

THE REAL ECONOMY BULLETIN

TRENDS, DEVELOPMENTS AND DATA

FOURTH QUARTER 2022

*The Real Economy Bulletin is a TIPS review of quarterly trends, developments and data in the real economy, together with a comprehensive analysis of the main manufacturing industries and key data in Excel format.**

GDP growth

The economy shrank by 1.3% in the fourth quarter of 2022. Arguably that very poor outcome actually showed surprising resilience, given extraordinarily heavy loadshedding combined with falling export prices. Manufacturing contracted by just under 1%, but agriculture and mining both fell by 3%. Since the pandemic, quarterly GDP growth has turned markedly volatile.

The GDP contracted by 1.3% in the final quarter, after growing by 1.8% in the previous quarter. (Graph 1) For the year as a whole, despite two quarters of shrinkage, the economy expanded by 2.1%, reaching a total of R6.6 billion. That was 0.6% above 2019, before the pandemic downturn. (Graph 2) In the interim, however, the population has grown over 4%, so per capita GDP still has some way to go before it gets back to 2019 levels.

GDP growth remains highly volatile. The past year saw two quarters of growth above 1.5% – which would translate to 7% annual growth, if it persisted – but in two quarters it shrank almost as fast. South Africa has not recorded that kind of quarterly variability since the transition to democracy. In 2021 and 2022, the volatility of quarterly GDP growth, as measured by the standard deviation, was more than twice as high as in 2018 and 2019.

*Available at www.tips.org.za/the-real-economy-bulletin

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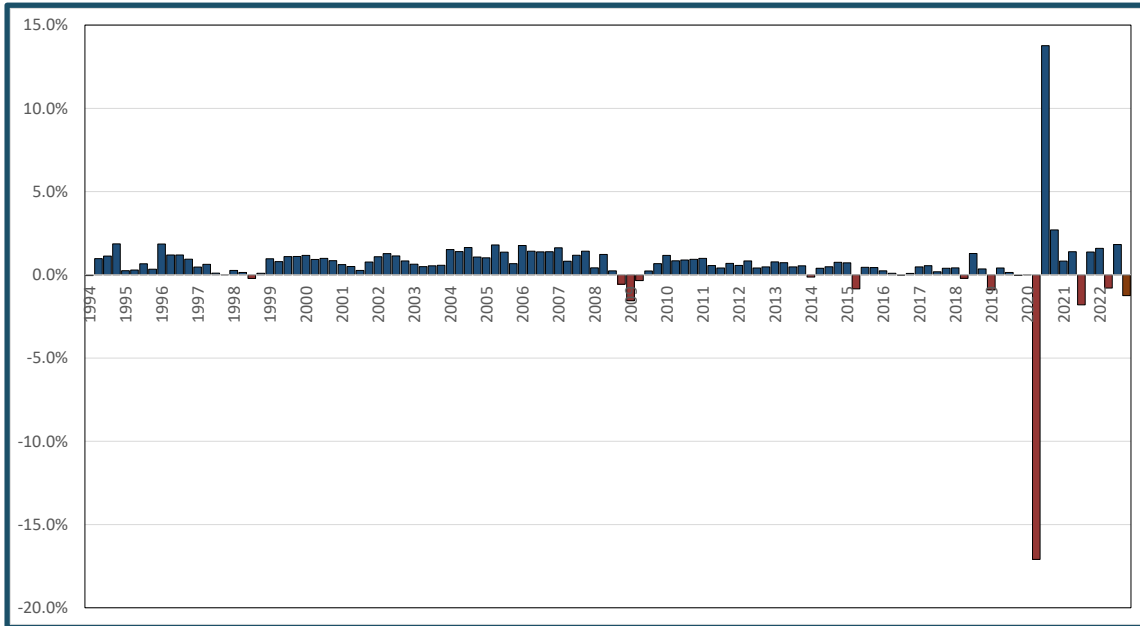
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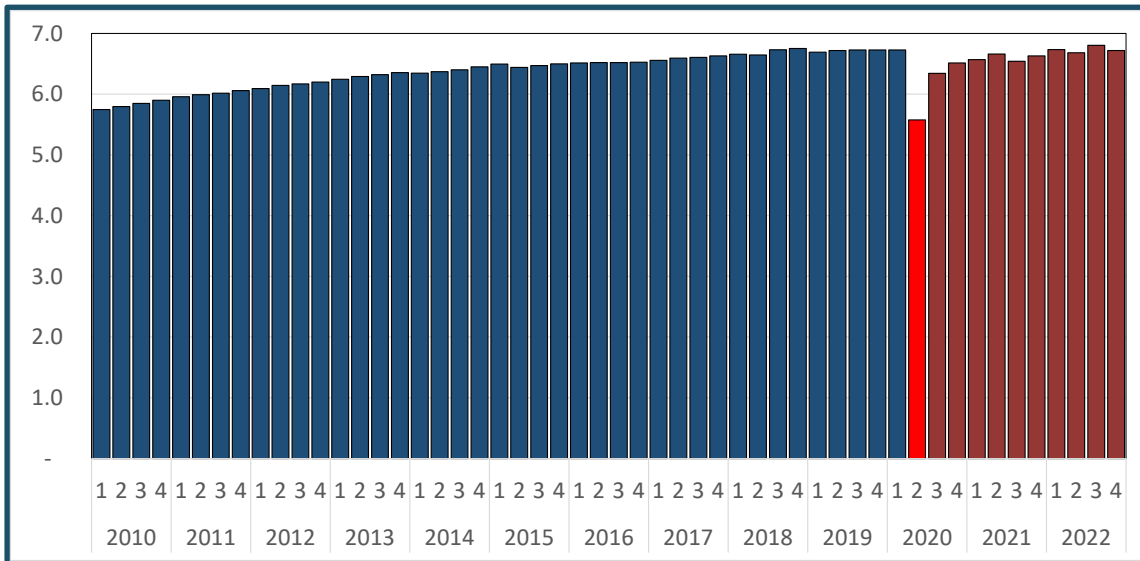
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Graph 1. Quarterly change in GDP, seasonally adjusted, 2000 to fourth quarter 2022



Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2022Q4. Excel spreadsheet.

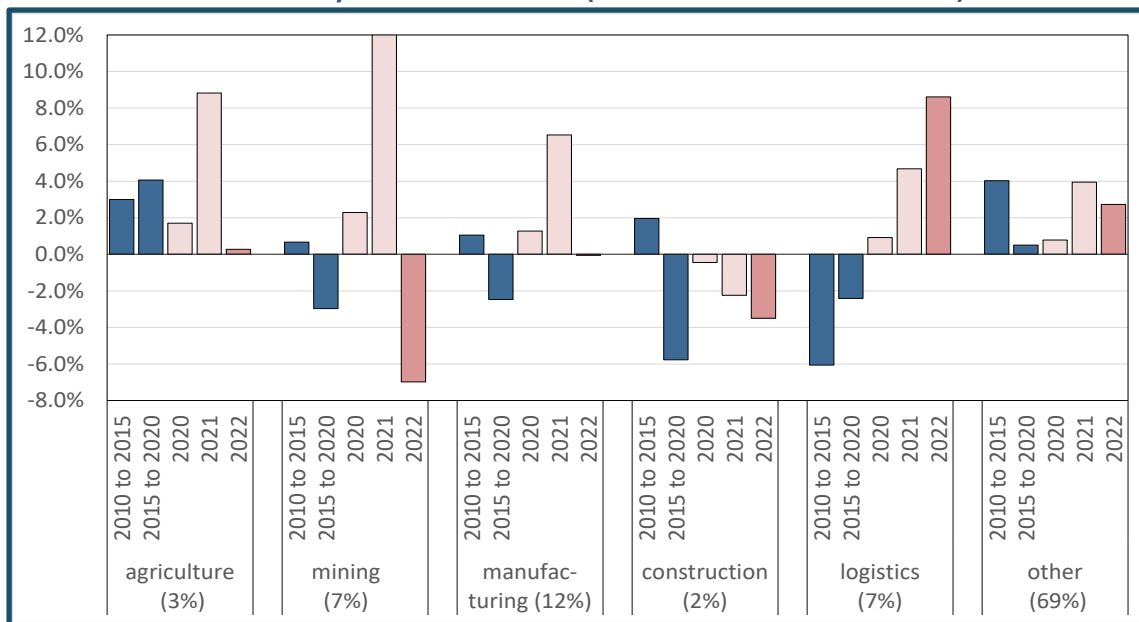
Graph 2. Quarterly GDP in trillions of constant (2022) rand (a) from 2010



Note: Refflated using implicit GDP deflator rebased to 2022. Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2022Q4. Excel spreadsheet.

In 2022, mining and construction were the largest drag on the GDP growth by volume. Mining output reportedly shrank by 7%, while construction fell 3.5%. Manufacturing barely declined at all over the full year, shrinking by 0.1%. Agriculture and the tertiary sector both expanded. Fundamentally, global mining cycles continue to be a key factor behind trends in the broader economy. Mining accounts for only 7% of the GDP but over half of total exports, which means the significant swings in its contribution to the GDP have a major impact on overall growth. Construction remains in a long-term downturn.

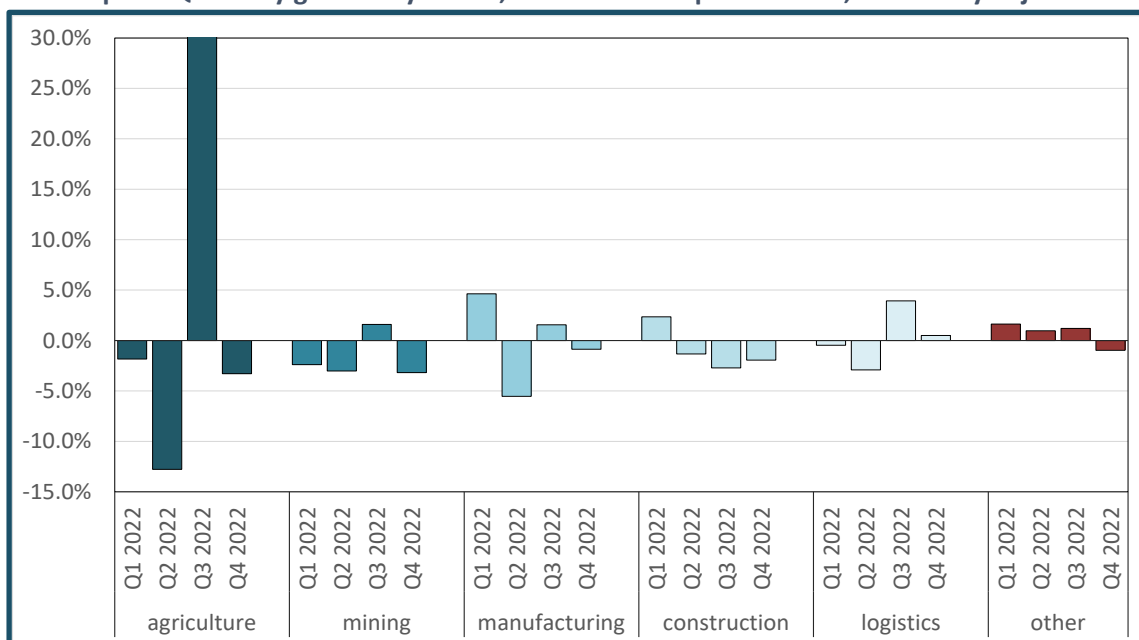
Graph 3. Annual growth by sector, average from 2010 to 2015 and 2015 to 2020, and annually from 2020 to 2022 (share of total GDP in brackets)



Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2021Q4. Excel spreadsheet.

In the last quarter of 2022, manufacturing shrank moderately, while both agriculture and mining saw much larger downturns. Agriculture shows extraordinary swings in growth quarter on quarter, which suggests persistent problems with the seasonal adjustment of the data. The rest of the economy also shrank after three quarters of growth.

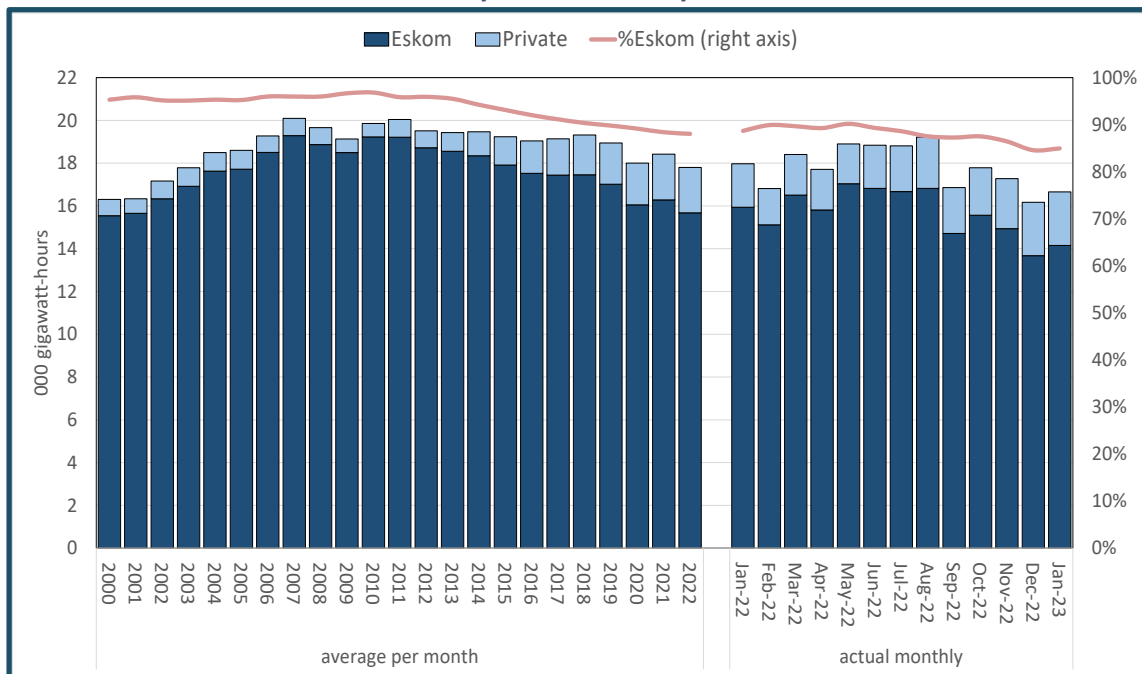
Graph 4. Quarterly growth by sector, first to fourth quarter 2022, seasonally adjusted



Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2021Q4. Excel spreadsheet.

The very high levels of loadshedding and a fall back in export prices over the course of 2022 made some economic decline inevitable. As Graph 5 shows, Eskom’s supply of electricity fell sharply in August and again in December. The private sector increased generation, but not enough to offset the Eskom shortfall. Eskom’s share in grid electricity fell from 87% in the third quarter of 2022 to 85% in the final quarter. The figures do not include small off-grid solutions, such as generators and rooftop solar, which gained in popularity among higher-income households and formal businesses. The 2023/4 budget provided credit guarantees to assist businesses in going off grid, a critical step in protecting the economy from the failures of the national electricity supply in the short run. Unfortunately, experience during the pandemic suggested that this kind of measure would not necessarily get banks to relax their lending requirements. When financing is available, solar systems generally pay for themselves over the medium term, as the very low cost of generation compared to both Eskom electricity and diesel generators offsets the initial investment in panels and batteries.

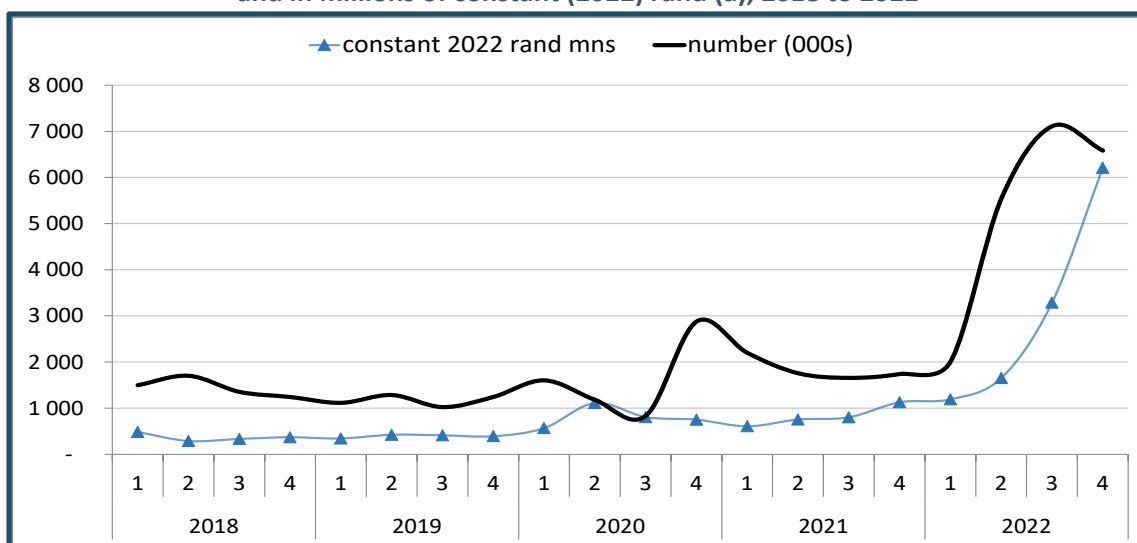
Graph 5. Electricity available for distribution in GWh and share of Eskom in total electricity supply through the national grid, monthly average from 2000 to 2022 and monthly from January 2022 to January 2023



Source: Calculated from Statistics South Africa. P4141. Electricity generated and available for distribution. Excel spreadsheet

There are indications of the cost of loadshedding to the economy, although the overall burden is difficult to quantify. For instance, Graph 6 shows that the cost of imports of lithium-ion batteries climbed more than threefold in the course of 2022. Still, aggregating the full costs of loadshedding proves difficult. On the one hand, the burdens are diffused across virtually all producers, with very uneven impacts depending on their energy dependency and access to substitutes. On the other, business accounts do not generally record many of the costs separately, for instance for repairs to equipment damaged by interrupted electricity or overtime to make up for lost shifts. See Briefing Note on Loadshedding and the economy on page 20.

Graph 6. Quarterly imports of lithium-ion batteries in thousands of units and in millions of constant (2022) rand (a), 2018 to 2022

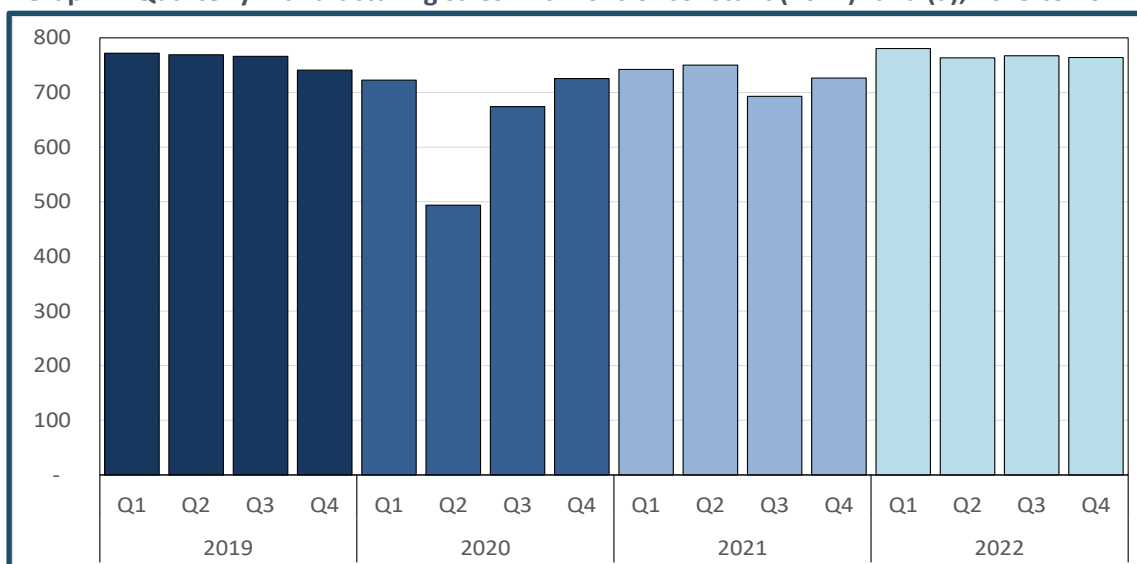


Note: (a) Rebased with quarterly CPI rebased to fourth quarter 2022. Source: Calculated from International Trade Centre. TradeMap. Interactive dataset. Accessed at www.trademap.org March 2023.

Studies agree that the burdens of loadshedding to the broader economy generally exceed the cost of measures to reduce it. These measures include, among others, financing producers to enable them to afford the up-front cost of off-grid solutions; fast-tracking new sources of supply for the grid; and burning more diesel to generate electricity. For Eskom and the government as a whole, however, these solutions would appear as on-budget costs, where loadshedding effectively externalises them.

In 2022 as a whole, gross manufacturing sales were 7% higher than in 2019. The recovery in sales essentially stalled in the second quarter of 2021 (Graph 7). In the fourth quarter of 2022, they were essentially the same, in constant rand, as in the preceding six months.

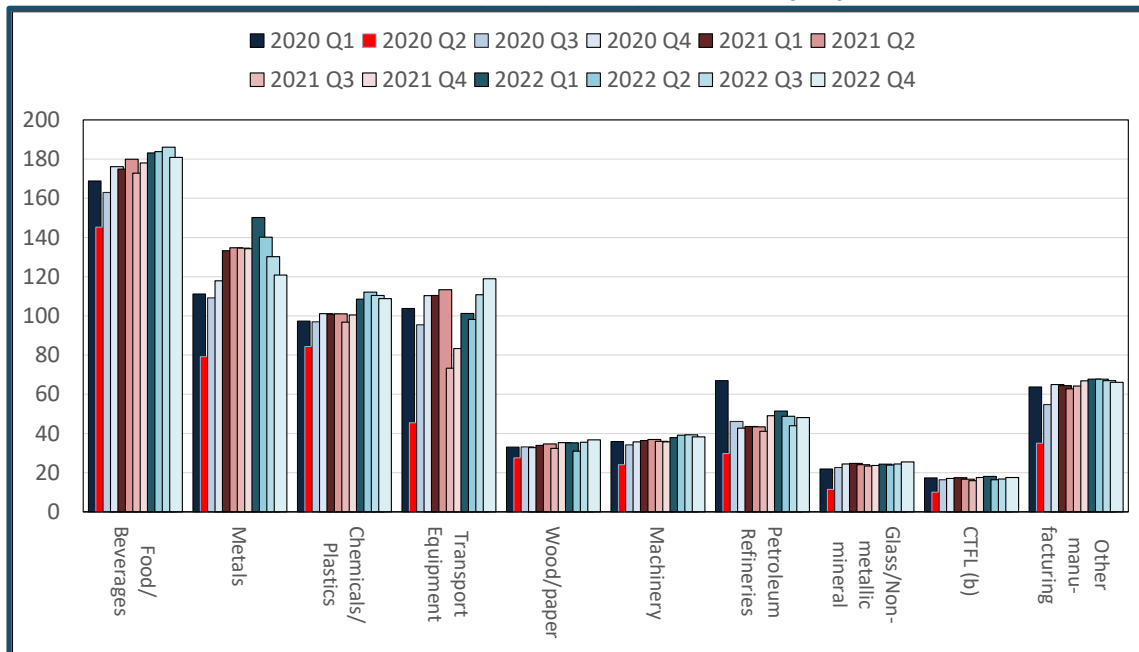
Graph 7. Quarterly manufacturing sales in billions of constant (2022) rand (a), 2019 to 2022



Note: (a) Rebased with CPI rebased to December 2022. Source: Calculated from Statistics South Africa. Manufacturing: Production and Sales, December 2022. P3041.2.

Sales by the auto industry climbed to 15% above pre-pandemic levels, with a sharp recovery from the downturn in mid-2021. In contrast, metals started the year with a jump in sales but saw a steep and steady decline thereafter. Food sales dipped but in constant rand were still 5% above pre-pandemic levels.

Graph 8. Quarterly sales by manufacturing industry in billions of constant (2022) rand (a), seasonally adjusted



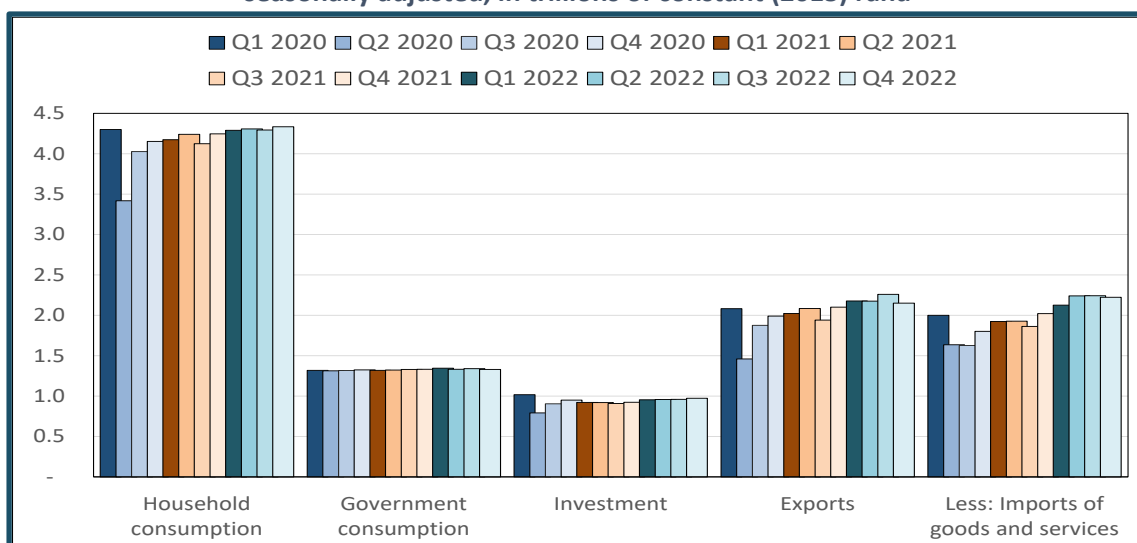
Note: (a) Refflated with CPI. Source: Calculated from Statistics South Africa. Manufacturing: Production and Sales, December rema2022. Excel spreadsheet. P3041.2.

The recent decline in metals sales was driven primarily by lower prices and stagnant production in the steel industry, which accounts for around a third of the industry’s total turnover. From the first to the last quarter of 2022, the unit steel price dropped by nearly a third, while output fell 15% from mid-2021.¹ Aluminium and fabricated products saw their sales decline between 15% and 20% in constant rand, mostly due to falling prices rather than shrinking output. In contrast, structural steel production increased through 2022, though it remains around 50% lower than in the early 2010s.

From the perspective of expenditure, household consumption and investment were the main drivers of growth, but falling government consumption and export revenues offset them. (Graph 9) Declining export revenues mainly reflected lower prices for South Africa’s mineral exports, especially iron ore, combined with lower volumes. These issues are detailed in the section on international trade. As discussed in the section on investment, higher investment arose almost entirely from general government and the private sector, with a continued fall in capital spending by state-owned corporations.

¹ Calculated from Statistics South Africa. Manufacturing: Production and Sales. Excel spreadsheet. December 2022. P3041.2.

Graph 9. Quarterly expenditure on GDP, first quarter 2020 to third quarter 2022, seasonally adjusted, in trillions of constant (2015) rand

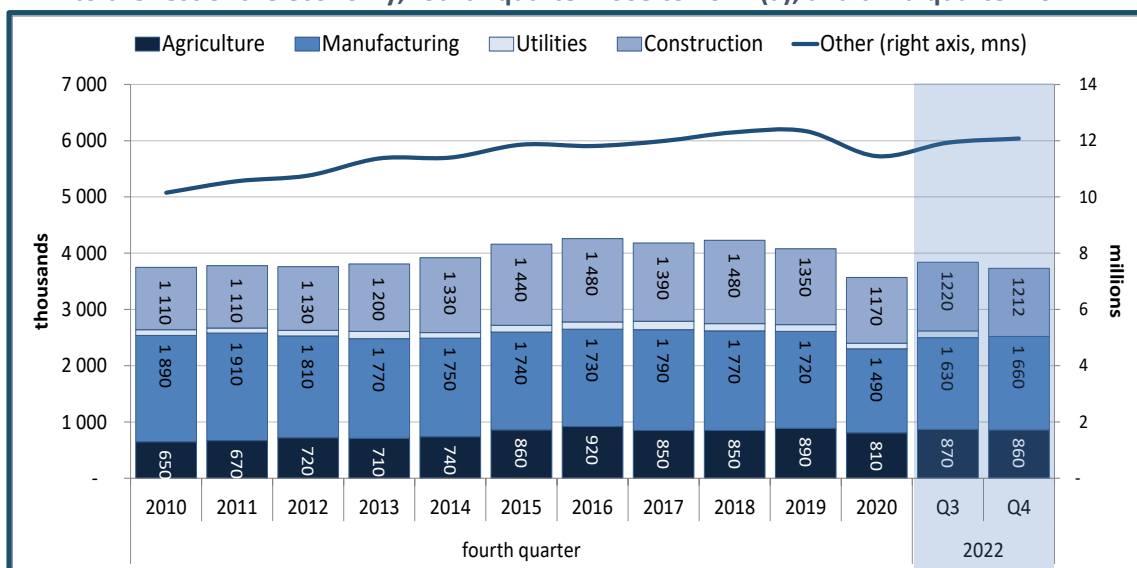


Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2021Q4. Excel spreadsheet.

Employment

Despite the decline in the GDP, total employment climbed by almost 160 000 in the fourth quarter of 2022, for a net gain of 900 000 compared to the same quarter in 2020. Still, the economy remained 500 000 jobs short of its pre-pandemic total. Most of the job losses affected clerical and skilled production workers, while highly qualified people gained over 2019. Manufacturing saw a second quarter of modest growth, although not enough to catch up with its pre-pandemic levels.

Graph 10. Employment in agriculture, manufacturing, utilities and construction compared to the rest of the economy, fourth quarter 2008 to 2022 (a), and third quarter 2022



Source: Calculated from Statistics South Africa. QLFS Trends 2008-2022Q4. Excel spreadsheet.

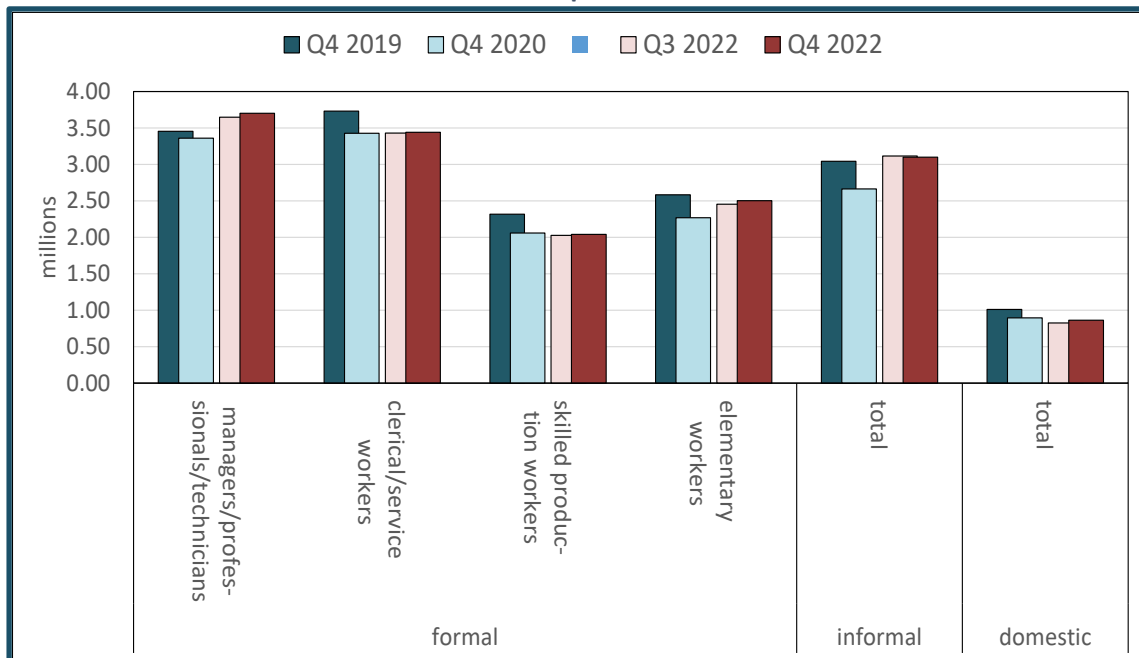
Employment in agriculture, manufacturing, construction and utilities, taken together, climbed compared to the fourth quarter 2020, although not as fast as the rest of the economy. (Graph 10) Manufacturing alone saw net gains of 170 000 jobs over the past two years. A comparison to

2021 is not possible because the labour force surveys had an extremely low response rate in the second half of the year, making them unreliable.

The job losses during the pandemic have a highly uneven impact by class. More professionals and managers are now employed than in 2019. In contrast, clerical, skilled production and to a lesser extent elementary and domestic workers continue to face lower employment levels. This trend deepens South Africa’s already sharp economic inequalities. (Graph 11)

The slow recovery in lower-level formal employment encouraged a sharp increase in informal activities, which now exceeds pre-pandemic levels. In addition, the jobs recovery since 2020 has been associated with a jump in qualification levels. It appears that when employers laid off workers during the pandemic downturn, they often replaced them with more qualified people, even in the informal sector. (See the Briefing Note on page 25 and the forthcoming REB Edition on the State of Small Business for more detail.)

Graph 11. Employment by occupation, fourth quarter 2019, 2020 and 2022 (a) and third quarter 2022

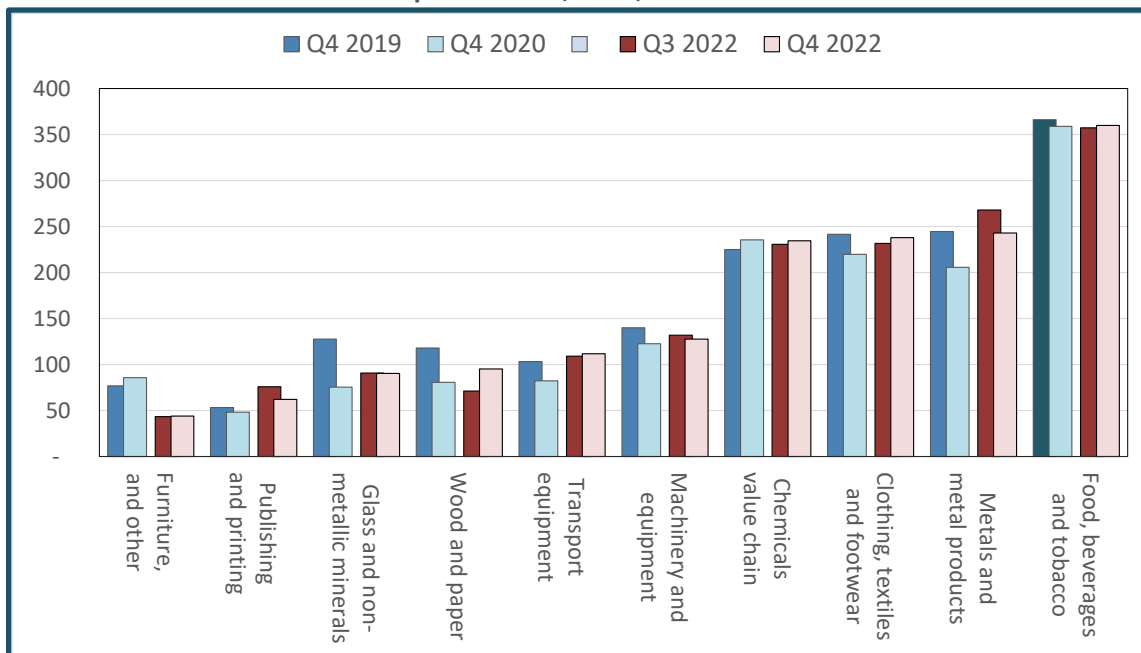


Note: (a) Excludes findings for fourth quarter 2021 due to the very low response rate.

Source: Calculated from Statistics South Africa. QLFS for relevant quarters. Electronic databases.

Within manufacturing, employment in printing, transport equipment and the chemicals industry now exceed pre-pandemic levels. Food, clothing and metals jobs have made significant progress since the pandemic downturn, but employment remains respectively 2%, 1% and 1% lower than in the fourth quarter of 2019. The jobs deficits are much larger, however, in wood and paper, glass and non-metallic minerals, machinery and equipment, and furniture and other industries.

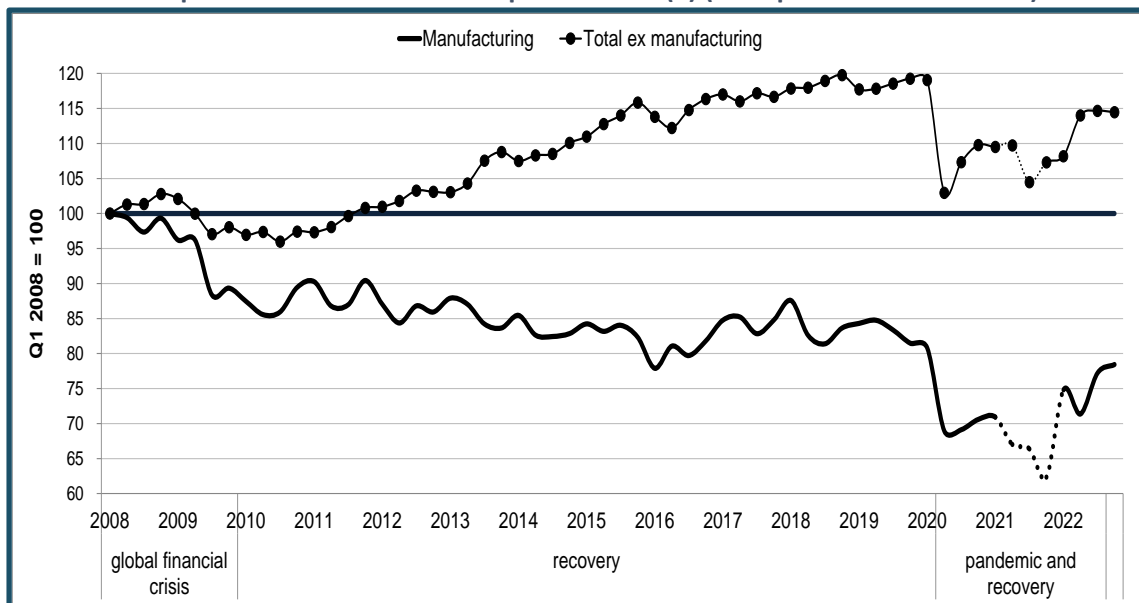
Graph 12. Employment in manufacturing industries, fourth quarter 2019, 2020, 2021 and 2022



Source: Calculated from Statistics South Africa. QLFS for relevant quarters. Electronic databases.

Trends in manufacturing and non-manufacturing employment from 2008 are depicted in Graph 13. It provides a long-term view of the decline of manufacturing employment relative to other sectors, and a sense of the scale of the COVID-19 shock to employment. As of the fourth quarter of 2022, manufacturing employment was 4% lower than before the pandemic, around the same as for the rest of the economy.

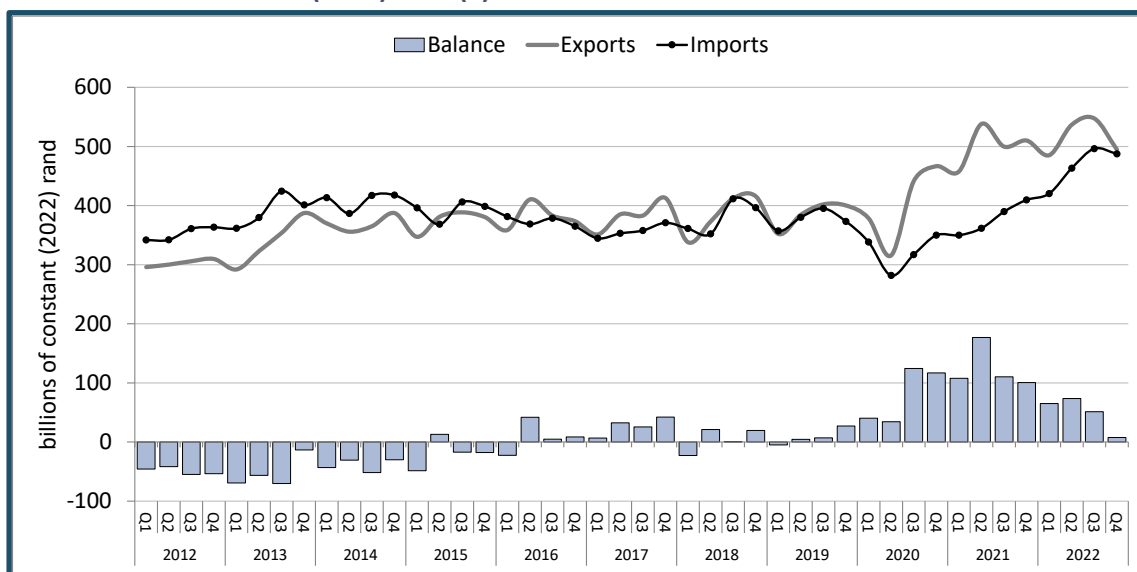
Graph 13. Indices of employment in manufacturing and the rest of the economy, first quarter 2008 to the fourth quarter 2022 (a) (first quarter of 2008 = 100)



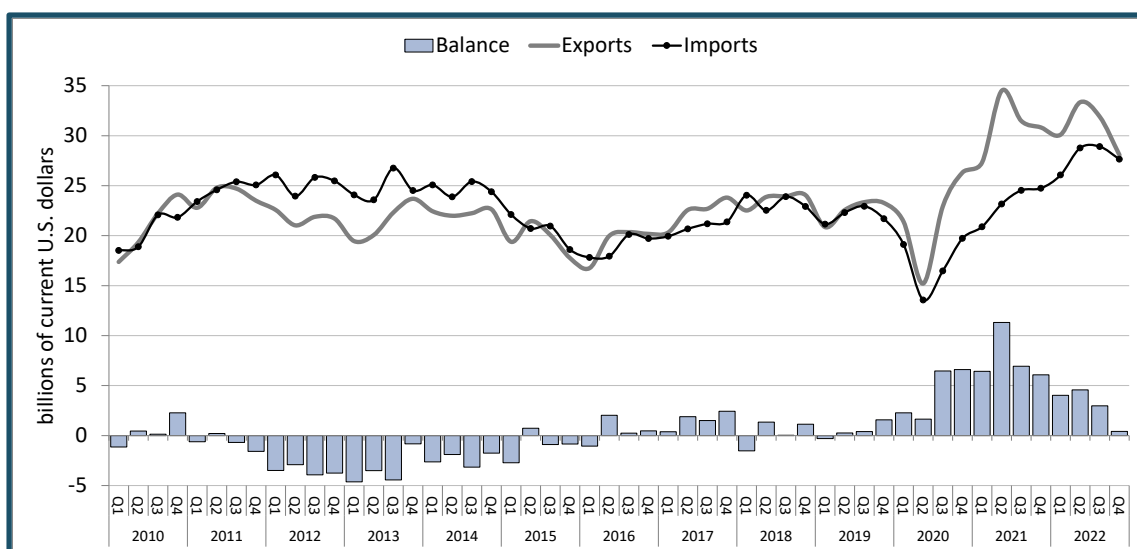
Source: Calculated from Statistics South Africa. QLFS for relevant quarters. Electronic databases.

Graph 15. Exports, imports and balance of trade in billions of constant rand and current US dollars

A. Billions of constant (2022) rand (a)



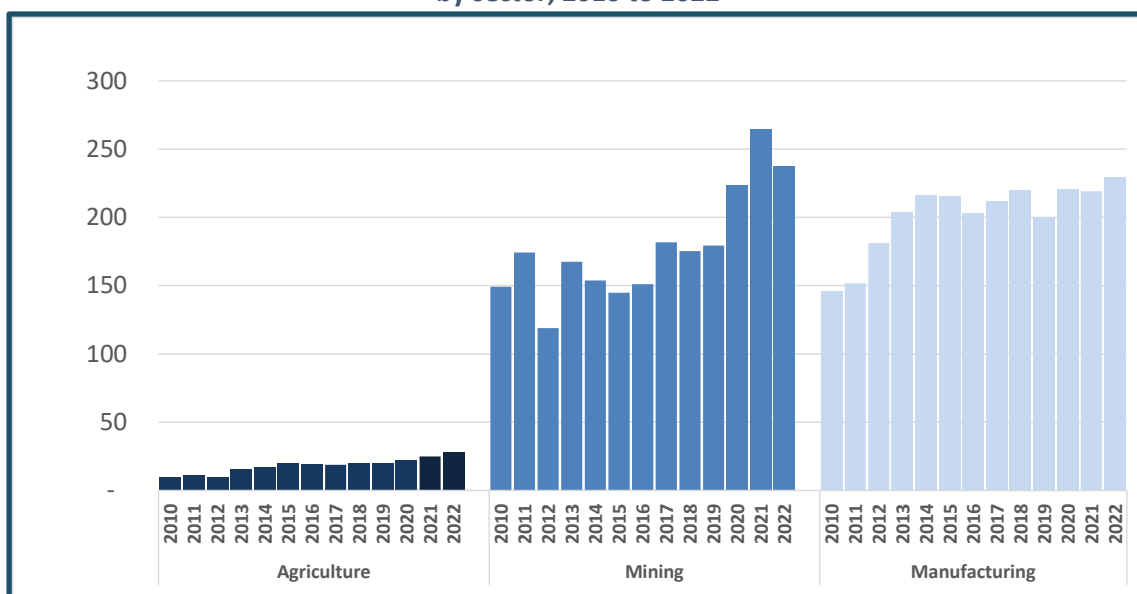
B. Billions of current US dollars



Source: Calculated from South African Revenue Service data.

In constant rand, mining exports declined by 11% in the year to December 2022, although they remain well above pre-pandemic levels. Manufacturing exports climbed R10 billion to R229 billion. Agriculture exports increased by R3 billion, reaching R28 billion. Agricultural and manufacturing exports grew by 21.4% and 4.4% respectively over the last three years, driven mainly by the depreciation of the rand and exports of steel and automotives.

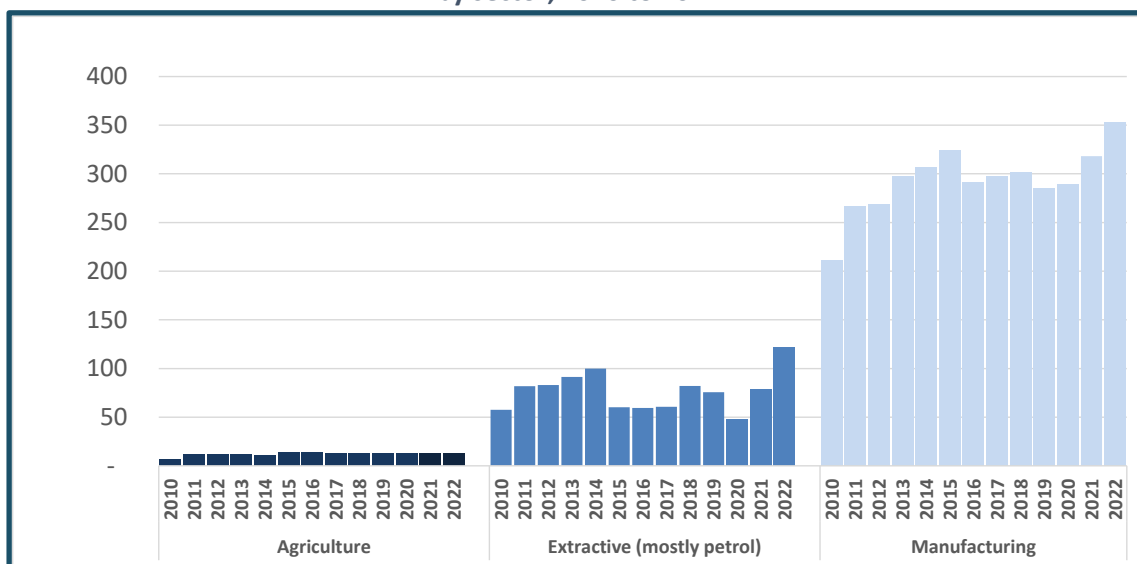
Graph 16. Fourth quarter goods exports in billions of constant (2022) rand (a), by sector, 2010 to 2022



Note: (a) Deflated with CPI. Source: Calculated from South African Revenue Service data.

In constant rand, manufacturing imports reached a 12-year high of R20 billion at the end of 2022, a R1 billion increase from the end of 2021. The jump resulted primarily from higher imports of transport equipment, along with a steady increase in metals, machinery and electronics. Extractive imports, which are almost entirely petroleum, also reached a 12-year high as prices remained elevated and the rand depreciated against the US dollar. Agricultural imports remained comparatively low and stable at R13 billion. (Graph 17)

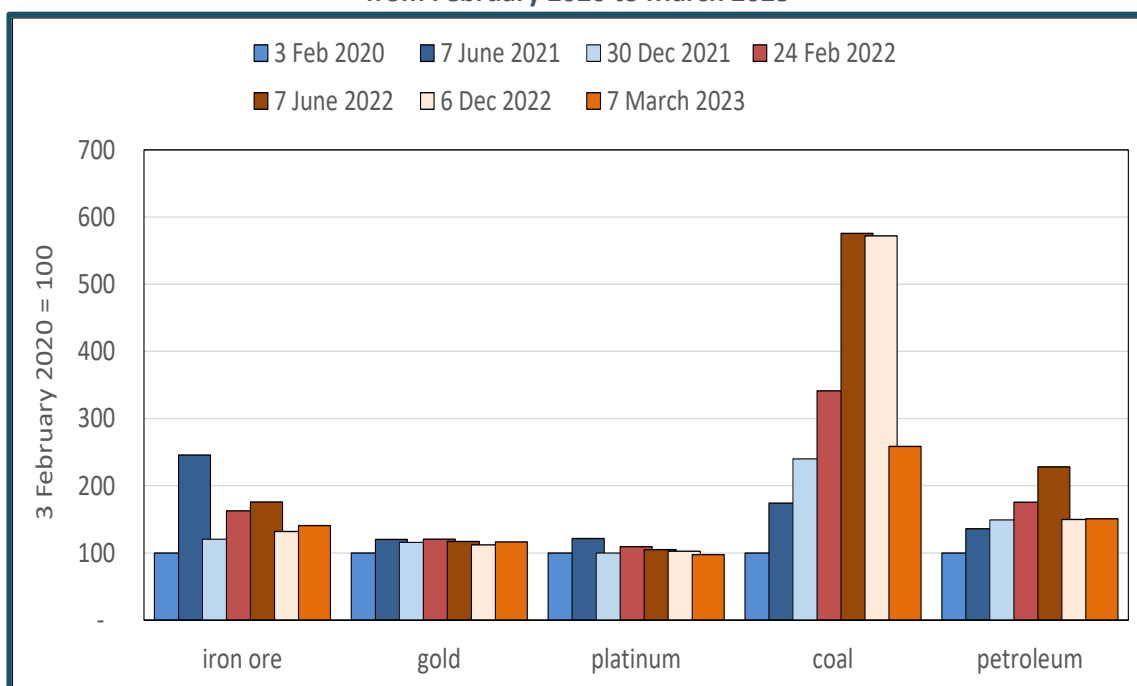
Graph 17. Fourth quarter goods imports in billions of constant (2022) rand (a), by sector, 2010 to 2022



Note: (a) Deflated with CPI. Source: Calculated from South African Revenue Service data.

While prices for most of South Africa’s mineral exports remain above their pre-pandemic levels, they have fallen off their highs. The decline has been particularly sharp for iron ore, although the revival of the Chinese economy may lead to some improvement. Platinum prices have also seen a steady decline since their peak in mid-2021. The increase in coal prices following the invasion of Ukraine proved comparatively durable, but they plummeted in the first quarter of 2022. Generally, international mining prices have been extraordinarily changeable, which adds to the stress on the South African economy.

Graph 18. Indices of global US dollar prices for South Africa’s major mining exports from February 2020 to March 2023



Source: Calculated from Trading Economics. Commodity prices. Interactive dataset. Accessed at <https://tradingeconomics.com/commodities> on 6 December 2022.

In manufacturing, metals accounted for most of the decline in exports, but it was more than offset by higher auto and machinery sales. Imports of autos and machinery, however, grew far more quickly than exports. The increase in machinery imports bodes well for investment.

Table 1. Trade by manufacturing subsector in current US dollars and constant rand

INDUSTRY	VALUE (BILLIONS)		% CHANGE FROM Q4 2021		CHANGE IN BILLIONS	
	USD	Rand	USD	Rand	USD	Rand
EXPORTS						
Food and beverages	1.17	20.6	-4.4%	1.9%	-0.05	0.38
Clothing and footwear	0.47	8.2	-12.7%	-7.1%	-0.07	-0.62
Wood products	0.14	2.5	-10.7%	-4.8%	-0.02	-0.12
Paper and publishing	0.52	9.2	17.5%	24.8%	0.08	1.83
Chemicals, Rubber, plastic	2.36	41.6	0.1%	6.6%	0.00	2.56

INDUSTRY	VALUE (BILLIONS)		% CHANGE FROM Q4 2021		CHANGE IN BILLIONS	
	USD	Rand	USD	Rand	USD	Rand
Glass and non-metallic mineral products	0.11	1.9	-14.4%	-8.9%	-0.02	-0.19
Metals and metal products	2.68	47.2	-18.0%	-12.8%	-0.59	-6.90
Machinery and appliances	2.33	41.0	5.2%	11.9%	0.12	4.36
Transport equipment	2.98	52.5	11.0%	18.1%	0.30	8.04
IMPORTS						
Food and beverages	0.93	16.3	-7.4%	-1.4%	-0.07	-0.23
Clothing and footwear	1.22	21.6	-5.2%	1.1%	-0.07	0.23
Wood products	0.10	1.8	-10.7%	-4.9%	-0.01	-0.09
Paper and publishing	0.80	14.1	8.7%	16.1%	0.06	1.96
Chemicals, rubber, plastic	4.04	71.2	-4.2%	2.1%	-0.18	1.48
Glass and non-metallic mineral products	0.25	4.4	2.2%	8.9%	0.01	0.36
Metals and metal products	1.33	23.5	-14.3%	-8.6%	-0.22	-2.20
Machinery and appliances	6.53	115.1	4.7%	11.5%	0.29	11.88
Transport equipment	4.41	77.7	29.6%	38.3%	1.01	21.50

Source: Calculated from South African Revenue Service data.

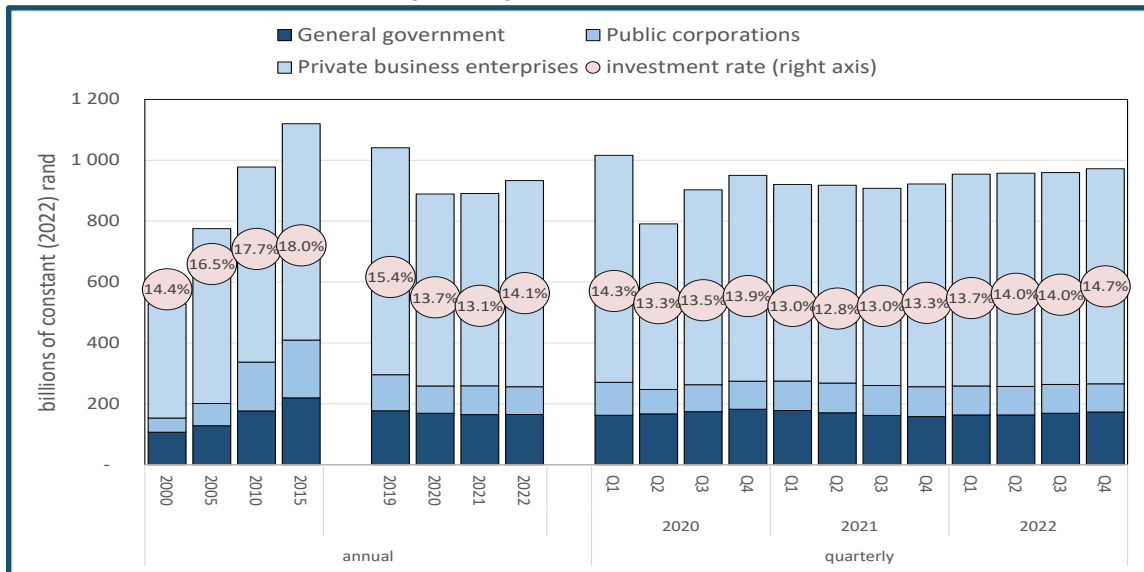
Investment

Investment this quarter increased by 1.3% relative to the third quarter of 2022, nudging the investment rate up to 14.7% of the GDP – still well below the level normally considered adequate for sustained rapid growth. Government investment climbed 2.5% (offset by the fall in government consumption, which mainly covers social services and grants) and private investment 1.5%. State-owned companies, however, cut their capital spending by 2.3%. In 2022, total investment in manufacturing was down by a third compared to 2019.

As **Graph 19** shows, investment is still around 20% below pre-pandemic levels. Overall, it peaked in 2013, then largely plateaued before falling sharply at the start of the pandemic.

The investment rate (that is, gross fixed capital formation as a percentage of the GDP) came to 14% for 2022 as a whole, and 14.7% for the last quarter, compared to 18% in 2015 and just over 15% in 2019. Still, it was up from a low of 13% in 2021. Total investment in constant rand climbed 1.3% in the fourth quarter of 2022, with a 2.5% increase in general government investment and a 1.5% hike in private investment. In contrast, investment by state-owned companies fell 2.3%.

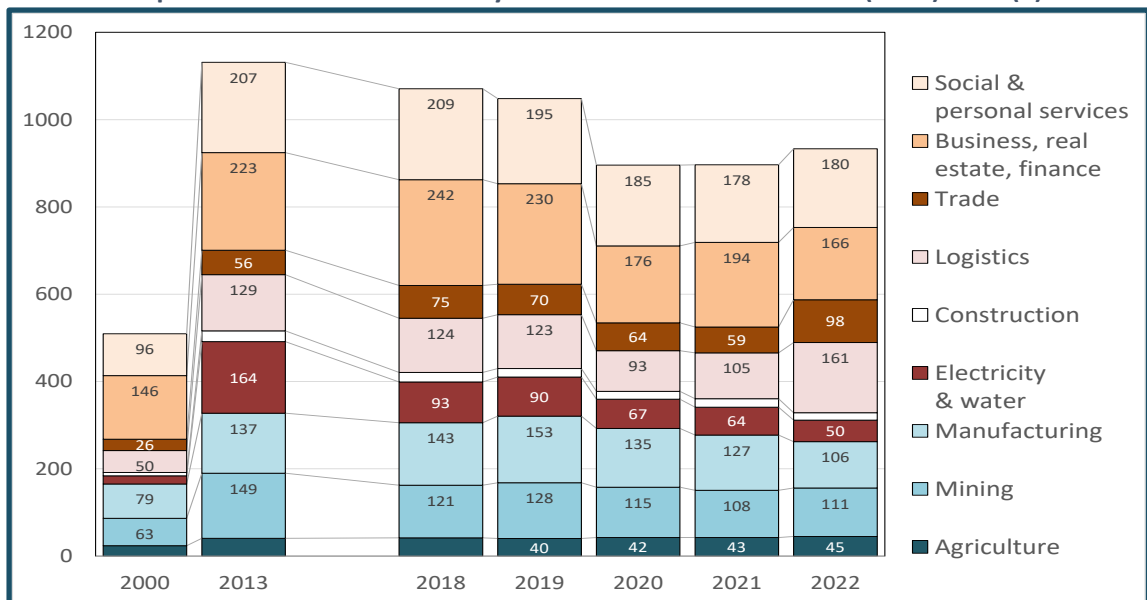
Graph 19. Investment by type of investor and the investment rate (gross fixed capital formation as percent of GDP), annual from 2000 to 2015 and 2019 to 2022 and quarterly from 2020 to 2022



Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2022Q4. Excel spreadsheet. from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2022Q4. Excel spreadsheet.

Data by sector are only available on an annual basis. The biggest decline from the mid-2010s emerged in electricity, gas and water, which in constant terms plummeted from R164 billion in 2013 to R50 billion in 2022. Mining investment also fell, from almost R150 billion in 2013 to a low of R108 billion in 2021, but recovered marginally in 2022. In contrast, manufacturing investment peaked just before the pandemic at R153 billion in 2019, but dropped steadily to R106 billion in 2022. (Graph 20) Logistics – that is, communications and transport – jumped from R105 billion in 2021 to R161 billion in 2022.

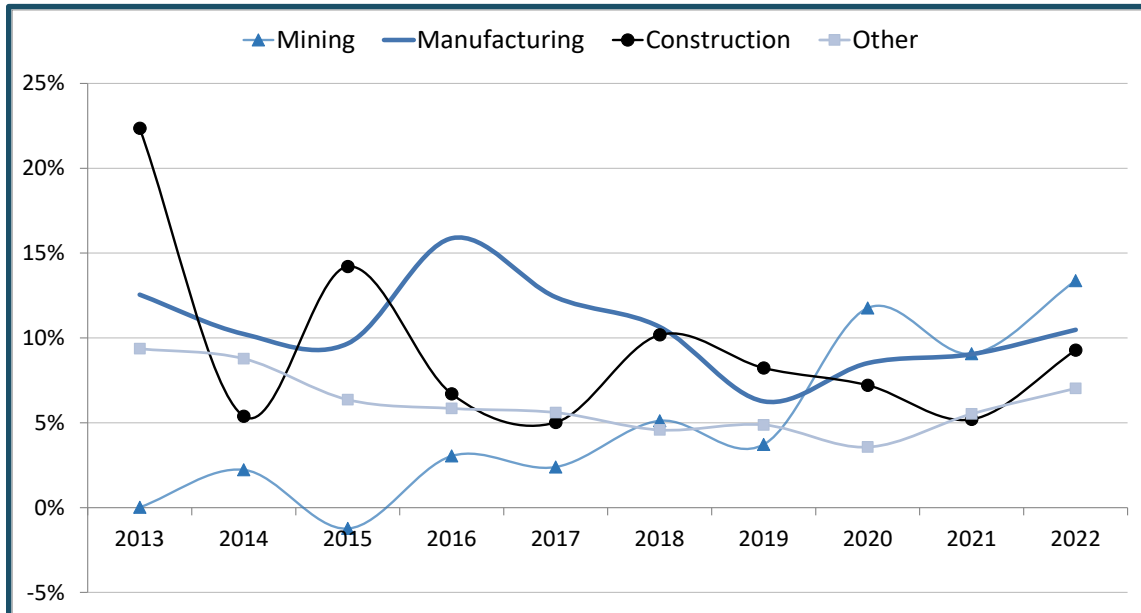
Graph 20. Annual investment by sector in billions of constant (2022) rand (a)



Note: (a) Reflated with implicit deflator rebased to 2022. Source: Calculated from Statistics South Africa. GDP quarterly figures. GDP P0441 – 2022Q4. Excel spreadsheet.

Profitability for formal enterprises generally improved in 2022. Still, it remained well below the early 2010s for manufacturing and construction. The latest available data are for the third quarter of 2022. (Graph 21)

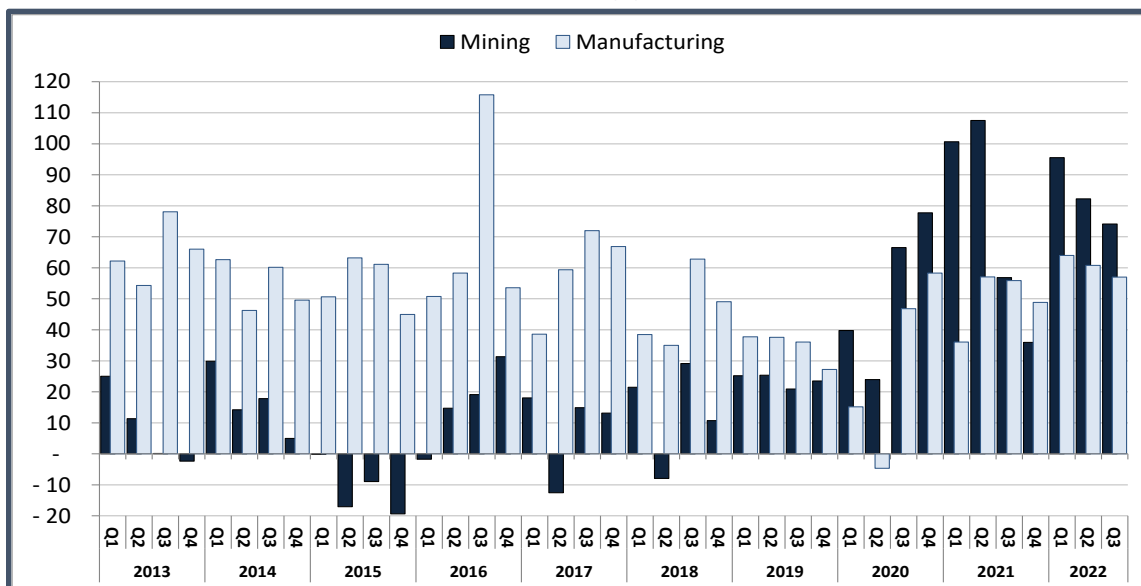
Graph 21. Return on assets (net profit as percentage of fixed assets), third quarter, 2013 to 2022



Source: Calculated from Statistics South Africa. Quarterly Financial Statistics. Excel spreadsheet.

In constant rand, mining profits increased as first the pandemic and then the Russian invasion of Ukraine led to (largely speculative) hikes in commodity prices. In contrast, although manufacturing returns improved compared to the late 2010s, they remain lower than a decade ago.

Graph 22. Quarterly profits in manufacturing and mining in billions of constant 2022 rand (a), 2013 to 2022



Note: (a) Deflated with CPI. Source: Calculated from Stats SA, Quarterly Financial Statistics. Excel spreadsheet.

Foreign direct investment projects

The [TIPS Foreign Direct Investment Tracker](#) monitors FDI projects, on a quarterly basis, using published information. This quarter 17 projects were added to the Tracker. The pledged investment value recorded for the quarter amounted to R9.8 billion from nine projects. The other projects did not report investment values. A total of 19 pre-existing projects were updated in the Tracker, largely related to the Renewable Independent Power Producer Procurement Programme (REIPPPP).

Table 2. FDI projects captured in Q4, 2022

	ANNOUNCED	FEASIBILITY	PROJECT PREPARATION	CONSTRUCTION/IMPLEMENTATION	COMPLETE
Number of projects	9	1	1	1	5
Value (R billions)	9.1	Not reported	0.06	Not reported	0.404
Industries	4 Utilities 2 Services 2 Manufacturing 1 Mining	Utilities	Manufacturing	Services	3 Utilities 2 Manufacturing
Type	Greenfield	Expansion	Greenfield	Greenfield	3 Brownfield 1 Upgrade 1 Greenfield
Company	Google Envesa/ Anglo American/ EDF Renewables Sasol/Arcelor Mittal TotalEnergies EDF Renewables AMEA Power Equinix	Pan African Resources	Orion Engineered Carbons	Vantage Data Centres	Hyundai Volkswagen South Africa (VWSA) Dräger Safety Zenith

Source: TIPS FDI Tracker database.

Note: Numbers may not always sum to the total investment amounts due to rounding.

New and existing projects

Utilities

Enel Green Power projects were selected as preferred bidders in the 6th round of REIPPPP. The firm plans to develop the facilities in the North West for an estimated R2 billion² per project. The individual 150MW Kutlwano and Boitumelo solar plants will have an expected generation

² Based on FDI Tracker calculations.

capacity between 165GWh and 205GWh per annum. They will feature battery storage facilities with a capacity of up to 500MW at each site.

The 100MW Doornhoek solar photovoltaic project was also among projects awarded preferred bidder status in Bid Window 6 of REIPPPP. It will be developed by AMEA Power – based in the United Arab Emirates – for about US\$120 million (R2.2 billion). The facility is expected to produce over 325GWh of renewable energy.

VWSA completed two projects this quarter at its Kariega manufacturing plant in the Eastern Cape. The firm constructed a wastewater recycling facility onsite, investing about R20 million. The facility will recycle wastewater, related to production, from various areas of the plant for further use in manufacturing. The firm further installed 3 136 solar photovoltaic panels on the roof of the manufacturing facility for an undisclosed amount. These have the capacity to generate about 2 500MWh of electricity, supplying up to 3.5% of the plant's energy needs.

Hyundai Automotive South Africa has installed solar power infrastructure across the firm's properties in Gauteng for R14 million. These properties include Hyundai's head office and various dealerships in the province. The head office features over 240 solar panels on the roof of the building, which deliver about 110kW of electricity a day. The firm is further exploring battery power storage for some of its facilities.

Anglo American and EDF Renewables have partnered to establish a new company, Envusa Energy. The company will develop a regional renewable energy ecosystem for Anglo's operations in South Africa to meet Anglo American's energy needs, and broadly contribute to decarbonisation in the country. Envusa Energy is starting with the launch of over 600MW of wind and solar projects. The value of the investment has not been reported.

Pan African Resources has completed a feasibility study exploring the expansion of the recently commissioned Elikhulu solar plant. The expansion would result in the plant being able to generate about 22MW of electricity, higher than the current 10MW produced at the Elikhulu facility. The company has not yet disclosed the value of investment.

Manufacturing

Sasol and ArcelorMittal South Africa have signed a joint development agreement intending to produce sustainable chemicals and fuels. In the Western Cape, the partners plan to initiate the Saldanha green hydrogen and derivatives study to investigate the region's potential to host an export hub. In Gauteng they further plan to explore the Vaal carbon capture and utilisation project. The study will investigate the potential of using renewable energy and green hydrogen to transform captured carbon from ArcelorMittal's Vanderbijlpark steel facility into cleaner chemicals and fuels.

Luxembourg-based Orion Engineered Carbons has committed to invest R60 million towards the development of carbon black feedstock storage facilities. The project includes upgrading key equipment, the development of two tanks for the storage of carbon black feedstock, and other infrastructure. It further entails the relocation of the liquid fuel storage facilities (Dom Pedro Tank Farm) from the Port of Port Elizabeth to the Port of Ngqura. The Dom Pedro Terminal is due to be closed. The Department of Trade, Industry and Competition (the dtic) is further providing an additional R200 million for the initiative.

VWSA completed upgrades at the firm's Kariega manufacturing plant featuring a new wax flooding facility. Wax flooding prevents corrosion by coating metal with a layer of wax. The upgrades aim to improve production efficiency by 25% and reduces CO2 emissions by 55% for the Volkswagen Polo and Polo Vivo.

Dräger Safety Zenith, subsidiary of Dräger, manufactures safety and medical equipment including dust masks used by mining and construction companies. The company completed a manufacturing plant for about R135 million. The dtic contributed a further R81 million towards the construction of the factory in the Eastern Cape.

Mining

TotalEnergies announced plans for oil exploration off the West Coast in the Western Cape. TotalEnergies and its joint venture partners hold an exploration right over Block 5/6/7, which allows for the various exploration activities within the Block. The company intends to start by drilling one exploration well, and, based on the result, TotalEnergies would drill an additional nine wells. The firm has launched an Environmental and Social Impact Assessment study. The value of the project has not yet been reported.

Services

Google has selected South Africa as one of five countries in which the company plans to establish a new Google cloud region. The new region aims to support users, developers, business and institutions of learning. It will link users' on-site networks with Google's grid in three African countries including South Africa, the first on the continent. Services that can be accessed through Google cloud include cloud storage, compute engine, and management systems. Google plans to further leverage its private subsea cable, Equiano, which recently landed in South Africa and connects Europe and Africa.

Vantage Data Centres is constructing a second data centre campus, JNB2. The first building of the JNB2 campus will consist of a 20MW 355 000 square foot (33 000 square meters) two-story data centre and will be operational in mid-2024. Vantage is repurposing a portion of an existing warehouse for the initial phase, reducing the embodied carbon of the development. Vantage has further initiated the next phase of the development of the company's inaugural data campus JNB1 in Midrand.

United States-based firm Equinix is entering the South African market with a US\$160 million (R2.9 billion) project. The firm plans to develop a 4MW data centre, JN1, in Gauteng. The complete facility will feature a 20MW campus that spans over 9 000 square metres of colocation space.

Updates

Thirteen solar photovoltaic projects from Bid Window 5 of the REIPPPP have signed power purchase agreements (PPA) with Eskom, paving the way for the projects to proceed. These solar projects will add about 975MW to the grid once they are complete. These include projects that will be developed by the Ikamva Consortium (six projects), Engie-Pele Consortium (three projects), Scatec (three projects) and TotalMulilo with one project.

Two of EDF Renewables – and partners – projects, under Bid Window 5 of the REIPPP achieved financial and commercial close, meaning construction can commence. These are the San Kraal and Phezukomoya Wind Energy facilities that total 280MW. EDF's third wind project under Bid Window 5 is expected to reach the same status in early 2023. The PPA for all three projects was signed with Eskom in Q3 2022. The projects have a combined investment value of R11.5 billion.

The 100MW Redstone Concentrate Solar Power Plant is under construction and is at 45% completion. The R11.6 billion project is being developed by ACWA Power in the Northern Cape. Construction started in 2021 and the planned commercial operation date is Q4 2023. The project was awarded preferred bidder status in Round 3 of the REIPPPP programme.

The Tshwane Automotive Special Economic Zone (TASEZ) has started operating and the 10 component manufacturers that will supply Ford have commenced production. Of the R4.2 billion commitment estimated for the TASEZ, R3.62 billion has been invested. Ford recently started production of the next generation Ranger.

PepsiCo has started implementing capital investment projects that are a result of public interest commitment – totals R6.5 billion – in the firm's acquisition of Pioneer Foods. The company opened a new R300 million production line at the firm's Weet-Bix facility in the Western Cape. Further, PepsiCo implemented upgrades at company's Malmesbury Mill for an additional R60 million.

Vanadium Resources completed a definitive feasibility study for the Steelpoortdrift vanadium project. The study suggests that the project could be developed for about US\$211 million (R3.8 billion) and proposes construction of a solar power plant. The investment decision is still pending. The Steelpoortdrift project involves the open pit mining of vanadium ore.

Teraco has completed the first phase of the JB4 data centre expansion in Gauteng. The first phase of JB4 comprises 30 000 square metres of building structure, 8 000 square metres of data hall space, and 19MW of critical power load. Teraco has secured adjacent land and power for the Phase 2 expansion. The value of the project is R4.4 billion.

Nippon Telegraph and Telephone Corporation (NTT) has officially opened the Johannesburg 1 Data Centre. The facility has a capacity of 12MW, covering 6 000 square metres of IT space, and forms part of NTT's expansion into the African continent. The facility will cater to hyper-scalers and enterprises with services that include a managed hybrid cloud and application monitoring, among others. When it was announced the project was valued at R875 million.

Briefing Note 1: The 2023/4 budget and industrial policy

Neva Makgetla

The recent 2023/4 national budget mainly takes forward the rather austere strategies adopted in 2022/23. To analyse the impact on inclusive industrialisation, this note looks at three aspects: the overall fiscal approach; broad support for industrialisation; and the allocation to the dtic.

In real terms (deflated by the projected CPI to March), the budget foresees a 2% real cut in spending outside of debt service payments, which increased by 38%. In the process, the government will prioritise paying off foreign debt.

This strategy effectively means government services as a whole will have reduced resources this year. Yet demands are only growing, as the pandemic left South Africa with around half a million fewer jobs and deeper inequalities. Moreover, the population is growing just over 1% a year. Revenues are expected to climb by around 8% in real terms, but the increase goes entirely to debt repayment.

The cuts to national spending overall tend to dampen economic growth by reducing demand. That in turn makes it harder to restructure the economy as needed for industrialisation. In this context, it becomes particularly important that changes to government spending improve its alignment with national priorities. Instead, like last year, the National Treasury is relying on cross-cutting cuts to public servants' pay and social grants, with increases limited almost exclusively to physical infrastructure. The budget foresees a 5% real reduction in personnel costs and a 1% cut to transfers to households. In contrast, payments for capital assets will climb by over 10%.

Broad cuts to remuneration and social grants avoid the deep research and wearing negotiations with other officials that more programmatic cuts require. But it effectively imposes an untargeted reduction on social services, including education, as well as transfers to the poorest households. In effect, it pays for higher investment in tangible infrastructure by reducing spending on social and human capital. For industrial policy, however, higher education levels and greater social solidarity form critical preconditions.

The budget vastly increases support for the electricity transition, both by taking over much of Eskom's enormous debt, with conditionality to improve management, and by assisting businesses and households to invest in off-grid solar. It lets businesses write off 125% of investment in solar generation over the next two years, and provides guarantees to finance the initial investment.

Dedicated funding for industrial policy remains relatively small. The dtic gets around 0.5% of total expenditure, with a modest decline over the past five years. Around 80% of the dtic budget transferred to agencies and private businesses. Almost three quarters of the transfers are provided through incentive schemes managed by the Industrial Financing and Industrial Policy divisions. Almost all of the rest finances the Competition Commission.

The relatively small size of the dtic budget would not be a problem if it had stronger mechanisms to leverage key government instruments that fall under other departments – especially training and education; national and municipal infrastructure and licensing; and regulatory frameworks that affect ownership such as land reform and zoning. In every country, these programmes absorb the bulk of national spending. The problem is to ensure that they effectively support and reinforce inclusive industrialization. Currently, however, as the overall budget strategy shows, South Africa still lacks the platforms required to secure that kind of coordination across national departments as well as provincial and municipal authorities.

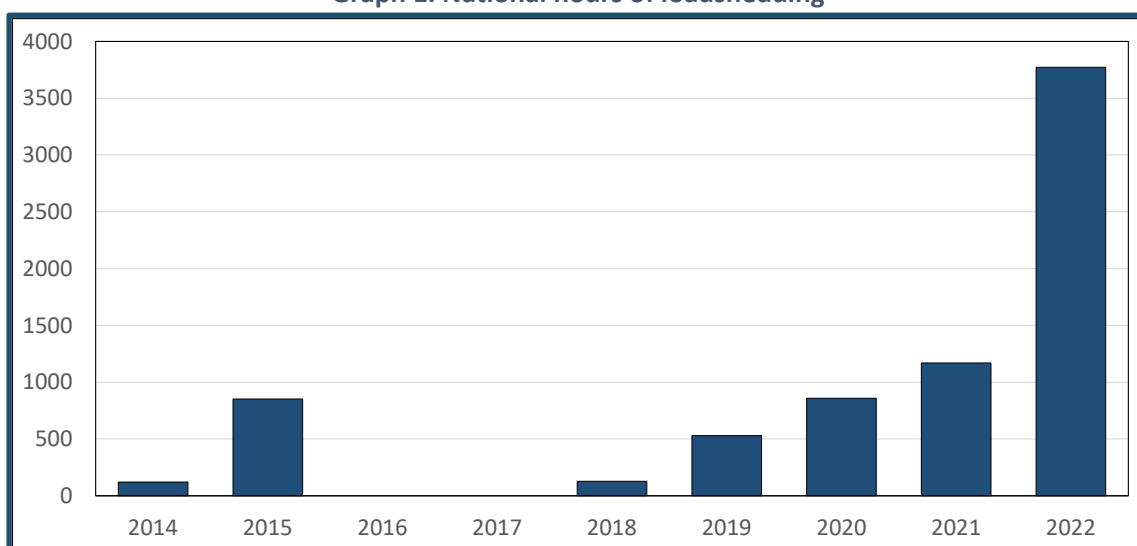
Briefing Note 2: Loadshedding and the economy

Rapula Diale and Neva Makgetla

Over the past decade, loadshedding has increasingly affected the economy, due to an aging and poorly maintained national electricity system. According to the Reserve Bank, six to 12 hours of loadshedding costs the economy between R204 million and R899 million³. Despite these enormous costs, loadshedding increased dramatically through the first quarter of 2023, and the national grid seems unlikely to recover any time soon. In response, businesses have taken on additional costs to bring in their own off-grid solutions. Solar in particular is increasingly attractive, especially in light of the significant support that the latest national budget provides to meet the often high up-front costs.

Since 2018, loadshedding has more than tripled, with the biggest leap in the past year. In 2022, according to the CSIR, South Africa experienced 3773 hours of loadshedding, over twice as much as in 2021 and four times 2020 (Graph 1). At any given time, around 30% of Eskom's capacity was out of service due to breakdowns.⁴

Graph 1. National hours of loadshedding



Source: CSIR. *Statistics of utility-scale power generation in South Africa 2022*. Slide 110.
Accessed at <https://bit.ly/3l4me7B>.

The core factors behind loadshedding are delays and faults in the construction of new capacity; the consequent strains on Eskom's existing and aging plants; and poor maintenance and extraordinarily poor procurement systems that enable corruption. (See TIPS 2021 report [The coal value chain in South Africa](#)). As Graph 5 in the section on the GDP shows, in 2022 Eskom's output fell sharply. Increased private supply only partially offset the decline.

The electricity crisis affects the economy in several ways. First, loadshedding disrupts production, making it difficult for companies to maintain supply to customers and disrupting working time.

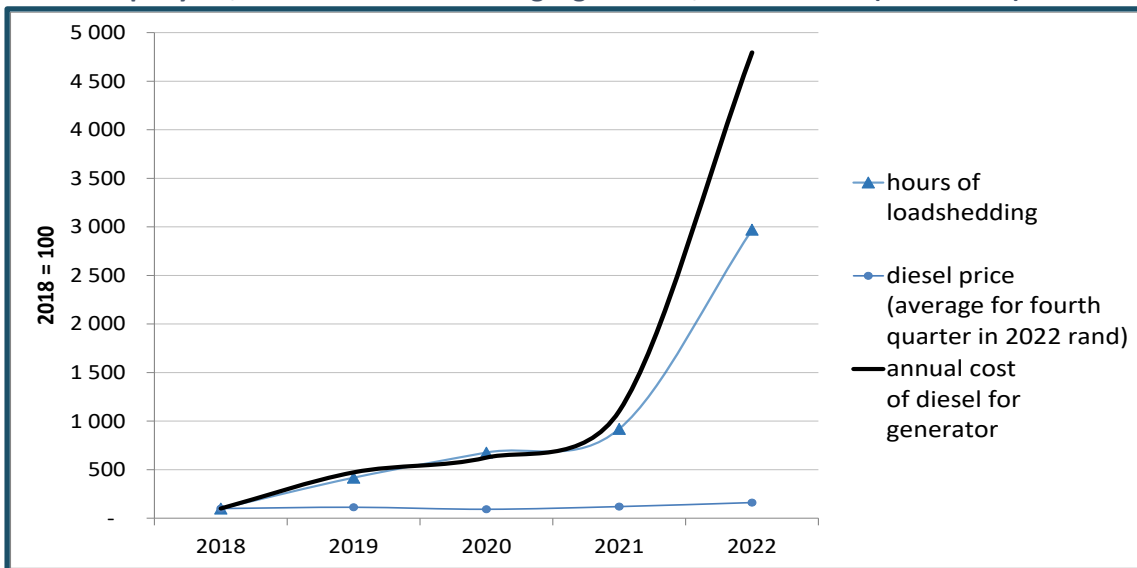
³ <https://www.engineeringnews.co.za/article/blackouts-may-cost-south-africa-r899m-a-day-reserve-bank-says-2023-02-07>

⁴ CSIR. *Annual hours of loadshedding from CSIR. Statistics of utility-scale power generation in South Africa 2022*. Authored by Warrick Pierce and Monique Le Roux. Accessed at <https://bit.ly/3l4me7B>.

Second, it can damage machinery and equipment through unexpected shutoffs and power surges. Third, businesses have faced a sharp rise in the cost of electricity as Eskom prices have risen while they have had to come up with off-grid solutions during loadshedding. Eskom tariffs have more than doubled in the past decade, with a further 20% increase in real terms approved for 2023 and 2024. Eskom’s revenues increased from 1.5% of the GDP in 2007 to 3.5% in 2021, although the volume of its sales declined. In the same period, local coal sales rose from 0.8% of the GDP to 1.7% with no increase in tonnage. But businesses also face costs if they go off-grid. The costs vary depending on the technology used. Diesel generation is cheaper up front but involves higher generation costs; solar pays for itself through very low operational costs, but requires higher initial investments for a reliable system.

In 2022, the escalation in both loadshedding and fuel prices brought a sharp increase in the cost of relying on diesel. As Graph 2 shows, from 2018 to 2022, the number of hours of loadshedding multiplied almost 30 times. In the same period, the regulated price of diesel in Gauteng increased by 60%. That is, the cost of running a generator for an hour climbed by 60% while the number of hours required rose 3000%. As a result, the cost of using the generator for electricity multiplied by almost 50. That is, a company that used 50 litres of diesel for an hour of loadshedding would spend R8 000 a month on their generator in 2018, but almost R400 000 by the end of 2022. (Graph 2) Some major retail chains spelled out the real-world implications. At the end of 2022, Pick n Pay reported spending close to R350 million in 10 months on diesel, and Shoprite said it spent a billion rand a year.⁵

Graph 2. Indices of the increase in the diesel price in constant rand, hours of loadshedding per year, and total cost of running a generator, 2018 to 2022 (2018 = 100)



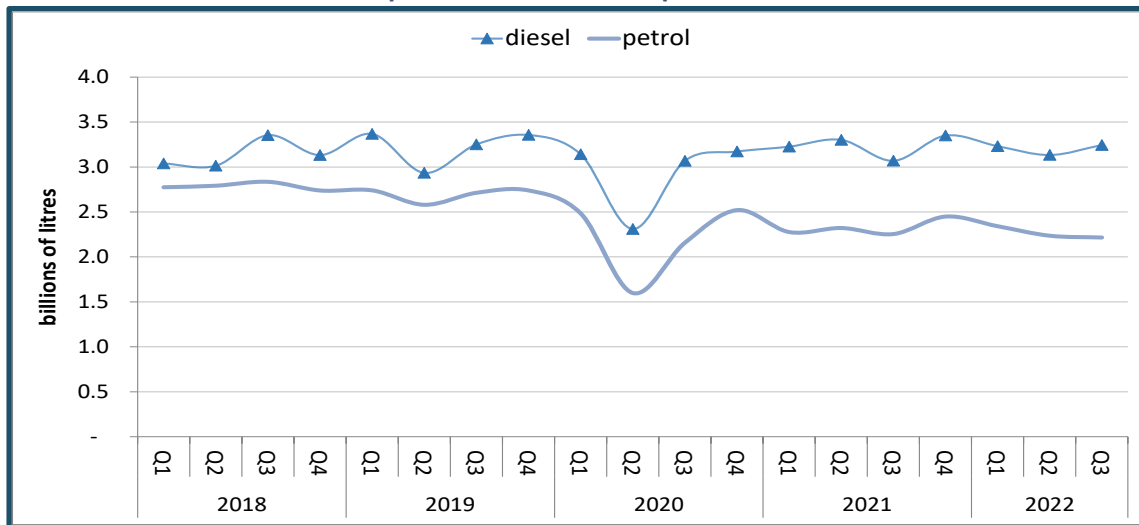
Source: Diesel prices (deflated with CPI) from SAPIA. Old fuel prices. Webpage. Accessed at <https://www.sapia.org.za/old-fuel-prices/>. Annual hours of loadshedding from CSIR. Statistics of utility-scale power generation in South Africa 2022. Accessed at <https://bit.ly/3l4me7B>.

It is difficult to disentangle the impact of loadshedding on national diesel use, since it also faces downward pressure from slower economic growth, especially after the pandemic, and soaring

⁵ <https://mybroadband.co.za/news/energy/479929-pick-n-pay-and-shoprite-spend-r1-million-to-r3-million-per-day-on-diesel.html>

prices. As Graph 3 shows, diesel consumption remained essentially flat from 2018, while petrol consumption fell. Diesel imports have doubled in volume over the past three years, but that also reflects substitution for crude oil purchases as several local refineries have closed.

Graph 3. National consumption of fuel



Source: Calculated from data from DPME. Energy statistics. Webpage. Accessed at https://www.energy.gov.za/files/energyStats_frame.html in March 2023.

The soaring cost of both diesel generation and grid energy have encouraged a turn to solar. In the past decade, rapid technological progress has increased the reliability of solar as well as reducing the cost. As noted in the section on the GDP, an indicator of increased demand emerges from the jump in imports of lithium-ion batteries in 2022. (see Graph 6). Data for other components for solar generation, such as panels, are less accessible because the tariff lines have evolved rapidly in the past few years.

The challenge with solar, especially for smaller businesses, is the high initial investment required for the combination of the panels themselves, a battery and an inverter. As a result, the up-front cost usually runs several times the price of a diesel generator. Operation costs for solar, in contrast, are extremely low. As a rule, over five to 10 years, the savings on Eskom electricity will pay for the initial investment. Taking advantage of those savings, however, requires access to financing. The 2022/3 budget aimed to assist businesses in this regard by providing a 125% tax deduction on the initial costs, no matter how large, from 2022 to 2024. It will also offer credit guarantees for small businesses to invest in solar.

Ultimately, the electricity crisis is forcing a profound transformation in South Africa’s electricity system. Above all, Eskom’s near-total monopoly on electricity generation has become unsustainable. New, smaller-scale, more competitive and cleaner generation technologies have merged rapidly in the past decade. Meanwhile Eskom itself, although nominally state owned, has largely ignored the public interest, as reflected in its soaring tariffs as well as its willingness to use loadshedding to externalise the costs of its shortcomings onto society. The likely end state will be a more decentralised and consequently more resilient electricity system, with lower operating costs for both producers and the environment. In other words, South Africa is caught up in a classic case of creative destruction, where new technologies and more agile producers displace long-established producers that cannot adapt. As always, the challenge is to manage the attendant disruption in ways that minimise the costs and take advantage of new opportunities.

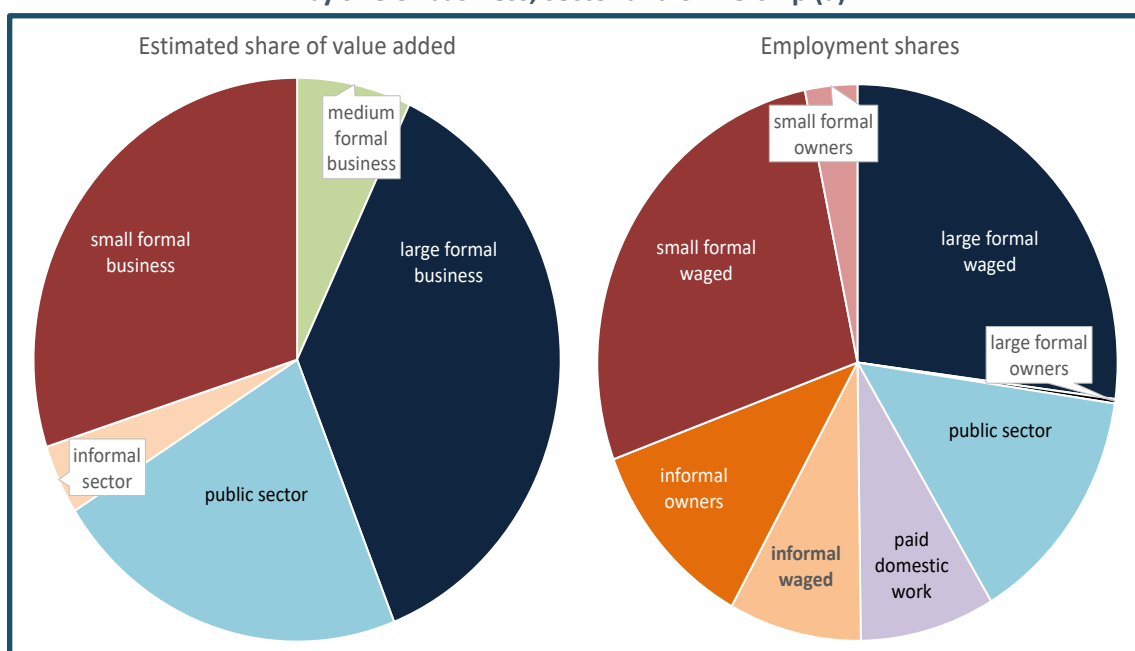
Briefing Note 3: The small business REB

Neva Makgetla and Lesego Moshikaro

TIPS is publishing the latest edition of its special REB on the State of Small Business, dedicated to an analysis of the available data on small business. This Briefing Note highlights some key findings.

- In 2022, the number of small formal business in South Africa reached 710 000. The figure had climbed from 590 000 in 2010 to 680 000 in 2019, and recovered from a decline during the pandemic.
- The number of informal businesses came to 1.75 million in the final quarter of 2022, fully overcoming a very sharp decline at the start of the pandemic. It had risen from 1.3 million to 1.6 million in the 2010s.
- The rate of growth in the number of small businesses over the past thirty years was not enough to overcome the disastrous deficit in small enterprise left by apartheid. In other upper middle income countries, small business owners (that is, employers and the self-employed) make up over 20% of the working-age population. In South Africa, the figure is just 6%. This backlog in itself largely explains very low employment levels in South Africa.
- TIPS estimates that small formal businesses directly generate a third of value added in South Africa. Informal enterprise adds around 5%. The impact on employment is larger. (Graph 1)

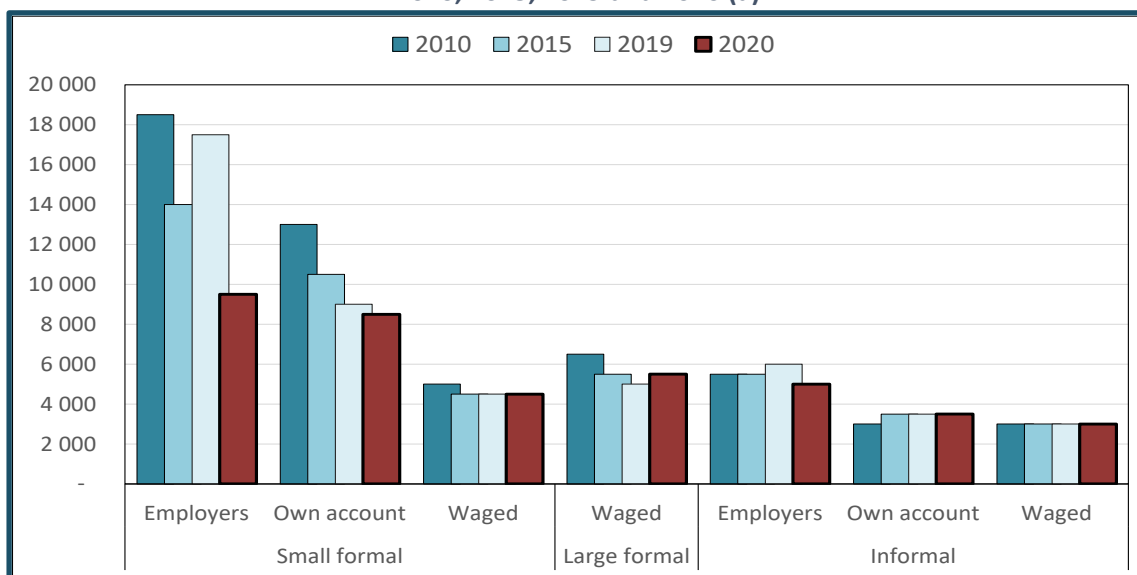
Graph 1. Indication of shares in national value added and in employment by size of business, sector and ownership (a)



Note: (a) Estimated based on remuneration in the public sector; earnings in informal business and formal self-employment; and remuneration plus pre-tax profit in the private formal sector. Source: Calculated from Statistics South Africa. Annual Financial Statistics 2020. AFS 2019 revised - Estimates by business size. Excel spreadsheet. Accessed at www.statssa.gov.za in February 2023. Statistics South Africa. Labour Market Dynamics 2019. Electronic dataset. Accessed at Nesstar facility at www.statssa.gov.za. National Treasury. Medium Term Budget Statement. Table 7 - Consolidated government revenue and expenditure. Excel spreadsheet. Accessed at www.treasury.gov.za in February 2023.

- In 2020, small formal firms held at least a quarter of total business assets. Generally, they were both more labour intensive and more profitable than their larger counterparts. No similar data exist for informal business, but on the whole they have very low profits and limited resources.
- Small formal business generated 30% of total employment, 32% of all waged employment including informal and domestic work, and half of waged work in the formal private sector.
- The number of people working in small formal business was flat through the 2010s, while larger firms rapidly increased their employment. Small formal businesses also accounted for almost all of the formal job losses reported during the COVID-19 pandemic. That shrinkage in formal opportunities fuelled the extraordinary rebound in informal self-employment through most of 2022.
- Remuneration and benefits in small formal enterprises for both employers and waged workers lagged only slightly behind those in larger companies. They far exceeded the norm for waged employees and own account workers in informal and domestic work. In contrast, informal businesses typically provided low incomes and comparatively insecure jobs. (Graph 2)

Graph 2. Median monthly earnings in constant (2021) rand by size and sector, 2010, 2015, 2019 and 2020 (a)

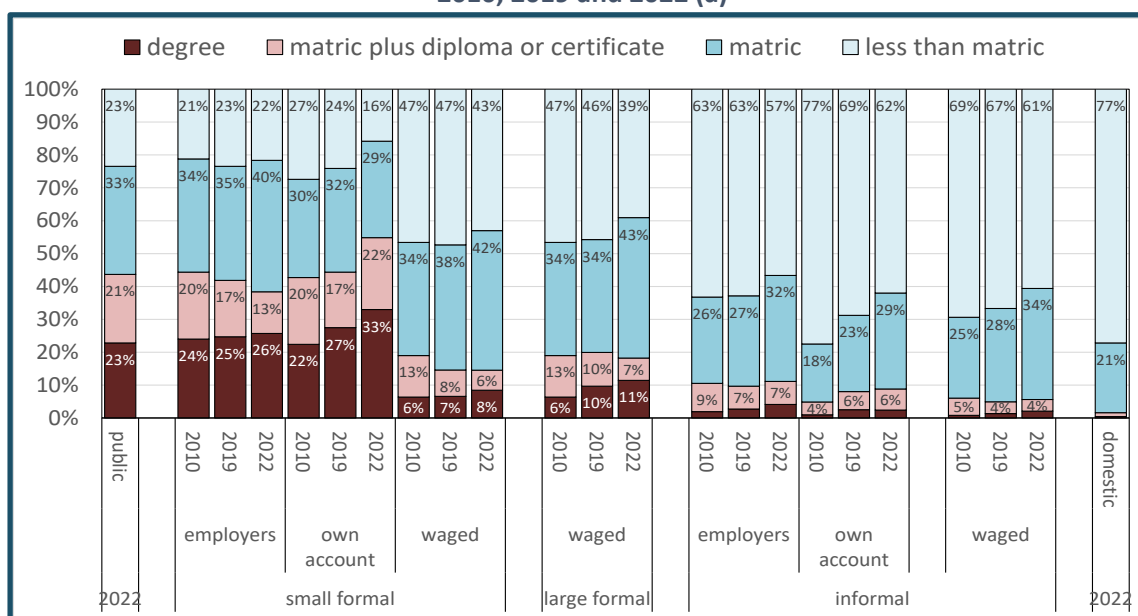


Note: (a) Rebased with average annual CPI rebased to 2021. Source: Calculated from Statistics South Africa. Labour Market Dynamics for relevant years. Electronic databases. Downloaded from Nesstar facility at www.statssa.gov.za.

- Around a fifth of private formal small businesses supply professional services, ranging from education and healthcare to engineering, legal advice and creative work. A quarter are in retail and hospitality. The rest are mostly in construction; transport and communications; manufacturing; and agriculture.
- In the informal sector, retail trade accounts for close to half of all businesses, including around half a million street traders. The next largest sector for informal business is construction, with about a tenth of the total. Only just over 5% of informal businesses provide professional services.

- Close to half of formal business owners have a post-matric qualification of some kind, compared to a seventh of their waged employees. Workers in smaller formal enterprises are slightly less educated than those in larger companies. They have much higher education levels, however, than informal business owners and their employees as well as domestic workers.

**Graph 3. Level of qualification according to business ownership and sector
2010, 2019 and 2022 (a)**



Note: (a) Average of quarterly figures for 2022. Source: Calculated from Quarterly Labour Force Surveys for 2022. Accessed at Nesstar facility at www.statssa.gov.za.

- In the early 2000s, black entrepreneurs owned 40% of small formal businesses. Their share rose to 60% in 2019. The pandemic hit them disproportionately hard, however, and their share fell to 50% in 2021. By the end of 2022, however, it had returned to pre-pandemic levels. Black people have consistently owned around 95% of informal enterprise.
- Women own around a quarter of small formal business, but half of them are white. In the informal sector the share of women entrepreneurs declined steadily from 45% in 2010 to 40% in 2019, with a further fall to 35% in 2022. The trend paralleled a loss of men's jobs in formal industries, which led more to compete in informal activities. At the same time, the expansion in public and formal private services as well as the evolution away from gender-based apartheid restrictions created more opportunities for women.
- In 2022, 4% of young people aged 15 to 34 were business owners, which equated to 15% of all employed youth. Among people aged 35 and over, 10% of the total population owned a business, equal to 21% of the employed.
- In 2019, the five largest metros held a third of the national population but around 60% of all formal small businesses. The historic labour-sending regions held only 5% of formal businesses, although they had a quarter of the national population. In contrast, the metros had only 35% of informal businesses in 2010, rising to 39% in 2019 and over 45% in late 2022.