

**AN ANALYSIS OF THE RELATIONSHIP BETWEEN
PERFORMANCE, FINANCIAL AND OPERATIONAL
RISKS IN TANZANIAN COMMERCIAL BANKS**

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**DOCTOR OF PHILOSOPHY (FINANCE)
UNIVERSITI MALAYSIA TERENGGANU**

2016

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**Thesis Submitted in Fulfilment of the Requirement for the
Degree of Doctor of Philosophy of Finance in the School of
Social Development and Economics
Universiti Malaysia Terengganu**

April 2016

DEDICATION

To Allah S.W.T for His power to give me a good health, morals and patience and for His perfect direction to successfully complete my PhD research.

To my lovely late mother and father for their support, encourage and prayers during their whole period of their life to insure my success. They left me with educational gifts that become souvenirs from them and believing my success is my gift to them that will keep their soul in happiness and peace forever.

To my dear husband, Mr. Mbarouk who was willing to keep on struggling and enduring discomfort of having a spouse who overlooks the given role of the woman and is actively engaged in the study. A very special thank is offered to you for your practical and emotional support as I added the roles of wife and then mother, to the demanding study. This work is a living proof that patience, persistence, and prayers can make you actualise your dreams.

To my lovely children: Khalil, Muhammad and Asmaa for the endurance in hard times to stay far from your lovely mother. This study is for, and because of you and all the generations to come. It is dedicated to your hard life to different hands of maids, but it was nothing except learning to succeed for your success.

To my beloved mother and father in law, sisters, brothers, sister and brother in law and other members in my family for their sacrifices on their leisure, money, energy and time to care my children and to ensure my success in my studies.

Abstract of thesis presented to the Senate of Universiti Malaysia Terengganu in fulfilment of the requirement for the degree of Doctor of Philosophy of Finance.

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Studies on performance and risks of Tanzanian commercial banking have become a very important issue since they started to experience challenges after liberalisation. From an empirical viewpoint, very few studies were done on performance, especially on stochastic frontier with profitability. Studies on the relationship between performance and risks are also very limited, and there is lack of study on indirect influence of the instrument to performance and risks. This study aims to examine the commercial banks' performance, simultaneous influence of the risks and performance and indirect influence of the instruments to performance and risks. The performance under examination is stochastic cost and revenue frontier, and return on assets and equity while risks are financial and operational. Instrumental variable estimation is utilised to solve simultaneous equations. Afterward, derivatives are applied to find indirect influence of instruments to performance and risks. Using 21

commercial banks from 2003 to 2012, the results of the study prove that profitability is unstable where stochastic cost performance declines where stochastic revenue performance increases for an individual bank over the years. Results also prove that small, foreign and private banks have lower profitability than large, local and government banks. Large, foreign and government banks are more revenue efficient than small, local and private banks; small, foreign and private banks are more cost inefficient than large, local and government banks. Moreover, the results verify performance and risks have a simultaneous relationship. They also show off balance sheet items and real interest rates are powerful in influencing all risks and inflation rate is powerful on operational risk. Gross domestic product growth has strong influence on performance and operational risk. Business volume has a strong influence on financial risk because their strongest is for at least two performance measurements. The implication of this result is that liberalisation has created innovative challenges and becomes an indication of successful performance. Thus, leads to risks and performance relations. Hence, commercial banks should make a trade-off. Their relation makes instruments to have an indirect influence on performance and risks. For this reason, commercial banks and supervision should take action if an influential variable has a huge impact on performance and risks.

Keywords: Performance, Financial and Operational risks, SFA, Simultaneous equation and Commercial banks

Abstrak tesis yang diserahkan kepada Senat Universiti Malaysia Terengganu bagi memenuhi keperluan ijazah Doktor Falsafah Kewangan.

**ANALISIS HUBUNGAN ANTARA PRESTASI, RISIKO KEWANGAN DAN
RISIKO OPERASI BANK KOMERSIAL DI TANZANIA**

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Kajian berkenaan prestasi dan risiko yang dihadapi oleh bank-bank komersial di Tanzania perlu dijalankan susulan pelbagai cabaran yang dihadapi oleh institusi kewangan tersebut berikutan liberalisasi. Dari sudut pandang empirikal, amat sedikit kajian tentang prestasi yang telah dijalankan khususnya tentang kaedah sempadan stokastik dengan keuntungan. Kajian tentang hubungan antara prestasi dengan risiko juga amat terhad, dan juga tidak banyak kajian tentang pengaruh tidak langsung pemboleh ubah instrumen tersebut terhadap prestasi dan risiko. Kajian ini bertujuan untuk menguji prestasi bank-bank komersial, pengaruh serentak risiko dan prestasi, dan pengaruh tidak langsung pemboleh ubah instrumen terhadap prestasi dan risiko. Prestasi yang diuji ialah sempadan kos stokastik, sempadan hasil stokastik, pulangan terhadap aset dan pulangan terhadap ekuiti, manakala risikonya ialah risiko kewangan dan risiko operasi. Anggaran pemboleh ubah instrumen digunakan untuk menyelesaikan persamaan serentak. Selanjutnya, derivatif digunakan untuk mencari pengaruh tidak langsung

pemboleh ubah instrumen terhadap prestasi dan risiko. Dengan menggunakan bank-bank komersial dari tahun 2003 hingga 2012, keputusan kajian ini membuktikan bahawa keuntungan adalah tidak stabil kerana prestasi kos stokastik menjunam apabila prestasi hasil stokastik melonjak bagi setiap bank tahun demi tahun. Keputusan tersebut turut menunjukkan bahawa bank kecil, bank asing dan bank swasta memiliki keuntungan yang lebih rendah berbanding bank besar, bank tempatan dan bank kerajaan. Bank besar, bank asing dan bank kerajaan lebih mendatangkan hasil berbanding bank kecil, bank tempatan dan bank swasta, manakala bank kecil, bank asing dan bank swasta lebih tidak efisien daripada segi kos berbanding bank besar, bank tempatan, dan bank kerajaan. Lebih lanjut lagi, keputusan ini mengesahkan bahawa prestasi dan risiko mempunyai hubungan serentak. Keputusan turut menunjukkan bahawa perkara di luar lembaran imbalan dan kadar faedah sebenar amat mempengaruhi semua risiko, dan inflasi mempengaruhi risiko operasi. Pertumbuhan keluaran dalam negara kasar mempunyai pengaruh yang kuat terhadap prestasi dan risiko operasi. Jumlah pulangan perniagaan mempunyai pengaruh yang kuat terhadap risiko kewangan disebabkan oleh kekuatannya pada sekurang-kurangnya dua kayu ukur prestasi. Implikasi daripada keputusan ini adalah bahawa liberalisasi telah mewujudkan cabaran yang inovatif dan menjadi petunjuk bagi prestasi yang berjaya. Cabaran inovatif ini lalu mewujudkan hubungan antara risiko dengan prestasi yang boleh dikekalkan. Oleh itu, bank-bank komersial perlu melakukan analisis tindak balas atau keseimbangan pulangan-risiko. Hubungan ini menyebabkan pemboleh ubah instrumen berkenaan memiliki pengaruh tidak langsung terhadap prestasi dan risiko. Atas dasar ini, bank-bank komersial perlu bertindak sekiranya pemboleh ubah yang berpengaruh mempunyai kesan yang besar terhadap prestasi dan risiko.

Kata kunci: Prestasi, Risiko Kewangan dan Operasi, Analisis Sempadan Stokastik, Persamaan serentak dan Bank komersial