Impact of Contemporary Technological Tools on Financial Mathematics and Financial Management Services

Stephen ARO-GORDON
Department of Financial Mathematics, Faculty of Computing and Applied Sciences
Baze University Abuja ***Email:*** stephen.aro-gordon@bazeuniversity.edu.ng

Chandrashekhar UPPIN
Department of Computer Science, Faculty of Computing and Applied Sciences
Baze University Abuja. ***Email:*** cv.uppin@bazeuniversity.edu.ng

Abstract

The paper outlines the potential impact-areas of emerging technological tools on financial mathematics and financial management practice in a developing economy like Nigeria where mathematical / statistical finance is a relatively new discipline. Mathematical and computer science tools are utilized in almost every discipline, notably, engineering, economics, and finance. The research to date is varied but geared towards finding optimal solutions to such financial management problems as asset / derivatives pricing, portfolio risk management, modelling for scenario simulations, and generally providing better understanding of market trends and behaviour of financial assets. Increasingly sophisticated financial mathematical tools and theories are constantly being discovered and traditional analytical techniques such as spread sheet packages are being applied in new ways. Consequently, a wide variety of career opportunities are open to people with mathematical, statistical, and computational talents and training, but a holistic assessment of the impact of deployable computational tools is arguably neglected. To advance the research in this regard, we employed exploratory research approach to identify emerging computational financial technology products and tried to schematize the impact realms for further empirical investigation. A case study analysis based on Nigeria's emerging real estate capital market dataset spanning 2000 to 2013 was provided. The paper advocates the need to deepen the role of computational technological tools in providing helpful insights into portfolio investment valuation and performance issues in today's data-driven and fast-paced marketplace. Towards the end, the paper also stresses the imperatives for tertiary educational institutions to be supported with targeted resources and robust curriculum reforms in order to achieve emerging technology's maximum impact for sustainable corporate productivity and national prosperity.

Keywords: Computational finance; Financial management practice; Financial mathematics; Computational financial technology, Higher educational institutions.
Related Conference Theme: MATHSFINANCE
Preference: Oral Presentation
Paper 31