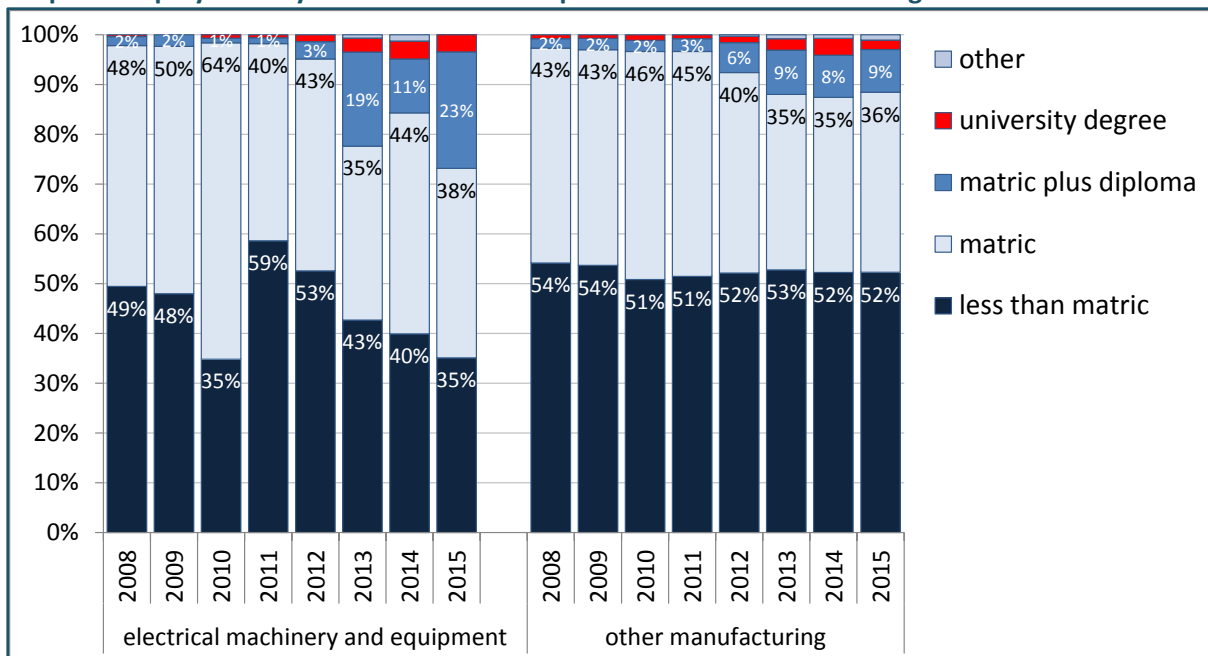
Graph 3. Employment in capital equipment



Note: (a) Calendar years except for 2017, which is the year to the third quarter. Source: Calculated from Statistics South Africa. Labour Market Dynamics. 2008 to 2015. Series on employment by industry. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in September 2017; and Quarterly Labour Force Survey. Q1 2016 to Q3 2017. Series on employment by industry. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in December 2017.

Education levels in capital equipment were higher than in the rest of manufacturing. In 2015, a third of workers in the industry did not have matric, compared to half in the rest of manufacturing. A quarter had a tertiary degree, in contrast to just over a tenth in other manufacturing industries.

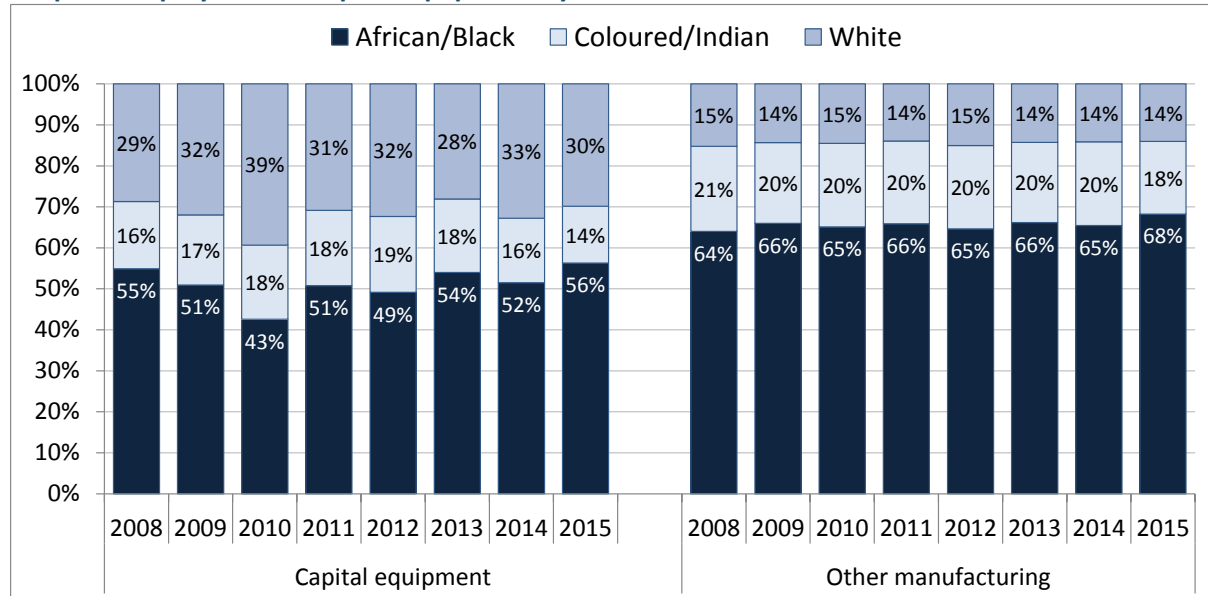
Graph 4. Employment by education level compared to other manufacturing



Source: Statistics South Africa. Labour Market Dynamics. Relevant years. Series on employment by industry and education. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in September 2017.

The share of whites in capital equipment production was around twice that in the rest of manufacturing, while the share of African and Coloured workers was relatively low. In 2015, whites constituted 30% of employment in capital equipment, compared to 14% in other manufacturing.

Graph 5. Employment in capital equipment by race



Source: Statistics South Africa. Labour Market Dynamics. Relevant years. Series on employment by industry and population group. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in September 2017.

Women made up less than a quarter of the labour force in capital equipment, compared to around a third in the rest of manufacturing. Just 4% of women working in manufacturing was employed in capital equipment, compared to 6% of men in manufacturing jobs.

Graph 6. Employment in capital equipment and other manufacturing by gender

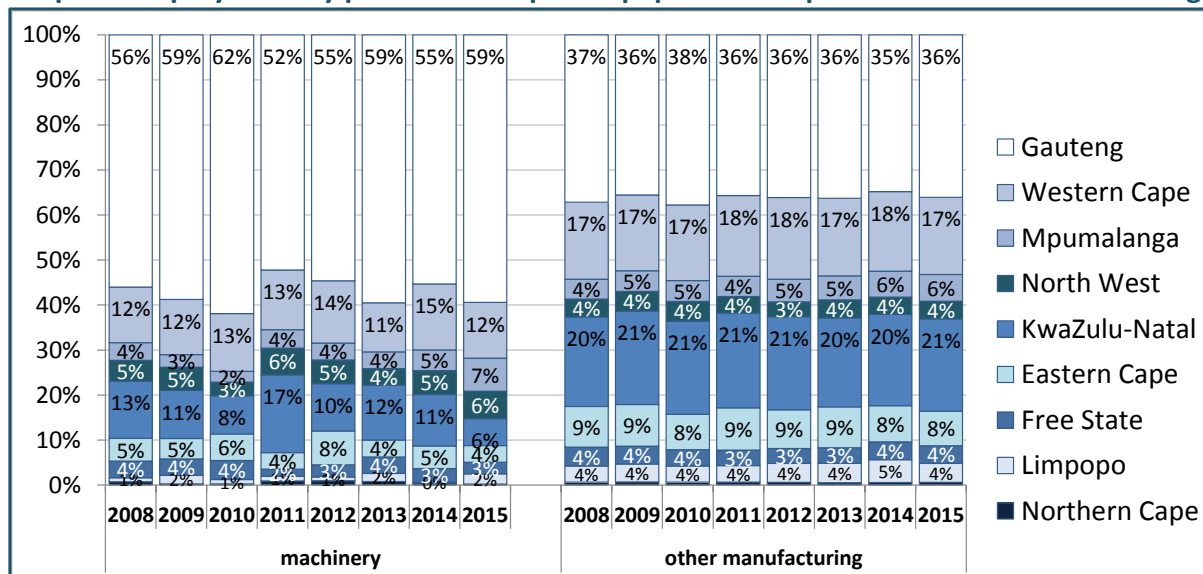


Source: Statistics South Africa. Labour Market Dynamics. Relevant years. Series on employment by industry and gender. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in September 2017.

3 Location

Statistics South Africa does not provide information on capital equipment production by province, but they do generate data on employment. As the following graph shows, Gauteng was the by far the largest employer in capital equipment, where it was even more dominant than in the rest of manufacturing. The Western Cape also had a fairly large share in capital equipment production, but the share of KwaZulu Natal dropped sharply in the past five years. The Eastern Cape had a significantly smaller share of employment in capital equipment production than in the rest of manufacturing.

Graph 7. Employment by province in capital equipment compared to other manufacturing



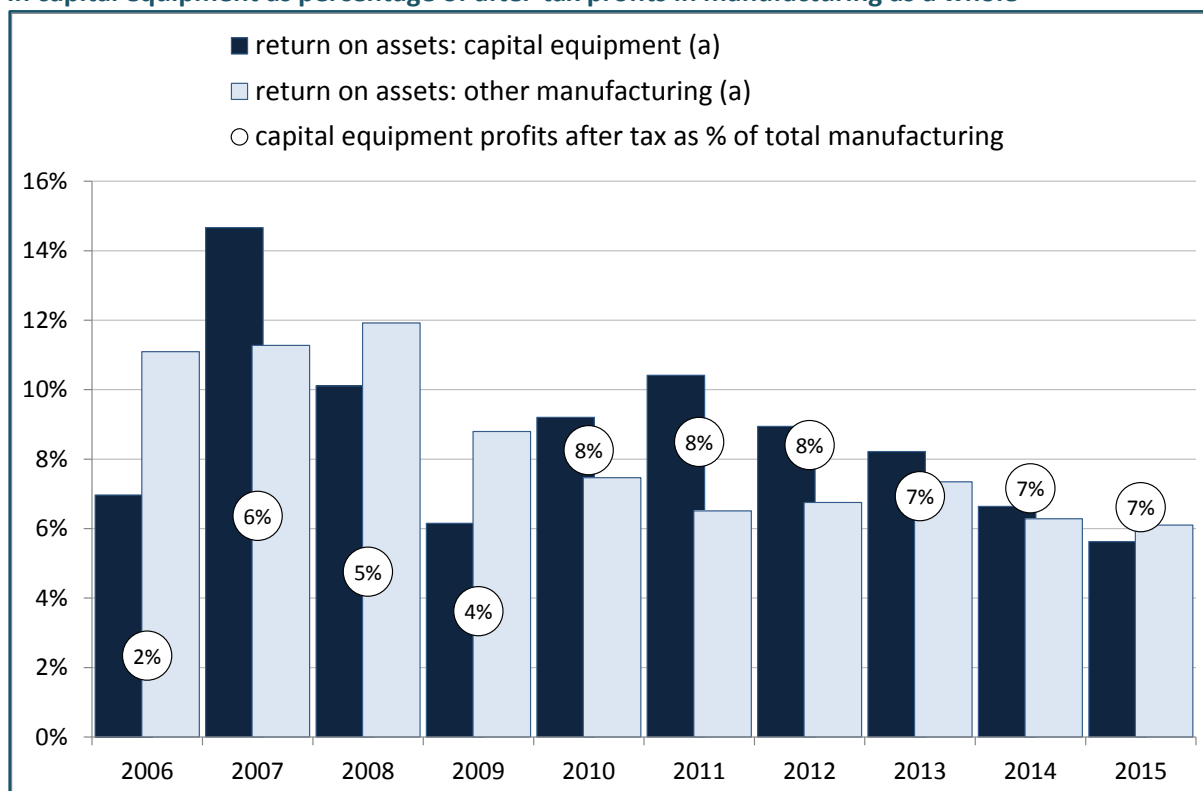
Source: Statistics South Africa. Labour Market Dynamics. Relevant years. Series on employment by industry and province. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in September 2017.

The location of manufacturing can also be understood in how it was embedded in apartheid geography. To this day, only a tenth of manufacturing employment is in the former so-called “homeland” regions, where around a quarter of the population lives. In the case of capital equipment, around 4% of total employment was in the former “homeland” regions from 2008 to 2015, less than half the share for the rest of manufacturing.

4 Profitability and assets

From 2008, the after-tax return on assets in capital equipment generally tracked profits in the rest of manufacturing. It provided around 7% of all manufacturing profits in 2015.

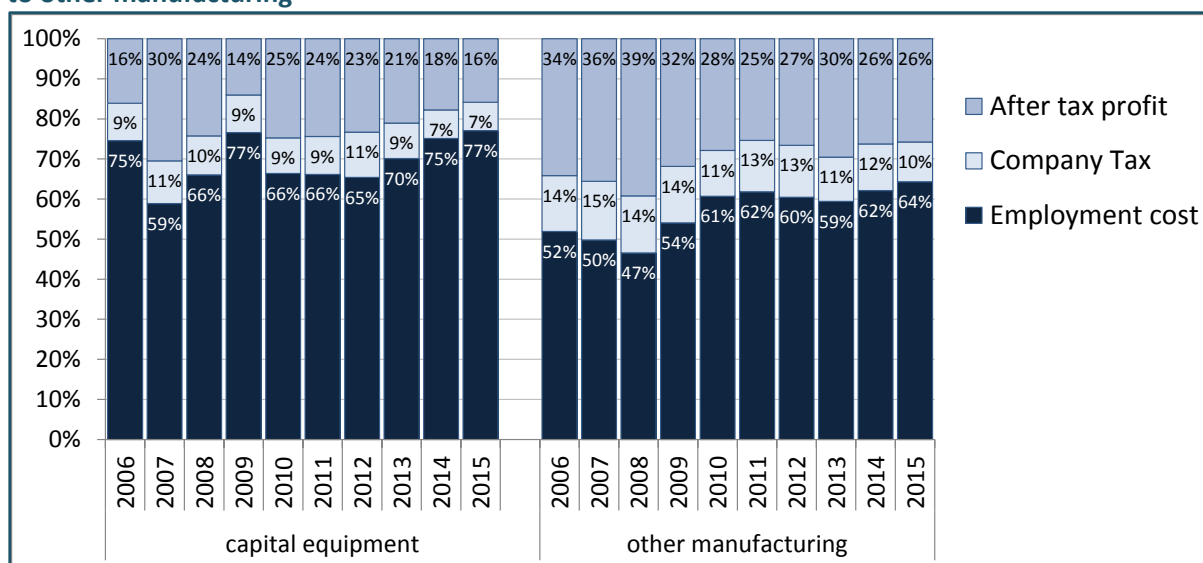
Graph 8. Return on assets (a) in capital equipment and other manufacturing, and after-tax profits in capital equipment as percentage of after-tax profits in manufacturing as a whole



Note: (a) Profits before taxes and dividends less company tax as percentage of total assets. Source: Calculated from Statistics South Africa. Annual Financial Statistics. Disaggregated Industry Statistics for relevant year. Excel spreadsheet. Downloaded from www.statssa.gov.za in September 2017.

In 2015, employment costs accounted for around three quarters of value add in capital equipment, up from two thirds in the five years to 2012. After-tax profits were just 16% in 2015, compared to 26% in the rest of manufacturing. Company taxes absorbed 7%, while the figure for the rest of manufacturing was 10%.

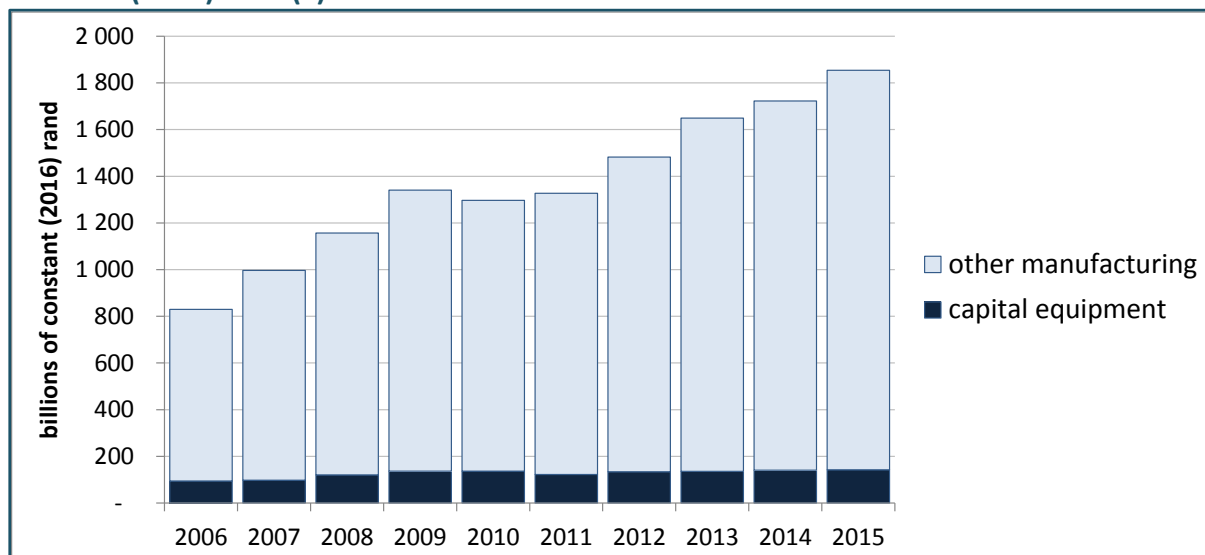
Graph 9. Share of remuneration, profits and taxation in income from capital equipment compared to other manufacturing



Source: Calculated from Statistics South Africa. Disaggregated Industry Statistics for relevant year. Excel spreadsheet. Downloaded from www.statssa.gov.za in September 2017.

In constant rand, the value of assets in the production of capital equipment climbed just 18% from 2009 to 2015, while the assets in the rest of manufacturing rose 67%. As a result, the share of capital equipment total manufacturing assets fell from 10% to 8% over this period.

Graph 10. Value of total assets in capital equipment and other manufacturing in billions of constant (2016) rand (a)

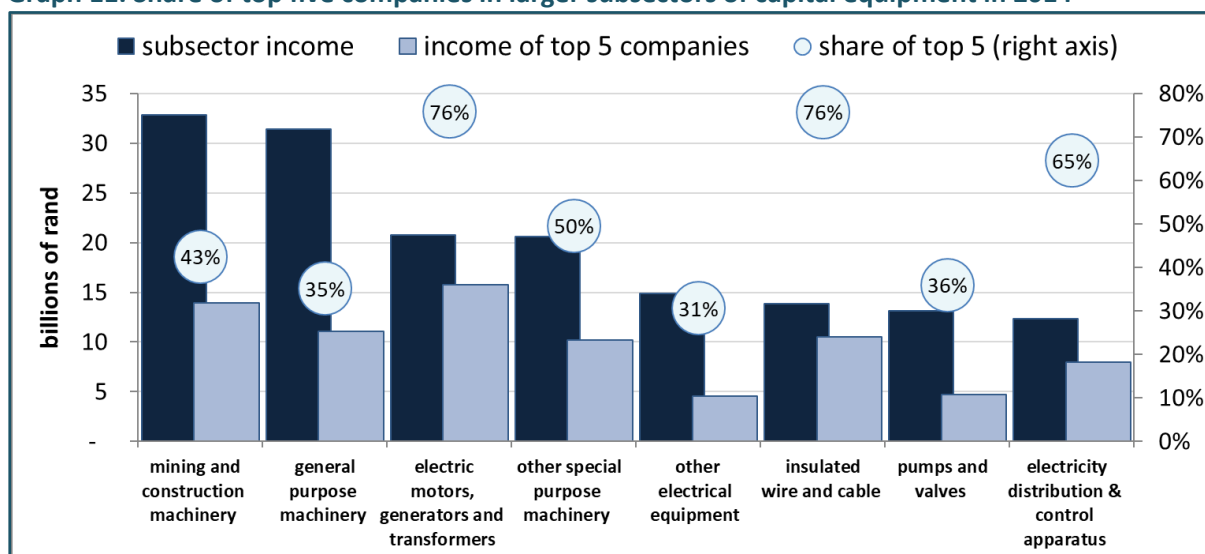


Notes: (a) Deflated with CPI. Source: Calculated from Statistics South Africa. Disaggregated Industry Statistics for relevant year. Excel spreadsheet. Downloaded from www.statssa.gov.za in September 2017.

5 Market structure and major companies

According to Statistics South Africa’s Manufacturing Financial Statistics, in 2014 the share in total income of the largest five companies varied substantially by subsector within capital equipment. In most of the largest subsectors, as shown in Graph 11, concentration was more or less on the norm for manufacturing industries, although sections of electrical equipment manufacturing were significantly more concentrated.

Graph 11. Share of top five companies in larger subsectors of capital equipment in 2014



Source: Calculated from Statistics South Africa. Manufacturing Industry: Financial, 2014. Pretoria. Table 9, p 33, ff.

In 2015, the Labour Market Dynamics Survey found under 5 000 formal enterprises (that is, employers and self-employed) in capital equipment, compared to around 60 000 in manufacturing as a whole, and 671 000 for the entire economy. The figure was too small to permit a meaningful analysis of trends.

South African manufacturers of capital equipment mainly produce for mining, construction, electric power generation and distribution (including renewables) and food processing.

The top manufacturers of capital equipment in South Africa are virtually all linked to foreign original equipment manufacturers (OEMs), either as subsidiaries or through licences. Usually it is not possible to determine the import content of their sales in South Africa. Leading companies include Bell Equipment, Joy, Actom and Howden.

Much smaller companies have a crucial role in designing and installing capital equipment for companies and utilities, in manufacturing specialised products, and in providing after-sales maintenance, service and repair. These companies have a central role in ensuring a responsive, flexible capital equipment supply to industry. Many are in a symbiotic relationship with the dominant mining and construction companies and/or Eskom. Increasingly they also supply the renewable energy industry.

The largest companies in capital equipment are described in Table 1. The table excludes wire and cable manufacturers, which are included in the metals industry note, as well as battery producers. It also leaves out companies that distribute capital equipment but do not manufacture locally, even if they provide installation, maintenance and repair services.

Table 1. Large companies in capital equipment production

Company	Employees	Nature of business
Electrical machinery and equipment		
Barloworld SA	16 400 in SA (group)	In addition to auto and Caterpillar products rental and sales, imports, assembles and distributes generators and equipment for SA and neighbouring countries, including turnkey solutions and aftercare.
ACTOM	7 700 (group)	Subsidiaries and divisions manufacture, import, install and maintain electro-mechanical equipment across southern Africa, including generators, transformers, smart metres and other electrical equipment for utilities, mines, transport, construction and other industries. Mostly owned by SA investors and institutions, but a UK company, Actis Turbine, holds around 30%.
Power Technologies	1 807	Supplies electrical and electronic equipment for electricity management in the generation, mining, construction and other industries. Among others, designs, manufactures and installs power and distribution transformers; provides battery solutions; supplies control systems. Owned by Altron.
Circuit Breaker Industries	1 790	In addition to imports of electrical equipment, manufactures and trades in low-voltage distribution, protection and control equipment as well as switchgear for utilities, original equipment manufacturers, property developers and mining.
Siemens	1 410	Imports, distributes and installs products for electricity and manufacturing industries; manufactures wind turbines for the electricity industry.
Powertech Transformers	955	Manufactures, installs and distributes large power transformers, reactors and bushings for Eskom, local councils and industry. Has one factory that manufactures distribution transformers.
Zest WEG Group Africa	644	In addition to importing and distributing electrical equipment, manufactures generators, mini substations, transformers and switchgear products. Branches in SA and other countries across Africa.

Company	Employees	Nature of business
Cummins SA	550	Imports, designs, manufactures and supplies power generation equipment, power systems, gasoline engines and custom power supplies.
Diesel Electric Services	550	Manufactures and supplies diesel generators and control panels for commercial properties and Eskom.
Apex Cordset	520	Manufactures electrical and computer cables, moulded plugs, sockets and wire harnessing for national and export markets.
enX Group	519	In addition to its main business of importing and distributing capital equipment and petrochemicals, manufactures and installs diesel generators.
Schneider Electric SA	480	Manufactures electrical distribution and automation control equipment, including automotive and industrial lighting.
Radiant Group	373	Imports, manufactures and distributes lamps, electrical accessories and light fittings for domestic, commercial and industrial use.
BEKA Schreder	330	Manufactures and distributes luminaires and glass fibre reinforced polyester poles for street lighting, industrial lighting and commercial interior and exterior lighting. Assembles at own plants and contracts out injection moulding, aluminium casting, blast manufacturing and reflectoring.
Conlog	327	Manufactures and distributes electricity meters.
Landis and Gyr	296	Designs and manufactures electric meters for Eskom.
JinkoSolar	270	Manufactures solar panels for SA and global markets.
Mcwade Productions	210	Produces and distributes high-voltage switches and line gear.
Electro Inductive Industries	209	Designs and manufactures transformers and wind-farm equipment for reticulation companies, Eskom, and municipalities.
Revive Electrical Transformers	207	Manufactures, refurbishes and installs dry type transformers, including for Eskom and other SA companies as well as for export.
Lighting Innovations Africa	175	Manufactures and distributes commercial lighting systems including bollards, ceiling lamps, various light fittings, emergency lighting, floodlighting, amenity lighting and functional lighting. Has a factory.
Rabro and Sturdy	122	Manufactures and distributes industrial and commercial lighting.
Steelcor	71	Designs and manufactures transformers and miniature sub-stations for surface areas at the mines.
LED Lighting SA	64	Designs, assembles and retails LED lighting solutions for commercial and industrial sectors using imported components; finished products are exported to the UK.
Lightnet	25	Manufactures industrial, commercial and general lighting.
Other machinery and equipment		
Aveng Africa	13 500 (group in SA)	In addition to its core construction business, Aveng subsidiaries manufacture control equipment, valves and regulators.
Howden Group SA	4 400 (group)	Manufactures and distributes large-scale engineered plant and products including fans, heat exchanges, industrial cooling and refrigeration for utilities, mining and manufacturing. Owned by Colfax (US)
Bell Equipment	3 513	Subsidiaries manufacture, distribute and export earthmoving and material handling machinery for mining, construction, forestry, sugar and related industries, for SA and global markets. Factories in SA and Germany. Mostly owned by SA founding company, but John Deere (US) has a 31% interest.
Multotec	1 500	Subsidiaries supply equipment to utilities, construction and mining, including process equipment, screening and flotation, separation and conveyor-belt equipment.
Sandvik Mining	1 500	Imports, distributes and refurbishes drilling, loading and transporting equipment for the mining industry, with manufacturing on a small scale.

Company	Employees	Nature of business
Bilfinger Power Africa	1 200 in Steinmuller Africa, 5000 group	Core business is support for coal plants; a subsidiary (Steinmuller Africa) manufactures pressure parts for coal fired power stations as well as boilers and pipes to client specification.
Joy Global (Africa)	1 000	Manufactures, markets and exports original equipment, aftermarket parts and services for underground mining, surface mining and certain industrial applications in SA and Africa. Owned by Joy Global (US).
Metso SA	1 000	Manufactures, distributes and services machinery including heat treating, crushing and separation-process equipment and ground pumps, primarily for mining. Holding company originated in Finland but is listed on Nasdaq.
DBT Technologies	700	Designs, distributes, manufactures, installs and maintains cooling and heating systems; process equipment; rotating systems; and pipe systems.
Hitachi	700	Imports, manufactures, distributes and repairs excavator buckets, front-end loader buckets, water tankers, bottom dump coal haulers and rear dump truck bowls for mining, construction and forestry industries.
Manhattan Mining Equipment	570	Manufactures, supplies, installs and refurbishes new and reconditioned mineral and mining equipment for diamond, gold and coal operations in SA and worldwide.
Flsmidth SA	550	Designs, manufactures and imports engineered mineral processing equipment and services to the mining, metallurgical, pyroprocessing and pulp and paper industries.
ELB Group	548	Provides engineering solutions to the mining, power, construction and industrial sectors in Africa and Australasia; imports and manufactures relevant equipment.
Veolia Water Solutions	514	Designs and manufactures water treatment plants. Has one factory.
Tenova SA	450	Engineering project house servicing the mineral and metal industries worldwide, including provision of belt feeders, bucket chain excavators, and smelting furnaces and plants.
Liebherr-Africa	440	Imports, assembles, erection and maintenance of cranes, earthmoving equipment and concrete mixers for construction.
Vulcan Catering Equipment	439	Manufactures and distributes general catering equipment, including softserve machines, waffle makers, refrigeration equipment, ovens and industrial potato peelers. Owned by Bidvest.
Fermel	400	Designs, manufactures, repairs, maintains and distributes underground mining equipment.
ERD Fab	400	Manufactures and maintains erosion protection shields, pressure vessels, heat exchangers and related products for power generation, mining, chemical and petrochemical industries. Has one factory.
Osborn	320	Designs and manufactures heavy mining machinery.
H C Heat	320	Manufactures and supplies heat exchangers to industry.
NOV Oil and Gas Services	300	Manufactures mining and oil field equipment and undertakes installation, repair, inspection and maintenance for oil rigs and mines.
GEA Africa	288	Designs, imports and manufactures of industrial cold storage systems for food and beverages industries.
Colcab	280	Manufactures and imports industrial refrigerators and display freezers.
Sulzer Pumps (SA)	275	Manufactures and distributes pumps, hydro-drills and related turnkey projects for mines and utilities in SA and globally. Has one factory.
Turner Morris	274	Manufactures, imports and rents construction equipment and machinery including concrete mixers and generators for SA and neighbouring countries.
Macadams International	260	Imports, manufactures and distributes bakery and catering equipment, including packaging and refrigerators, for catering and retail.

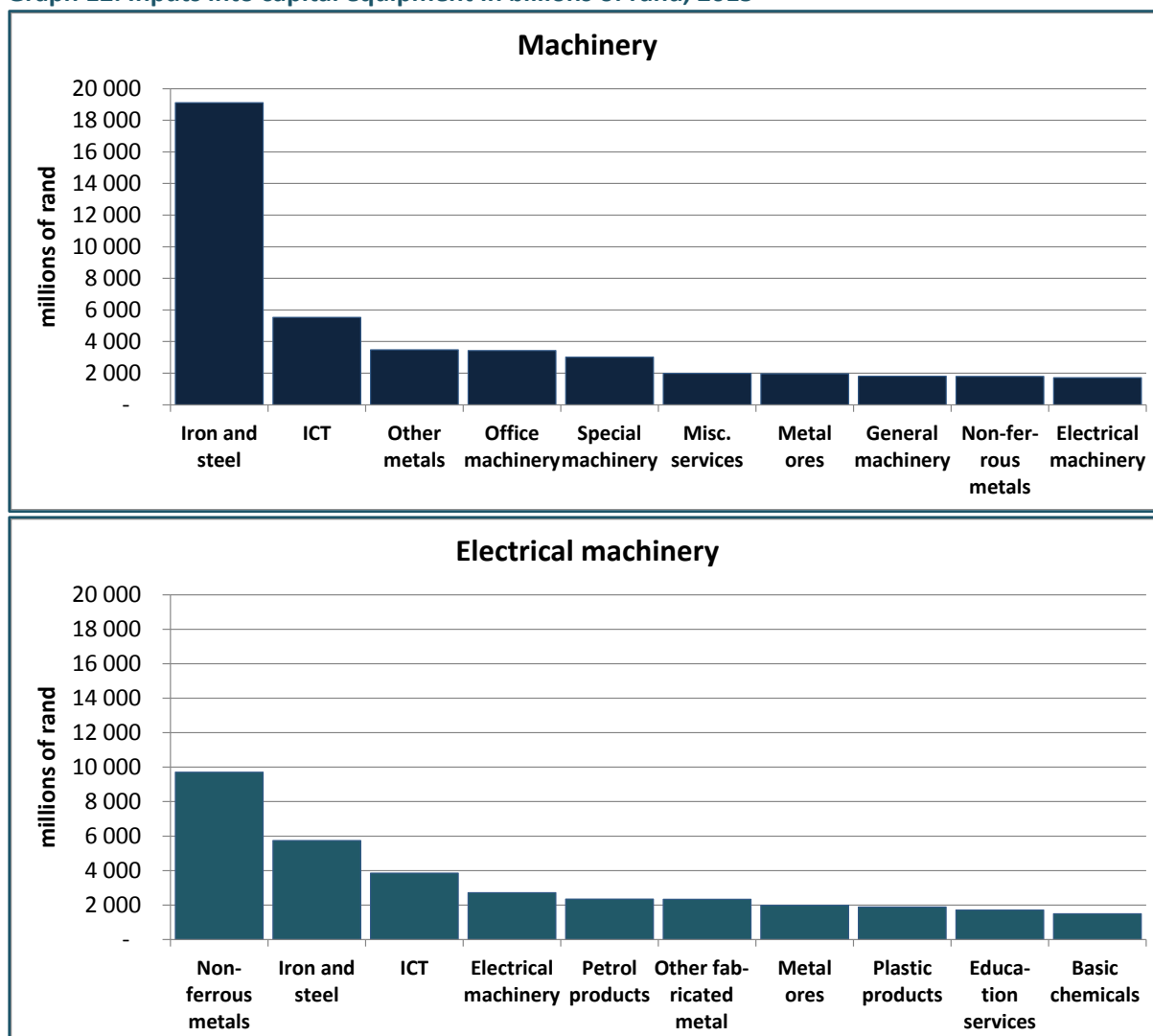
Company	Employees	Nature of business
H G Molenaar	250	Imports, designs and manufactures machinery for food and beverages industry, including tunnel pasteurisers, spray drying and packaging equipment, for SA and international markets.
Ansys	243	Designs, develops and manufactures advanced technology systems and products for the mining, telecommunications and defence industries.
C F W Industries	240	Designs, manufactures, installs and maintains industrial ventilation systems and drying units for industry.
WIKA Instruments	221	Imports, manufactures and distributes electrical and mechanical gauges for the petro chemical, mining, hydraulics and automotives industries, among others.
AARD Mining Equipment	214	Manufactures underground vehicles for mining, in part in collaboration with Bell Equipment for sale in Sam Zambia and Eastern Europe.
Clyde Bergemann Africa	180	Manufactures and distributes boiler on-load cleaning technologies.
Cooperheat of Africa	171	Provides heat treatment solutions for a variety of materials, including metals, non-metals, composites, coatings and refractories.
Acepak	155	Manufactures industrial packing and labelling equipment for plastic packaging for major SA companies and export. Has 1 factory.
Festo	148	Installs and maintains control engineering equipment for the automotive, mining and packaging industries.
Filmatic Packaging	115	Manufactures packaging systems for dairy, beverage and other industries with the focus on turnkey projects in SA and internationally, mostly in Africa.
Baltimore Aircoil	108	Manufactures and distributes heat transfer and ice thermal storage products for construction, manufacturing and mining.
Keeley Granite	80	Manufactures attachments for earthmoving equipment such as buckets, tyre handlers and cable reelers.
MD Mineral Technologies	22	Imports and manufactures mineral processing equipment such as gravity separation equipment and concentrating cones for the mining industry.
Bradken Resources SA	16	Manufactures and distributes, for SA and international markets, mining equipment, such as mill liners and crawler shoes; technology for foundries, steelworks and smelters; and freight rolling stock for bulk and intermodal use.

Source: *Who Owns Whom. Report Generator. Electronic database. Downloaded from www.wow.co.za in November 2017.*

6 Major inputs

The main inputs into capital equipment are metals, which together accounted for over 35% of all inputs in 2015. Iron and steel alone account for almost a third of inputs into machinery.

Graph 12. Inputs into capital equipment in billions of rand, 2015



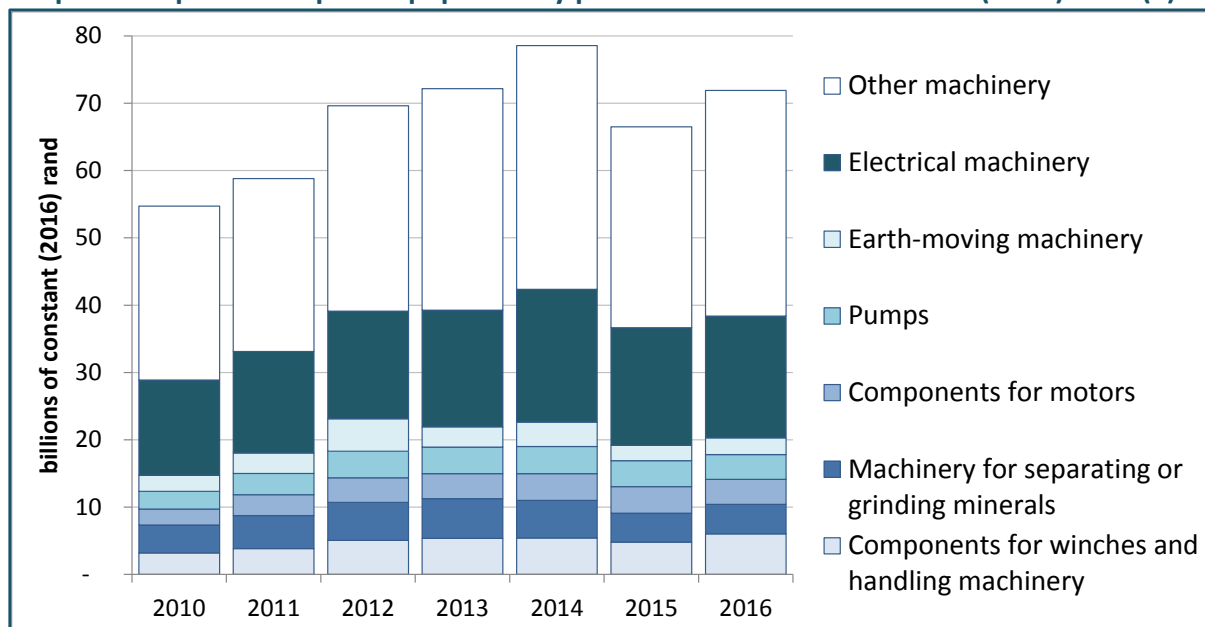
Source: Calculated from Statistics South Africa. Statistics South Africa, GDP data in excel format, Fourth Quarter 2017. Use Tables. Downloaded from www.statssa.gov.za in October 2017.

7 Trade

South Africa imported substantially more capital equipment, and more diverse products, than it exported.

Exports of capital equipment came to around 7% of total exports. They were dominated by machinery for mining and construction, and electrical machinery and equipment.

Graph 13. Exports of capital equipment by product in billions of constant (2016) rand (a)

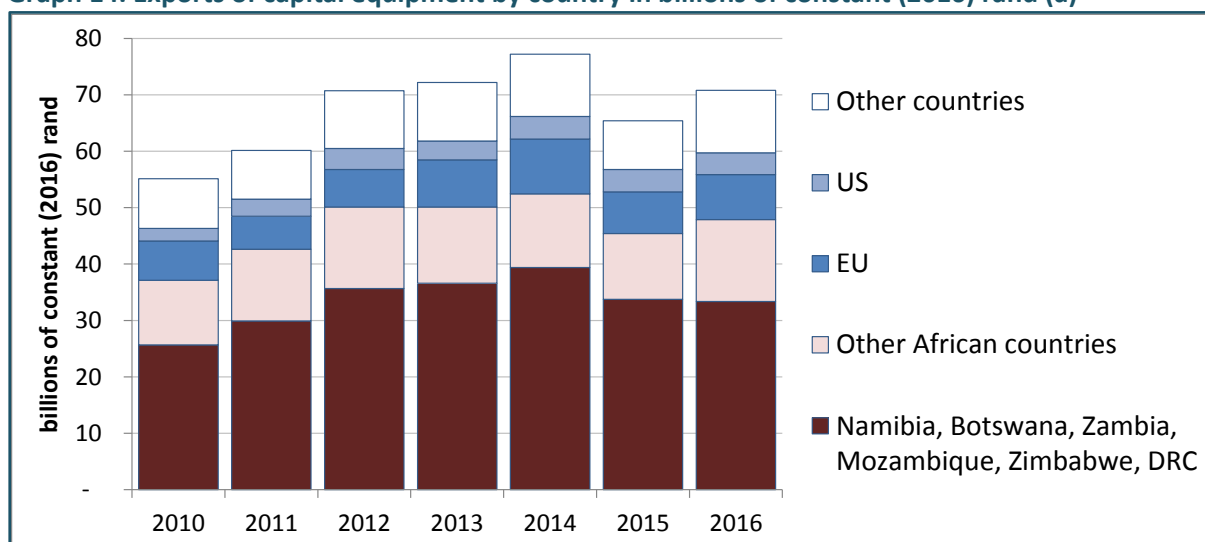


Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on exports of machinery and electrical machinery, excluding appliances and electronics, in rand. Downloaded from www.trademap.org in November 2017.

Over two thirds of capital equipment exports go to other African countries, and almost half is sold to six nearby countries with substantial mining activities – Namibia, Botswana, Zambia, Mozambique, Zimbabwe and the Democratic Republic of Congo (DRC). These exports declined from 2014, presumably in large part due to the end of the metals price boom a few years earlier.

Exports to the US and Europe consist largely of components for motors. Although the figures are included under machinery rather than auto components, it seems likely that these exports are in fact related to the auto industry.

Graph 14. Exports of capital equipment by country in billions of constant (2016) rand (a)

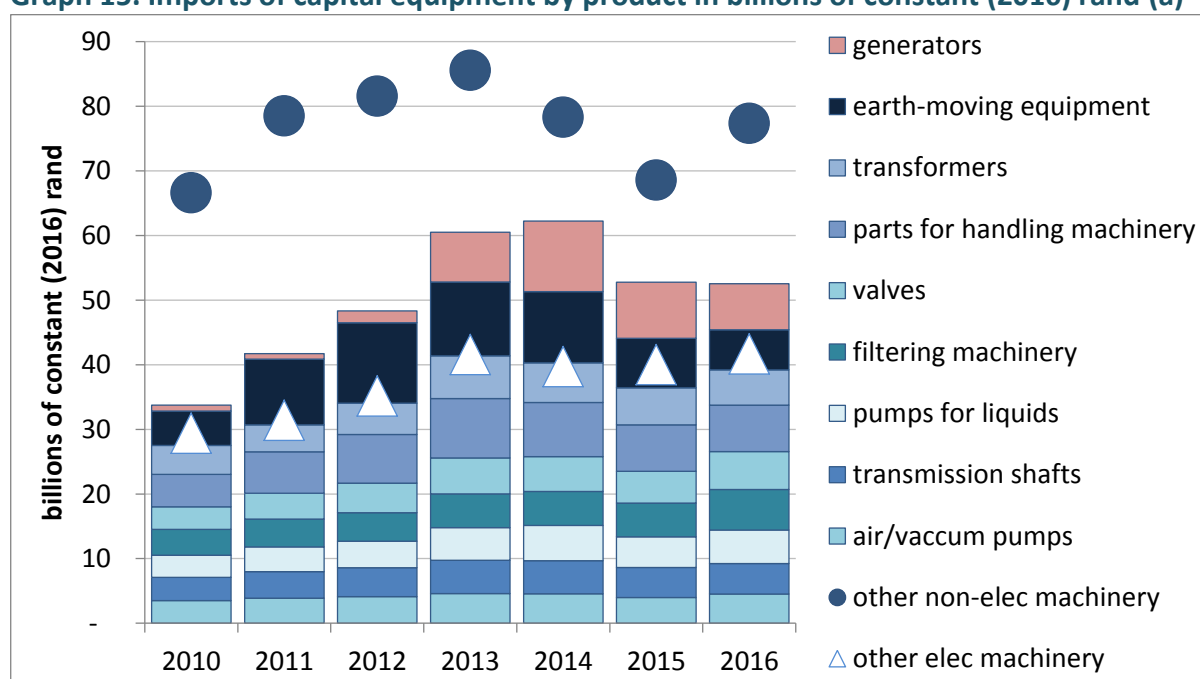


Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on exports of machinery and electrical machinery, excluding appliances and electronics, in rand. Downloaded from www.trademap.org in November 2017.

South African imports of capital equipment climbed through 2014, then fell sharply. The decline appeared to reflect a combination of the end of the metals price boom, which saw a fall in mining and metals production; depreciation, which increased the cost of imports in rand terms; and the overall slowdown in investment that began in 2014. Capital goods accounted for around 15% of total imports, a figure that remained stable from 2010 to 2016.

No single type of product dominated imports of capital equipment, which ranged from plastic packaging machines to heavy earthmoving equipment to generators and transformers. The composition of imports changed from 2010, with a growing share of electrical equipment – especially generators – and a decline from 2013 in non-electrical equipment, particularly earth-moving equipment. Generators climbed from 1% of imports of capital equipment in 2010 to 4% in 2016, a more than sixfold increase in constant rand. Imports of earthmoving equipment more than doubled from 2010 to 2014 in constant rand, then dropped by 45%.

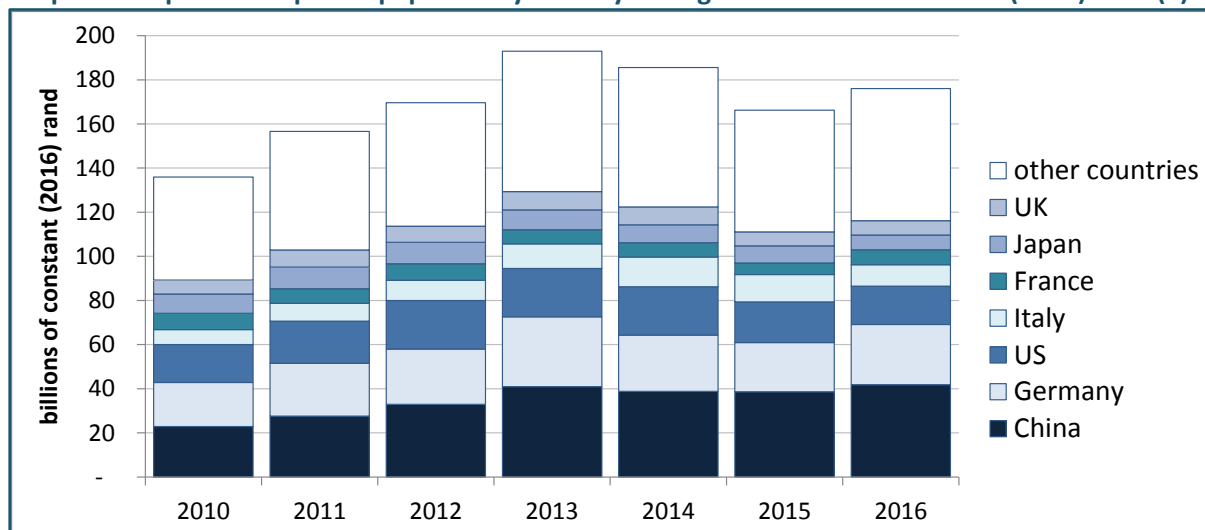
Graph 15. Imports of capital equipment by product in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on imports of machinery and electrical machinery, excluding appliances and electronics, in rand. Downloaded from www.trademap.org in November 2017.

Imports of capital equipment came principally from Europe, China, the US and Japan. China's share climbed from near zero in 2000 to 17% in 2010 and to 23% in 2016. In contrast, other major exporters saw a significant fall in their share in imports of capital equipment and in many cases a drop in the value from 2014 to 2016.

Graph 16. Imports of capital equipment by country of origin in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on imports of machinery and electrical machinery, excluding appliances and electronics, in rand. Downloaded from www.trademap.org in November 2017.

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