



MANUFACTURING SUBSECTORS

Metals and metal products

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 metals and metal products subsector as of December 2017. It will be updated as information becomes available.

Metals and metal products covers smelting, refining and shaping of base metals – that is, excluding gold and platinum. In South Africa, the industry consists primarily of iron and steel, a range of ferro-alloys, and aluminium products. It derives from local iron and ferroalloy mining and coal-fired electricity, except for aluminium, which utilises imported ores.

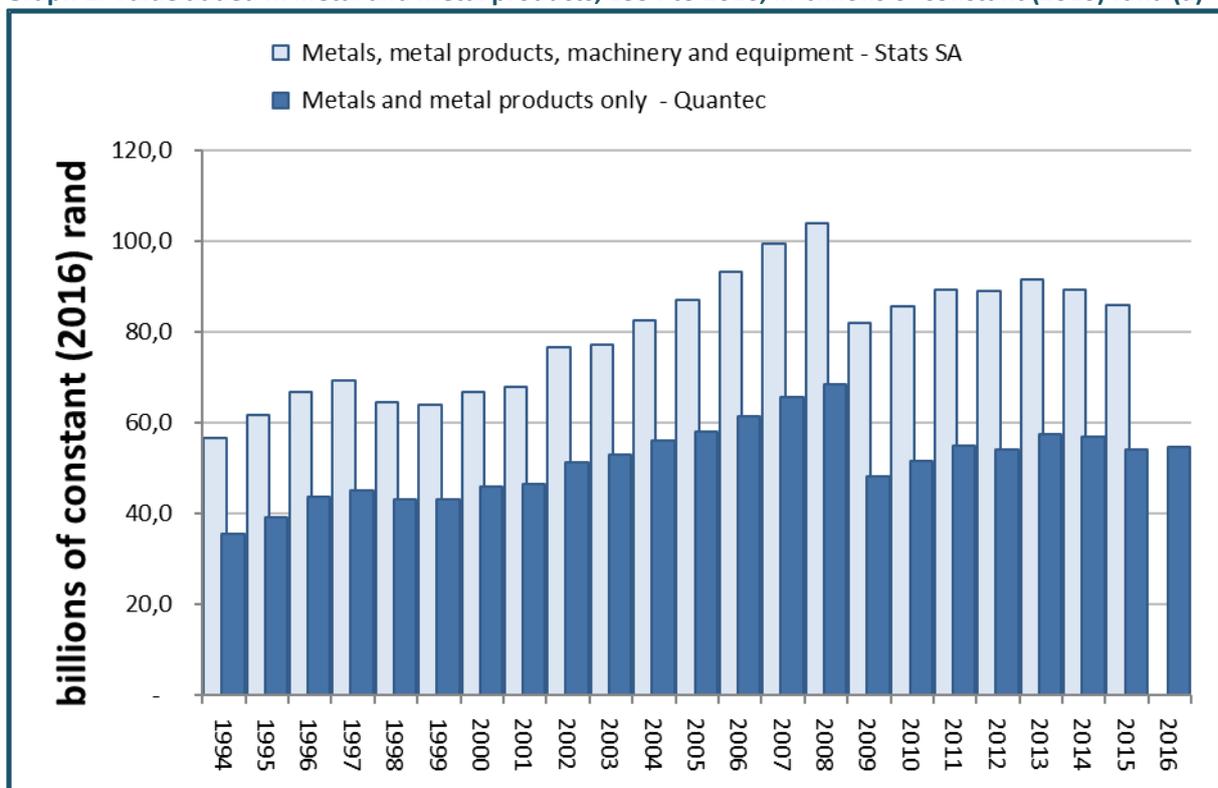
1 Contribution to GDP

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.

The Statistics South Africa data combine metals and metal products with machinery and equipment. The Quantec estimates suggest that metals and metal products follow a trend similar to the broader Statistics Africa category, as Graph 1 shows.

Production of metals and metal products rose rapidly during the first half of the commodity price boom that lasted from around 2002 to 2012. From 2002 to 2008, it climbed at just under 4% a year. In 2008/9, during the global financial crisis, production of heavy industry, especially metals refining and metal products, declined sharply, with a 6% fall in metals and metal products. Thereafter, a slow recovery was dampened with the end of the commodity price boom in 2012. It was also affected by the doubling of electricity prices in real terms from 2008 to 2016. Production remains around 20% below 2008 levels.

Graph 1. Value added in metal and metal products, 1994 to 2016, in billions of constant (2016) rand (a)

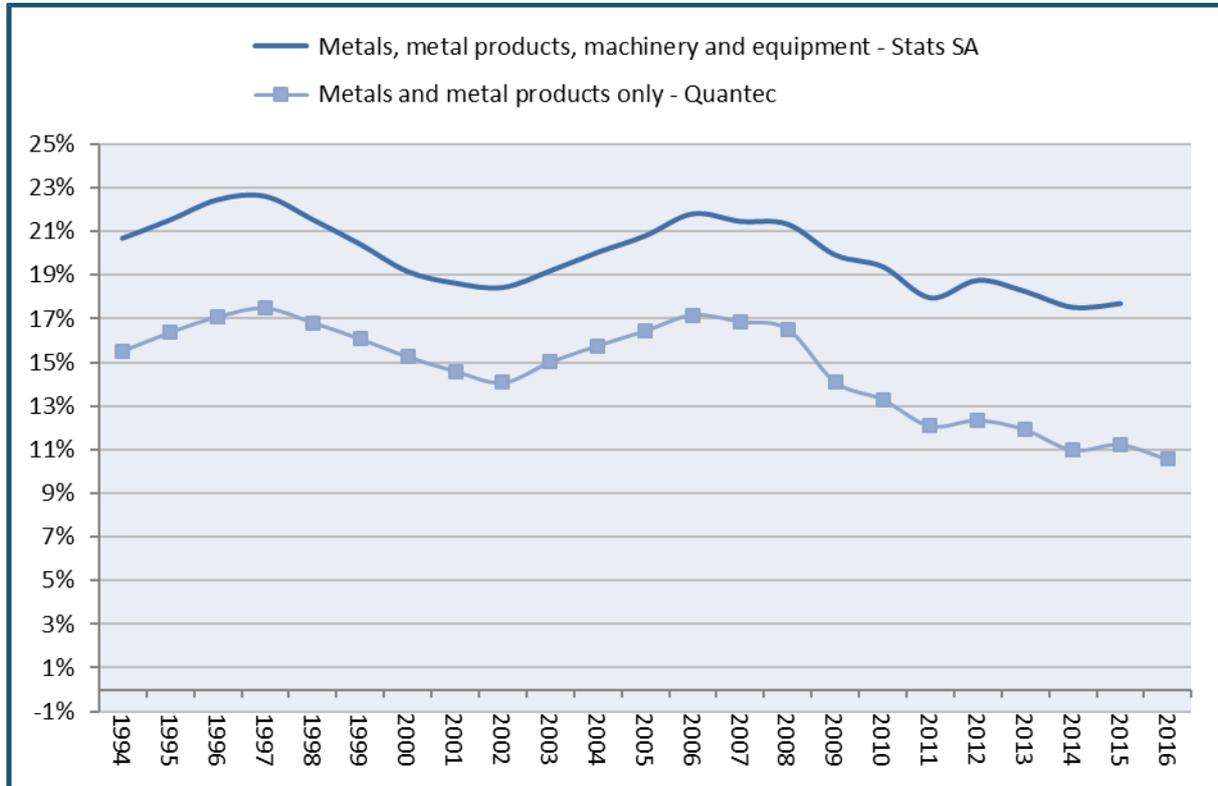


Note: (a) deflated by calculating the deflator used in the sources from figures in current and constant rand, and then rebasing to 2016. Source: Statistics South Africa, GDP P0441. Annual quarter and regional revisions. Q4 2016. Excel spreadsheet. Series on manufacturing subsectors in current and constant rand. Downloaded 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.

As a result of these trends, the share of metals and metal products in total manufacturing production declined from 2008. It fell from 17% in 2006 to under 11% a decade later.

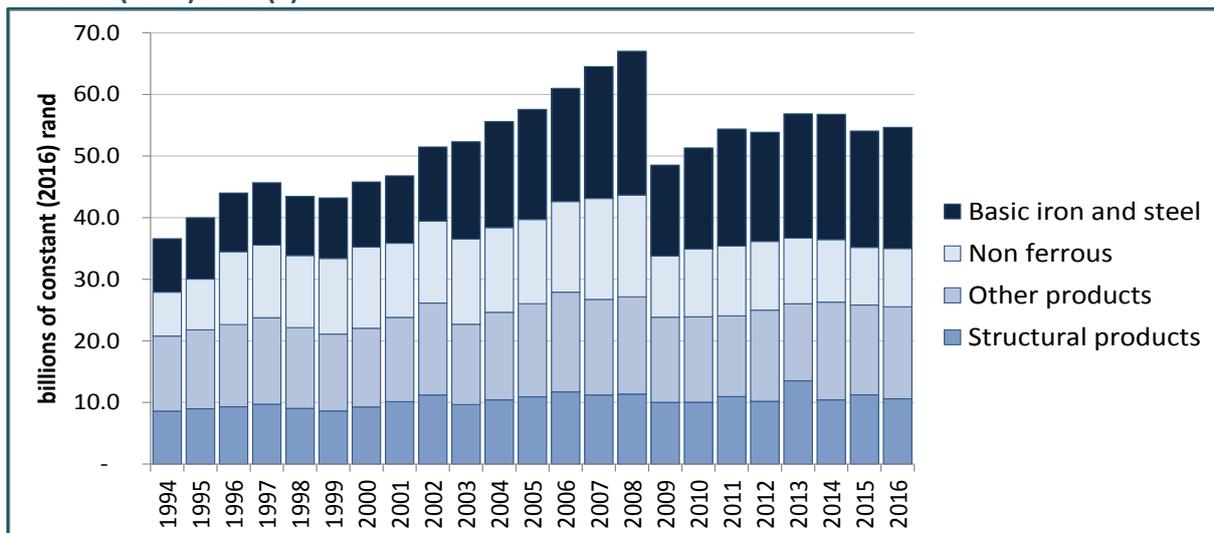
Graph 2. Metal and metal products contribution to manufacturing value added



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.

As Graph 3 shows, Quantec estimates find that the decline in 2008/9 was almost entirely due to basic ferrous and non-ferrous metals. In contrast, structural steel and other basic manufactures remained fairly stable. As a result, by 2016 basic iron and steel production and miscellaneous manufactured products account for around 30% of value add each, with non-ferrous metals and structural metal products at about 20% each.

Graph 3. Value added by subsectors of metal and metal products, 1994 to 2016, in billions of constant (2016) rand (a)



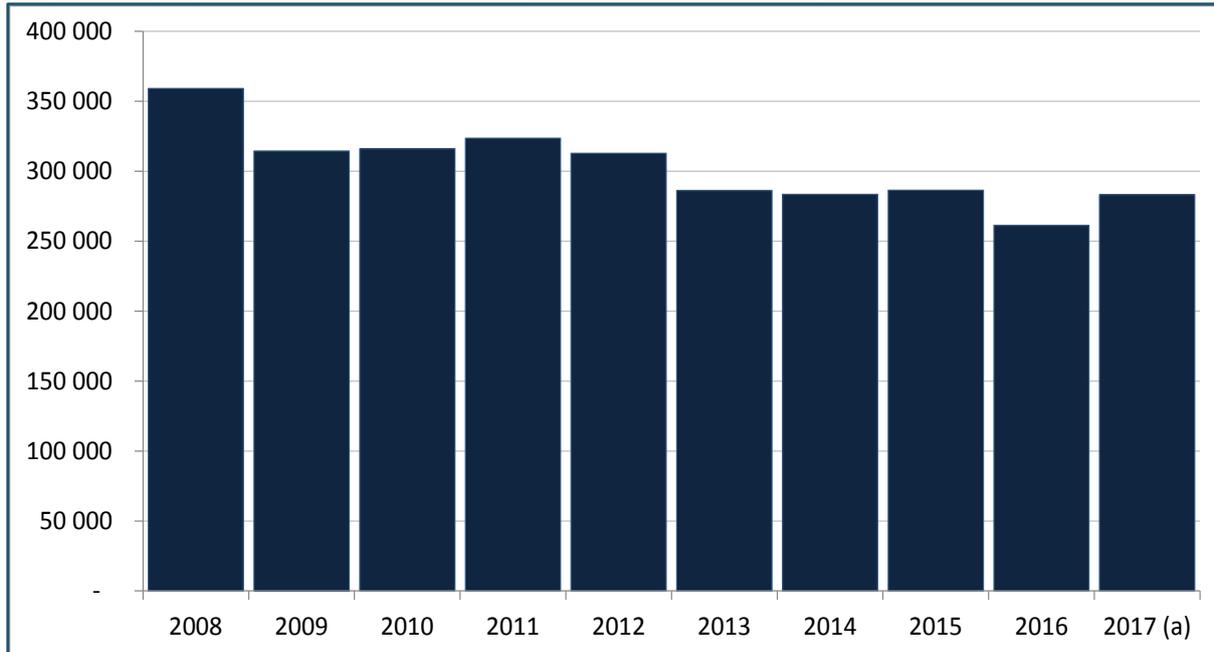
Note: (a) Deflated by calculating the deflator used in the sources from figures in current and constant rand, and then rebasing to 2016. Source: Quantec EasyData. Standardised regional data. Database in electronic format. Series on value added in current and constant rand for metals and metal products by subsector. Downloaded from www.quanis1.easydata.co.za in September 2017.

2 Employment

Employment data in this section draw on Statistics South Africa’s Quarterly Labour Force Survey, which was introduced in 2008. Its annual figures, in 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 metals and metal products fell by almost 100 000 jobs, or over a quarter, from 2008 to 2016. In the year to the third quarter of 2017, however, it reportedly bounced back by more than 20 000, or 8%.

Graph 4. Employment in metal and metal products, 2008 to third quarter 2017 (a)

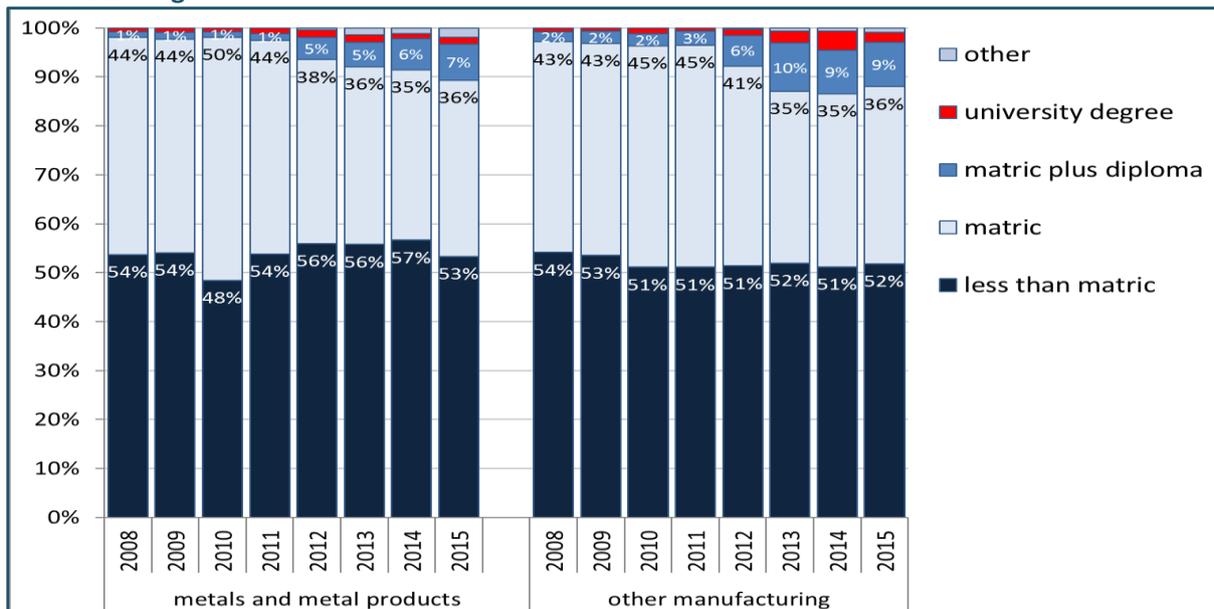


Note: (a) Calendar years except for 2017, which is to the third quarter. Source: Calculated from StatsSA. Labour Market Dynamics. 2008 to 2015. Series on employment by industry. Electronic databases. Downloaded www.statssa.gov.za Nesstar facility, September 2017; and Quarterly Labour Force Survey. Q1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

Education levels in metals and metal products were nearly the same as in the rest of manufacturing. In 2015, 53% of workers did not have matric, compared to 52% in the rest of manufacturing.

The share with post-matric education was somewhat lower than the manufacturing norm.

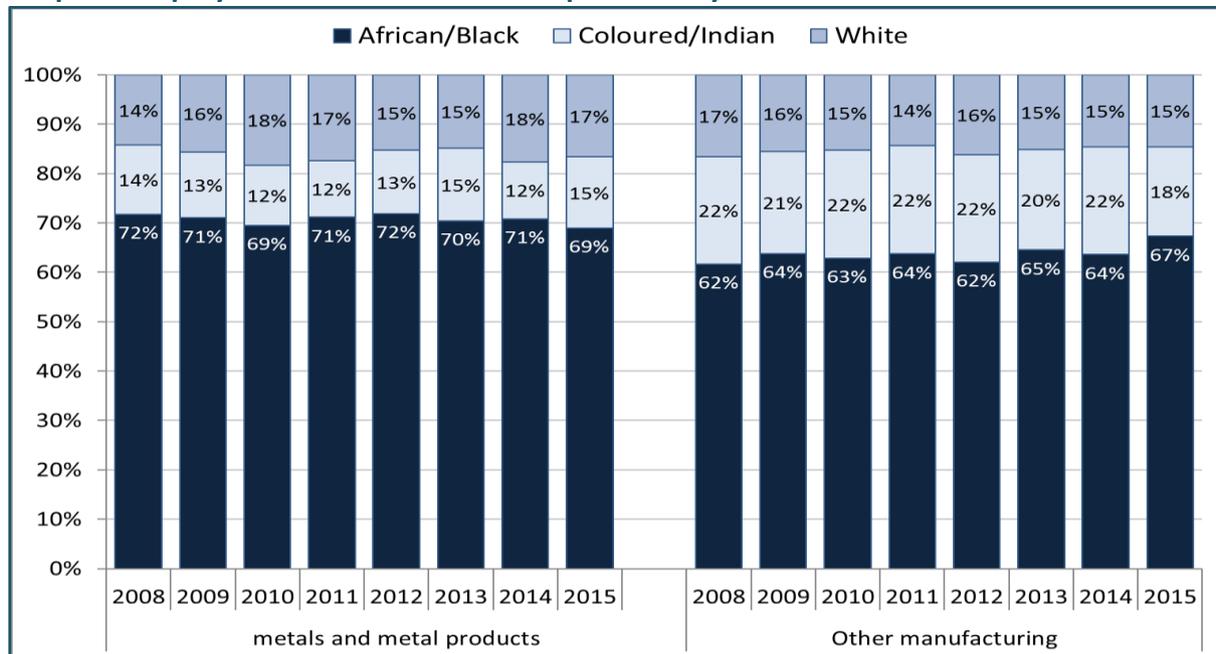
Graph 5. Employment by education level in metal and metal products compared to other manufacturing



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.

Workers in metals and metal products were more likely to be African than in the rest of manufacturing, while a smaller proportion were Coloured and Asian. In 2015, Africans constituted 69% of employment in metals and metal products, compared to 67% in other manufacturing.

Graph 6. Employment in metal and metal products 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 around 12% of the labour force in metals and metal products, less than half of that for the rest of manufacturing. Only one in 20 women manufacturing workers were employed in metals and metal products, compared to one in five for men in manufacturing.

Graph 7. Employment in metal and metal products 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 provides information on employment by province. As the following graph shows, Gauteng was the largest employer in metals and metal products, accounting for about half the labour force from 2008 to 2015. It was followed by KwaZulu-Natal and the Western Cape.

Graph 8. Employment by province in metal and metal products compared to other manufacturing



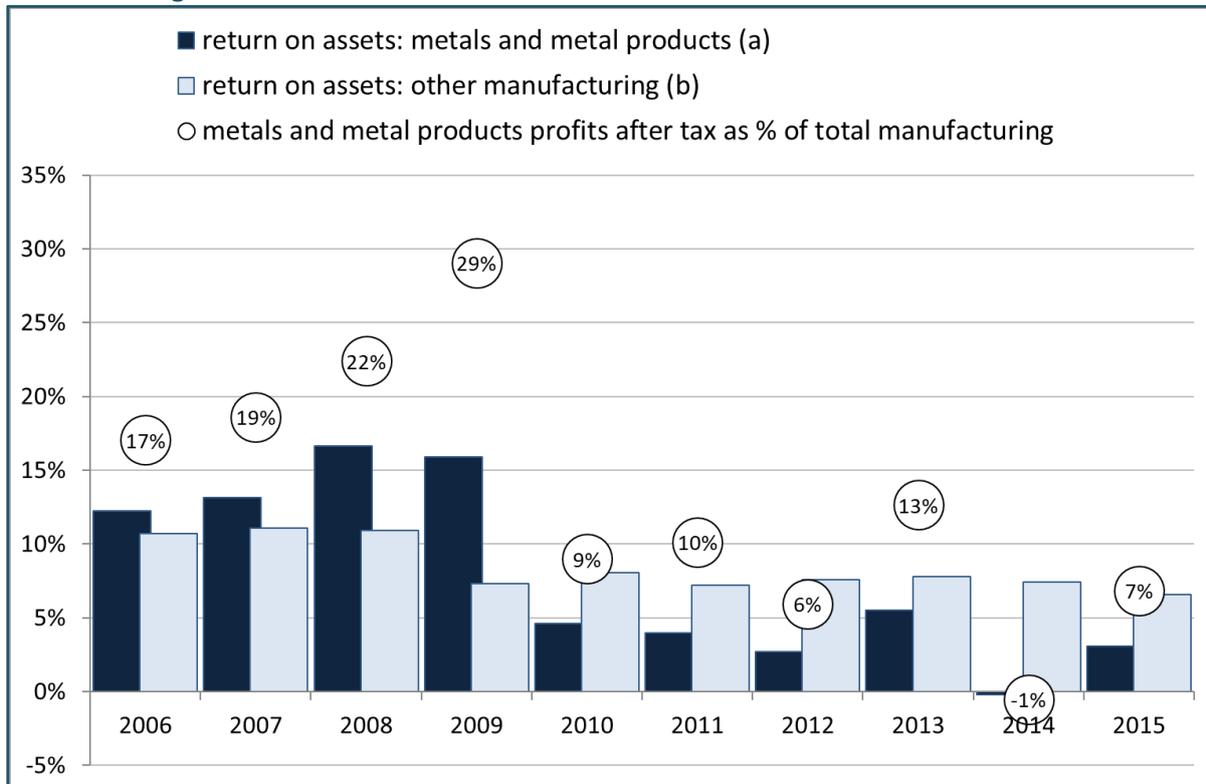
Source: Statistics South Africa. Labour Market Dynamics. Relevant years. Series on employment by industry and province. Electronic databases. Downloaded from www.statssa.gov.za Nesstar facility in September 2017.

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 metals and metal products, around 9% of total employment was in the former “homeland” regions from 2008 to 2015, virtually the same as for manufacturing as a whole.

4 Profitability and assets

Before 2008, metals and metal products had a significantly higher after-tax rate of return than the rest of manufacturing, exceeding 15% a year in 2008 and 2009. After 2009, however, the rate of return fell sharply, with losses in 2014 and a figure of only 3% for 2015. As a result, from 2010 the rate of return in the industry was, on average, 3% – less than half that for other manufacturing industries. The share of metals and metal products in total manufacturing after-tax profits declined from a high of almost 30% in 2009 to an average of 7% from 2010 to 2015.

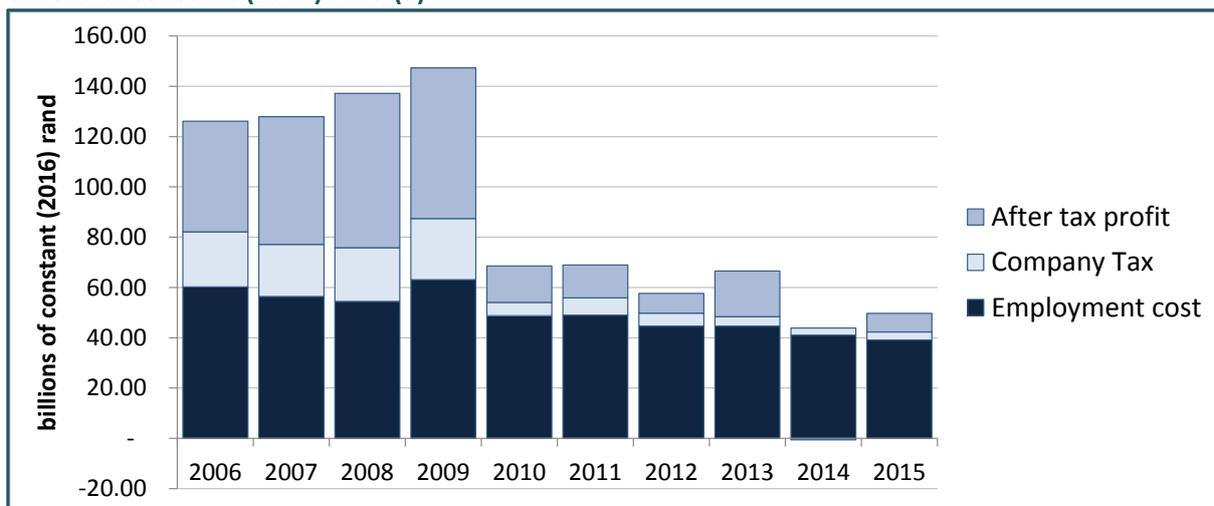
Graph 9. Return on assets (a) in metal and metal products and (b) other manufacturing, and after-tax profits in metals and metal products as percentage of after-tax profits in manufacturing as a whole



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.

From 2009, employment costs in metals and metal products fell by almost 40%, while after-tax profits and tax payments plummeted almost 90%.

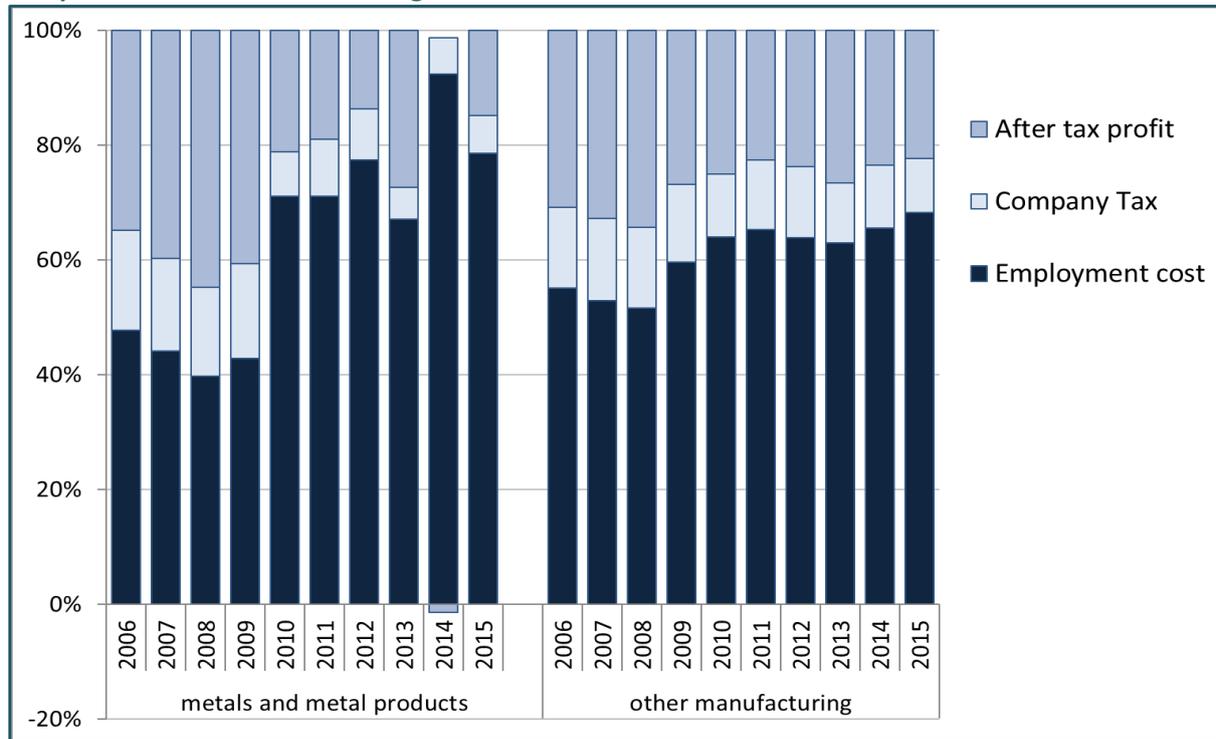
Graph 10. Employment costs, company tax and after-tax profits in metals and metal products in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. 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.

As a result of these trends, the share of employment costs in value added climbed rapidly in metals and metal products while taxes and profits declined. Between 2010 and 2015, employment costs averaged 77% of income in metals and metal products, up from 40% in 2009. After-tax profit fell to an average of 16% from 2010 to 2015, after reaching more than 40% from 2007 to 2009. Taxes dropped from over 16% before 2010 to an average of 7% from 2010 to 2015.

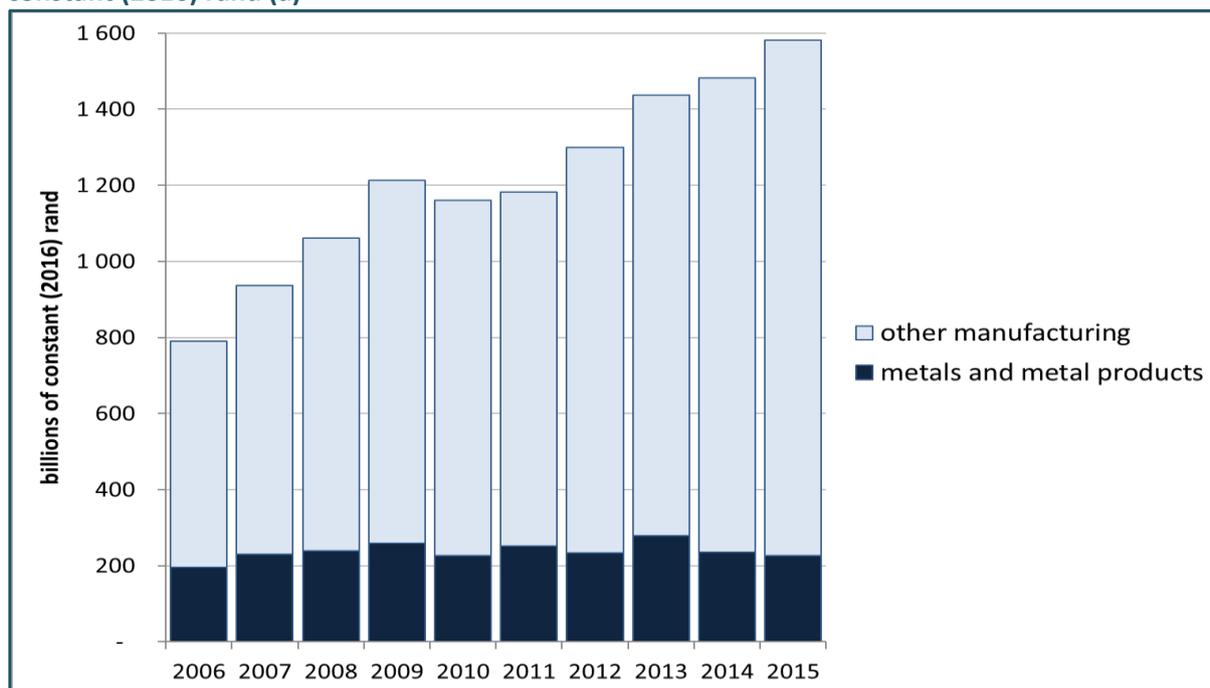
Graph 11. Share of remuneration, profits and taxation in income from metal and metal products compared to other manufacturing



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

The value of metals and metal products assets dropped by 5% from 2008 to 2015, while the assets in the rest of manufacturing rose 65%. As a result, the share of metals and metal products in total manufacturing assets fell from 23% to 14% over this period.

Graph 12. Value of total assets in metal and metal products and other manufacturing in billions of constant (2016) rand (a)

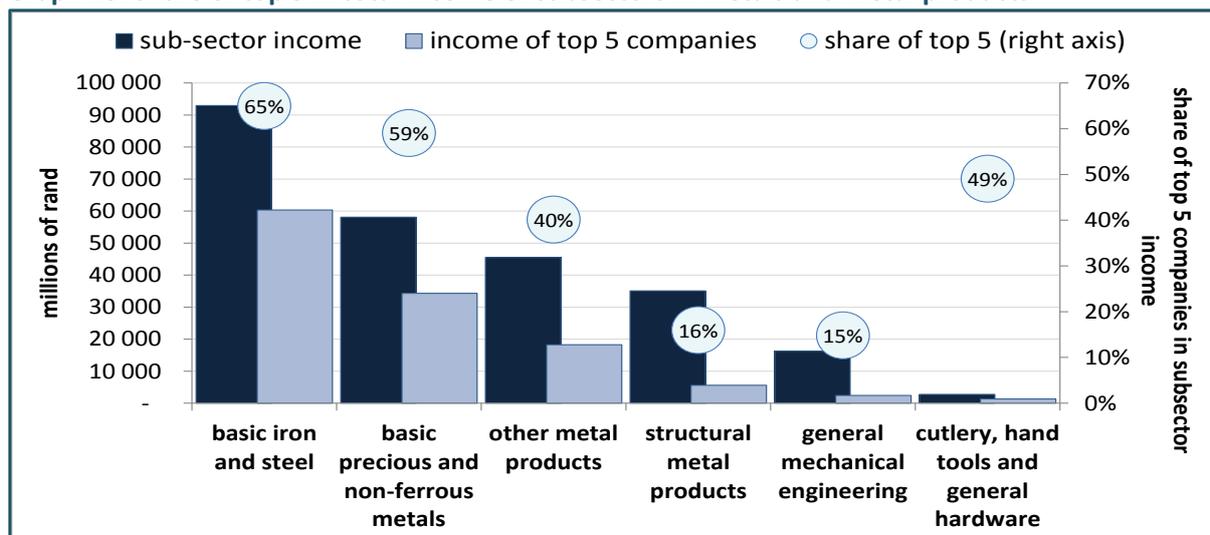


Notes: (a) Deflated with CPI. Source: Calculated from Statistics South Africa. Annual Financial Statistics. Disaggregated Industry Statistics for relevant year. Excel spreadsheet. Downloaded www.statssa.gov.za, September 2017.

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 in metals refining was high, at around 60%. For casting and metal products, it was also high compared to most other industries, at between 40% and 50%. In structural steel and general mechanical engineering, in contrast, it was low for manufacturing, at under 20%.

Graph 13. Share of top 5 in total income of subsectors in metals and metal products



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

In 2015, the Labour Market Dynamics Survey found around 10 000 formal enterprises (that is, employers and self-employed) in formal metals and metal products, compared to a total of 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.

Major companies in metals and metal products are described in Table 1. The largest companies in the value chain are vertically integrated mining and metals conglomerates. In steel, trading companies also have considerable market power. In contrast, downstream fabricators are often relatively small. Many produce highly specialised products for mining, agriculture, auto OEMs (original equipment manufacturers) and other manufacturing industries.

Table 1. Major metals producers

Company	Employed (a)	Operations
Basic iron and steel		
Arcelor Mittal SA (AMSA)	9 056	Dominant SA producer of steel and commercial-grade coking coal products for the local and international market. Has six major refineries. Arose from privatisation of Iscor, the state-developed steel industry.
Macsteel Service Centres	4 300	Steel service centre and steel trading group, distributing a comprehensive range of steel and allied steel products; also operates in Mozambique and Malawi.
Cape Gate	1 350	Vertically integrated producer of wire and steel products using its own source of raw materials, mostly based on scrap metals. Worldwide exports.
Columbus Stainless	1 254	Manufactures flat stainless steel and chrome bearing steels in the austenitic, ferritic and duplex ranges. Exports approximately 75% of finished products. Owned by a Spanish company and the Industrial Development Corporation (IDC).
Silicon Smelters	660	Smelts silicon ore into inputs for production of gaskets and sealants as well as medical applications, mostly for export.
BSi Steel	427 in SA	Steel trading across southern Africa.
Iron and steel products		
Aveng	13 500 in SA	Construction company that manufactures structural steel and other construction materials, and engineering.
Group Five	9 313 (group)	In addition to construction, manufactures structural steel products and other construction products.
Nampak Products	4 158 (group)	Through Nampak Metals, its largest division, manufactures and prints on beverage cans and ends, metal cap closures, food cans, aerosol cans, pails and drums, aluminium foil and other metal packaging. Two manufacturing facilities.
Scaw SA	4 093	Manufactures a range of steel products in SA, Southern Africa and Australia. Produces high chromium and forged grinding balls at two main manufacturing plants; manufactures long steel products from recycled steel scrap; produces steel and complex low alloy steel, manganese steel, ductile iron and high chromium iron castings at four foundries; manufactures, supplies and distributes specialised ropes, chains, wire and strand for industrial use.
Southey Holdings	3 000	Subsidiaries manufacture structural insulating panels primarily for cold storage facilities; knives and hand tools; scaffolding components; gas tanks; other construction inputs.
Argent Industrial	2 774	Subsidiaries manufacture steel office and industrial furniture products, wheels, scrapers, car components and other products.
Lafarge Industries SA	2 000	In addition to core business in non-metallic construction materials, owns a factory that manufactures steel ceiling grids, metal studs, aluminium profiles and access flooring.

Company	Employed (a)	Operations
Steinmuller Africa	1 200	Maintains and manufactures specialised coal-fired boilers and auxiliary equipment, and pressure parts for power stations and heaters.
Welfit Oddy	1 040	Designs, manufactures and distributes tank containers and bulk liquid shipping containers and transport containers for the international chemical and food grade logistics market.
Robor	1 000	Manufactures and supplies structural steel; exports worldwide.
Atlantis Foundries	900	Manufactures, exports and distributes automotive iron castings for commercial vehicle industries; machines cylinder blocks for automotive applications; designs and manufactures its own jigs, fixtures and other tooling equipment for use in the plant. Exports to Germany and the US.
Steval Engineering	820	Mechanical engineering including structural steel and pipe work; manufactures and erects steel tanks.
Innovative Mining Products	700	Manufactures roof support products and roof monitoring systems for underground mining operations.
Praga Technical	700	Manufactures automotive metal pressings and assemblies for OEMs.
Auto Industrial Group	677	Manufactures motor car components for OEMs in SA and exports to India and Germany.
Kwikot	650	Manufactures hot water systems and distributes other plumbing and refrigeration equipment.
Mazor Group	639	Designs, supplies and builds structural steel frames, other aluminium structures such as windows and balustrades for large construction projects.
GRW Engineering	600	Manufactures and refurbishes road tankers on chassis for the bulk transportation of liquids as well as stainless steel tank containers for export.
Hall Longmore	570	Manufactures large-bore welded steel pipes for pipelines.
Rheem SA	563	Manufactures metal drums, pails, cans, plastic pails and does steel de-coiling and cutting. Has four manufacturing plants.
Air Products SA	525	Air Products SA manufactures and distributes a variety of industrial and speciality gases. The company also manufactures a range of gas regulating, control and handling equipment including flow control equipment and BIP cylinders.
ASSA ABLOY (SA)	520	Manufactures, supplies and installs door locks, padlocks and gear locks.
Autocast SA	500	Manufactures and supplies engine blocks, manifolds and other automotive parts to local and international OEMs.
Sturrock and Robson	500	Manufactures and distributes industrial products and provides engineering and other services principally for mining and shipping worldwide. Moved main domicile to UK in 2010.
Consolidated Wire Industries	480	Manufactures mild steel wire and wire products for export and domestic sale. Owned by AMSA and the IDC.
Bosal Afrika	448	Manufactures exhaust systems, catalytic converters and towbars as well as industrial products such as irrigation equipment and tubing. Has two manufacturing plants.
Malesela Taihan Electric Cable	414	Manufactures and supplies power cables, aluminium overhead conductors, bare copper and welding wire and strip products as well as optical fibre cables. Exports to other African countries. Has one manufacturing plant.
ERD Fab	400	Manufactures erosion protection shields and pressure vessels, heat exchangers, economisers, boilers, tanks, silos, pressurised systems, ducting and general structural steel work.
Gedore Tools SA	380	Imports and manufactures automotive hand tools, including spanners, pliers, screwdrivers and sprockets.

Company	Employed (a)	Operations
Trellidor Holdings	370 (HQ and manufacturing)	Subsidiaries manufacture and distribute custom-made security barriers in SA and Africa, aimed primarily at residential, office and retail premises.
Andrew Mentis	370	Manufactures and sells steel floor grating, handrail systems, expanded steel, guard rails and allied products.
M I S Engineering	365	Designs and manufactures wear-resistant high-chrome iron castings for the pumping, crushing, grinding, brick making and materials handling industries, primarily for OEMs in the global mining and energy industry.
Silverton Manufacturing	337	Manufactures and distributes components for Toyota, Nissan and VW among others; also does metal pressing and tooling manufactures.
Pabar	320	Manufactures metal pressing and rolled formed components. The company is licensed to manufacture its own brand of gas cylinders for the liquefied petroleum gas market. Wheelbarrows, kitchen sinks, automotive components, lighting boxes and stadium seats are also manufactured.
Allied Steelrode	316	Steel service production centre as well as steel trading.
Voestalpine VAE SA	302	Manufactures and reconditions rails, points crossings and steel sleepers for local state-owned companies (SOCs) and export to other African countries.
Saint-Gobain Pipelines SA	300	Manufactures cast iron products, for the construction and civil engineering, as well as cooking pots and braais. Has two foundry operations.
Clotan Steel	300	Manufactures and trades roof sheeting, cold formed sections and slit strip to clients' specifications
Safal Steel	299	Manufactures aluminium zinc coils and colour coated coils for roofing for domestic and export markets.
Franke SA	277	Manufactures geysers and stainless-steel products such as sinks, hydroboils and toilet pans. Has one factory.
MW Wheels	273	Manufactures steel auto wheels.
Dorbyl	251	Manufactures and markets spheroidal graphite and grey iron castings for automotive, mining, energy and other industries.
Barnes Tubing Industries	250	Manufactures steel water pipes as well as fence posts and gates
Pro Roof Steel and Tube	250	Manufactures and distributes hot rolled structural tubing and cold formed open sections. Has two service and steel processing centres.
Wahl Industries	240	Aluminium die casting manufacturing plant makes irrigation equipment, general aluminium castings for catering and engineering companies and outdoor lighting for the retail and projects market. Has one foundry and three manufacturing plants on the same premises.
KK Engineering	235	Manufactures shelving, racking, display equipment, mezzanine floors and all shopfitting equipment.
SA Scaffolding	230	Manufactures and supplies scaffolding in SA and abroad.
Dense Media Separation Powders	230	Manufactures ferro silicone powder used to separate diamonds from ore.
ND Engineering	220	Manufactures and supplies of carbon steel and stainless-steel storage tanks and pressure vessels.
VR Laser Services	220	Laser cutting of steel, plasma, the bending of armour roller works, fabrication and integration.
Copper Tubing Africa	220	Manufactures copper tubing and components and distributes fittings for taps.
Fischer SA Facilities	218	Subsidiaries manufacture tubes for the auto, transport, food and medical industries.

Company	Employed (a)	Operations
Clear Creek Trading 167	215	Manufactures and supplies wire and wire products for construction, security, agriculture, engineering and mining.
Fabrication & Light Engineering CC	200	Manufactures steel shelving, racking and storage equipment and scaffolding, as well as undertaking materials handling project management. Has one factory. Exports overseas.
Insimbi Refractory and Alloy Supplies	181	Manufactures steel and polypropylene fibres; operates a foundry; supplies consumables and hardware to non-ferrous foundries and for electroplating and galvanizing; provides a range of inputs for the metals industry.
Tshwane Cables	180	Manufactures and distributes low, medium and high voltage cable. Has one manufacturing plant.
Kimberley Engineering Works Foundries	173	Manufactures cast-iron band wheels for mining as well as hand moulded castings, precision machining and fitting, pressings, cylinders, vessels, pumps and agricultural gearboxes.
Fabrinox	170	Operates as a general engineering company, specialising in steel metal fabrication for the food, beverage, mining and agricultural sectors.
SA Bolt Manufacturers	162	Manufactures and distributes industrial fasteners in steel and aluminium, forged by both cold and hot methods. Clients include SOCs; exports to other African countries.
Greif SA	160	Manufactures packaging products such as steel drums, plastic drums and tin pails from raw materials. Has two manufacturing plants.
Tank Clinic	150	Manufactures and supplies new road tankers to the oil and chemical industry. Has two manufacturing facilities.
SA Steel Mills	143	Manufactures steel long products such as angles, channels and pipe.
Zealous Automotive	140	Manufactures components and aluminium castings for the local auto industry.
CBC Fasteners	120	Manufactures and distributes metal fasteners; exports overseas. Has one factory.
Avlock International	105	Manufactures and distributes industrial fastening systems. Supplies mines, appliance and telecoms industries, and exports overseas.
Foxtec-Ikhwezi	70	Manufactures and supplies high-volume forged non-ferrous products and aluminium struts for C-Class Mercedes Benz. Exports 85% to Germany. Has one foundry.
T and I Chalmers Engineering	60	Manufactures industrial fasteners and threaded rods, supplying bolt and nut companies and the building industry.
Impala Bolt and Nut	55	Manufactures bolts and nuts, both standardised and to order.
Precious and non-ferrous metals smelting and refining		
Anglo American Platinum	45 500 (group)	Smelting and refining operations treat ores and concentrates from own mines plus joint ventures and third parties. Virtually entire output is refined. Has three smelters and a refineries complex.
Impala Platinum Holdings	45 000 in SA (group)	Mines, refines and markets platinum and related metals. Has two concentrator plants in SA and two in Zimbabwe. Owns Impala Refining Services which provides smelting and refining services to group mines.
Impala Platinum	44 000 (group)	Smelting and refining operations treat ores and concentrates from own mines. Virtually entire output is refined. Has three concentrators and a smelter.
Harmony Gold Mining Company	31 000 in SA (group)	Processes gold from its own mining operations.

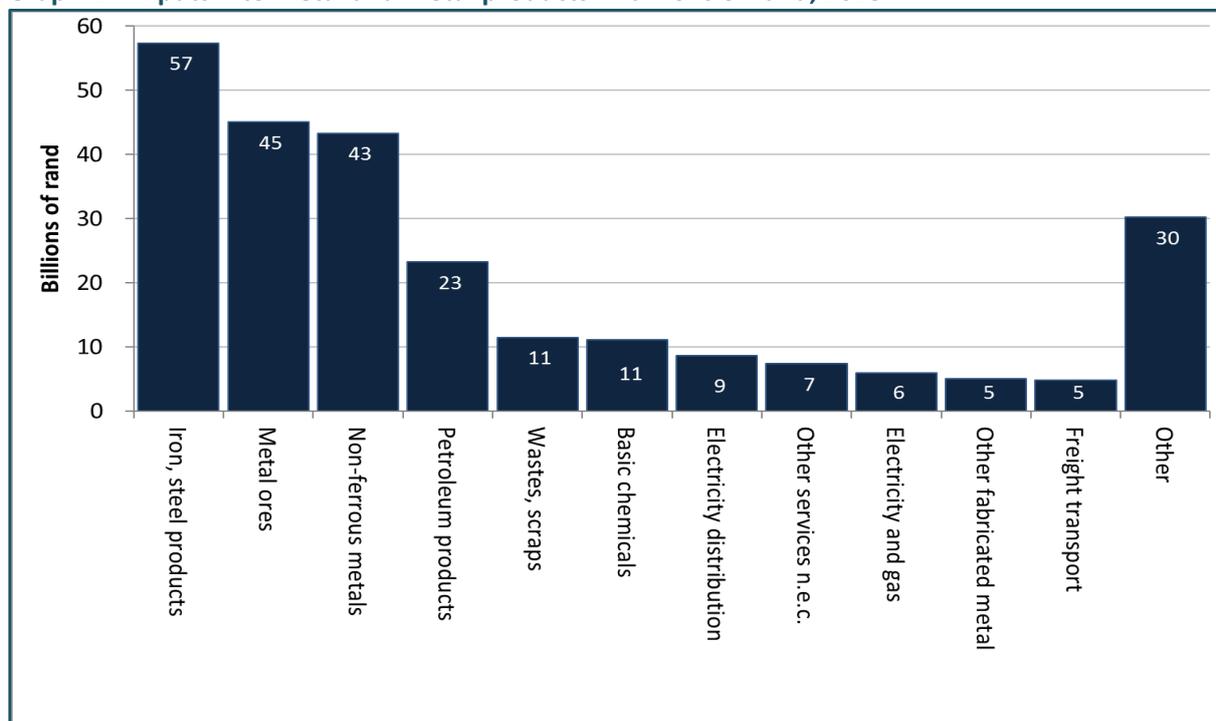
Company	Employed (a)	Operations
Lonmin Plc	26 000 (group)	Mining company with platinum interests with two smelter/refinery complexes that process and refine own production and have the potential to smelt and refine third party and recycling material. Headquarters in UK.
African Rainbow Minerals	23 000 (group)	Diversified mining company with a ferromanganese smelter and works; sells platinum and chrome as concentrates.
Northam Platinum	8 392	Mining interests plus its own metallurgical operations, including a plant to separate base metals from platinum and a smelter.
South32	7 300 in SA	Has an aluminium smelter in Richards Bay (using imported alumina); owns Mozal Aluminium in Mozambique; also has coal mines in SA. International mining company spun off by BHP and headquartered in Australia.
Exxaro Resources	6 648	Mines, extracts and refines minerals and metals including, coal, titanium, base metals (primarily zinc, lead, copper) and selected industrial minerals.
Richards Bay Titanium	2 800	Smelts and beneficiates titanium and related metals.
Zimco Group	1 475	Manufactures aluminium alloys for the steel, auto, aircraft and household utensil industries.
Tronox Mineral Sands	700	Produces titanium dioxide mined on the Northern Natal Coast.
Rand Refinery	510	Refines, fabricates, markets and secures gold. Products include cast and minted bars, coins, coin blanks and medallions, as well as semi-fabricated products for jewellery manufacturing and dentists. Owned by SA gold mining companies; refines all of AngloGold Ashanti production.
Andulela Investment Holdings	474	Through subsidiaries, processes tailings concentrate and related mining of PGMs; also trades steel.
Non-Ferrous Metal Works	430	Manufactures non-ferrous metal products including aluminium, copper, brass and bronze products.
Manganese Metal Company	370	Refines and produces pure electrolytic manganese metal. Has one production facility and exports 95% of its product overseas.
Copalcor	340	Manufactures copper, brass, alloy-based semi-finished products and turnkey busbar solutions; imports aluminium.
Nimag	72	Manufactures and distributes nickel magnesium alloys and ferrosilicon magnesium alloys including for the specialised foundry industry. 85% of the business is exported worldwide.
Precious and non-ferrous metals products		
Hulamin Operations	2 100	Produces semi-finished aluminium products, such as rolled and extruded products and sheet plate for local and global markets.
Wispeco	902	Manufactures and supplies extruded aluminium profiles for the building, engineering and durable goods sectors. Also has powder coating and anodising plants.
Mazor Aluminium	250	Manufactures aluminium door and window frames.

Note: (a) Total employees of company; many may be employed outside of metals manufacturing, for instance in mining, marketing or construction. Source: Who Owns Whom. Report Generator. Electronic database. Downloaded from www.wow.co.za in November 2017.

6 Major inputs

The main inputs into metals and metal products are iron, steel products, metal ores, non-ferrous metals (including imported as well as local chrome and manganese), and petroleum products. In constant rand, the value of inputs remained almost unchanged from 2012 to 2015. Iron, steel products, metal ores, non-ferrous metals, and petroleum products constituted 67% of all inputs.

Graph 14. Inputs into metal and metal products 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.

Electricity is the most important input into aluminium refineries, which thus effectively benefit South African coal. Alumina imports, mostly from Australia, account for around 15% of the value of South Africa's exports of basic aluminium products.

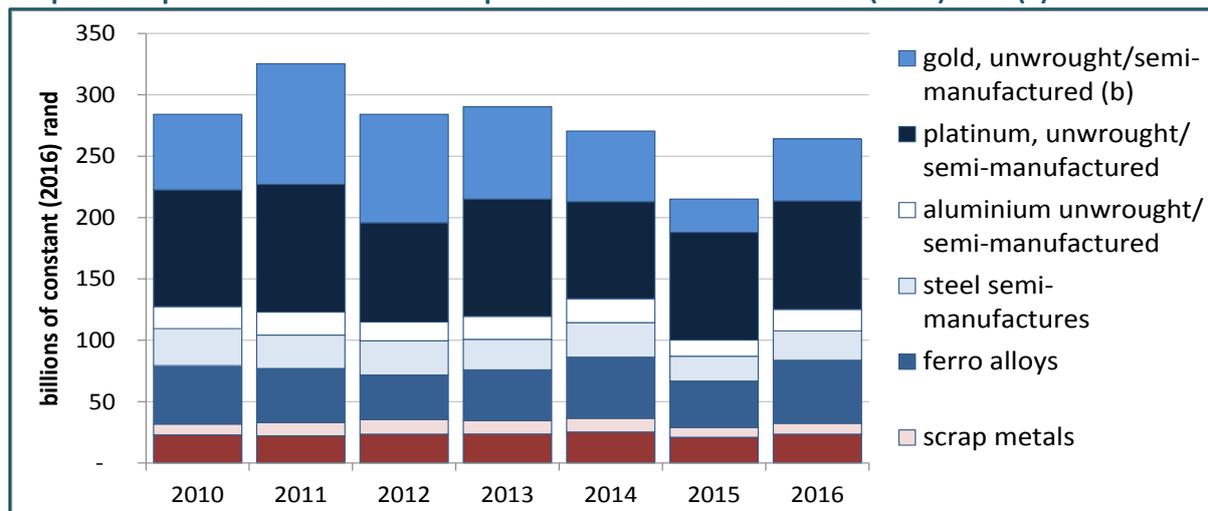
7 Trade

Refined metals and metal products accounted for a quarter of exports in 2016, down from a third in 2011, when the metals price boom ended. Overseas exports of unwrought and semi-manufactured metals (that is, essentially, sheets, bars and wires) dominate these sales. Exports of manufactured metal products such as containers and simple tools are far smaller, and mostly go to neighbouring countries. In contrast, imports consist primarily of steel manufactures, mainly from China.

Exports of unwrought and semi-manufactured metals accounted for nine tenths of the industry's exports in 2016. Platinum made up a third, and steel and ferro alloys almost as much. The value of metals exports in constant rand dropped to a low in 2015, but a modest recovery in prices in 2016 saw some recovery.

From 2010, metals exports dropped by almost 20%, mainly due to a 50% decline in gold sales in constant 2016 rand. The relatively rapid fall in gold reflected the maturing of the mines, with a steady fall in output, combined with the end of the metals price boom from 2011. While the value of unwrought and semi-manufactured metals declined, manufactured metal products saw a 6% increase in constant rand from 2010 to 2016.

Graph 15. Exports of metals and metal products in billions of constant (2016) rand (a)

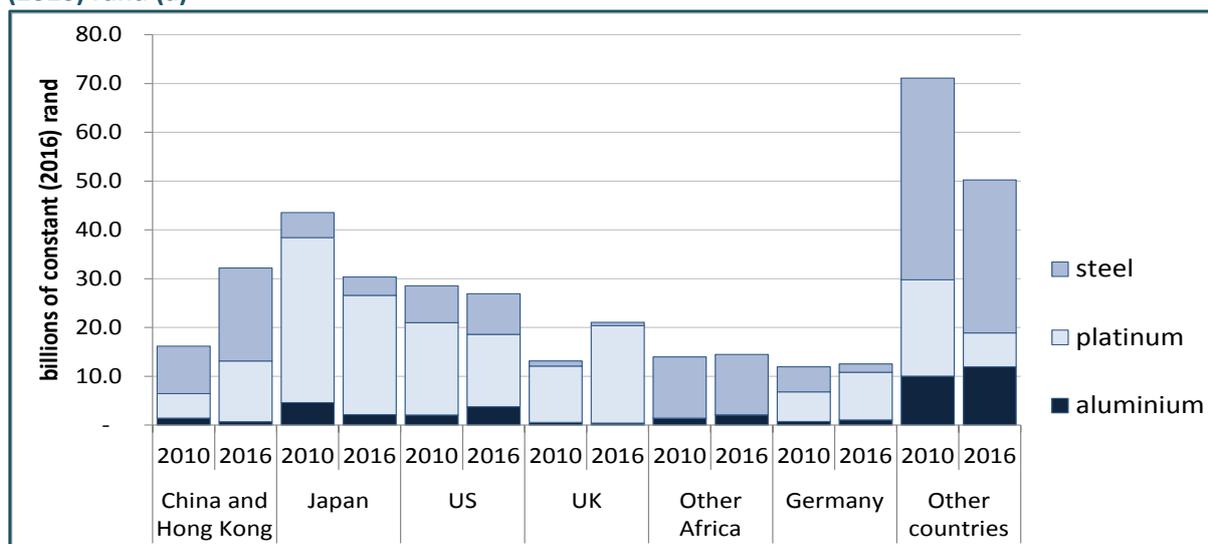


Note: (a) Deflated with CPI. (b) Data from trading partners for 2010. Source: Calculated from ITC. TradeMap. Electronic database. Series on exports of iron and steel, platinum, gold, steel articles and miscellaneous metal articles. Downloaded from www.trademap.org in November 2017.

Unwrought and semi-manufactured metals were sold on international markets, making it difficult to determine their ultimate destination. Some countries treat gold as a monetary product rather than a metal, which means the figures do not appear in their trade data at all. For this reason, Graph 16, which shows exports by country, excludes gold. Using mirror figures, which have significant gaps, it appears that China and Hong Kong together bought half of South African gold exports in 2016, while most of the rest went to the UK.

Platinum exports were centred on Japan, the US, the UK, Germany and China. This pattern reflected the use of platinum in catalytic converters, although increased recycling and more efficient techniques gradually reduced its importance during the commodity boom. Steel products reached far more diverse export markets, including significant sales in the rest of Africa as well as China, the US and Japan. Steel sales to Germany declined sharply from 2010 to 2016. Like steel, aluminium exports were also relatively diversified.

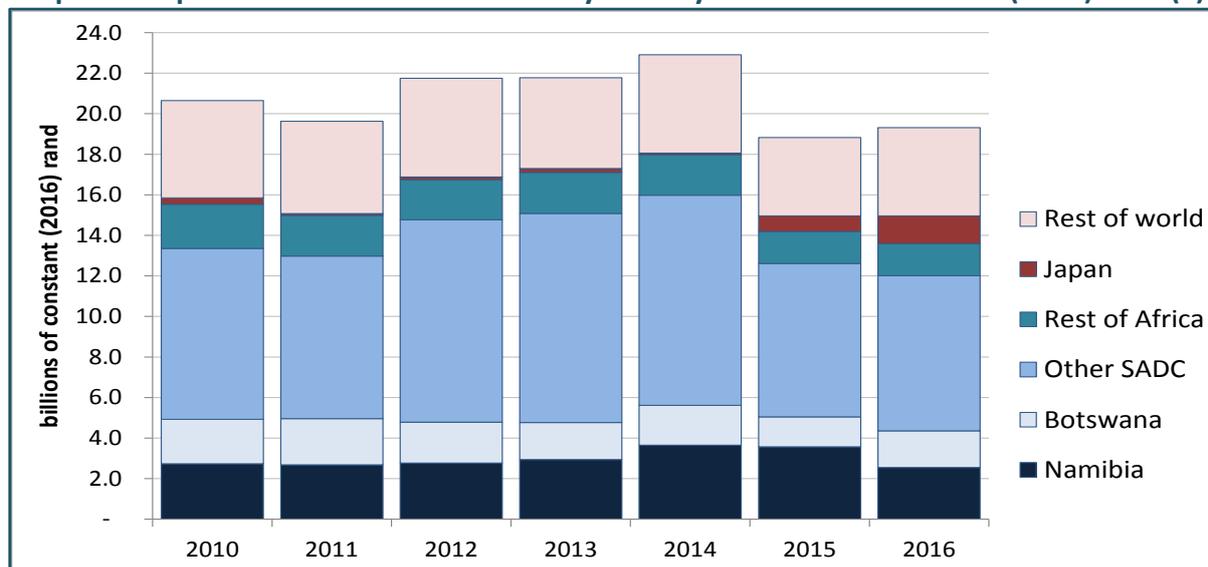
Graph 16. Exports of metals and metal products (excluding gold) by country in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on exports of iron and steel, aluminium and platinum by country. Downloaded from www.trademap.org in November 2017.

South African exports of manufactured metal products were only around a quarter as high as exports of metals. The bulk of these exports goes to other Southern African Development Community (SADC) countries, led by Namibia, Botswana, Mozambique and Zambia. A significant decline emerged in 2015.

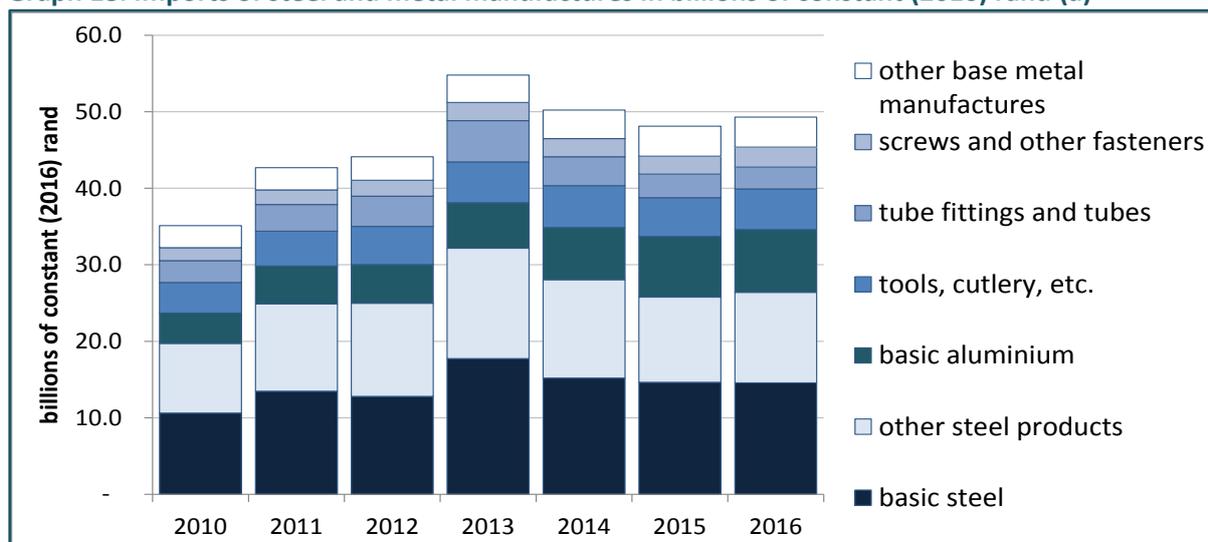
Graph 17. Exports of metal manufactures by country in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on exports of iron and steel products, tools and cutlery, and miscellaneous base metal articles by country. Downloaded from www.trademap.org in November 2017.

South African imports of precious metals were small compared to exports, mostly around R1 billion in jewellery in 2016. In contrast, imports of steel, aluminium and other base metal products, excluding copper, came to around R55 billion, as Graph 18 shows. The value of these imports fell by 10% from 2013 to 2016, as the end of the commodity boom saw a decline in public and private investment as well as a weaker rand, which increased the unit cost of all imports. The fall was driven by basic steel products and tube fittings and tubes. In contrast, aluminium imports rose steadily.

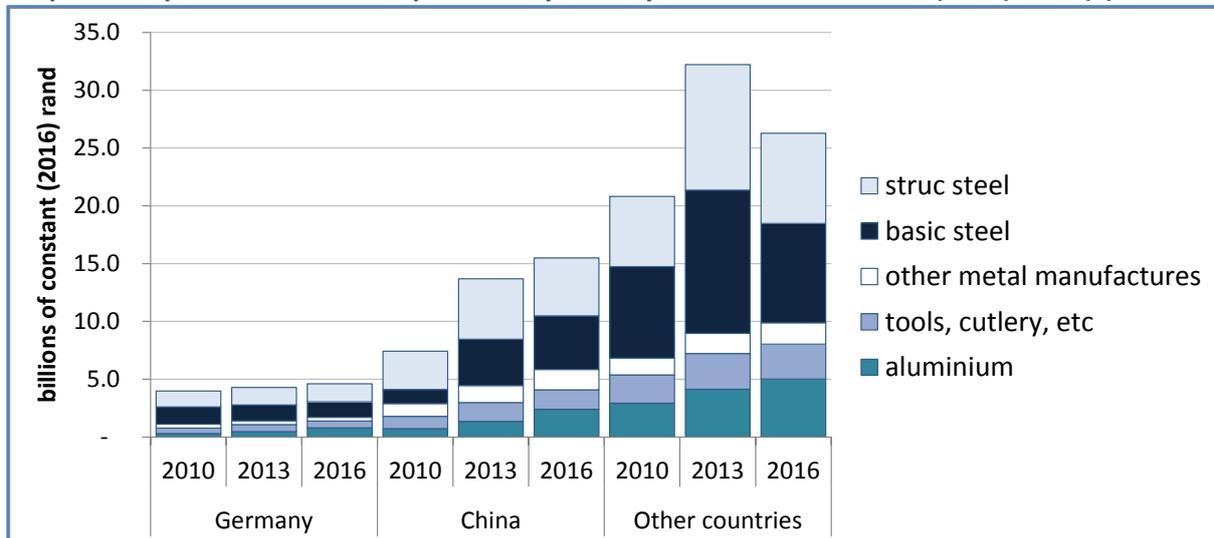
Graph 18. Imports of steel and metal manufactures in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on imports of iron and steel products, aluminium products, tools and cutlery, and miscellaneous base metal articles by product. Downloaded from www.trademap.org in November 2017.

By far the largest sources of metals imports were China and Germany. From 2010 to 2016, China effectively displaced other sources for basic steel, climbing from 12% to 32% of the total. Largely as a result, its share in total base metals imports rose from 23% in 2010 to 33% in 2016. Its sales to South Africa of basic steel alone climbed 230% in constant rand from 2010 to 2013. They rose 16% from 2013 to 2016, even as South African steel imports from other countries fell by 28%.

Graph 19. Imports of basic metal products by country in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on imports of iron and steel products, aluminium products, tools and cutlery, and miscellaneous base metal articles by country. Downloaded from www.trademap.org in November 2017.

While China was the largest single source of aluminium products, at 29% in 2016, imports from Mozambique climbed sharply from 2014. In the two years from 2014, they increased from R6 million to R480 million in constant 2016 rand, reaching 6% of the total.

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