TRADE & INDUSTRIAL POLICY STRATEGIES

SOC MANDATES, OUTCOMES AND THE COVID-19 PANDEMIC

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ABBREVIATION

DFI	Development Finance Institute
DMRE	Department of Mineral Resources and Energy
DPE	Department of Public Enterprises
dti (the)	Department of Trade and Industry
dtic (the)	Department of Trade, Industry and Competition
IRP	Integrated Resource Plan
KPIs	Key Performance Indicators
NDOT	National Department of Transport
NDP	National Development Plan
PIC	Public Investment Corporation
SANRAL	South African National Roads Agency
SOCs	State-Owned Companies
PRASA	Passenger Rail Agency for South Africa

1 AIMS AND APPROACH

This paper:

1. Reviews the socio-economic mandates of the major state-owned companies (SOCs) as reflected in official documents, sometimes only implicitly;
2. Provides case studies of four leading SOCs in terms of their socio-economic and financial mandates over the past decade or so; and
3. The actual and potential impact of the COVID-19 pandemic on the four case studies.

To this end, the study briefly reviews the SOC and development finance institute (DFI) landscape in terms of the functions and size of the various entities. It then looks in more detail at Eskom, SANRAL (South African National Roads Agency), Transnet and Denel.

2 THE PUBLIC ENTERPRISE LANDSCAPE

Table 1 provides a brief overview of the functions of the main public enterprises. They engage in three kinds of activity: supplying infrastructure and related services; producing a miscellany of other goods; and providing development finance.

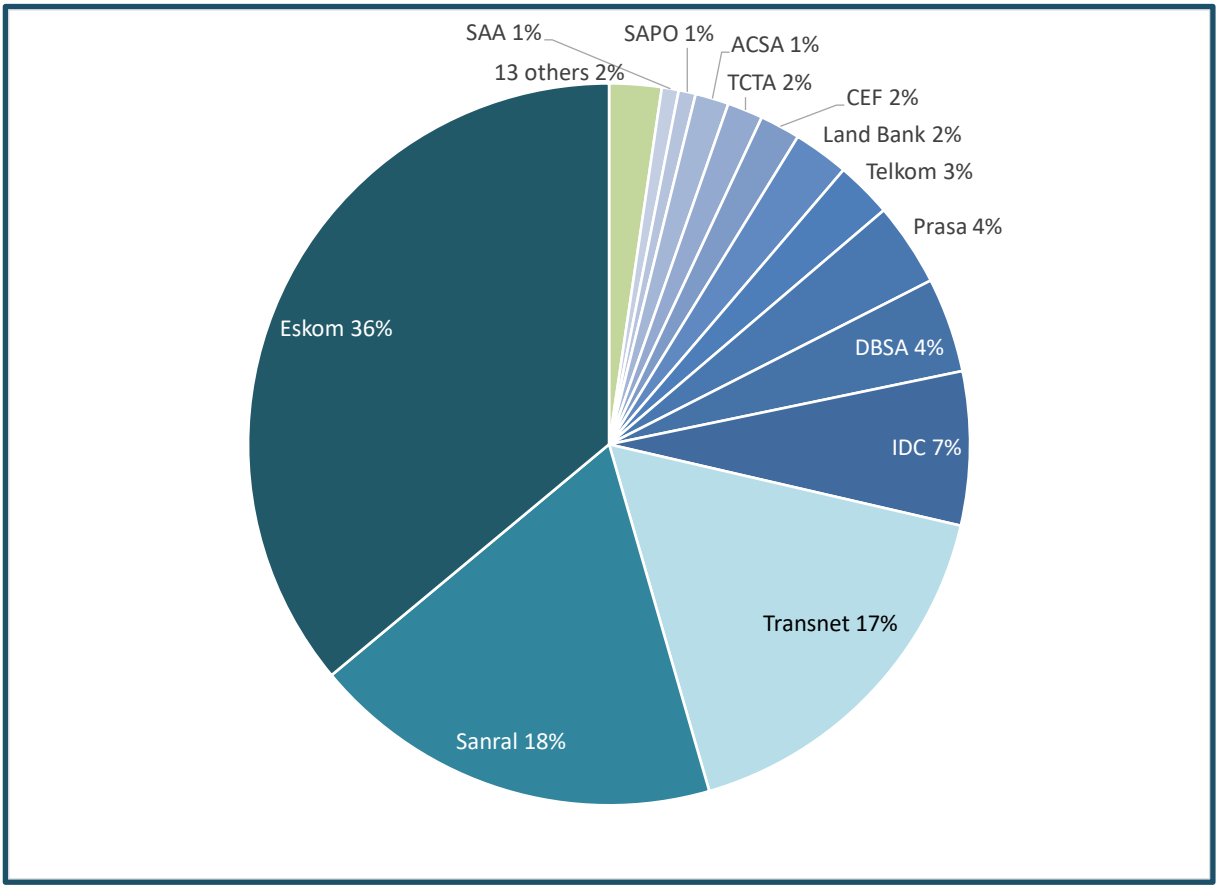
Table 1. Core SOC and DFI functions

INFRASTRUCTURE GOODS AND SERVICES	PRODUCTION OF OTHER GOODS OR SERVICES	DEVELOPMENT FINANCE INSTITUTION
Air Traffic and Navigation (manages air traffic) Airports Company of South Africa (manages national airports) Broadband Infraco (provides broadband access) Eskom (electricity) PRASA (commuter rail) South African Airways (national and international air travel) South African Express Airways (domestic and regional air travel) South African Post Office (postal services and savings bank) SANRAL (national roads) Sentech (carrier for broadcasters) Telkom (information and communications technology services) Transnet (rail transport)	Alexkor (diamond mining) Armscor (procures armaments for state agencies) Central Energy Fund (various energy activities) Denel (armaments) Independent Development Trust (manages construction projects for government departments) South African Broadcasting Corporation (national broadcaster) South African Nuclear Energy Corporation (produces nuclear products) South African Forestry Company – SAFCOL (forestry)	Development Bank of Southern Africa (infrastructure finance) Export Credit Insurance Corporation (insurance for exports and investments) Industrial Development Corporation (industrial finance) Land Bank (agricultural finance) Public Investment Corporation (manages social security and public-sector retirement funds)

As a group, the public enterprises account for a fifth of all capital stock but only a seventh of annual investment and around 1% of employment. Figures for investment and direct employment vastly understate their impact on the economy, however, since they provide infrastructure and development finance that are critical for national growth and job creation.

The public enterprises vary greatly in size. In terms of assets and employment, the group is dominated by the main infrastructure companies – Eskom, SANRAL, Transnet and PRASA (Passenger Rail Agency of South Africa) – and, if managed funds are considered, the Public Investment Corporation (PIC), which stewards public employees' pension funds. Graph 1.Graph 1 shows the distribution of assets among the public enterprises. It excludes the assets that the PIC did not own, but invested on behalf of the Government Employees Pension Fund and other state agencies. At R2 trillion, these resources approximated the value of all the other enterprises put together. If they are excluded, Eskom, SANRAL and Transnet alone held 70% of public enterprise assets.

Graph 1. Assets by SOCs and DFIs (excluding PIC)(a), in billions of rand, 2019



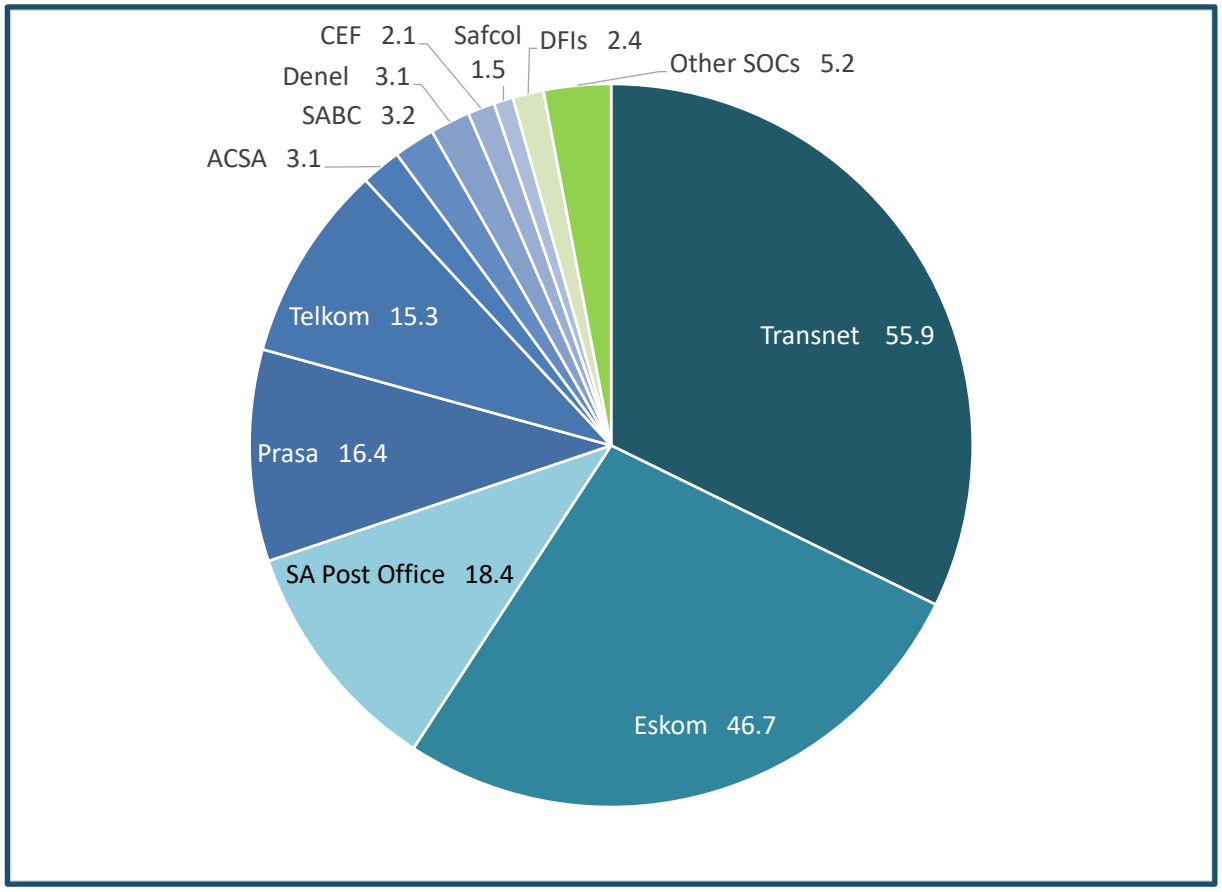
Note: (a) Excludes PIC because its own assets are only R3 billion, but it manages almost R2 trillion in assets, mostly from the Government Employees Pension Fund. *Source:* Most recent Annual Reports.

In addition to their asset ownership, the DFIs support investment through equity holdings and long-term loans. Again excluding the PIC's managed funds, in 2018 these investments equalled around 5% of the GDP. The PIC managed assets equal to two thirds of the GDP. It managed investments equal to a fifth of government bonds (down from half in 1994), and close to a tenth of equity on the Johannesburg Stock Exchange.

The public enterprises directly employed 175 000 people in 2019. Indirectly, however, the infrastructure providers enabled virtually all of the 15 million jobs across the economy. As

with assets, the size of SOCs and DFIs in terms of jobs ranged widely, from around 50 000 at Transnet and Eskom to under a hundred at the Export Credit Insurance Corporation. Transnet, Eskom, the Post Office and PRASA accounted for four fifths of the public enterprises' total employment. In contrast, SANRAL mainly contracted work to construction companies, so it directly employed only 400 people. It estimated that its contractors had around 13 000 workers in 2019.

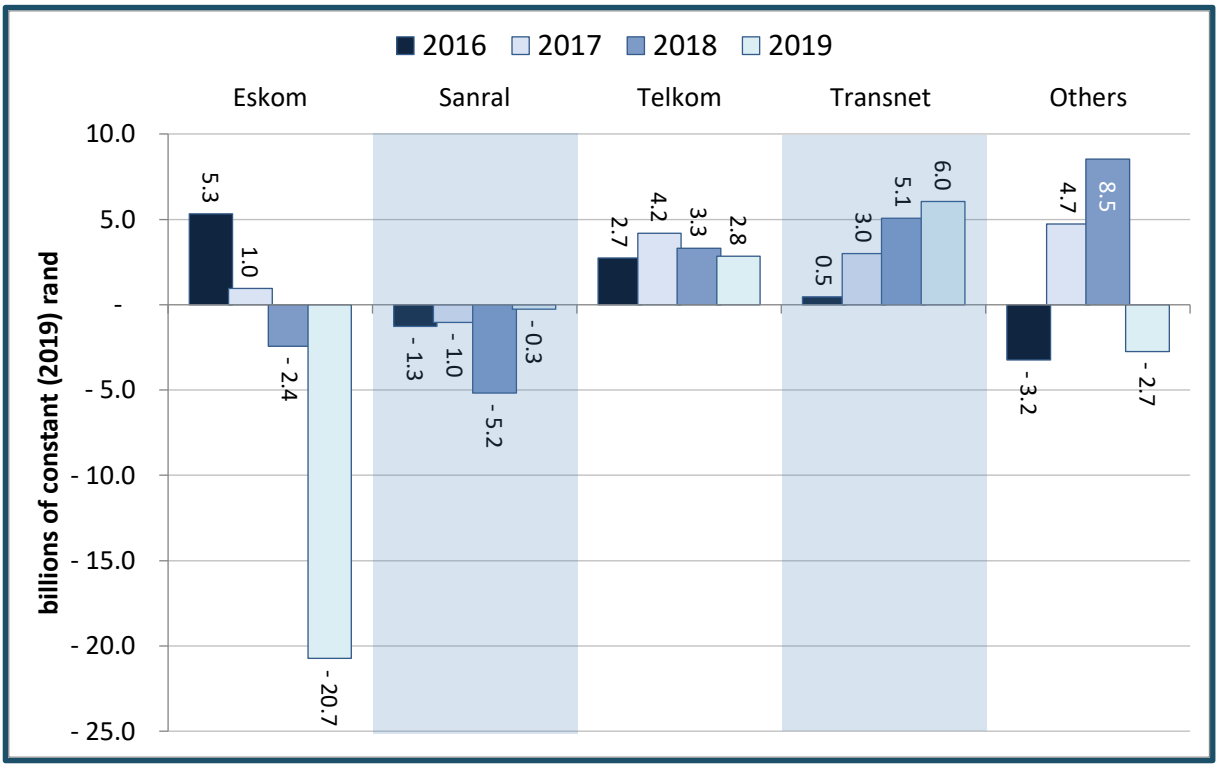
Graph 2. Direct employment by SOCs and DFIs in thousands, 2019



Source: Most recent Annual Reports.

In financial terms, the public enterprises saw a sharp decline in their performance from 2015. In 2018/19, even before the COVID-19 pandemic started, the national public enterprises as a group reported R15 billion in losses and a rate of return on assets of -0,7%. Eskom alone lost R20 billion. SANRAL made losses from 2016 to 2019 because most motorists did not pay the tolls on the Gauteng freeways while it still had to service debt incurred to improve them. In contrast, Transnet saw rapidly rising profits from 2016/7 to 2019/20. (see Graph 3).

Graph 3. Profits and losses of the public enterprises, 2016 to 2019



Source: Published Annual Reports as of March 2020.

Rising public-enterprise losses largely reflected the broader economic slowdown, as metals and coal prices hit a low and South African exports dropped. In these circumstances, public enterprises as a group suffered falling revenues. They also had to write down some assets because the expected demand did not materialise. Losses and inefficiency were aggravated by systematic looting by corrupt businesses in collusion with some managers and government leaders. It was enabled by periodic financial transfers from the state, mostly in the form of loans, guarantees and equity investments.

The COVID-19 depression tipped the more financially precarious SOCs into crisis. On the one hand, they could no longer count on government funding to make up for shortfalls. On the other, like the private sector, they faced falling demand and revenues. In these circumstances, a number went into business rescue or liquidation. As of mid-2020, the list included South African Airways, South African Express and Alexkor; and the South African Nuclear Energy Corporation, the Post Office and Denel were on the brink.

The following sections review the performance of the main SOCs and DFIs against their socio-economic mandates in more detail. For each entity, it first reviews mandates from the National Development Plan and the oversight and policy departments. These mandates often did not fully align, and the departmental objectives often underwent significant changes from 2018. The strategy and Key Performance Indicators (KPIs) adopted by the entities themselves are then compared to the national mandates. A second subsection reviews the main outcomes of the SOC or DFI against its mandates, including financial results. A final subsection evaluates the implications of the COVID-19 depression.

3 ESKOM

Eskom has historically monopolised the national electricity grid, providing over 90% of generated electricity; managing the grid itself; and marketing electricity. It sells power directly to around 30 large energy-intensive companies, mostly refineries and mines, as well as to municipalities for distribution to businesses and households. It also provides electricity directly to some historically black communities as a result of electrification programmes established before 1994.

3.1 Policy objectives

The National Development Plan (NDP) generally called for inclusive industrialisation, in the sense of job-creating growth with rising productivity. In this context, it identified energy distribution and generation as one of the "most pressing constraints on growth, investment and job creation". (NPC, 2012:64)

More broadly, the NDP argued that prices for state services, including electricity, should be moderated. Its vision included a "substantial commitment to reducing the costs of production and living," as "Improved efficiencies and oversight help to get the rapid increases in administered price inflation under control." (NPC, 2012:122) At the same time, it argued that public investment should increase to 10% of the GDP.

The NDP also stressed the importance of moving toward renewable electricity. It required that through 2030, half of new generation capacity should be from renewable sources. It estimated that would mean 20 gigawatts (GW) out of a total of 40 GW would renewable, assuming that 11 GW of existing capacity would be retired. (NPC, 2012:65)

Eskom governance fell under two departments, with the Department of Mineral Resources and Energy (DMRE) providing policy guidelines while the Department of Public Enterprises (DPE) was the shareholder.

In its 2020-2025 Strategic Plan, the DMRE noted that "Operational challenges and financial constraints at Eskom, higher electricity tariffs and declining demand in a low-growth environment have affected the performance of the electricity sector," and that Eskom was "the single-largest risk factor" (DMRE, 2020:25). It proposed two main responses.

- It planned to set up a regulatory framework to enable more private generation. It expected that new producers would come on-stream only in 2022, however, except for relatively small off-grid plants to serve specific producers, mostly mines and refineries.
- It also expected to finalise a new pricing policy for electricity by 2021. The deadline had been extended from at least three years earlier. The department did not indicate the direction of the proposed new pricing policy.

The DMRE also committed to promoting renewable energy in place of coal. The 2019 revision of the Integrated Resource Plan (IRP) set a target for renewables that was similar to the NDP. It anticipated that in 2030 48% of capacity would be renewables, a similar share would be coal, 6% would be gas, and 2% nuclear.

In its 2020-2025 Strategic Plan, the DPE defined Eskom's mandate as "Economic growth delivered by being a financially sustainable provider of cost-effective energy solutions across Africa." (DPE, 2020:66). A producer can be cost effective but not affordable for users,

however, in the sense that they are efficient producers but priced so high as to make industrial users uncompetitive while placing pressure on household living standards.

Eskom's website said that the DPE established a specific "strategic intent statement" for the company. As of September 2020, it listed the following seven outcomes.

- The provision of reliable, predictable and affordable electricity;
- Financial viability and sustainability;
- Alignment with national transformation imperatives (not further defined, but apparently referring to broad-based black economic empowerment rather than more equitable and diverse industrialisation);
- Reduced impact on the environment;
- A company structure that is responsive to the changing energy landscape, which presumably means separating out grid management from generation and distribution;
- Submission of an annual strategic document and progress reports; and
- Reporting in line with the regulatory model, including profit and loss for each licensee, which would entail separate reporting for each generating plant. [1]

In its 2018/9 Financial Statements (the latest available due to the pandemic), Eskom listed the KPIs in its stakeholder compact with the DPE. These indicators did not reflect the developmental role foreseen in the NDP or in the statement of strategic intent, with no indicators for affordability, access for small business or underserved communities, or increased renewable generation. They set targets for workplace safety; reliability of supply; investments in generation and transmission; reduced particulate emissions and water use; shifting coal haulage from road to rail; and reducing costs, including by improving payments on municipal debts to Eskom. The only indicators listed under socio-economic development related to skills development, procurement from empowered suppliers, acquisition of intellectual property and corporate social investment.

Eskom's 2018/9 Integrated Report explicitly cited the DPE's strategic intent statement as its highest level guide. Its own mandate statement, however, did not replicate the DPE's outcomes. Instead, it argued that Eskom should aim

> "To provide electricity in an efficient and sustainable manner, including its generation, transmission and distribution and retail. The company also has a developmental role and will promote transformation, economic development and broad-based black economic empowerment."

Two elements in this mandate statement diverged from the NDP and the DPE's statement of intent.

- The mandate did not refer to affordability, but only efficiency. By extension, Eskom could (and did) apply for tariff increases far above inflation as long as it was convinced it was minimising generation costs.
- The mandate separated out developmental aims from the core function of providing electricity. In contrast, the NDP saw Eskom's key contribution to national economic and

[1] Accessed at: https://www.eskom.co.za/OurCompany/CompanyInformation/Pages/Business_Vision.aspx

social development as expanding the access of both households and companies to reliable, affordable and green energy, especially in historically under-served communities.

Eskom's 2018/9 Integrated Report noted a "utility death spiral" as a leading risk. In the previous year's report, it defined this situation as:

> "The utility death spiral: Traditional utility business models around the world are under threat due to a number of transformational changes and energy disrupters. As new technology allows self-generation [and incidentally also renewable electricity] to become increasingly price competitive for the consumer, a utility's sales decline. The utility, having invested in long-term assets with a large proportion of fixed operational costs, requires an ever-increasing tariff to generate the required revenue from declining sales. These price increases add to customers' incentive to move off-grid, further decreasing the customer base." (Eskom, 2018:26)

Eskom ranked the utility death spiral as a leading risk in the 2018/9 report. Nonetheless, it continued to argue that, faced with declining demand, it could not cut its costs and therefore required double-digit tariff increases.

In sum, the state did not have a unified set of objectives for Eskom, and the company's interpretation of its mandate did not fully reflect national priorities. The NDP, the DPE and the DMRE prioritised somewhat divergent outcomes, especially with regards to affordability of electricity and access. Eskom's own strategic statements and KPIs as reflected in its latest Integrated Report downplayed the importance of affordability to customers as well as the NDP and IRP commitment to replacing coal-fired generation with renewable sources. Yet given new, more affordable and efficient technologies, that appeared to be an unsustainable business model.

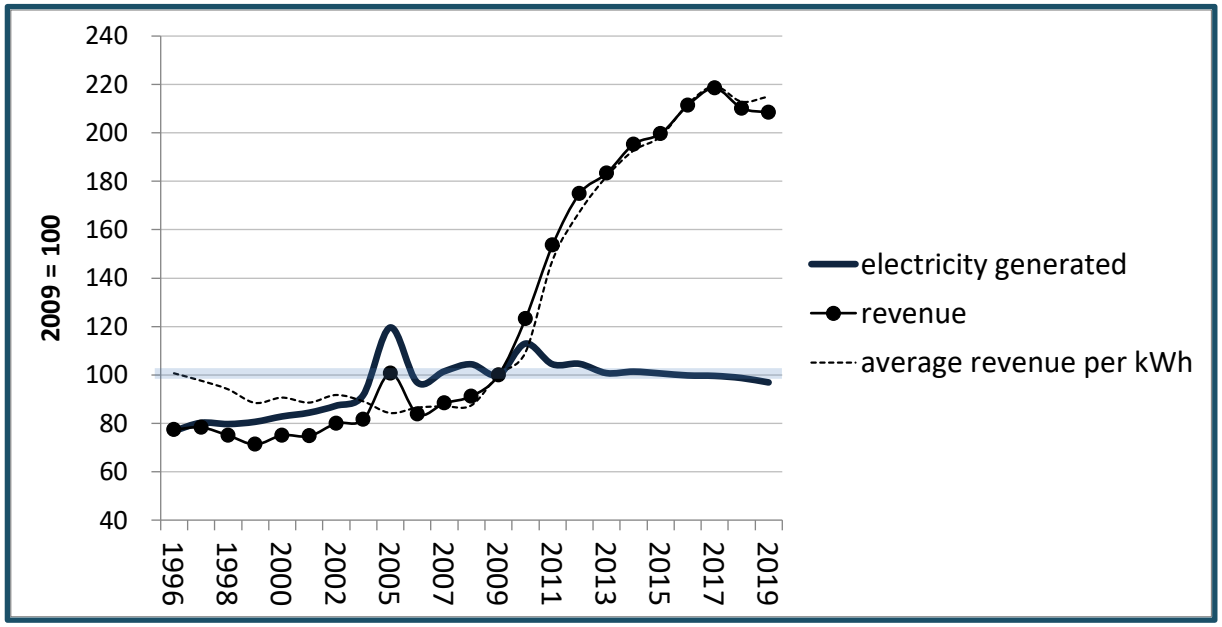
3.2 Developmental impacts

This sub-section reviews Eskom's impact on socio-economic development, using the core themes identified in the NDP – that is, affordable and reliable supply, with increasing access for small business and historically underserved communities combined with falling emissions.

Affordable and reliable supply: In real terms Eskom's prices climbed 180% from 2008 to 2017, then stabilised through 2019. The company intends to increase tariffs by 15% in nominal terms, or over 10% above inflation, in 2020/21. Eskom's supply also proved increasingly unreliable, with loadshedding – that is, rationing of supply – in 2008/9; 2015/6; and 2019/20. As of mid-2020, it anticipated that loadshedding would last through 2022. It resulted essentially because Eskom's older plants have had to remain in use longer than anticipated due to years of long delays in the finalisation of two newer, large plants – Medupi and Kusile – which also have design failures that limit their capacity.

As Graph 4 shows, the trends resulted in a sharp rise in Eskom's revenues in constant rand terms despite falling sales of electricity. The decline in sales reflected a combination of a demand response to soaring prices and customers' efforts to find more reliable sources of energy.

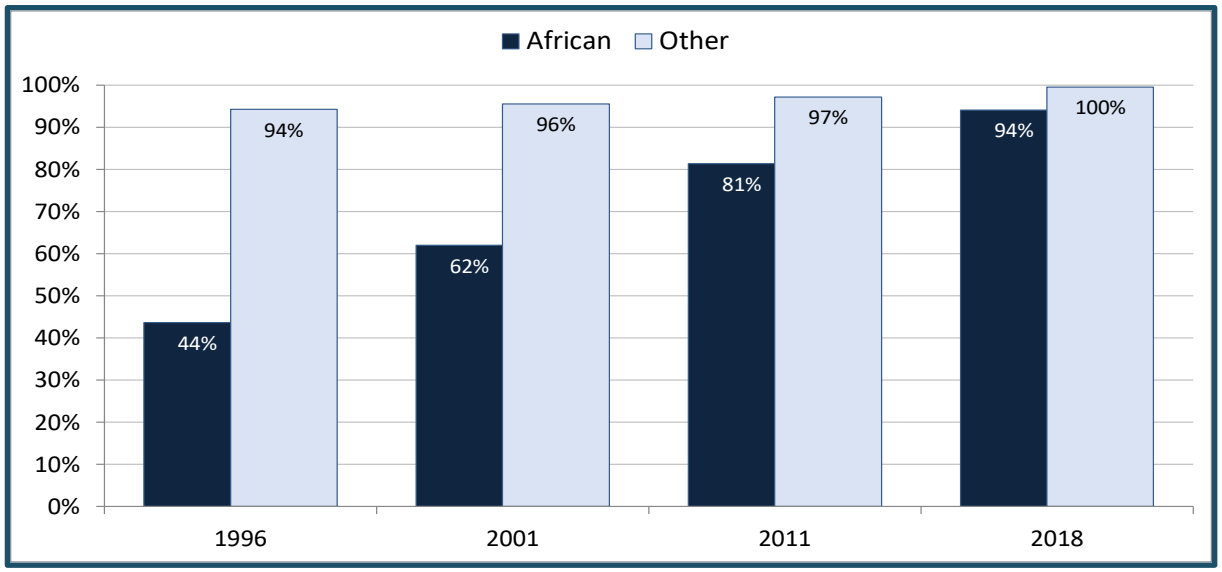
Graph 4. Indices of Eskom electricity generated in GWh, and total revenue and average revenue per kWh in constant rand (a), 1996 to 2019 (2009 = 100)



Note: (a) Deflated with CPI. *Source:* Calculated from Eskom Annual Reports for relevant years.

Increasing access for small business and historically underserved communities: Access to electricity increased relatively rapidly from 1994. Nonetheless, in 2018 only 94% of black households had access to electricity, compared to virtually 100% of other households. Limited access to electricity affects both ability to take advantage of economic opportunities and the quality of life. In addition, electricity in historically black communities was generally of relatively low quality, with limited power available and more frequent breakdowns and outages.

Graph 5. Household access to electricity for lighting by race, 1996, 2001, 2011 and 2018



Source: Calculated from Statistics South Africa. Census data for 1996, 2001 and 2011. Interactive data set. Accessed at SuperWeb site at statssa.gov.za; and from Statistics South Africa. General Household Survey 2018. Electronic database. Downloaded from Nesstar facility at www.statssa.gov.za.

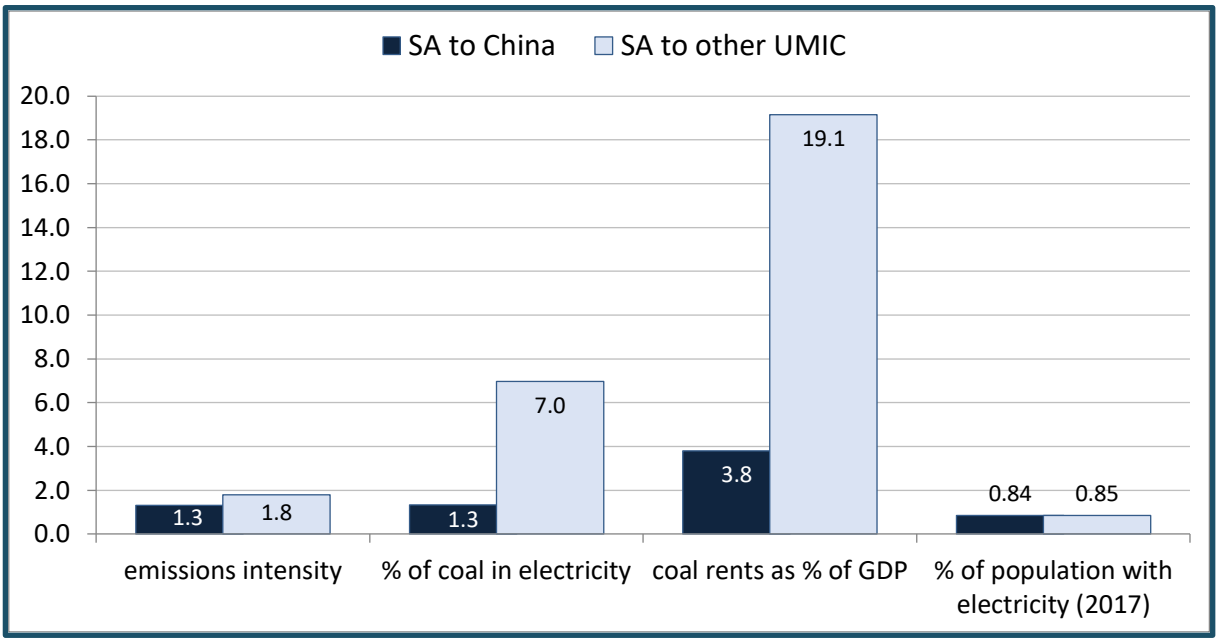
Eskom supplies around half of all households – around six million families – directly. The remaining households are supplied by municipalities that in turn depend on Eskom supplies.

This system came under stress as a result of rapid increases in electricity prices, especially as municipalities extended services to low-income households. As of 2020, accumulated municipal debt to Eskom exceeded R30 billion, compared to R20 billion in 2019 and R10 billion in 2015. For comparison, the 2020 figure equalled 17% of Eskom's 2019 revenue, and 8% of its accumulated debt. In response, the company rationed electricity to debtor municipalities, leading to business closures as well as hardship for the affected communities. This approach risked pushing municipalities into a downward spiral.

In addition, starting in 2020, Eskom rationed electricity to low-income, densely populated communities where it suspected high levels of illegal connections. Again, it effectively imposed a collective punishment on the affected communities, since even households that fully paid their bills were shut off.

Renewable energy: In the late 2010s, South Africa stood out from other upper-middle-income economies in its high dependence on coal-fuelled electricity, as the following graph shows.

Graph 1. Ratio of South Africa to China and to other upper-middle-income (UMIC) economies for emissions intensity, share of coal in electricity, coal rents and household access to electricity, 2015



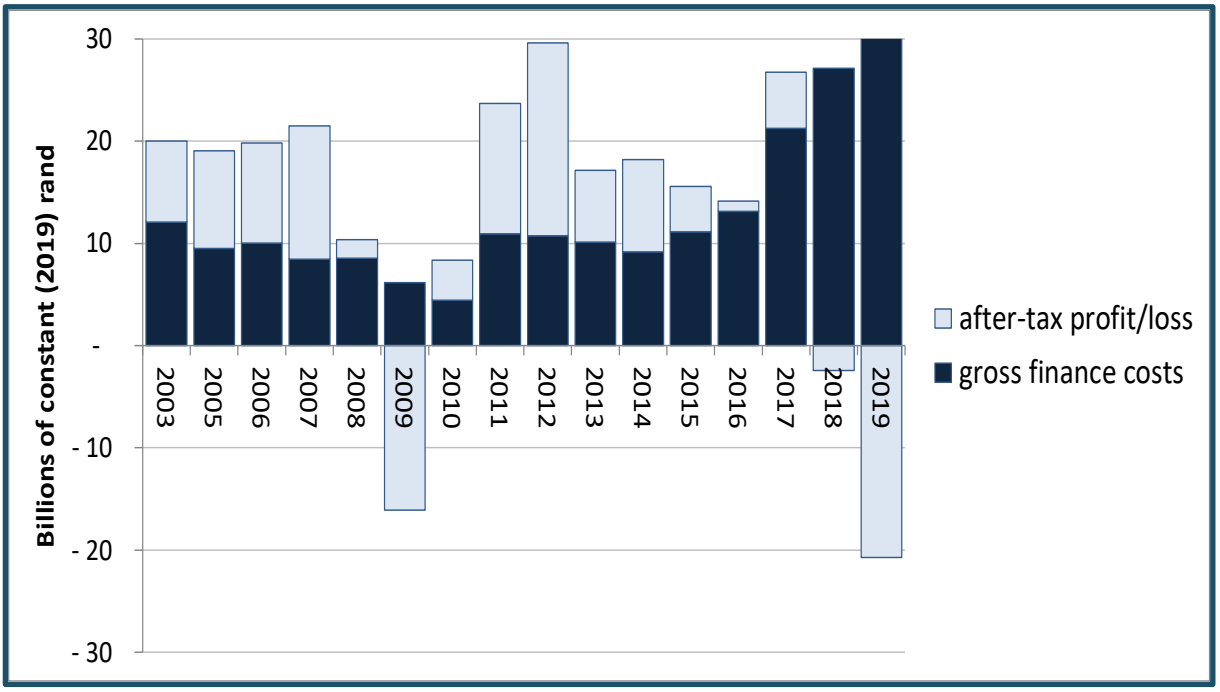
Source: Calculated from World Bank, World Development Indicators. Interactive database. Downloaded from www.worldbank.org in February 2020.

At least through 2020, Eskom essentially saw renewable electricity as outside of its core business. It established a small wind farm, which generated 0,2% of its total output. It was, however, expected to provide a platform for private renewables generators, which it treated as a source of primary energy analogous to coal. As a result, it generally viewed renewables as a cost-driver and a source of competition rather than a new, lower-cost technology to be perfected and expanded.

Financials: Despite the rapid increase in unit tariffs, Eskom saw a steady decline in its financial position through the late 2010s. Its annual profitability depended heavily on whether it was able to hike its tariffs to cover its soaring finance costs, which largely reflected over-runs on major investment projects from 2008. By the late 2010s, debt payments were its second largest cost after procurement of coal and liquid fuels. Its accumulated debt rose from

R70 billion in 2009 to almost R400 billion in 2019 in constant rand terms. As a result, in 2019 it accounted for around 10% of government and government-guaranteed debt. It paid out R30 billion in financing costs while reporting a loss of R20 billion.

Graph 7. Eskom losses and gross finance costs, 2003 to 2019, in billions of constant (2019) rand (a)



Note: (a) Deflated with March CPI rebased to 2019. *Source:* Eskom Annual Reports for relevant years.

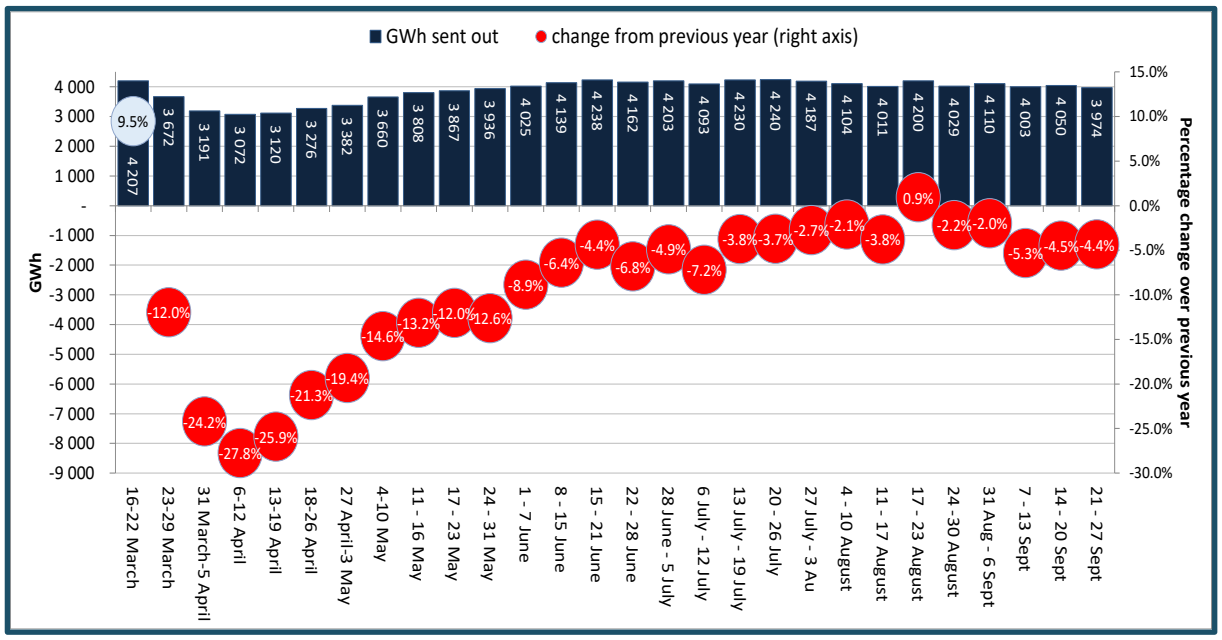
Eskom's deteriorating position reflected a combination of:

- Over-investment in Medupi and Kusile, with costs pushed up by delays and faults, which ultimately made the plants uncompetitive, especially as increasingly efficient renewable and gas-based electricity fell in price;
- An inability to cut costs as demand declined, which meant it relied on continual hikes in tariffs well above inflation – the definition of the utility death spiral; and
- Significant over-payment to suppliers linked to the state-capture network, especially for coal but also for consultants, which significantly increased its costs.

3.3 The impact of COVID-19

From the first quarter of 2020, as the economy began to slow with the lockdown in China, Eskom saw declining demand. The lockdown in April led to an almost 25% fall in demand, but by mid-September sales had almost returned to 2019 levels, driven largely by the recovery in the mining value chain. Increasingly, the constraint was Eskom's inability to maintain a reliable supply rather than a decline in demand.

Graph 8. Electricity sent out in GWh, weekly, 24 March to 27 September, and percentage difference from the same week in 2019



Source: Calculated from Eskom System Adequacy Reports for relevant weeks.
Accessed at http://www.eskom.co.za/Whatweredoing/SupplyStatus/Pages/SupplyStatusT.aspx.

In the medium term, the COVID-19 depression in South Africa and abroad seemed likely to make it even harder for Eskom to sustain the rapid increases in tariffs to which it had become accustomed. At the same time, national tax revenues were expected to fall 20% in 2020/21 and remain depressed for some years, making it more difficult for Eskom to obtain bailouts. The fall in municipal revenues was forecast at 30%, reducing their ability to pay off their debts to Eskom in the foreseeable future.

4 SANRAL

SANRAL is responsible for 22 000 kilometres of national roads, or only 3,6% of the total network. Yet its roads carry a third of all traffic and 70% of freight. Toll roads account for a third of SANRAL's income, although they constitute a seventh of the national roads by length. By law, the toll roads are supposed to be self-financing, while SANRAL gets a transfer from the petrol tax to cover the rest of the national network.

4.1 Policy objectives

The NDP did not discuss SANRAL specifically, but its developmental role would fall under the general prescript of greater investment in infrastructure while maintaining affordable costs to industries and households. Long-distance transport is particularly important in South Africa, because towns are often distant from each other and (thanks largely to mining) far inland. Around three quarters of all freight goes by road. The national roads are also critical for social linkages between provinces and for tourism.

In this context, the NDP specifically prioritised the long-planned N2 road that would ultimately improve transport between Durban and Cape Town through the Eastern Cape. It argued for stronger efforts to shift freight from road to rail, which is less polluting and, in the long run, cheaper.

The National Department of Transport (NDOT) is both the policy department and shareholder for SANRAL. In its five-year strategic plan starting in 2020, the department did not target socio-economic impacts for the national road network, for instance by promoting economic diversification, regional integration, overall competitiveness, or road to rail objectives. Instead, it identified SANRAL's mandate as planning, maintaining and managing national roads "in accordance with its business and financial plan" (NDOT 2020a:125). This mandate effectively left it to SANRAL to determine the developmental role of the national roads, either explicitly or implicitly.

As KPIs, the NDOT five-year plan said SANRAL should maintain roads in their existing condition, which it estimated at 60% good, 36% fair, and 4% poor (NDOT 2020a:104). In the subsequent 2020/21 Annual Performance Plan, it argued rather oddly that the maintenance of national roads would contribute to development of isolated, rural "poor communities," although typically they do not have access to national highways (NDOT 2020b:278). The NDOT also targeted moving 10% of freight from road to rail, mostly to improve timeliness and reduce costs (NDOT 2020a:138). The five-year plan identified the national road maintenance programme as a source of decent jobs. In the 2020/21 Annual Performance Plan, it targeted 16 000 full-time employment equivalents (or 50 000 short-term job opportunities), with set-asides for youth, women and disabled people. (NDOT 2020b:166)

In its latest integrated report, for 2018/19, SANRAL defined its mission as delivering "a safe, efficient, reliable and resilient national road transport system for the benefit of all the people of South Africa" (SANRAL, 2019:18). It does not define the anticipated benefits or commit to skewing them to lower-income communities, nor did it discuss holding the line on the cost to users.

In contrast to the 2018/9 mission statement, SANRAL's long-run strategy, Horizon 2030, adopted in 2017, argued that it had to "develop models that balance the need for world-class road infrastructure with the public's ability to pay." (SANRAL, 2017:10). The plan responded in large part to SANRAL's recognition that it could not expect approval for new toll roads while slower economic growth limited government funding. (SANRAL 2017:4) A central challenge was widespread pushback against the tolls introduced for the Gauteng Freeway Improvement Project, which saddled SANRAL with substantial losses from the mid-2010s as many users simply refused to pay.

SANRAL's 2018/19 integrated report included nine strategic objectives. Again, none identified aims around the broader economic and social impacts of the national roads, which would be particularly important for prioritising new investments as well as maintenance. Instead, they generally specified outputs without identifying the socio-economic implications. Most related to road maintenance, safety and financial stability. One objective related to broad-based black economic empowerment, with nine KPIs centred on support for black-owned and small suppliers; one to co-ordination nationally and regionally through regular meetings with a committee of South African transport officials as well as improving infrastructure across southern Africa; and one to environmental protection.

Ultimately, neither SANRAL nor the NDOT set objectives for how its core function – the maintenance of and improvements in the national roads network – should promote national social and economic aims. In this context, their plans were silent on how to achieve a balance between affordability and quality of roads. As discussed below, the failure to

strategise around this issue laid the basis for SANRAL's large losses over the past decade, and constrained investment in 2019.

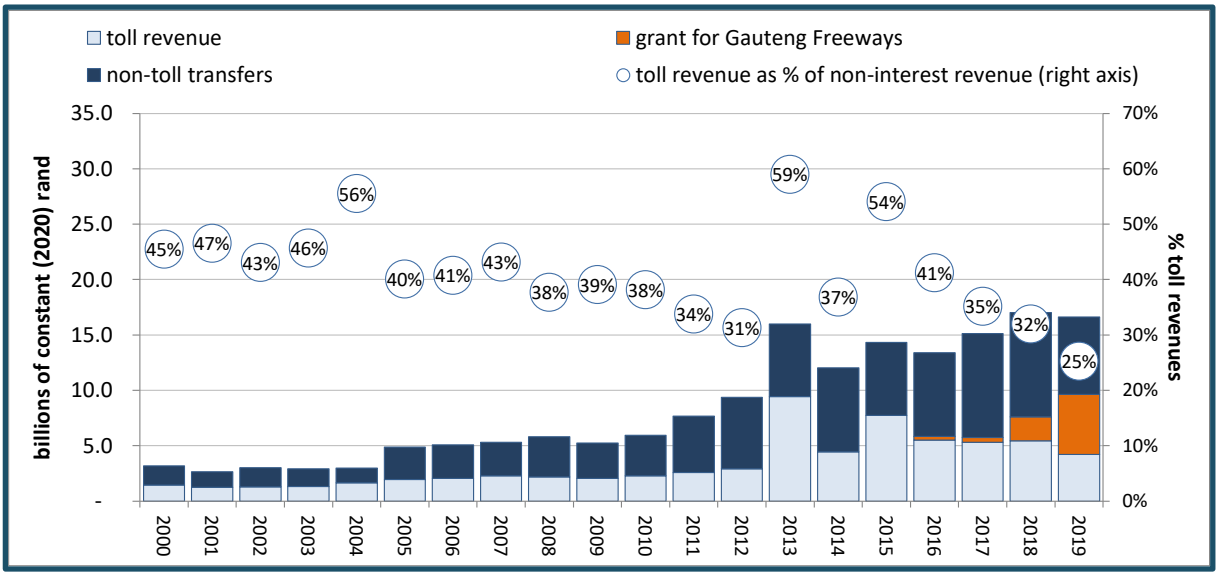
4.2 Developmental impacts

The national roads contribute to socio-economic development principally by ensuring affordable, quality freight, social and recreational transport. They can play a central role in enabling rural areas to link into national value chains. In the long run, they can help reduce emissions and costs by promoting a shift of freight to rail and supporting the transition to electric vehicles.

Affordable and reliable roads: South Africa's national roads rank among the highest quality in the world. As noted, only 4% were considered in poor condition in the late 2010s, which was far better than the norm for provincial and local roads. In constant rand, however, the total cost per kilometre doubled from 2000, when designated national roads totalled just 7 000 kilometres, to 2017.

Toll roads accounted for a disproportionate share of the cost to users of the national roads, although from 2016 they relied increasingly on a government grant for the Gauteng freeways. As a percentage of revenue earned from freight and passenger transport services, SANRAL's tolls plus the grant for Gauteng climbed from 2,5% in 2010 to 5,5% in 2019.[2] The figure for actual toll costs to commercial enterprises was lower, because travellers in their own cars paid a share of the tolls. Still, the finding points to a sharp increase in tolls on users. The companies managing the tolls on concession from SANRAL absorbed around 20% of the gross revenues. (NDOT, 2017:35)

Graph 2. SANRAL revenues by segment, in constant 2019 rand and share of toll revenue, 2000 to 2019 (year to March)(a)



Note: (a) Deflated with CPI for March. *Source:* Calculated from SANRAL Annual Financial Statements for relevant years.

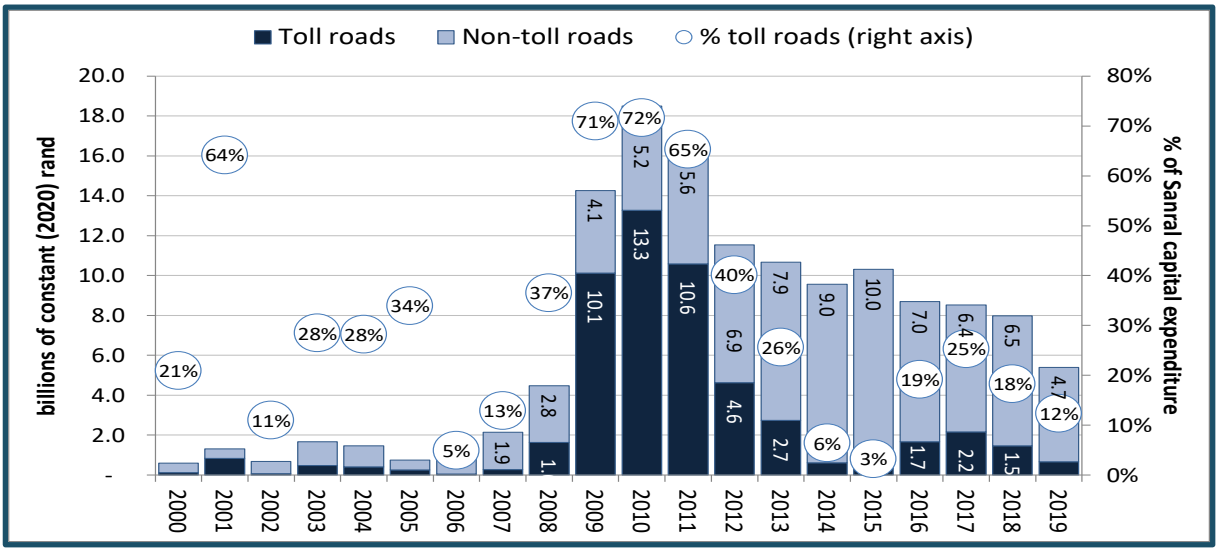
As Graph 2 shows, the share of toll roads in SANRAL's total income declined in large part because from 2016 it obtained grant funding to pay finance costs for the Gauteng roads as

[2] Income from freight and passenger traffic calculated from Statistics South Africa. Land Transport Survey. July 2020. Excel spreadsheet. Downloaded from www.statssa.gov.za in September 2020.

most users refused to pay the tolls. The grant effectively came out of the petrol tax. Although the Act establishing SANRAL required it to keep funding for toll and non-toll roads separate, in 2019 Treasury agreed it could transfer R5 billion to tolls through the Gauteng grant. As a result, the share of tolls in SANRAL's total income fell to a quarter, down from around a third over the previous decade, while the agency cut the budget for improvements in non-toll roads by over 20%. As discussed below in the section on finance, the Gauteng roads led to large and persistent losses for Sanral through most of the past decade.

Shifting funds from non-toll national roads to pay for SANRAL's debts ultimately resulted in a decline in capital expenditure, with implications for the quality of the roads in the longer run. After a spike from 2009 to 2011, mostly for the Gauteng programme, Sanral capital expenditure fell 50% through 2019. Still, in real terms, it remained over five times as high as at the start of the 2000s.

Graph 10. SANRAL capital expenditure by segment, in constant 2019 rand, and share of toll roads, 2000 to 2019 (year to March)(a)



Note: (a) Deflated with CPI for March. *Source:* Calculated from SANRAL Annual Financial Statements for relevant years.

SANRAL's failure to understand demand in Gauteng reflected a broader pricing problem for state-owned enterprises. As with Eskom, it proved difficult to determine when the economic and social benefits of infrastructure improvements outweighed the costs. Both companies enjoyed an effective monopoly in many regions, which meant they could not refer directly to market outcomes to evaluate effective demand. SANRAL itself argued that tolling worked best when it had market power – that is, when users had "no alternatives, as it means elasticity of demand will be lower so raising tolls will also raise revenues" (NDOT, 2017:34).

In the absence of market data, SANRAL frequently relied on heroic assumptions about transport company revenues, capacity utilisation and costs to justify new investments. It did not publish its estimates for comment, which meant it often misunderstand customer needs and wants. For the Gauteng roads, for instance, it effectively assumed high opportunity costs for time spent due to traffic jams. As a result, it planned to charge tolls of R60 between Johannesburg and Pretoria in return for eliminating delays of between 20 minutes and an hour for single trips. Most travellers and transport companies argued the toll was excessive, and it was reduced by over 80% when it was finally introduced – too late, however, to avert the boycott.

Spatial development: Through the early 2000s SANRAL vastly improved roads outside of the historic corridors from the coast to Gauteng, including to Zimbabwe and Mozambique. The extent to which historically underserved communities have been able to use the national throughways themselves remains contested, however, since often they do not have direct access roads and cannot afford the tolls. Still, the expansion of the throughway network certainly improved mobility and trade across the country and Southern Africa.

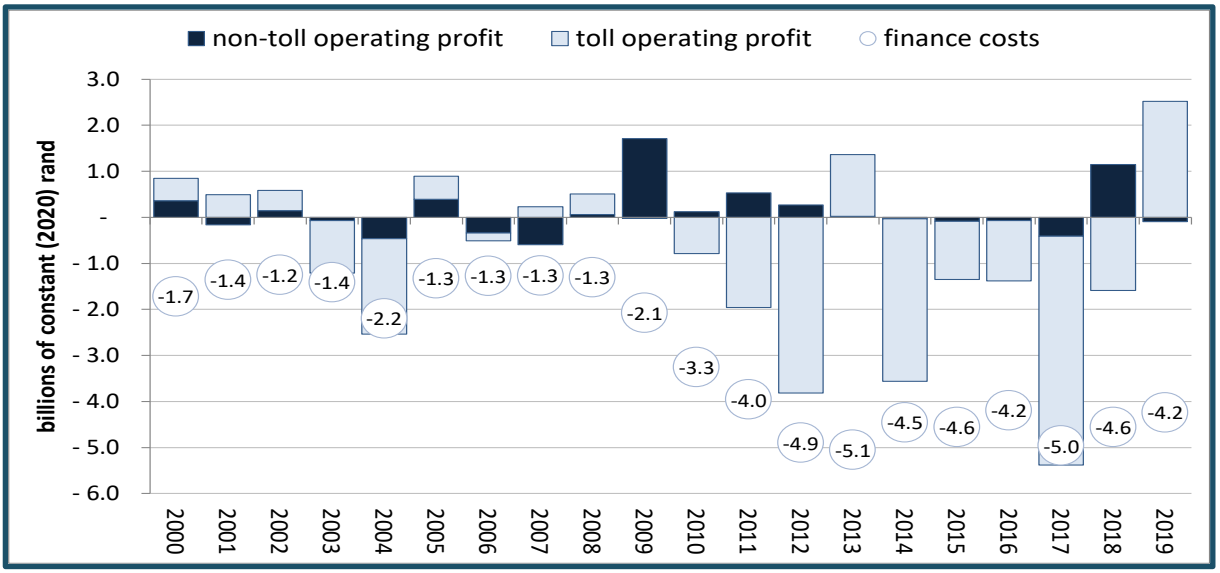
In August 2020, Sanral announced it was making progress on the N2, although the pandemic had caused some delays. The project will connect East London to Port Edward, a distance of 410 kilometres. It has been delayed for years by environmental and community challenges as well as geographic difficulties – it requires, among others, two "mega bridges". (SANRAL, 2020)

Road to rail: As shown in Graph 15 (in the section on Transnet), the share of freight carried by rail has declined over the past decade. One blockage is that maintenance and expansion of the national road system is mostly paid for through the petrol tax, while Transnet fees have to cover the improvements and repairs to the rail network in addition to operational costs.

Financials: SANRAL's overestimation of effective demand for improvements in the Gauteng freeways led to significant losses from the mid-2010s. Before 2009, it generally made modest operating profits, with both toll and non-toll roads breaking even in most years. Its heavy investments in Gauteng did not lead to the anticipated toll revenues, however, leaving it with huge losses. From 2010 to 2018, SANRAL lost an average of R1,7 billion a year, largely due to the finance costs for the Gauteng improvements.

In 2019, because Treasury's allowed SANRAL to transfer funds from non-toll to toll roads, as discussed, it returned to profit. Moreover, it was able to reduce its debt from R56 billion in 2018 to R53 billion in 2019, and its gearing ratio (against both toll and non-toll assets) from 18% to 15%. But it also cut its spending on non-toll roads by 27%. It was not clear if this arrangement would be continued after 2019.

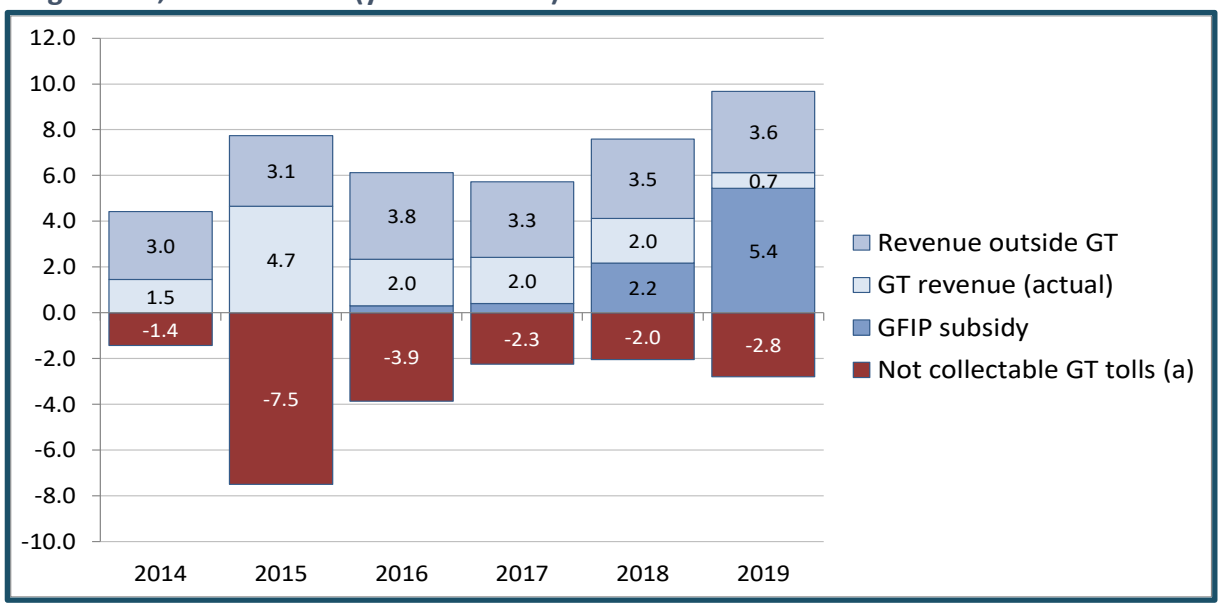
Graph 3. SANRAL operating profit/loss and finance costs, 2000 to 2019, in constant (2020) rand (a)



Note: (a) Deflated with CPI for March. *Source:* Calculated from SANRAL Annual Financial Statements for relevant years.

The following graph indicates the impact of the Gauteng shortfall on SANRAL's toll revenues.

Graph 4. SANRAL's toll revenues and grant for Gautrain Freeway Improvement Programme, 2014 to 2019 (year to March)



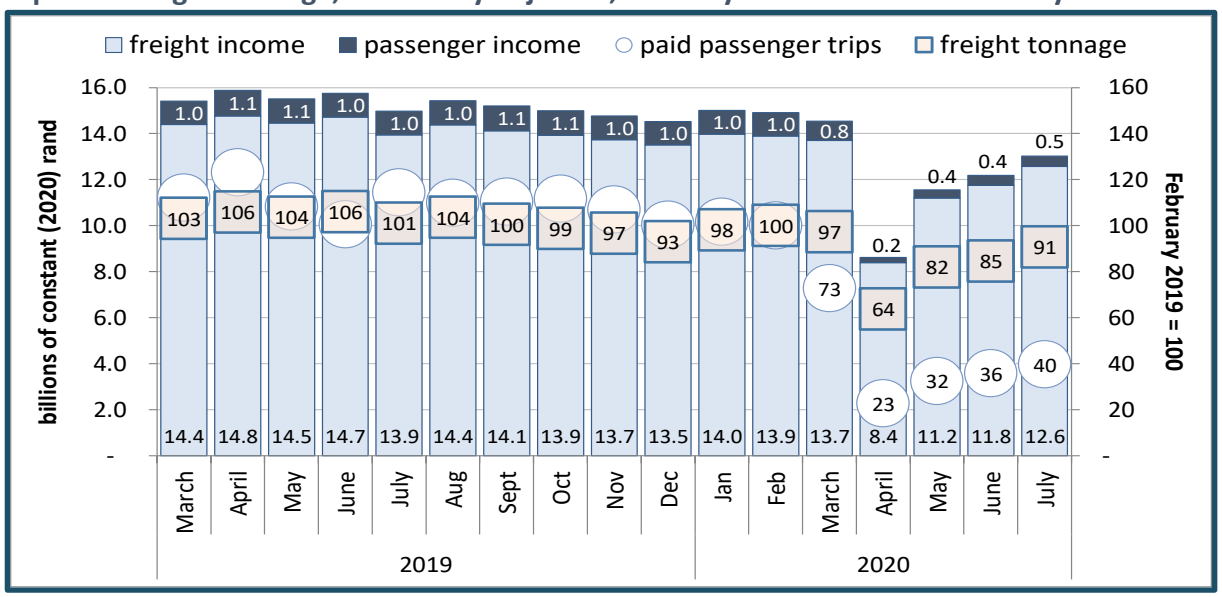
Note: (a) Deflated with CPI for March. *Source:* Calculated SANRAL Annual Financial Statements relevant years.

Overall, SANRAL maintained the national roads effectively over the past 20 years, although at a steadily rising cost. The failure to develop an appropriate strategy to balance affordability and quality, however, effectively led to overinvestment and consumer resistance in Gauteng, which in turn fuelled destabilising losses over the past decade.

4.3 The impact of COVID-19

Data on the impact of COVID-19 on SANRAL are not yet available. The agency will be affected by lower toll and petrol tax revenues as travel declines due to the economic slowdown, although the pace of recovery remains unclear. The lockdown in April saw freight volumes fall by a third compared to February, and passenger transport by over three quarters (Graph 13).

Graph 5. Freight and passenger income billions of constant rand (a); indices of passenger trips and freight tonnage, seasonally adjusted, monthly from March 2019 to July 2020



Note: (a) Deflated with CPI rebased to July 2020. *Source:* Calculated from Statistics South Africa. Land Transport Survey. Excel spreadsheet. Downloaded from www.statssa.gov.za in September 2020.

Freight recovered fairly rapidly, however, rising to 91% of February volumes (in seasonally adjusted terms) by July. In contrast, passenger transport had only recovered to 40% of pre-lockdown levels as of July, although the shift to Level 1 should have led to a further recovery as restrictions on inter-provincial travel were lifted.

In theory, SANRAL should be protected from the anticipated fall in national tax revenues as a result of the COVID-19 depression, since the petrol tax is ring-fenced. If freight and personal travel do not recover rapidly, however, its toll revenues will likely fall below pre-pandemic projections. The slowdown would not automatically lower SANRAL's debt service payments, however, which now constitute around a third of its costs. That could add to strain on the entity.

5 TRANSNET

Transnet manages the national freight rail network; the ports, through a regulator and a separate terminals management authority; and pipelines for liquid fuels. Historically, its activities have centred on support for the development of mines. Coal, iron ore and more recently chrome and manganese transport provided almost half its total revenues in 2019. Because South Africa's mining, manufacturing and population centres are largely inland while the country is distant from major trading partners, efficient ports and bulk rail transport have historically been central to its overall competitiveness.

5.1 Policy objectives

Transnet fell under the NDP's general call for quality but affordable infrastructure that supports inclusive industrialisation; higher public investment; and a shift from road to rail. The NDP also targeted specific projects for Transnet that are now underway or completed, including improving the Durban-Gauteng corridor, building the line to the Waterberg, and upgrading Richards Bay. (See NPC, 2012:46).

The DPE is Transnet's shareholder and the NDOT the main policy department.

In its 2020 to 2025 strategic plan, the NDOT did not set targets for Transnet's socio-economic impacts. Its only target for Transnet was the corporatisation of its ports regulator, which is legally required to become a separate entity by the end of 2020. It also planned to establish frameworks for private participation in rail and for high-speed rail corridors, but did not provide any details. As noted in the section on SANRAL, it also expected to set up a regulator for transport specifically to manage the natural monopolies enjoyed by some suppliers, including Transnet, but it did not set parameters for price increases or services.

In its strategic plan for 2020 to 2025, the DPE mandated Transnet to provide "Cost-effective, reliable, integrated and seamless transport solutions for the bulk and manufacturing sectors in Southern Africa." (DPE, 2020:66). As noted, cost-effective is not the same as affordable. In practice, in contrast to Eskom and SANRAL, Transnet consistently adopted a demand-led investment strategy that encouraged it to avoid overinvestment. The DPE mandate does not require Transnet to promote economic diversification by prioritising manufacturing producers over bulk commodity transport.

The DPE's strategic plan did not specify how Transnet should affect socio-economic impacts beyond ensuring "access to an affordable and reliable transport system". To that end, it argued that it should invest in rolling stock, corporatise the ports authority, and improve the reliability of the ports. (DPE, 2020:61).

Like Eskom, Transnet included in its annual report for 2019 a "statement of strategic intent" that had been agreed with the Minister of Public Enterprises. It reported that the statement required it:

- To reduce the cost of logistics as a percentage of transportable GDP;
- To implement and accelerate the shift from road to rail;
- To leverage the private sector in the provision of both infrastructure and operations where required;
- To integrate South Africa with the region and the rest of the world; and
- To optimise sustainable economic, social and environmental outcomes of all activities undertaken by the SOC. (Transnet, 2019a:48)

In this context, Transnet set KPIs in four "strategic focus areas": financial stability; capacity creation; industrialisation; and operational excellence. It set targets for each of its divisions – freight rail; engineering; the National Ports Authority; port terminals; and pipelines – around financial status, including return on assets and Ebitda; capital expenditure; volumes handled; share of black employees; and energy efficiency. (Transnet, 2019b) It also targeted a shift from road to rail, both to maintain revenues and to reduce emissions. It measures progress toward this objective only in terms of the "Rail Addressable Market Share", which includes only freight that is "suitable for rail", mostly mining and other bulk products. It did not set targets for reducing the cost of logistics relative to value added in goods production, which is presumably the definition of "transportable GDP".

The aims adopted for Transnet by the oversight departments and its own management did not fully align with the NDP. They reflected the commitment to cutting costs for producers and shifting freight from road to rail. But they did not indicate if or how Transnet should contribute to economic diversification and a more equitable and inclusive economy. In practice, Transnet equated its role in industrialisation exclusively with promoting local production of rolling stock rather than prioritising services for manufacturing industries or leveraging its relationships with mining companies to promote beneficiation and fabrication in South Africa. (See Transnet, 2019b).

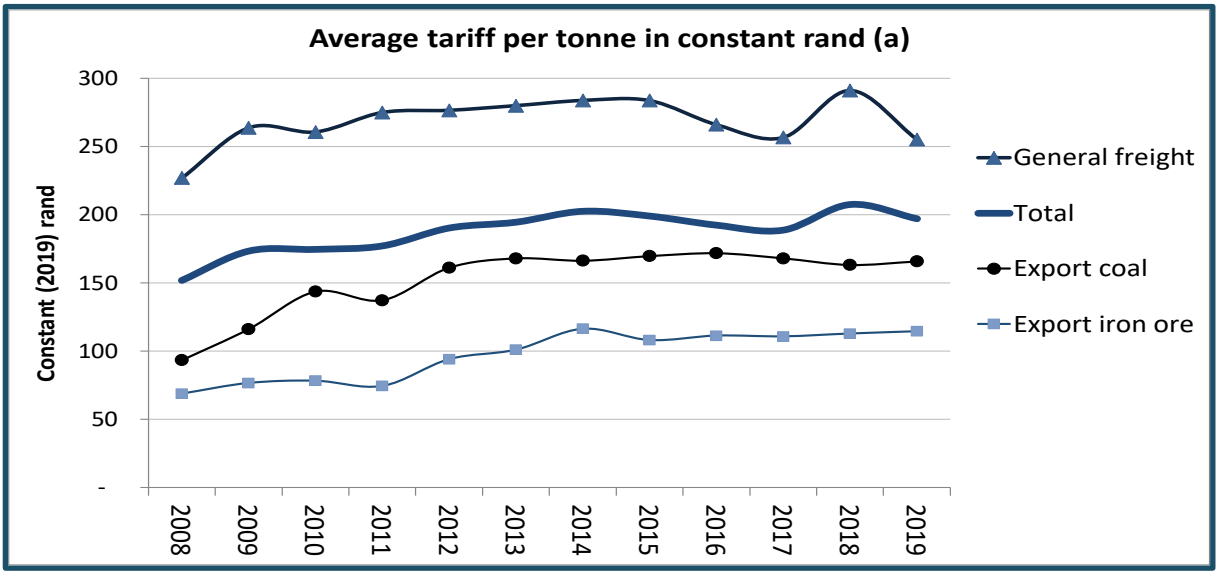
5.2 Developmental impacts

Transnet's main developmental impacts centred on efficiency and affordability; promoting industrialisation; and reducing emissions and transport costs by shifting freight from road to rail. In contrast to Eskom, Transnet managed to avoid overinvestment and the consequent increase in unit prices as the economy slowed from 2014. Its prioritisation of services for mining and the auto industry, however, effectively came at the cost of stronger support for new economic activities, while state capture inflated the cost of some investments.

Quality and affordability: Over the past 15 years, Transnet significantly improved the reliability and speed of its transport. In the early 2000s, it faced rising complaints about persistent delays and inadequate capacity in freight transport through the ports and rail lines. It then invested heavily to upgrade its services, especially for bulk transport of mining products. By the late 2010s, congestion around harbours had become a major source of delays, but that was largely outside of Transnet's direct control.

The picture on affordability was more mixed. Unit costs for Transnet's rail freight transport declined 3% from 2014 to 2019 in constant rand. That meant they were still higher than before the commodity boom, since they had climbed 26% from 2008 to 2014.

Graph 14. Unit cost per tonne for export coal and export iron lines and for other lines (a), 2008 to 2019, in constant (2019) rand (b)



Note: (a) Other lines include dedicated bulk handling for chrome, manganese and agricultural products as well as other commodities and container transport. (b) Deflated with CPI for March rebased to 2019. *Source:* Calculated from relevant Transnet Annual Reports for freight rail.

Transnet faced downward pressure on pricing due to both low international commodity prices and pressure to reduce port charges in order to reduce the cost of container shipments in particular. On the one hand, for some commodities freight was more expensive than road, cutting into its prospective market share. On the other, a new regulator for the ports limited increases to below inflation, and government was moving forward toward a unified transport regulator that would also oversee freight. Transnet argued that these pressures on price represented its most important risk, which it aimed to manage primarily by better economic analysis of its prices and by establishing frameworks arrangements with customers and regulators. (Transnet, 2018).

Industrialisation: Transnet's main contribution to industrialisation is to ensure access to affordable freight transport especially for manufacturers, both to reduce the cost of imported inputs and to promote competitiveness on domestic, regional and overseas markets. In practice, however, low-cost dedicated bulk lines for mines provided most of its revenues and profits. Transnet itself argues that commodities have "traditionally been the cornerstone of the organisation's shipping activities". (Transnet, 2019a:76). In 2019, almost half of Transnet's ports and rail revenues derived from coal and metal ores. In contrast, containers, which typically carry manufactured goods, contributed just under a fifth; while agriculture brought just 4%, and steel and cement 7%. (Transnet, 2019b:53)

Transnet also provided roll on, roll off ("roro") facilities for auto manufacturers. These facilities were crucial for the development of South Africa's small but globally competitive auto assembly industry. They accounted for only 2% of its Transnet's total revenues, however. (Transnet 2019b:53).

As Graph 14 suggests, Transnet typically charged more per tonne for containers because they cost more to transport than bulk products. That practice effectively raised the logistics costs for manufacture exports compared to raw materials. Transnet argued that the cost of transport per tonne was lower for bulk products, however, which meant that despite lower tariffs it reaped higher returns from them.

In contrast to Eskom, Transnet successfully cut back on its investment plans as demand flattened with the end of the global commodity boom in 2011 and the broader economic slowdown that followed. (See Transnet, 2018). In constant rand, its total investment grew five-fold in the decade from 2005 to peak at R41 billion in 2015. It then fell by more than half to R18 billion in 2019. In its own words, given slower global growth,

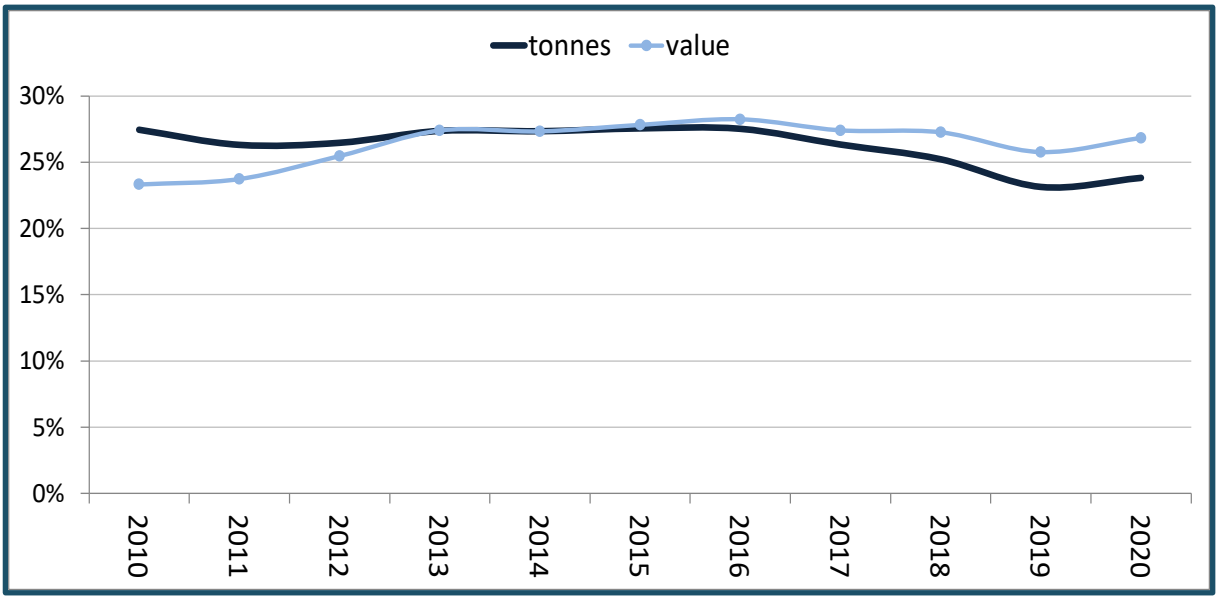
> …the organisation has had to revise its capital expenditure and infrastructure investment approach from the previous accelerated Market Demand Strategy, which relied on growing global and domestic aggregated demand. In the short to medium term, Transnet is shifting its emphasis towards capital expenditure based on validated demand, and prioritising spend on sustaining capital rather than capital expansion. (Transnet 2019a:76)

While financing costs increased at Transnet as a result of past investments, they remained in control. Its net finance costs tripled from a low of R3 billion in 2009 to R11 billion in 2019 (in constant terms), but that meant they only climbed from 6% to 11% of its revenues. Transnet's gearing ratio climbed from 40% in 2015 to 44,5% in 2019.[3]

Transnet argued that it supported industrialisation principally by establishing local assembly and production of locomotives in South Africa, in partnership with overseas suppliers. Investment in new locomotives, built partially in South Africa, came to more than R50 billion, or around a sixth of Transnet's total capital expenditure over the past decade. But the company ended up overpaying its partners by around 40%, or R15 billion. The risk was that this in turn would escalate its costs to users, reducing competitiveness across the real economy.

Container freight from road to rail: As the following graph shows, the share of rail in freight transport actually declined from 2015 to 2020, dropping from a high of 28% to 24%. In value terms, the fall was smaller, from 28% to 27%.

Graph 15. Share of rail in total freight transport, 2010 to 2020 (year to March)



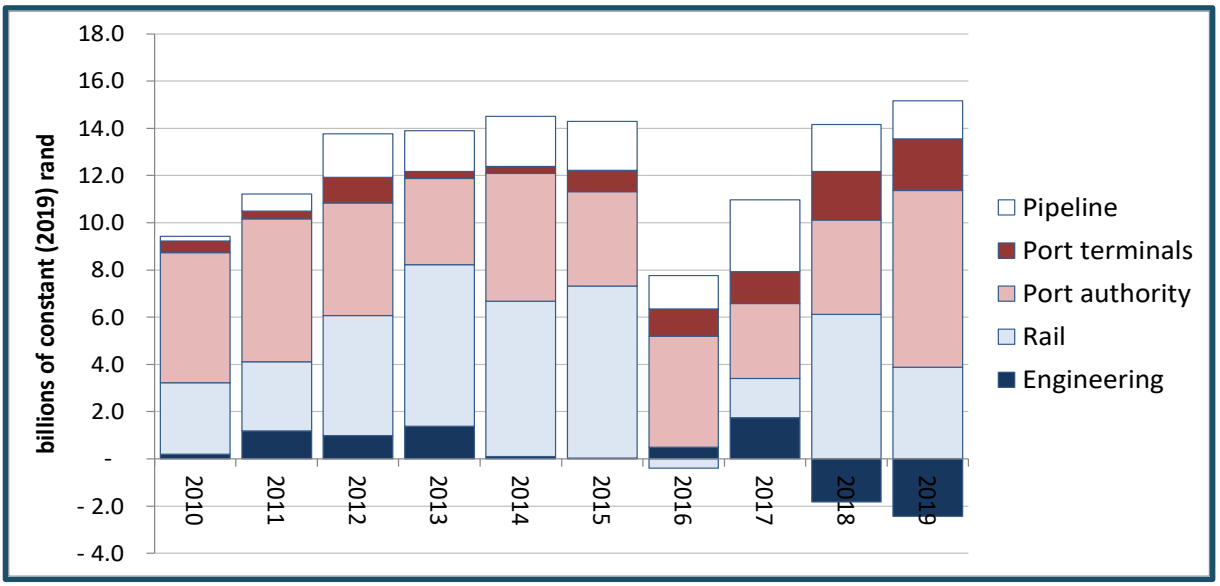
Source: Calculated from Statistics South Africa. Land Transport Survey. Excel spreadsheet. Downloaded in September 2020 from www.statssa.gov.za.

Financial: In contrast to Eskom and SANRAL, Transnet has been consistently profitable, as the following graph shows. Returns by division have, however, fluctuated. In 2015/6, it

[3] Calculated from Annual Financial Statements for the relevant years.

significantly revalued its rail assets, which led to lower profitability in the following year because depreciation climbed sharply. In contrast, the decline in profitability at its engineering division results from a steady climb in costs relative to revenues. This division was deeply involved in the large-scale procurement of rolling stock, which saw a sharp escalation in costs in large part as a result of corruption.

Graph 6. Transnet pre-tax profits by division in constant (2019) rand (a)



Note: (a) Depreciated with CPI rebased to 2019. *Source:* Calculated Transnet Annual Reports for relevant years.

Transnet's financial stability resulted largely because it explicitly targeted some key financial indicators, including Ebitda and return on total assets. That forced it to adjust its spending, and especially its investment, when market conditions changed. Still, its net finance costs climbed from 6% of its revenue in 2008 to 15% in 2019, mostly due to its investment drive in the 2010s.

Transnet also lost huge sums due to inefficiency and corruption in its large-scale procurement of rolling stock as part of the investment programme. In both 2018 and 2019, it had a qualified audit opinion because of a rapid increase in irregular expenditure, mostly around the procurement of locomotives. In 2018/19, its irregular expenditure soared to over R40 billion from R8 million in the previous year. (DPE, 2020:51) In effect, the company lost huge sums without gaining the expected increases in productivity from new locomotives, which could affect its profitability over the coming years.

5.3 The impact of COVID-19

Transnet will be affected by COVID-19 through the overall decline in the GDP, which in turn will likely see a reduction in freight transport generally. In addition, its revenues tend to fall when commodity prices for its main mining exports stagnate. The global pandemic has generally seen a fall in prices for coal, iron ore and other metals. In addition, domestic and foreign demand for cars was expected to be around 30% below 2019 levels in 2020.

In contrast to Eskom and SANRAL, Transnet entered the pandemic with a fairly strong balance sheet. The delayed impact of overpayments for its earlier investments could, however, make it harder for it to adapt.

6 DENEL

Denel grew out of government support for a local arms industry before 1994, in large part in response to sanctions as a result of apartheid. It was corporatised in 1992. It manufactures artillery, munitions, missiles and aircraft, including components, with after-sales service and maintenance. Around half its output is sold to the South African National Defence Force, with the rest exported mainly to governments in the Middle East and other developing countries.

6.1 Policy objectives

The NDP does not discuss the defence industry, but presumably it would argue that Denel should contribute to inclusive industrialisation. The Department of Trade, Industry and Competition (the dtic)[4] has consistently included the defence industry as a priority for South Africa's industrial policy. According to a departmental input to the 2019 Cabinet Lekgotla,[5] the industry's broad contributions lie in exports and established technological capacity, especially where there are potential spillovers for civilian uses. The dtic did not, however, set specific targets for these impacts. Instead, it listed the following outcome indicators for the defence industry from 2019 to 2023.

- Contribution to the GDP to climb from under 0,5% in 2019 to 1% in 2023;
- Foreign direct investment to double from R12 billion to R24 billion; and
- Direct employment in Denel and other, smaller enterprises in the industry to double from 15 000 to 30 000, which it argued would indirectly support another 90 000 employment opportunities. (the dtic, 2019:70)

The department's latest Industrial Policy Action Plan included proposals for a competitive aerospace and defence cluster, which government would support by establishing a supplier development park. Denel was expected to support local suppliers by acting as a major system integrator and partner. (the dti, 2018:187-8)

The DPE said in its 2020 to 2025 strategic plan that Denel was mandated to be a "global strategic partner for innovative defence, security, aerospace and related technology solutions."(DPE 2020:66). It did not explain how this would contribute to broader socio-economic aims for South Africa. Its only specific KPI for Denel in the strategic plan was to achieve "contracted cashflow targets on major programmes", which presumably depends primarily on meeting deadlines for supplying equipment. (DPE 2020:73).

In contrast to Eskom and Transnet, neither the DPE nor Denel refers to a statement of strategic intent for the company. The DPE's webpage argues that it contributes to the following national socio-economic imperatives:

- Job creation, skills development and social investment.
- Enhancing the local technology and manufacturing base.
- Supplier development.
- Exploiting commercial use of technology.
- Foreign policy and regional security objectives. (Accessed at www.denel.co.za in September 2020).

[4] The Department of Trade and Industry merged with the Economic Development Department in June 2019 to become the Department of Trade, Industry and Competition.

[5] The presentation is labelled secret but available on the dtic website.

In sum, government and Denel both argued that growing the arms industry would contribute to industrialisation by maintaining existing high-tech capacity and supporting exports. That said, neither Denel nor the DPE appeared to have aligned their targets with the dtic's expectations for growth in the industry. More fundamentally, like most of the other goods-producing SOCs (Alexkor, Mossgas and the South African Nuclear Energy Corporation), Denel was inherited from the previous regime, which established it for strategic rather than developmental reasons. As such, it did not appear to be the optimal instrument for achieving inclusive industrialisation, given the precariousness of domestic and export demand, the high degree of corruption involved in most arms deals, and the capital intensity and limited multipliers of the defence industry.

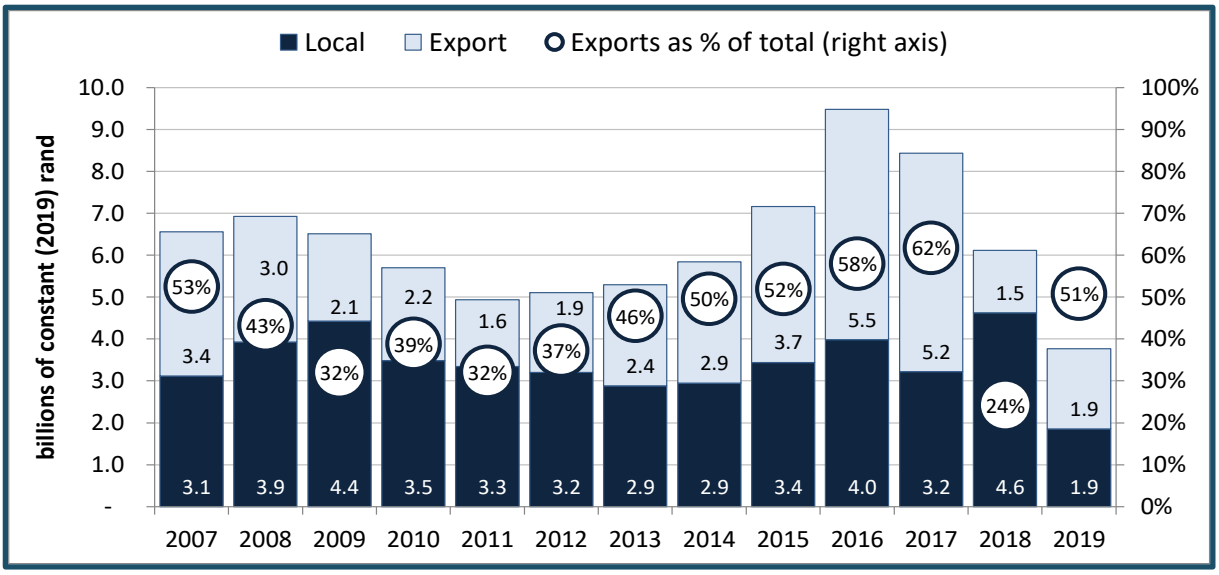
6.2 Developmental impacts

Denel was principally expected to support inclusive industrialisation through spillovers to civil technological advances, exports, growth in production and job creation. It has not, however, published information to show progress in any of these areas. Its 2019 Annual Report points to outcomes in terms of, among others, R&D expenditure, salaries and skills development, but it does not discuss how they translated into more inclusive industrialisation overall.

Spillovers: As of 2019, there was no available evidence of significant spillovers from Denel's military technologies to support advances in producing for domestic or global civilian markets. The limits on Denel's ability to support civilian industries emerged from its contention that defence spending in South Africa should grow in order to increase demand for arms. In this context, Denel suggests that South Africa should multiply its military spending 2,5-fold (Denel, 2019:48) – a target that even before the COVID-19 depression had virtually no political support in light of pressing social and economic needs. Globally, the spillovers from military spending have tended to decline since the 1950s.

Denel does employ a large number of highly-skilled personnel, but the number has fallen sharply in recent years. In 2018/9, 70% of its employees ranked as managers or professionals, down from 73% in 20167. It employed 2 400 professionals in March 2019, but the number had declined from over 3 000 two years earlier.

Graph 7. Denel sales by destination in billions of constant (2019) rand (a) and exports as percentage of total, year to March, 2007 to 2019



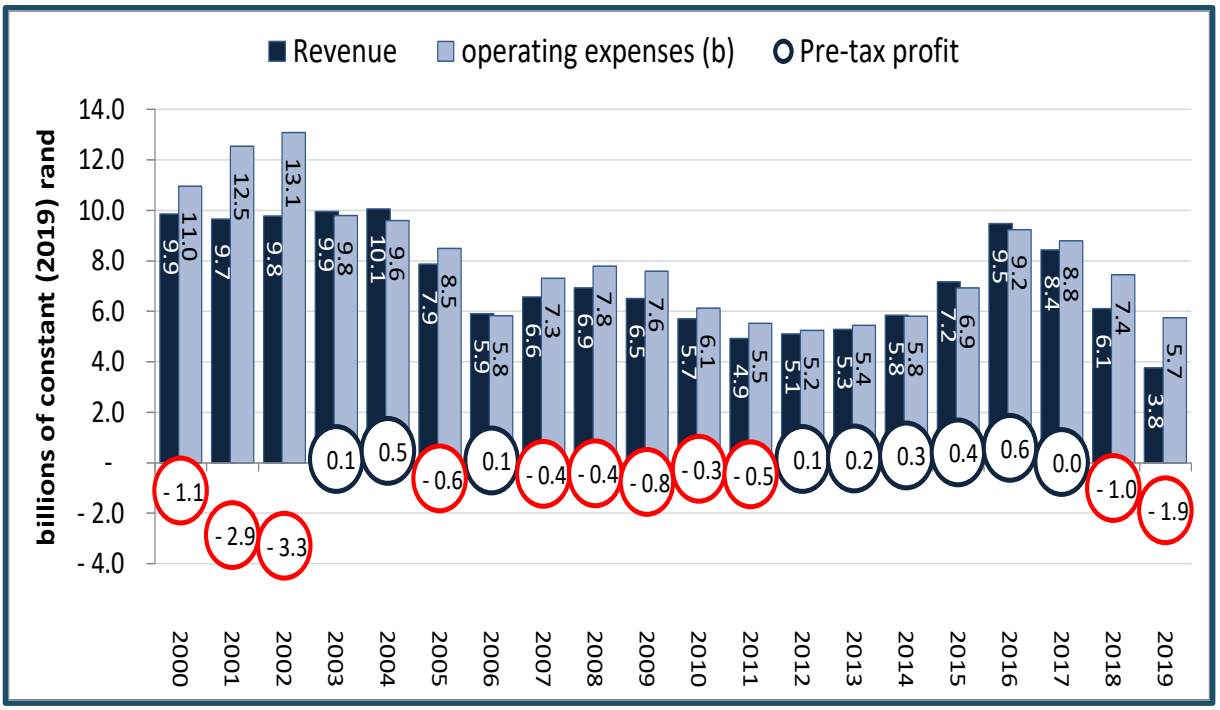
Note: Deflated with March CPI rebased to 2019. *Source:* Denel Annual Reports for relevant years.

Growth and exports: As Graph 17 shows, Denel's sales fluctuated significantly in the past decade, ultimately falling by more than 50% from 2017 to 2019. Part of the problem appears to be that in order to bolster its financials, the company entered into a number of new large export contracts in 2016 and 2017, but then could not deliver on them. In addition, in the 2010s its exports went increasingly to the Middle East, which was an unusually volatile and risky region for arms sales.

Employment: Denel's total employment fell from 15 000 in 1994 to 11 000 in 2004, and to 5 000 in 2009. It was then fairly stable until 2017, but dropped further to under 4 000 employees in 2019. In addition, Denel's employees, especially in higher-level positions, are notably unrepresentative. In 2018/9, more than two decades after apartheid ended, 44% of Denel's managers and professionals were white, and 38% of its total labour force.

Financials: Denel appeared to make an operating profit in the mid-2010s, but apparently it reflected contractual obligations that it could not meet. In the 2018 and 2019 financial years, it fell into losses.

Graph 8. Denel revenues, operating costs and profits in billions of constant (2019) rand (a), year to March, 2000 to 2019



Note: (a) Deflated with March CPI rebased to 2019. (b) Cost of sales plus other, unspecified, operating expenses.
Source: Calculated from Denel Annual Reports for relevant years.

6.3 The impact of COVID-19

Denel faced a liquidity crunch even before the pandemic, and the disruptions to production and international trade aggravated its problems as it could not deliver to customers. By mid-2020, it could no longer pay either its employees or its creditors, and faced liquidation.

7 CONCLUSIONS

Analysis of four major SOCs points to some common shortcomings.

First, none of them had unambiguous socio-economic mandates that were aligned with national needs and strategies. Different government oversight agencies and plans set more or less divergent objectives and priorities.

Second, when socio-economic mandates imposed significant burdens on SOCs, they were often not costed or funded. That in turn made it more difficult to maintain financial discipline.

Third, financial stability was consistently listed as an objective, but at least until 2019 businesses could make significant losses without any consequences. Faced with higher costs, they typically raised their tariffs or approached government for a subsidy.

Finally, the drive to increase investment in the decade from 2005 did not adequately take affordability for users into account. As several SOCs exercise effective monopolies, the result was often overinvestment, leading to excessive tariff increases that reduced competitiveness across the economy. Moreover, the resulting fall in demand often led to losses for the SOCs as well. This situation was aggravated by the end of the commodity boom in 2011, which effectively reduced demand for many SOC outputs as mining growth and profits declined.

In these circumstances, the COVID-19 pandemic has vastly increased the fragility of the SOCs. Given a 20% decline in national revenues, they could no longer count on a bailout from the state, while the harsh conditions facing business made it even more difficult to increase tariffs. As government faced soaring fiscal deficits, it proved increasingly difficult to justify state support for SOCs that had no clear value add for the public, either as customers or as the nominal owners of the enterprises.

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