EXAMINING THE LIQUIDITY RISK OF ASEAN BANKS BY USING PARTIAL ADJUSTMENT MODEL

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MASTER OF SCIENCE (BANKING)
UNIVERSITI UTARA MALAYSIA
December 2016

EXAMINING THE LIQUIDITY RISK OF ASEAN BANKS BY USING PARTIAL ADJUSTMENT MODEL

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Thesis Submitted to

Othman Yeop Abdullah Graduate School of Business

Universiti Utara Malaysia,

In the Fulfillment of the Requirement for the Degree of Master of Science (Banking)

December 2016

Pusat Pengajian Ekonomi,
Kewangan dan Perbankan
SCHOOL OF ECONOMICS, FINANCE, AND BANKING
Universiti Utara Malaysia

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ABSTRACT

The aim of study is to examine whether ASEAN banks actively manage their liquidity or not and how effective the liquidity risk has been managed. Two liquidity measurements have been used, the first one is net stable funding ratio (NSFR) which indicates banks' long-term liquidity buffer and the second one is the short-term liquidity ratio (SHORT). The study used annual data of 87 banks that operate in 6-ASEAN countries over 20-year period (1996-2015). Firstly, partial adjustment model is employed to examine whether ASEAN banks do have liquidity target ratios. The findings showed thatthe average estimated liquidity target for NSFR is 1.4936, and 0.6417 for SHORT. These findings confirm that ASEAN banks do have liquidity targets. Secondly, generalized method of moments (GMM) is employed to estimate the speed of adjustment of ASEAN banks towards their liquidity target ratios. The findings revealed that the adjustment speed for NSFR is 0.406 and 0.366 for SHORT, this implied that ASEAN banks adjust their NSFR quicker than their SHORT. Thirdly, GMM estimation method is used to examine the determinants of banks' liquidity target ratios. The results showed that bank size was found positively related with NSFR and negatively with SHORT. Furthermore, equity ratio and asset quality negatively affected both NSFR and SHORT, while bank growth plan, funding cost and interest rate spread were positively influencing the liquidity targets for both NSFR and SHORT. In addition, GDP was found insignificant for both NSFR and SHORT. Fourthly, ordinary least squares (OLS) regression estimation technique is used to examine the determinants of ASEAN banks' speed of adjustment toward liquidity. The results showed that the liquidity distance from target level (GAP) was positively related with the adjustment speed whereasbank size, GDP growth, and financial crises had negative impacts on the banks' speed of adjustment. Lastly, OLS regression is used to examine the impact of speed of adjustment toward liquidity on banks' profitability. The results showed that the liquidity's speed of adjustment affected banks' profitability negatively.

Keywords: ASEAN Countries; Commercial banks; NSFR; Short-term liquidity ratio; Liquidity management; Partial adjustment models: GMM; Speed of adjustment.

ABSTRAK

Kajian ini bermatlamat untuk menyelidik sama ada bank ASEAN mengurus elemen kecairan (*liquidity*) mereka secara aktif ataupun tidak dan cara bank tersebut menangani risiko kecairan dengan berkesan. Dua ukuran kecairan diupayakan dalam kajian ini. Ukuran yang pertama ialah nisbah dana stabil bersih (NSFR) yang memperlihatkan penimbal kecairan jangka panjang bank dan ukuran yang kedua ialah nisbah kecairan jangka pendek (SHORT). Kajian ini menggunakan data tahunan bagi tempoh dua puluh tahun (1996-2015) untuk sejumlah 87 bank yang beroperasi di enam negara ASEAN. Pertama sekali, model pelarasan separa diupayakan untuk menyelidik sama ada bank ASEAN mempunyai nisbah sasaran kecairan ataupun tidak. Dapatan menunjukkan bahawa sasaran kecairan yang dianggarkan secara purata untuk NSFR ialah 1.4936 dan 0.6417 untuk SHORT. Dapatan ini mengesahkan bahawa bank ASEAN mempunyai sasaran kecairan. Kajian kemudiannya menggunakan kaedah momen teritlak (GMM) untuk menganggarkan kelajuan pelarasan bank ASEAN bagi nisbah sasaran kecairan mereka. Dapatan memaparkan bahawa kelajuan pelarasan NSFR ialah 0.406 dan kelajuan pelarasan SHORT pula ialah 0.366. Hal ini menunjukkan bahawa bank ASEAN menyelaraskan NSFR mereka lebih cepat berbanding SHORT. Seterusnya, kaedah anggaran GMM digunakan untuk meneliti penentuan nisbab sasaran kecairan bank. Dapatan memperlihatkan bahawa saiz bank didapati berkait secara positif dengan NSFR dan berkait secara negatif dengan SHORT. Selain itu, nisbah ekuiti dan kualiti asest mempengaruhi secara negatif kedua-dua NSFR dan SHORT, manakala rancangan pembangunan bank, kos dana, dan rebakan kadar faedah mempengaruhi secara positif sasaran kecairan untuk NSFR dan SHORT. GDP juga didapati tidak signifikan untuk kedua-dua NSFR dan SHORT. Teknik anggaran regresi kuasa dua terkecil biasa (OLS) pula digunakan untuk mengkaji penentu kelajuan pelarasan kecairan bagi bank ASEAN. Dapatan menunjukkan bahawa jarak kecairan daripada tahap sasaran (GAP) berkait secara positif dengan kelajuan pelarasan manakala saiz bank, pertumbuhan GDP, dan krisis kewangan memberikan impak yang negatif terhadap kelajuan pelarasan bank. Akhir sekali, regresi OLS digunakan untuk meneliti impak kelajuan pelarasan kecairan terhadap keuntungan bank. Dapatan memaparkan bahawa kelajuan pelarasan kecairan mempengaruhi keuntungan bank secara negatif.

Kata kunci: Negara ASEAN; bank perdagangan; NSFR; nisbah kecairan jangka pendek; pengurusan kecairan; model pelarasan separa; GMM; Kelajuan pelarasan

Dedicated to my wonderful mother who could not see this thesis completed. There's nothing that I value more than your love, the world classifies you as dead but my heart classifies you as immortal.

May ALLAH (SWT) grant you the highest rank in paradise.

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful. Peace and blessings of Allah be upon Prophet Muhammad.

First and foremost, all praise and gratitude to Allah, the Almighty, on whom ultimately, we depend for sustenance and guidance, for bestowing on me the great strength, patience, and courage needed to complete this thesis.

Secondly, immeasurable appreciation and deepest gratitude to my supervisor, Dr. Hamdan Amer Ali Al-Jaifi for his professional guidance, constructive feedbacks, and insightful comments. There were many times where I had reached the ‘crossroads’ and each time Dr. Hamdan was there to steer me towards the right path. He was prepared to sit and listen to my troubles and always proffer the reasonable solutions needed. I am very thankful for having such a good supervisor like him; a more supportive and considerate supervisor I could not have asked for.

Within the University, I would like to express my gratitude and appreciation to the committee members, Assoc. Prof. Dr. Kamarun Nisham Bin Taufil Mohd and Dr. Azira Abdul Adzis. My heartfelt appreciation will be extended to all the academic and non-academic staff of the University. In particular, School of Economics, Finance, and Banking and Othman Yeop Abdullah Graduate School of Business. Additionally, special thanks go to Prof. Dr. Asish Saha for all his support and guidance.

I also owe a debt of thanks to my lecturers and colleagues in Ibb University. Especially, the Department of Banking and Finance and Faculty of Administrative Science.

Most importantly, I would like to acknowledge my family to whom I owe a great deal of so much gratitude. To my beloved late mother (Dawleh) who was always a constant source of support and encouragement. To my beloved father (Yahya) who is a great inspiration to me. To my older brother (Dr. Adnan) and all my sisters for their support and encouragement. To my lovely wife (Thoraya), children (Nabil, Shahd and Mawaddah) for their sacrifice and patience for not being together with me throughout out my period of study.

Finally, I am grateful to all my friends in UUM whom we spend wonderful time together, and my people from my beloved country (Yemen).

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The recent line of banking theoretical literature emphasizes the role of banks in creating liquidity on the base of financing long-term assets with short-term liabilities. However, the heavy reliance on short-term sources of funds has exposed banks to liquidity risk that was very clear over the global financial crisis 2007-2008. Banks in many countries experienced liquidity shortages because of the turmoil of wholesale bank funding markets. The most vulnerable banks in US banking system were heavily affected to the extent that these banks found themselves unable to renew their borrowing. This segment of banks and other financial institutions have suffered big losses on their investments in the subprime market that leads to illiquidity and which necessitated government support (Acharya & Merrouche, 2013; Brunnermeier & Pedersen, 2009; Cornett, McNutt, Strahan, & Tehranian, 2011; Huang & Ratnovski, 2011; King, 2013)

In response to that crisis, the Basel Committee on Banking Supervision (BCBS) has developed the third record "Basel III" to strengthen the existing capital requirements and to cope with the illiquidity issues and funding unrests arose during the crisis. By introducing the new record, BCBS aimed to address deficiencies of Basel II that was adopted in 2004 which was structured around imposing capital requirements based on three

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