

CLIMATE CHANGE-RELATED CHALLENGES IN THE SOUTH AFRICAN FINANCIAL SECTOR

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Abstract: This article aims to provide an analysis of the pressing financial sector challenges that South Africa is currently facing due to climate change (CC). South Africa is likely to experience numerous impacts because of CC. Adaptation is gaining more and more recognition for its significance, impacting not only local communities but also regional and national administrations. It is important to recognise that there may be certain limitations to adaptation, particularly in situations where incomes are lower.

Climate-related events are already causing significant harm to the lives of many South Africans. The economic and financial impacts are becoming more apparent as we witness a rise in the frequency and intensity of extreme weather events, leading to significant financial losses.

Investments made by the private sector in low-carbon innovation, infrastructure, energy, and transportation present both promising opportunities and potential risks. Moreover, there are

exciting prospects to contemplate. Like an auditor, the financial system can provide valuable indicators that can help the private sector effectively manage climate risks and ensure a seamless transition. Effective collaboration among those involved in setting accounting standards, credit rating organisations, and regulatory bodies is crucial for generating accurate signals.

I. INTRODUCTION

The article focuses mainly on desktop analysis and cites various sources, including a study conducted by Turpie, Winkler, Spalding-Fletcher, and Midgley (2002) that investigates the "Economic Impacts of Climate Change in South Africa: A Preliminary Analysis of Unmitigated Damage Costs."

Furthermore, the text presented a chance to assess the difficulties presented by climate change in the South African financial industry, which should have been incorporated into the Country Study. CC is a significant global issue that is resulting in far-reaching impacts on our planet.

Although there have been some improvements in climate change risk management, there is still a substantial amount of work that must be undertaken to address this issue effectively. However, it is a crucial field that necessitates careful consideration.

Furukawa, Ichiue, and Shiraki (2020) state that financial authorities and international organisations have conducted extensive research to assess the effects of climate change on the financial system and the potential role of central banks and regulators. South Africa has faced substantial social and economic repercussions due to a range of natural calamities, such as droughts, floods, and cyclones. CC is anticipated to worsen the situation.

Tadesse (2010) highlights the extensive and pervasive effects of CC in Africa, which have a significant impact on various aspects of individuals' lives both now and in the future. Climate models suggest that the agricultural production and food security of various regions in Sub-Saharan Africa (SSA) will be significantly affected by CC.

Climate change is a significant issue that presents significant challenges for both humans and the environment (Tadesse, 2010). Johnston, Egbebiyi, Zvobogo, Omar, Cartwright, and Hewitson

(2024) conducted a comprehensive study to investigate the potential consequences of climate change in South Africa, with a specific focus on its impact on people's livelihoods.

II. RECENT OCCURANCES

According to Furukuwa et al. (2020), there has been a growing emphasis on the environmental alterations brought about by CC in recent times. According to climate science, increasing temperatures are expected to result in shifts in climate patterns, resulting in a greater occurrence of severe and frequent extreme weather events such as wildfires and floods.

Natural catastrophes like cyclones, floods, as well as droughts have undoubtedly had a big influence on South Africa's society and economy. The consequences are anticipated to escalate as CC continues. However, the study brings attention to the profound effects of CC in South Africa, particularly on the most susceptible individuals in the nation. The nation recently experienced an acute financial crisis characterised by a scarcity of energy and soaring unemployment rates.

It may be somewhat difficult to accurately measure the impact of CC on financial stability. We try to use alternative materials whenever it is feasible and suitable. Our predictions strive to offer an

initial indication of the potential financial outcomes that can be anticipated for the financial sector.

Grippa, Schmittmann, and Suntheim (2019) argue that the impact of CC on the economy will intensify in multiple ways. In-depth analyses of the short- and long-term effects of CC are critical to the book's success. Individuals who are currently without employment may find themselves in a state of stagnation. The image is expected to remain unfavourable due to the long-lasting effects of CC. As noted by Brainard (2020), a comprehensive analysis is required to comprehend the complex effects of climate risk.

The non-linear projected trajectory of CC suggests that there may be tipping points with the capacity to significantly alter climate conditions. Moreover, conventional climate projections that rely on past data may become obsolete. The anticipated effect of CC on the economy is predicted to rise gradually as time passes, although there's no guarantee that this trend will hold.

As per a study conducted by Grippa et al. (2019), it has been found that societies with lower and intermediate incomes are especially susceptible to the effects of physical hazards. South Africa is currently experiencing a challenging situation. Grab and Nash (2023), Laldas

(2023) and Sutherland (2024) have highlighted the Durban flood of April 2022 as an exceptionally destructive natural disaster in KwaZulu-Natal (KZN).

In 2023, Grab and Nash (Online, 2023) investigated that shed light on the extensive consequences of death, property and infrastructure damage, and economic implications. The investigation thoroughly examines historical flood data from KZN, spanning over a century and a half. This study presents strong evidence to support the widely acknowledged belief, backed by firsthand testimonies, that the floods in April 2022 were the most devastating natural disaster ever recorded in KZN.

Furthermore, the data indicates a noteworthy rise in the frequency of flooding over the previous century. The KZN coastal zone, which includes the South Coast and the greater Durban area, had an exceptionally high rainfall of more than 300 mm in a single day in April 2022, according to Grab and Nash (2023).

In May 2022, a tragic flood occurred, causing the loss for 459 lives leaving 88 others missing. More than 40,000 individuals were left homeless, with an additional 45,000 temporarily unable to work because of the extensive damage to over 4,000 houses. A staggering USD 2

billion was allocated for infrastructure expenses and company losses.

III. CLIMATE RISKS AND THEIR IMPACT ON FINANCIAL STABILITY.

It is estimated that most of the population is struggling to satisfy their basic needs with their current resources, due to the significant income disparity. If this is the case, it seems that they are encountering difficulties in obtaining not only sustenance but also the fundamental items necessary for their survival.

South Africa has the greatest unemployment rate among the G20 countries for individuals aged 16 to 64, as per Johnston et al. (2024). The unemployment rate among individuals in this age group has surpassed one-third, which is necessary for a more precise comprehension. The economy of South Africa appears to have rather dismal prospects considering the situation that was just described. To effectively mitigate the effects of CC, it is imperative to strengthen the financial system of South Africa.

IV. LOOKING AHEAD

Stokes (2024) in the Financial News highlights the insurance sector's proactive approach in utilising data and technology-driven innovation to effectively manage the consequences of climate change-related catastrophic weather events. Financial organisations, such as banks, asset

managers, insurers, and retirement funds, are currently evaluating their investment strategies to align with environmental and social goals, like economists.

The path ahead presents a formidable array of challenges. If we fail to act and make necessary changes to our current practices, future generations could face significant challenges. It is becoming increasingly recognised that transitioning for an economy and society that emits less carbon and is better equipped to handle the impacts of climate change is of great importance.

To achieve the Sustainable Development Goals (SDGs) and improve the welfare of growing populations, this shift is essential. The National Treasury's latest technical report (2021) provides strong support for this claim and is widely recognised as the authoritative statement on the matter.

The financial system, accounting norms, credit rating agencies, and regulators can offer valuable insights to assist the private sector in effectively managing climate risks and ensuring a smooth transition (Brainard 2020). Aside from the potential risks, there are also exciting opportunities for private sector investments in areas like innovation, infrastructure, energy, and transportation.

Empirical research by Grippa et al. (2019) and Afiya (2024) suggests that financial policy could be impacted by climate change effects. The effect will show up as a slowdown in productivity growth, which can be related to things like health problems and ageing infrastructure. Furthermore, the adoption of CC will make inflationary trends more unpredictable and unstable.

Adjustments to monetary policy are essential for addressing emerging challenges while staying within the mandates set by central banks. The Financial Stability Board (FSB, 2020) says that climate change may have significant and far-reaching effects on various businesses, sectors, and interconnected regions. The potential consequences of these dangers could have long-lasting effects. The potential ramifications of these hazards could have enduring impacts.

V. FINANCIAL IMPLICATIONS

Regulators as well as businesses are increasingly acknowledging CC's influence on financial institutions (Grippa et al., 2019). Scholes and Engelbrecht (2021) emphasise South Africa's vulnerability to the consequences of climate change in their report. According to the statement, the rate of warming in South Africa's interior is nearly double the global average.

As stated by Brainard (2020), CC pose significant risks to the financial system's stability. This applies to both tangible and intangible dangers. To avoid unexpected and severe price fluctuations, it is critical to have a thorough understanding of the various levels of susceptibility to environmental hazards for both physical and financial assets, as well as the uncertainty surrounding the scope and timing of these risks.

People's perceptions of the severity of climate-related disasters such as storms, floods, and fires can change quickly. As a result, asset valuations may change abruptly and significantly. Rapid changes in investor perceptions of future climate policies can have a significant impact on the financial system, resulting in unforeseen price fluctuations.

According to Steffen, Mallon, Kompas, Dean, and Rice's (2019) research, Australia's financial regulators have advocated for actions to be taken in response to climate change. Grippa et al. (2019) highlights the significant impact of stronger cyclones and prolonged droughts on infrastructure, livelihoods, and the frequency of mass migration. Current efforts to combat rising temperatures, while possibly insufficient currently, have the potential to destabilise the economy.

South Africa is currently dealing with the potential consequences of the research findings published by Stefan et al. (2019) and Afiya (2024). According to Igamba (2023), South Africa is expected to suffer significant economic consequences because of climate change. By 2050, the projected losses could total between R217 and R651 billion. Businesses need to carefully evaluate the potential financial effects of CC on their operations and overall profitability because of its extensive consequences.

Performing a comprehensive assessment of the company's operations is crucial, as various factors can have a direct impact on the company's assets, potentially leading to harm and disruption of business operations. Climate change has significant repercussions for financial institutions and financial markets. This results in a decrease in the rate of growth of financial assets and investment returns, as noted by Krueger, Sautner and Starks (2019), which further contributes to the volatility of the financial market. The frequency of climate risks indirectly increases the level of systemic financial risk through the banking, securities, and insurance markets. Insurance companies are impacted as they offer coverage for potential losses of physical assets and property (Massa and Zeng, 2021).

The study conducted by Piscetek, Nassiry and Dixon (2024) investigates the potential consequences that firms may face as the level of physical dangers increases. These results include increased operational expenses, higher production costs, increased capital expenditures, a decrease in asset book value, and revenue losses. The growing importance of insurance availability and pricing will be critical.

VI. PERILOUS FUTURE

The population of South Africa is currently grappling with a substantial challenge caused by climate change. This phenomenon has the potential to exacerbate the cost of living, impede their ability to acquire essential resources such as food and water, and adversely affect their financial stability. These variables could potentially jeopardise their ability to survive.

South Africa is projected to incur substantial financial losses in the future due to the detrimental effects of climate change. This forecast is based on the empirical findings of Scholes and Engelbrecht (2021) and Igamba (2023). These studies emphasise the vulnerability of South Africa to the consequences of climate change. Mao, Wei, and Ten (2023) assert that CC impedes the progress of the financial industry.

Businesses should conduct a comprehensive assessment of the potential financial ramifications of climate change and its impact on their operations and profitability. This is of utmost importance because the impacts of climate change are widespread and interconnected. This research is essential because of the complex and interrelated dynamics associated with climate change.

According to Bloomberg (2017), comprehending and acknowledging the financial ramifications of climate-related concerns on businesses can be challenging. Furthermore, a lot of organisations might have trouble accurately identifying the underlying issues, assessing the possible outcomes, and spotting inconsistencies in their financial statements.

Many companies frequently have insufficient knowledge about climate-related matters, tend to prioritise immediate risks over long-term considerations, and face difficulties in accurately evaluating the financial impacts of climate-related issues. These factors are contributing to the current situation. The Financial Authorities need to exercise caution to prevent any unanticipated incidents. The 2007-2008 global financial crisis exemplifies the detrimental impact of inadequate corporate governance and risk

management policies on asset value, as emphasised in a report by Bloomberg (2017).

In contemporary times, businesses are increasingly being required to improve the level of transparency regarding their governance structures, policies, and risk management approaches. Accurate and dependable information is essential for investors and other individuals to make informed decisions about pricing or valuation, ensuring proper allocation of resources.

VII. METHODOLOGY

South Africa requires a team that exceeds the standard qualifications and distinguishes itself with exceptional characteristics. An exceptional team distinguishes itself through its unique characteristics. According to Msimango (2020), success in today's business requires a strong understanding of technology and project management skills. The South African government, like an auditor, collaborates with financial sector authorities to develop a strategic vision. Effective collaboration is required to seamlessly integrate commercial and financial strategies and ensure clear communication of the overall strategy.

Msimango (2023) emphasises that a lack of explicit accountability and responsibility can be a significant barrier to

successful implementation. Furthermore, the continued rise in global temperatures can have a negative impact on both the economy and society due to the prolonged release of greenhouse gases. Creating a creative culture within the country is critical. The authorities must prioritise fundamental principles and cultivate a culture of good behaviour.

Forecasting the future of CC and its impact on the financial system is challenging due to its unpredictable nature and complex patterns. Furthermore, there is insufficient data to accurately assess the vulnerability of financial institutions to climate change risks. Managing climate change risk requires more than just developing new products and models. Effective communication and education help individuals understand potential hazards and make informed decisions about their residential and investment locations.

One significant impediment is the presence of a culture that struggles to adapt to new and unfamiliar circumstances. Assessing the precise duration and intensity of physical effects can be difficult. Dealing with this situation presents a significant dilemma in terms of economic decision-making, given its widespread and long-term consequences. Identifying the challenges can be a

daunting task. Coordination issues, communication problems, fragmented information transmission, insufficient organisational structures, and a culture that struggles to adapt to changing conditions are all possible challenges.

The potential impact of CC on the financial system is uncertain, making it difficult to predict its future trajectory. Furthermore, current data is insufficient to accurately assess the vulnerability of financial institutions to climate-related risks. A more in-depth understanding can be obtained by conducting a meticulous analysis of the potential effects of climate change on the organisation.

To avoid surprises like the 2007-2009 financial crisis, it's crucial to improve and reorganise processes to prepare for unexpected events.

IX. CONCLUSION

CC is a major contributor to the development of financial risks, and the increasing rate at which these risks emerge has a direct impact on the efficiency of financial markets. Developing countries must prioritise climate change-related hazards. According to Bloomberg (2017), both corporations and the South African government must effectively communicate their plans to change tactics in response to climate-related risks and opportunities. Despite numerous

uncertainties and a scarcity of available data, the statement remains accurate. The article has specific limitations. Furthermore, specific literary works may present difficulties in terms of accessibility, resulting in a limited scope of analysis in some cases.

VIII. RECOMMENDATIONS

It is imperative for the South African government to guarantee the efficient dissemination of precise and comprehensive information to all citizens. Enhancing early warning systems for critical indicators and refining the protocols for monitoring financial stability is of utmost importance. Companies and governments should engage in a systematic process of comprehending the effects of CC on their operations.

This involves examining historical climate impacts and predicting how these impacts will be altered by future CC. The relevant authorities should prioritise conducting macro-prudential stress tests to assess the risks of climate change in the financial sector. This would facilitate the modelling of the effects of external shocks on the financial system and the evaluation of quantitative risk assessments. Ultimately, enhancing disclosure systems for climate risk information is of utmost importance. In essence, effectively addressing the risk of

CC is an intricate and diverse task that necessitates action from all sectors of society.

Every person, community, government, and industry leader has a responsibility to contribute towards the creation of a stronger and more adaptable future. Through collaboration and the formulation of efficient tactics, we can effectively mitigate the hazards linked to CC and construct a more sustainable and prosperous world for future generations.

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