UNIVERSITI PUTRA MALAYSIA

PERFORMANCE AND TERM STRUCTURE OF PROFIT RATE OF SUKUK BONDS IN MALAYSIA

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FEP 2011 17

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By

GANIYAT ADEJOKE ADESINA-UTHMAN

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

JUNE 2011

Dedicated to my late Father, my Mother
My love, Ibrahim Olatunde
My boys
Irishadullah al-Akbar
Ubaydullah al-Hassan
Abdulmuqsit al-Muhsin
Mohd rasheed al-Miqdad
And my Princess
Al-Jannat

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy.

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Chairman: **Professor Shamsher Mohammad Ramadili, PhD**

Faculty: **Economics and Management**

Efficient functioning of financial system serves both as catalyst to deepen the domestic financial market and facilitates fair valuation of financial instruments. Financial institutions world-wide offer various financing solutions tailored to wide ranges of long and short term investment and financing needs. Bonds have been a key instrument in the financial system of developed and developing economies in meeting these needs. *Sukuk or Islamic bonds* surfaced in the Islamic Financial Market in the year 2000 to fulfill the needs of investors for long term investment financing that is *Shariah* compliant. Unlike conventional bonds that have an established infrastructure and yield-curve to forecast expected changes in yields and hence prices, the *Sukuk* lacks this facilities and have to rely on conventional yield curve for its pricing. This research fills this gap by constructing yield and credit curves based on a profit rate that is *Shariah* compliant to help both lenders and borrowers using *Sukuk* in making objective and religiously acceptable investment decisions. Hence, yield and credit curves for Government and corporate *Sukuk* as well as Spot and forward profit curves for government *Sukuk* were

constructed using the one-factor CIR Model (1985) and *Sukuk* two-factor HJM model with no-arbitrage restrictions; that allows the term structure to vary with the profit rate; with time-dependent drift rate. *Sukuk* data was sourced for the period 2001 to 2009.

The evidence from the two models showed that 89 percent of Malaysia *Sukuk* (Government and corporate) were not given a fair yield and therefore the bonds were mispriced. From the 89 percent that were mispriced, 44.4 percent were overpriced, 66.6 percent were underpriced. All the underpriced *Sukuk* were corporate *Sukuk*. It was observed that all the Government and corporate yield curves were humped. This is consistent with the Market Segmentation Hypothesis explanation for the curves. The non-monotonic yield curves indicates that there is uncertainty in the direction of the future spot profit rate. The upward slope of the curve implies in-built liquidity premium. The findings from OLS regression of spot and forward rates as well as inflation and forward rates showed that the forward profit rates had a very weak predictability power to forcast future spot profit rate and inflation. The findings on forward rate predictabilty to forecast future spot profit rates is not in support of the pure expectation hypothesis. The practice of benchmarking IFIs' profit rate to available interest rate for better competition is therefore a distortion to true market value of underlying assets and hence, their returns was buttressed by the pricing pattern observed in the study, consistent with Muhammad Al-Bashir's (2008) conclusions. A comparative analysis of Malaysian Government *Sukuk* and three different credit classes of corporate *Sukuk*; of which two are high investment grades and one low grade bonds showed that for the high gradethe corporate *Sukuk* performed better than the government *Sukuk*. The low grade *Sukuk* gave high yield relative to the GII benchmark rate. A comparison of yields of both

government and corporate *Sukuk* with similar characteristics showed an upward sloping curve implying in-built liquidity premium to compensate investors for taking extra risk.

In summary, the upward sloping profit yield curves of corporate and government *Sukuk* of different credit risk is consistent with the Liquidity Preference Theory (Biased Expectation Theory) and Market Segmentation Theory but inconsistent with the Pure Expectation hypothesis also known as Unbiased Expectation Theory. That is, the forward profit rates are not good predictor of future spot profit rates. Similar to the conventional bond market, the *Sukuk* market is dominated by risk-averse investors who require term premium to compensate for the risk involved in lending long. Thus the forward profit rate will exceed the forecasted spot rate by the liquidity or term premium and the forward rate will become a biased predictor of forecasted future spot rate. The predictability power of the forward rates to forecast future inflation was weak. These findings are similar to those reported by Gerlash (2003) for the conventional bond market in Hong Kong.

Abstrak tesis yang dikemukan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah.

PRESTASI DAN STRUKTUR TEMPOH KADAR-KADAR KEUNTUNGAN BON-BON SUKUK DI MALAYSIA

Oleh

GANIYAT ADEJOKE ADESINA-UTHMAN

JUN 2011

Pengurusi: Profesor Shamsher Mohammad Ramadili, PhD

Fakulti: Ekonomi dan Pengurusan

Fungsi cekap sistem kewangan melayan kedua-dua sebagai pemangkin untuk mendalamkan pasaran kewangan tempatan dan memudahkan penilaian adil instrumen kewangan. Institusi kewangan penyelesaian pelbagai pembiayaan tawaran seluruh dunia menjahit kepada julat-julat luas pelaburan jangka pendek dan lama dan keperluan pembiayaan. Bon-bon telah menjadi satu alat utama dalam sistem kewangan ekonomi-ekonomi membangun dan maju dalam pertemuan keperluan ini. Sukuk atau bon Islam timbul dalam Financial Market Islam pada tahun 2000 memenuhi keperluan pelabur-pelabur untuk pembiayaan pelaburan jangka panjang yang ialah Syariah patuh. Tidak seperti bon konvensional yang telah satu infrastruktur mantap dan keluk hasil untuk meramalkan perubahan-perubahan yang dijangka dalam hasil dan oleh itu harga, Sukuk kurang kemudahan ini dan perlu bergantung pada keluk hasil konvensional untuk penentuan harganya. Penyelidikan ini mengisi jurang ini dengan membina lengkung hasil dan kredit berdasarkan satu kadar keuntungan yang ialah Syariah patuh membantu

kedua-dua peminjam-peminjam dan peminjam-peminjam menggunakan Sukuk dalam membuat objektif dan keputusan-keputusan pelaburan yang secara tetap boleh diterima. Maka, menghasilkan dan mengkreditkan lengkung untuk Kerajaan dan Sukuk korporat serta Spot dan keuntungan ke hadapan melengkung untuk kerajaan Sukuk telah dibina menggunakan satufaktor CIR Model (1985) dan Sukuk HJM dua faktor memperagakan dengan tiada sekatan-sekatan arbitraj; itu membenarkan struktur tempoh untuk berbeza dengan kadar keuntungan; dengan kadar hanyutan bergantung kepada masa. Data Sukuk berpunca untuk tempoh 2001 untuk 2009.

Bukti dari dua model menunjukkan yang 89 peratus Malaysia Sukuk (Kerajaan dan korporat) tidak diberikan satu hasil adil dan oleh itu bon-bon ialah mispriced. Dari 89 peratus yang mispriced, 44.4 peratus terlalu mahal, 66.6 peratus harga rendah. Semua Sukuk harga rendah ialah Sukuk korporat. Ia telah diperhatikan yang semua Kerajaan dan keluk-keluk hasil korporat memikul. Ini konsisten dengan penjelasan Market Segmentation Hypothesis untuk lengkung. Tidak berekanada keluk-keluk hasil menunjukkan yang terdapat ketakpastian dalam arah kadar keuntungan tempat akan datang. Cerun meningkat lengkung menandakan premium kecairan terbina dalam. Penemuan-penemuan dari regresi OLS tempat dan kadar mara serta inflasi dan kadar mara menunjukkan yang kadar-kadar keuntungan ke hadapan telah kuasa kebolehramalan yang sangat lemah untuk forcast kadar keuntungan tempat akan datang dan inflasi. Penemuan-penemuan pada kadar hadapan predictabilty meramalkan kadar-kadar keuntungan tempat akan datang bukan dalam sokongan hipotesis jangkaan tulen.

Amalan IFIs tanda aras' kadar keuntungan untuk kadar faedah boleh didapati untuk pertandingan lebih baik adalah keherotan untuk nilai pasaran sebenar aset-aset yang mendasari dan oleh itu, pulangan mereka menyokong oleh corak penentuan harga memerhatikan dalam kajian itu, konsisten dengan Muhammad Al-Bashir (2008) kesimpulan-kesimpulan. Satu analisis perbandingan rakyat Malaysia Government Sukuk dan tiga kredit berbeza mengelaskan Sukuk korporat; di mana dua ialah gred-gred pelaburan tinggi dan satu bon-bon tingkat rendah menunjukkan itu untuk tinggi gradethe Sukuk korporat telah melaksanakan dengan lebih baik daripada kerajaan Sukuk. Tingkat rendah Sukuk memberi saudara hasil tinggi untuk kadar tanda aras GII. Satu perbandingan hasil kedua-dua kerajaan dan Sukuk korporat dengan sifat-sifat yang sama menunjukkan satu lengkung condong meningkat mengandaikan premium kecairan terbina dalam bagi mengganti rugi pelabur-pelabur untuk mengambil risiko tambahan.

Dalam ringkasan, keluk-keluk hasil keuntungan condong meningkat itu korporat dan kerajaan Sukuk risiko kredit berbeza konsisten dengan Liquidity Preference Theory (Biased Expectation Theory) dan Market Segmentation Theory tetapi tidak selaras dengan hipotesis Pure Expectation juga dikenali sebagai Unbiased Expectation Theory. Itu kadar-kadar keuntungan ke hadapan tidak peramal bagus kadar-kadar keuntungan tempat akan datang. Sebagaimana pasaran bon konvensional, pasaran Sukuk didominasi oleh pelabur-pelabur kehindaran risiko yang memerlukan tempoh premium bagi mengganti rugi untuk risiko menceburi dalam pinjaman lama. Maka kadar keuntungan ke hadapan akan melebihi meramalkan kadar serta-merta oleh mudah tunai atau

bertempoh premium dan kadar hadapan akan menjadi satu peramal berat sebelah meramalkan kadar serta-merta akan datang. Kuasa kebolehramalan kadar mara untuk meramalkan inflasi masa hadapan lemah. Penemuan ini ialah sebagaimana itu dilaporkan oleh Gerlash (2003) untuk pasaran bon konvensional di Hong Kong.

ACKNOWLEDGEMENT

With the completion of this thesis, I'm so indebted to many. First and foremost, all praises are due to Allah, The Lord of the Worlds, The Creator and Sustainer of the Universe. This thesis will not have been possible without His blessings. I thank Him for strengthening me to see it to a conclusive end.

I will forever be appreciative of my sweet Mum for her support and assistance to my home front before and during the study. I don't know how to repay you Mum, but I found solace in Allah's promise to good mothers like you. I also thank my father-in-law and my late mother-in-law, may Allah be please with her.

I owe my deepest gratitude to the chairman of my supervisory committee, Professor Shamsher Mohd Ramadili whose challenges made me to conclude on the research topic and strengthened me to face the novelty of the work. I acknowledge your constructive criticism. I pray Allah continue to be with you and bless your professorial touches on researches of students under you at all times.

I will also like to show my gratitude to Associate Professor Taufiq Hassan for his meaningful contributions at all stages of the work. This array of thanks to my supervisory committee is incomplete without thanking the Dean of faculty of Economics

and Management, Universiti Putra Malaysia; who is also a member; Professor Annuar Md Nassir for useful materials he supplied to aid the research.

I appreciate the contributions of all my teachers in the faculty especially Associate Professor Law Siong Hook, Professor Muzaffar Shah Habibullah, our econometric guru, Professor Ahmad Zubaidi Baharumshah, for their well of knowledge of which I was opportune to drink from.

It is my pleasure to thank our pioneer Vice Chancellor at Crescent University, Professor Fola Lasisi for his fatherly support and encouragement for further study, financial support and prayers during his visit to Malaysia. I will like to place on record my appreciation to Prof. Dr. Abdul-Lateef Sanni and his wife, Dr. Mrs Zulfal Aboaba-Sanni for their support cash and kind. With Allah lies your reward.

I will like to extend my appreciation to Engineer Ismail Tijani who submitted U.P.M form on my behalf. I'm as well grateful to him and Dr Musa Aibinu of International Islamic University Malaysia for teaching me MATLAB. It is of common usage in engineering field, hence a great challenge for me but an opportunity to acquire new knowledge and apply uncommon technique to the field of economics and finance.

Many thanks to my dear Sister Mrs. Ruqayah Dasola Tijani who is also a PhD candidate in Biotechnology at International Islamic University Malaysia for her kind gestures, her support cash and kind. I say a big thank you. I'll also like to say a big thank you to Dr Abd-Jelil Yusuf; a lecturer at UPSI in Perak and his dear dutiful wife Mrs Monsurat Yusuf for being there to lean on all the time. I wish, Mrs Yusuf a successful completion of her degree soon.

I thank my friend, sister and companion Engineer Rashidah Funke Muhibi, her husband; Professor Sulaiman Muhibi, head of department of Biotechology, IIUM for their support; financial and kind. With Allah lies your reward.

I extend same hand of fellowship to Dr Abd-Hafis Oladosu, a visiting Professor to ISTAC, IIUM and his wife, my darling sister Habibat Oladosu-Uthman- a PhD candidate at ISTAC- for their words of encouragement and support cash and kind. You're appreciated.

Many thanks to Dr Yusuf Muhammad and his wife; Dr Mikail Ismail and his wife; Alhajj Oni, Dr. Musa Owoyemi and his wife; Musa Abd-Hafis and his wife who is also my niece; Mr. Meor of Bond Pricing Malaysia; my colleagues and PhD candidates at U.P.M-Engineers AbdFattah Akande and Mudathir Akorede and all of you who stood by us one way or the other during the course of study.

I am greatly indebted to my one and only love, the sun that shines in my life; my radiance of happiness; the source of light that illuminate my path to success, my friend, my life, my strength; in person of my beloved Dr. Ibrahim Olatunde Uthman. Thank you for believing in me; thank you for your courageous words; thank you for sponsoring this study; thank you for your unflinching supports morally, emotionally and psychologically. I shall forever be grateful for these.

To my lovely kids; born and adopted; you mean everything to me. You sweeten my world. Accept my deepest thanks for your cooperation, understanding, love and sacrifices you made while I left you to study. Forgive me for not being there to discharge my motherly duties; please accept my heartfelt thanks. Lastly, I give all glory to Allah (SW), may His choicest blessings be showered on Muhammad (SAW), his households, companions and those who follow his footsteps till the end of time.

I certify that an examination Committee has met on **2nd June, 2011** to conduct the final examination of Adesina-Uthman Ganiyat Adejoke on her thesis entitled "**Performance and Term Structure of Profit Rate of *Sukuk* Bonds in Malaysia**" in accordance with Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy in Economics.

Members of the Examination Committee were as follows:

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Date: 26 July 2011

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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Date:

DECLARATION

I declare that the thesis is my original work except for the quotations and citations which have been duly acknowledged. I also declare that it has not been previously and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

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GANIYAT ADEJOKE ADESINA-UTHMAN

Date: 2 June 2011

TABLE OF CONTENTS