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C O L L O Q U I U M

Portfolio Stress Testing: A Risk Management Tool

Dr Praise Obanya (North-West University)

DATE: Monday, 6 October 2025 | 16h00–17h00 SAST

VENUES:

- **Stellenbosch University**: Neelsie Cinema
- **University of the Witwatersrand**: Room P215, 2nd Floor, Physics Building
- **North-West University**: Seminar room K310, Physics building G5
- **Online**

--- *A recording of the talk will be published on the NITheCS YouTube channel afterwards* ---

ABSTRACT

Stress testing is an important tool for the evaluation of the impact of economic factors on an entity's cash flow. This talk explores the use of mixed-effect models as a powerful tool for stress testing financial portfolios. It discusses a methodology for predicting the financial statements and, consequently, the cash flow of individual companies within a portfolio under various macroeconomic stress scenarios. Traditional stress testing methods often struggle to simultaneously capture both broad economic shocks and company-specific vulnerabilities. By employing mixed-effect models, we can account for fixed effects, such as market-wide macroeconomic factors, and random effects, which capture the unique characteristics and responses of individual firms. This approach allows for a more accurate assessment of how a diverse portfolio would perform under duress, providing a robust framework for evaluating the impact of economic downturns on an entity's financial health.

BIOGRAPHY

Dr Praise Otito Obanya is a postdoctoral research fellow at the Centre for Space Research, North-West University. She earned a Bachelor's degree in Mathematics and Education from the University of Lagos, Nigeria. She then earned her Honours in Applied Mathematics, as well as her Master's and PhD in Risk Analytics from North-West University. Her expertise covers risk, multivariate analysis, time series analysis, and process control. Praise was one of 26 fellows selected for the 2025 World Bank Group Africa Fellowship. She contributed to the Risk Strategy unit at the International Finance Corporation in Washington DC, USA. In October 2024, she was the runner-up for the Outstanding Graduate Student Presentation award at the International Conference on Advances in Interdisciplinary Statistics and Combinatorics, held at the University of North Carolina, Greensboro, USA.

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