

# CASE STUDY ON SUPPLY CHAIN RISK IN SOUTH AFRICA AND BEYOND

by  
**TAP Van Den Berg**

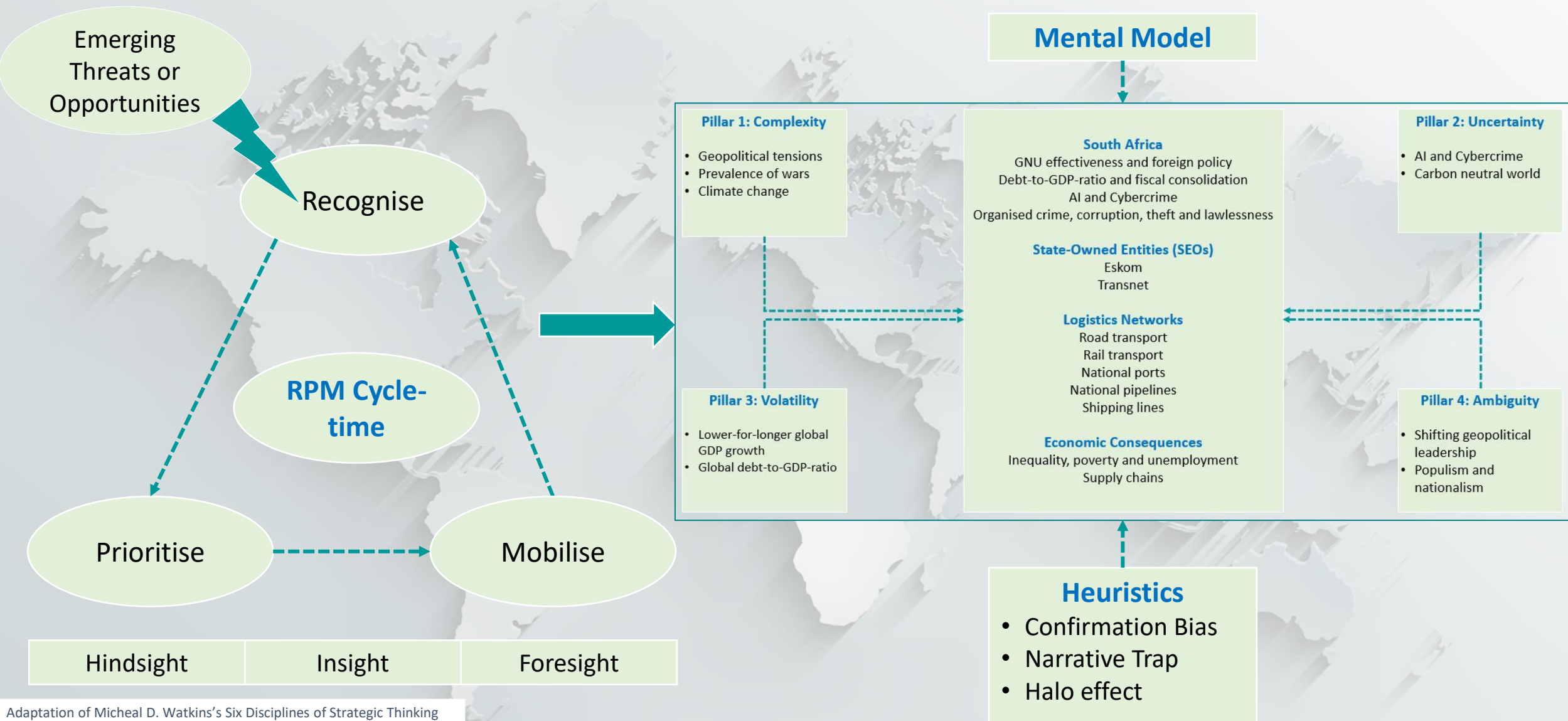
3 October 2024  
IRMSA Annual Conference 2024  
Gallagher Convention Centre



# Purpose of the Case Study

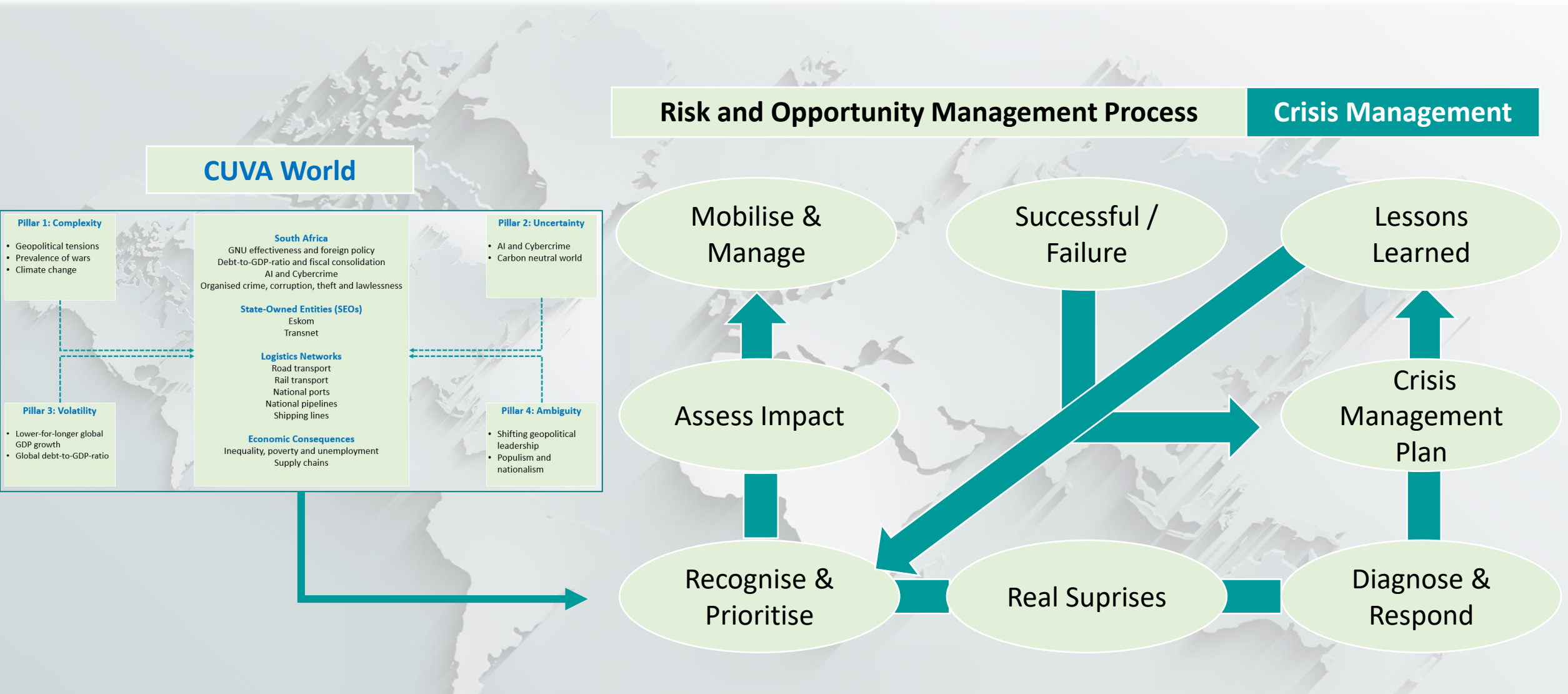
To investigate **global, regional, and national developments** and **systemic risks** impact on **Eskom** and **Transnet** and the resultant consequences for the effectiveness of **logistics networks** and **economic growth in South Africa**.

# Methodology: Pattern Recognition Process (RPM)



Adaptation of Micheal D. Watkins's Six Disciplines of Strategic Thinking

# RPM Aligned with Risk and Crisis Management



Adaptation of Micheal D. Watkins's Six Disciplines of Strategic Thinking

# Complex, Uncertain, Volatile, and Ambiguous World

## Pillar 1: Complexity

- Geopolitical tensions
- Prevalence of wars
- Climate change

## Pillar 3: Volatility

- Lower-for-longer global GDP growth
- Global debt-to-GDP-ratio

## South Africa

GNU effectiveness and foreign policy  
Debt-to-GDP-ratio and fiscal consolidation  
AI and Cybercrime  
Organised crime, corruption, theft and lawlessness

## State-Owned Entities (SEOs)

Eskom  
Transnet

## Logistics Networks

Road transport  
Rail transport  
National ports  
National pipelines  
Shipping lines

## Economic Consequences

Inequality, poverty and unemployment  
Supply chains

## Pillar 2: Uncertainty

- AI and Cybercrime
- Carbon neutral world

## Pillar 4: Ambiguity

- Shifting geopolitical leadership
- Populism and nationalism

## Key considerations/questions

- How robust are your organisation's **purpose, vision, mission, long-term goals or strategic intent** and capability to cope with the global developments or risks referred to in the four pillars of the CUVA model?
- How resilient are your organisation's **global supply chains** given the risks in the four pillars of the CUVA model?
- Are your organisation's **local supply chains** capable of withstanding the developments/risks related to South Africa, Eskom, Transnet and the country's logistics networks?
- Given the review of the three questions above, **are there any weaknesses in your organisation's supply chains or gaps in your organisation's top risk landscape?**

**Complexity:** refers to the connectedness and interdependencies of factors which arise from multiple variables that create complex results.

## Geopolitical tensions

- Largely driven by tensions between NATO countries, the USA, Russia and China over **trade, semiconductor IP, cyber warfare, military presence, and shift in global power** from the West to the East.

## Wars

- **92 countries** are involved in some form of conflict beyond their borders which is the **highest since World War II**.
- Russia-Ukraine and Israel-Hamas wars (Black Sea and Red Sea) are the **Center Stage of conflict between the West and the East**.

## Climate Change

- Climate change has significantly increased the **frequency and intensity** of global droughts, floods, heat waves, hurricanes, cyclones, wildfires, and other extreme weather events.

**Uncertainty:** refers to a lack of predictability or the difficulty in understanding the full impact of future events and making informed decisions due to insufficient or conflicting information.

## Artificial Intelligence

- **AI (4<sup>th</sup> Industrial Revolution) offers significant benefits** (i.e. data analytics, algorithms, BOD coding, and machine learning) to sustain or grow supply chains but also introduces new vulnerabilities that cybercriminals can exploit, such as intrusive software which disrupt supply chains. **AI is a critical anchor for cyber warfare.**
- Globally, the number of organisations impacted by supply chain cyberattacks has **surged by more than 2,600% since 2018.** The cost of cybercrime is **forecast to jump to \$23.84 trillion by 2027, from \$8.44 trillion in 2022.**

## Carbon-Neutral World

- The move to a **carbon-neutral world drives significant changes** in supply chains, requiring investments in renewable energy, new transportation modes (i.e. road, rail, air, and marine), efficiency improvements, and collaborative efforts to reduce emissions.

**Volatility:** refers to the speed and unpredictability of change and making it challenging to plan and respond effectively to these changes.

## Global GDP Growth

- The International Monetary Fund projected global **GDP growth to be around 3.2% in 2024 and 2025**, which is consistent with the growth rate in 2023 but significantly lower when compared to the **robust growth of around 6% seen in 2021**.

## Global Debt to GDP ratio

- The **rising trend in global debt to GDP** poses significant challenges to the sustainability and resilience of supply chains.
- The **US holds the highest national debt globally at \$30.1 trillion**, more than the combined debt of the next four highest-debt nations (**i.e. China \$14 trillion, Japan \$10.2 trillion, France \$3.1 trillion, and Italy \$2.9 trillion**).
- Worldpopulationreview.com reported that global **debt as of Q1 2024 reached a new record high of \$315 trillion**.

**Ambiguity:** refers to a lack of clarity and the potential for misinterpretation and are often characterised by unclear information and mixed messages.

## Shifting Geopolitical Leadership

- **2024 is the biggest election year in human history** as half of the world's population (~ 3,7 billion people or more than 60 countries) will have their say in local and national elections.
- It is expected that there will be a **significant shift in geopolitical leadership** or change in governments, giving rise to new bilateral and multilateral trade agreements, countries becoming new members of existing trading blocks, or countries establishing new trading blocs.

## Populism and Nationalism

- Politics based on populism and nationalism has been on the rise in many parts of the world, evident in countries like the **United States, United Kingdom, Brazil, India, and several European and African nations.**

## Government of National Unity Effectiveness:

- GNU yielded dialogues and expectations regarding its potential impact on accountability and governance, while it is still early days, there are **some green shoots of improvement on these fronts**.
- Finance minister Enoch Godongwana reported on 29 June 2024 to the Cabinet that the **Rand rallied 3.9% against the Dollar**, the **FTE/JSE gained 6.6%** whilst **local-currency bonds have rallied remarkably**.

## Foreign Policy

- The SA Government's stance on the Russia-Ukraine and the Israel-Hamas wars, **has raised concerns with the US Senate** regarding SA's continued participation in the **African Growth and Opportunity Act (AGOA) Treaty**.
- AGOA **exports increased from \$2.39 billion in 2020 to \$3.61 billion in 2022** and is around 0,7% of the SA's annual GDP.
- These **benefits are significant for SA's labour-intensive industries and sectors** with high local content and labour-absorptive supply chains, such as mining, car manufacturing, retail, and agriculture.

## Debt-to-GDP Ratio:

- SA's economic performance over the past decade has been grim (i.e. caused by exogenous as well as local socio-political factors) and the Reserve Bank reported that GDP growth from 2013 to 2023 **averaged around 1.1%** per year and is significantly lower than the **global average which fluctuated between 2 to 5%**.
- For the same period, the **debt-to-GDP ratio jumped from 45,5% to 72,2%** and is still rising.
- The high **debt-to-GDP ratio poses significant challenges** to the fiscus, capital markets, funding of infrastructure investments, economic growth, and the sustainability of supply chains.

## Fiscal Consolidation

- The national **debt-service costs** are expected to peak as a proportion of total revenue in 2025/26, **reaching around 25%** and could further reduce investments in infrastructure.
- **SA's greylisting by the Financial Action Task Force (FATF)** increased the cost of both public and private debt as well as the cost of international credit for SA's exports and imports.

## Artificial Intelligence:

- The integration of AI in IT systems (i.e. data analytics, algorithms, BOD coding, and machine learning) **introduces new vulnerabilities** such as adversarial attacks, data poisoning, and intelligent infiltration of IT systems, however, **offers significant potential for supply chain optimisation**.
- Trends show that the **public and private sectors are far from where they should be** to respond to these risks.

## Cybercrime

- Cybercrime incidents **have significantly impacted the private and public sectors** (i.e. governmental departments, CEOs, and institutions)
- The Council for Scientific and Industrial Research (CSIR) estimate that the **impact of cybercrime on the SA economy is around R2.2 billion** per annum.
- Accenture highlights that **SA has the third-highest number of cybercrime victims** worldwide.
- According to the INTERPOL African Cyberthreat Assessment Report 2024, the **battle against cybercrime has made significant progress**, however, the threat landscape remains challenging.

## Organised Crime:

- Rampant organised crime in SA has increasingly infiltrated the construction industry, giving rise to what is termed the “**construction mafia**” who employ **extortion, violence, and intimidation** to disrupt construction projects, demanding protection payments and sharing of profits or jobs.
- It is estimated (2023) that the **cost of crime (including extortion) is R700 billion**.

## Corruption:

- Corruption continues to **undermine both the private and public sectors** and is incited by greed, inadequate law enforcement, lack of transparency, poor governance, and impunity. SA is **ranked 83 out of 180 countries** on the International Corruption Index.
- The Auditor-General of South Africa reported that for the 2022/23 fiscal year, **that only 34 out of 257 municipalities** received clean audit reports. The biggest concern is the **dreadful condition of the municipalities’ utility infrastructure** due to –
  - the unavailability of funding for ongoing maintenance work; or
  - governmental grants not being spent on utility infrastructure which are critical for local supply chains.

## Theft:

- Widespread theft and vandalism are **having severe consequences for the economy and target logistics infrastructure** such as railway lines, pylons lines, electric cables, substations, and telecommunications networks, to steal valuable metals such as steel and copper.
- The persistent challenge of cable theft and vandalism results in **R7 billion in direct losses annually** for entities such as Telkom, Eskom, the Passenger Rail Agency of South Africa, and Transnet. It is estimated that beyond these direct losses, **there is a knock-on effect on the economy of ~R187 billion**. This leads to frequent service disruptions and an increase in maintenance costs for logistics service providers.

## Lawlessness:

- Lawlessness (often resulting from **service delivery protests and unrest**) is problematic, and it is common for communities or instigators to **target and destroy public and private properties as well as logistics infrastructure**.
- **Broken promises by central, provincial, and local governments, and politicians together with community disillusionment are the driving forces** behind service delivery protests and unrest.

## Climate Change:

- Climate change is **having a ruinous impact on Sub-Saharan** countries' ambient temperature (i.e. heatwaves and wildfires), rainfall, water resources (i.e. dams and lakes), crop yields, food security, and the ability to grow their economies and supply chains sustainably.

## Adverse Weather:

- Adverse climatic conditions **increasing frequency and intensity** claimed their toll as coastal areas have endured extreme weather events. Heavy rainfall, landslides, sea storms, and gale-force winds **jeopardise coastal infrastructure and properties**.
- In April 2022, **KwaZulu-Natal faced devastating floods and landslides** due to heavy rainfall culminating in **459 lives lost, 40 000 people displaced, 12 000 houses destroyed, 45 000 people temporarily unemployed and losses totalling US\$2 billion**.
- In September 2023, spring tides and gale-force winds along the Western and Eastern Cape coastal lines damaged homes, businesses, and infrastructure **leaving behind communities in despair**.

## Eskom:

- Eskom's devastating service delivery failures had an immense impact on the economy and **is estimated for 2019 (~ R120bn), 2020 (~ R75bn), 2021 (~ R80bn), 2022, (~ R100bn) and 2023 (~ R150bn).**
- The economic impact together with Eskom's **reported annual financial losses** for the same period including the **bailouts by the Treasury** is significantly higher than its **outstanding debt of (~ R450bn).**
- Fortunately, **Operation Vulindlela, the Joint Steering Oversight Committee (JSOC), and the National Energy Crisis Committee (NECOM) together with other State interventions** (i.e. appointment of a Minister of Electricity & Energy, a new Eskom Board and CEO, the Energy Regulation Amendment Bill, etc.) have played a crucial role in addressing Eskom's challenges and **improving its performance.**
- Eskom's Energy Availability Factor (**EAF**) is **~ 70%** and the country **did not suffer load shedding for 150 consecutive days (May 2024).**

## Transnet:

- Transnet's value chains are vast and spread across a complex configuration of rail corridors, pipelines, port terminals, and port infrastructure but are **performing dismally, costing the economy around R1bn per day**.
- The loss is equivalent to **4.9% of the country's GDP** and resulted in unprecedented import and export delays, significantly eroding foreign earnings, which are desperately needed to address inequality, poverty, and unemployment in the country.
- **Operation Vulindlela, the Joint Steering Oversight Committee (JSOC), and the National Logistics Crisis Committee (NLCC)** were established to address the significant challenges facing SA's logistics sector, particularly rail, port, and road networks.
- Transnet's **recent performance has shown some signs of improvement** but remains a challenge.

## Road Transport

- Transnet Freight Rail inefficiencies resulted in a significant loss of freight volumes to road transport and **fell consecutively in 2021 (183,29 Mt), 2022 (172,65Mt) and 2023 (149,49Mt), however, has improved in the 2024 FY to 151,70Mt** but is significantly lower than the **220Mt of freight moved six years ago**.
- This resulted in a substantial **increase in road cargo**, extensive traffic congestion on the national **highways (i.e. N2 and N3)** and **secondary roads servicing the ports (i.e. Richards Bay and Durban ports)**, increasing wear and tear of the road surfaces, running cost of trucks, and environmental pollution due to excessive emissions.
- The road infrastructure was not designed for the excessive increase in road cargo which is **damaging road surfaces to a point of no return** (cannot be repaired) and will have to be rebuilt.
- There is a substantial increase in **fatal cargo accidents** and **communities protesting** cargo moving through their cities or towns.
- Significant **increase in truck hijackings, cargo theft, security measures and trucks set alight during community unrests**, account for a considerable proportion of logistics costs.

## Rail Transport:

- TFR has a pivotal role to preserve SA's rail infrastructure, however specific challenges are impeding its role: **ongoing cable theft, vandalism along rail corridors, loss of freight volumes to road transport, ageing infrastructure, maintenance backlogs, and shortage of locomotives.**
- The unresolved **impasse with China Railway Construction Company refusing to supply critical spares for the 450 locomotives** TFR bought from them, is the main reason for the shortage of locomotives.
- **164 (36%) electric locomotives** could not return to service because of the unavailability of critical spares.
- TFR's poor performance is devastatingly impacting **mining, manufacturing, retail, and agriculture sectors and increases the risk of mass unemployment.**
- TFR is **actively promoting concessions** to allow the private sector to rent rail facilities and improve rail services.
- Transnet recently reported that it has secured an **R5 billion loan** from the NDB which will be used **for investments crucial for TFR to enhance its operational capabilities.**



## National Ports:

- The national ports play a decisive role in growing the economy, **servicing as gateways for imports and exports**, however, their performance has been a topic of scrutiny, both locally and globally.
- The Container Port Performance Index (CPPI) by the World Bank **ranks Durban (SA's biggest port) at a concerning 341 out of 348 ports globally**. The **Port of Cape Town follows closely behind, ranked 347**.
- TNPA has **made significant investments of approximately R2.5 billion** in the acquisition and maintenance of port equipment and infrastructure, including cranes, helicopters, tugs, dredgers, and straddle carriers.
- The ports of **Walvis Bay and Maputo are connected to rail corridors extending into SA** and are increasingly **competing with the ports of Cape Town, Richards Bay, and Durban** for cargo imports and exports.

## Inequality, Poverty and Unemployment:

- The impacts of state capture, COVID-19, and Eskom and Transnet's poor performance are **mentally and emotionally too overwhelming to fully comprehend** and hampers SA's capability to reduce **inequality, poverty and unemployment**.

Some disturbing statistics:

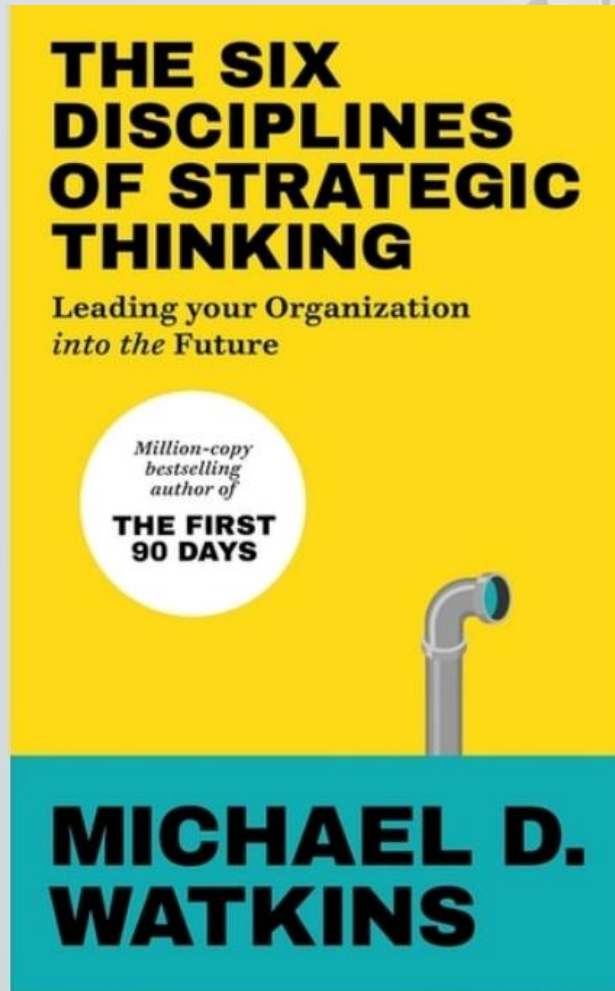
- As mentioned above, average **GDP growth from 2013 to 2023 of 1.1% p.a.** (much lower than the **global 2-5%**).
- SA is the **most unequal country in the world** and internationally recorded the highest Gini coefficient of 0.67.
- The poverty rate is estimated at **62.7% in 2023**, based on the upper-middle-income country poverty line. **Approximately 25.2% of SA's population lives below this line**, which translates to **around 13.8 million people**.
- The Quarterly Labour Force Survey showed that the unemployment rate increased from **32.9% in Q1 2024 to 33.5% in Q2 2024**. More worryingly, the **expanded unemployment rate in Q2 of 2024 increased** by 0.7 percentage points **to 42.6%**.
- A staggering **12,5 million people** who want to work can't find a job!

## Supply Chains Sectors:

- The supply chain sectors in the country are on the **verge of experiencing a significant influx of capital investments**, given the joint effort by the government and the private sector and is testament to the **noticeable progress made by Operation Vulindlela, NECOM, NLCC and JSOC committees to turn around Eskom and Transnet.**

## Conclusion:

- The **world is constantly in flux**, and business leaders must be resilient and have an astute mindset to deal with its volatility, uncertainty, complexity, and ambiguity in creating, sustaining, or realising value for their organisations.
- COVID-19, the **surge in global debt, inflation, and interest rate hikes** last experienced in the 1970s, and the incessant **geopolitical conflicts** have unsettled **global, regional, and local supply chains**.
- During the same time, **SA experienced the aftermath of state capture, rampant organised crime as well as the socio-political and socio-economic shocks, along with the near collapse of two of the most important state-owned entities** (i.e. Eskom and Transnet).
- These developments **are having far-reaching impacts on infrastructure investments, economic growth, reducing inequality, poverty, unemployment, and organised crime** in the country.
- Eskom and Transnet are pivotal in **supporting economic growth and the effectiveness of the SAs logistics networks**.



International bestselling author of *The First 90 Days* Michael D. Watkins presents an actionable new framework to help aspiring leaders learn to think strategically—a set of skills more necessary than ever in a world of constant change: Pattern recognition. Systems perspective. Mental agility. Structured problem-solving. Visioning. Political savvy. For every good leader who has mastered one of these disciplines is a great leader who knows and has mastered all of them.

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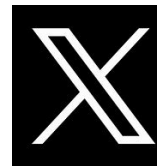
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