ARE PROFIT RATE OF ISLAMIC BANKS AND INTEREST RATE OF CONVENTIONAL BANKS COINTEGRATED? THE CASE OF INDONESIA

BY

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ABSTRACT

This paper tries to investigate the correlation between Islamic bank profit rate and conventional bank interest rate in Indonesia and the possibility of long run relationship of these rates by employing cointegration test. To capture the short run behaviour of those variables, the impulse response function and variance decomposition are utilized. The data used in this study is taken from Islamic banking statistics and economy and monetary statistics published by Bank Indonesia. We take the 1-month profit rate of *mudaraba* investment deposit and 1-month interest rate of fixed deposit. We use 109 pairs of monthly data from February 2000 to February 2009.Based on the descriptive statistics analysis; the *mudaraba* investment deposits profit rate has a mean which is lower than fixed deposits interest rate. By employing Engle-Granger two steps cointegration test and Johansen procedure, we found that there is a long run relationship between these two series. Granger Causality test result, confirms the conventional interest rate does influence the Islamic profit rate and we can reject the null hypothesis that the change of conventional bank interest rate does not cause adjustment in the Islamic bank profit rate. The result of impulse response function suggests that the profit rate of *mudaraba* deposits responds positively and significantly to interest rate of fixed deposits.

ملخص البحث

يسعى هذا البحث إلى معرفة العلاقة بين سعر الربح للبنك الإسلامي وسعر الفائدة للبنك الربوي في إندونيسيا، كما يحاول البحث العثور على مدى إمكانية العلاقة بين المجموعين في المستقبل، وذلك في إجراء اختبار cointegration. أما العلاقة اللآنية بين سعرين يمكن معرفتها بعد توضيف impulse response function، وvariance decomposition. والبينات المستخدمة في هذه الدراسة مأخوذة من إحصاءات البنك الإسلامي وإحصاءات الاقتصاد والنقد الصادرة من البنك الإندونيسي. فقد أخذنا البينات عن الربح المحصول عليه لمدة شهر للمضاربة (في البنك الإسلامي)، والفائدة المحصول عليها لمدة شهر أيضا للوديعة (في البنك الربوي)، وفي نفس الوقت استخدمنا 109 بيانات زوجية من فترة فبراير 2000 إلى 2009، كما استخدمنا كلا من VAR، وimpulse response function وvariance decomposition لمعرفة ديناميات المدة القصيرة. وبعد إجراء إحصاءات وصفية، عرف أن مستوى الربح في المضاربة أقل من ربح الفائدة الوديعة الثابتة، كما تبين لنا من خلال استخدام Engle-Granger two steps cointegration test وJohansen procedure, وجدنا أن هناك علاقة طويلة المدى بين المجموعتين أكد اختبار Granger السبابية أن مستوى الفائدة (للبنك الربوي) لايؤثر مستوى الربح (في البنك الإسلامي)، فبهذا نرفض قول القائل بأن تغير مستوى الفائدة في البنك الربوي لا يؤدي إلى التناسب في مستوى الربح في البنك الإسلامي. ثم أشار إجراء impulse response function إلى أن مستوى الربح في المضاربة يتفاعل بشكل إيجابي تجاه مستوى الفائدة للوديعة الثابتة.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a research paper for the degree of Master of Science in Finance.

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DECLARATION

I hereby declare that this research paper is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degree at IIUM or other institutions.

Mohamad Fany Alfarisi

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To

My Parents

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BismiLLAH

The journey to accomplish a research paper is not as easy as I thought before. After writing chapter by chapter, I realise that, there are so many thinks I have to do and acquire to finish this requirement. By having these limitations, I wonder that it might be the beauty of learning process. And I really understand and agree that knowledge and understanding are given by Allah SWT, God the Al-Mighty. He reveals the divine knowledge, so that human beings can understand the nature and be able to perform their function as the vicegerent in the world. Moreover, I realise only by His approval so that I can complete the whole chapters.

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Mohamad Fany Alfarisi

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CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

Banking sector serves as an important entity in channeling funds from the surplus to the deficit units in modern economy. Most countries in the world implement a unified banking system; where one central bank operates as the regulator and the lender of the last resort, whilst other banks perform their function as commercial banks and other specialized financial intermediary.

Nowadays, some countries operate a dual banking system when conventional and Islamic banking system run side by side. The conventional banking system is characterized by its function to channeling funds from the surplus units to the deficit units in the economy and it employs interest rate as an instrument to manage the flow of funds. On the other hand, Islamic banking system operates based on interest-free contracts and receive commission on other financial services rendered. The other features of Islamic banking system that make it differ from conventional one are as follows; prohibition of taking and giving interest, advancing loan to non permissible businesses[1], investing in investment products or projects which contain *gharar*[2], *qimar* (gambling), and *maysir* (games of change involving deception) elements[3]. In short, the sources of Islamic banking system principles are Al-Qur'an and hadits of Messenger of Allah SWT, Muhammad (PBUH). In conventional banking system,

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[1] Such as gambling, pornography, conventional financial services, weapon industry, liquor manufacturer, hotel and entertaintment.

[2] In Ayub (2007), *Gharar* means, literally, uncertainty, hazard, risk relating to major elements of a contract: technically, sale of a think which is not present at hand, orr the sale whose consequence or outcome is not known, or a sale in which one does not know whether it will come to be or not, such as fish in the water or a bird in the air.

[3] See Iqbal and Mirakhor (2007)

interest rate is used as a price of credits or funds (Mishkin, 2007). However, the interest rate is not applicable in Islamic banking system, since interest is deemed as riba which is strongly prohibited in Islam.

To fulfill the need of muslim to have a banking system which in line with Islamic tenets, muslim scholars have proposed an idea of having profit and loss (PLS) sharing mechanism as an alternative for bank and entrepreneur when entering an investment contract. By using PLS mechanism, Islamic bank and entrepreneur agree to a contract where both parties share profit and loss arising from the business activities. The profit and loss is shared, according to a specific proportion agreed by the contracting parties. The same profit sharing is also applicable when Islamic bank deals with depositors. This mode of transaction is called two-tier *mudaraba*. The PLS mechanism is one of distinctive feature of Islamic banking system (Iqbal and Mirakhor, 2007). Though, in the actual condition, share of *mudaraba* and *musharaka* financing of Islamic banks are lower than *murabahah* and or *bai bithaman ajil* (BBA) financing, however, the public perception would be straightly associated with PLS arrangement when we talk about Islamic banking system.

Islamic banks have been developed in a dual banking system since their inception. The condition is similar in almost every nation that operates the Islamic banking system *vis-à-vis* the conventional banking system, for instance: the experiences of Malaysia, Indonesia, Bangladesh, Bahrain, Saudi Arabia, Kuwait and other Islamic countries. According to Bacha (2008), in the case of Malaysia, when Islamic banking system was introduced, it adopted the replication strategy, or in other words, just simply transforming the sources of funds and application of funds to the products that is permitted by Islamic teachings. Furthermore, the same strategy is also adopted by countries mentioned above.

Though Islamic banking system has achieved tremendous accomplishment. however, some problems remain unresolved and need to be discussed. According to Lewis and Algaoud (2001), the problems pertinent to Islamic banking system are; the legal system, deposit attractiveness, lack of liquidity instruments. Furthermore, according to Bacha (2004) Chong and Liu (2009) and Bacha (2008), one main problem facing by Islamic banks is benchmarking problem. So far, Islamic banking system does not have a unique and independent profit rate that can be used by the Islamic banks as a point of reference. Though some Ulama such as Syeikh Muhammad Taqi Usmani and Syeikh Nizam Yaqubi, argue that benchmarking to the interest rate such as LIBOR, is not against Islamic tenets. Furthermore, Usmani (2004) gives his opinion as follows:

> No, doubt, the use of the rate of interest for determining a halal profit cannot be considered desirable. It certainly makes the transaction resemble an interest-based financing, at least in appearance, and keeping in view the severity of prohibition of interest, even this apparent resemblance should be avoided as far as possible. But one should not ignore the fact that the most important requirement for the validity of *murabahah* is that it is a genuine sale with all its ingredients and necessary consequences. If a *murabahah* transaction fulfils all the conditions enumerated in this chapter, merely using the interest rate as a benchmark for determining the profit of *murabahah* does not render the transaction as invalid, haram or prohibited, because the deal itself does not contain interest. The rate of interest has been used only as an indicator or as a benchmark.

However, in the last paragraph Usmani (2004) adds ;

> It is, however true that Islamic banks and financial institutions should get rid of this practice as soon as possible, because, firstly, it takes the rate of interest as an ideal for a halal business which is not desirable, and secondly because it does not advance the basic philosophy of Islamic economy having no impact on the system of distribution. Therefore, the Islamic banks and financial institutions should strive for developing their own benchmark.

Moreover, Askari et al. (2009) has been championing the quest to find a *Shariah*-compliant benchmark. Askari et al. (2009) formulates a new index as a reference point for pricing the riskiness of financial security, using a formula called the General Index. The index, basically, follows the weighted average rate of return method to determine a benchmark for financial security issued by government. Thus Askari et al. (2009) have been trying to offer a new benchmark for financial security to replace conventional benchmark such as LIBOR. Even though that index seems to be "a good news" for Islamic financial market, but, it has not reached any conclusion yet, more so the model needs to be discussed and tested further to gain wider acceptance among Islamic finance's stakeholders. So far, to the best of our knowledge, there is no *Shariah*-compliant benchmark. Thus, the only available benchmark in the market is interest rate based.

Interest rate, in nature, always fluctuates due to supply and demand interaction in financial market. The volatility of market interest rate are carefully watched by government, central bank and business sector. Since its movement might affect the whole economy, moreover, government and central bank design some policies to mitigate its adverse effect. Whereas, the business sector also design some strategic planning such as swap, hedging or other financial engineering techniques to handle the risks due to change in interest rate.

The recent global financial crisis has increased people attention to the risks exposure in financial market. According to Iqbal and Mirakhor (2007), there are some factors that responsible for the increasing of risk faced by financial institutions, such as: increased market volatility, financial innovations, shift in banking business, increased competition and regulatory environment.

In the context of Islamic financial market, Iqbal and Mirakhor (2007) classify risk profile of Islamic financial institution into four broad categories; (1) financial risk, (2) business risk, (3) treasury risk and finally, (4) governance risk. Basically, conventional financial institutions are also exposed to those risks, however, there are some risks that are only relevant to Islamic banks, such as: rate of return risk and displaced commercial risk. Islamic banks are exposed to rate of return risk due to their fixed rate financing assets are locked up in certain period. Unlike conventional banks, Islamic banks are not allowed to adjust their financing rate to the fluctuation of benchmark rate. When benchmark rate increases, moreover, Islamic banks are in a disadvantage position, meaning that their returns are lower than investors and depositors' expected returns. Nevertheless, this condition might lead to the displaced commercial risk. According to Iqbal and Mirakhor (2007), Accounting and Auditing Organization of Islamic Financial Institutions (AAOIFI) was the first regulatory body that identify the displaced commercial risk. Basically, displaced commercial risk is defined as the condition that Islamic banks are under market pressure to distribute profit in which satisfy the investment account holders' expected return though the assets' actual return may be lower. Moreover, the displaced commercial risk may reduce the size of deposits of Islamic banks, particularly when benchmark rate is increasing.

The studies conducted by Bacha, (2004), Chong and Liu, (2009) and Kasri (2008) confirm that, there is a significance correlation between investment accounts' profit rate and fixed deposit rate. It is obvious that competition among commercial banks is inevitable in a country that practice dual banking system. Moreover, customers of the banks, whether muslim or non-muslim have a freedom to choose and shift to anyone of the banking system, since no regulation restrain that right enlist. According to Haron and Wan Azmi (2008), and Dusuki (2007) in the case of Malaysia and study of Rohmah (2006) and Kasri (2008) in the case of Indonesia, the profit motive and pricing constitute the factors that encourage people to choose Islamic banks. Thus, in an economy where dual banking system is implemented, it is normal to expect that each system may influence one another. Although, there should be switching cost borne by customers who shift their funds, but we assume that it should be insignificant.

1.2. RESEARCH PROBLEM

The topic of the relationship between investment accounts profit rate and fixed deposit rate have been discussed extensively by Bacha (2004) and Chong and Liu (2008), however those studies only focus on Malaysia. A study conducted by Rohmah (2006) about of the determinants of level of deposits at Islamic banks in Indonesia, employ interest rate as one of the independent variables, and Rohmah (2006) suggested that it would be interesting to investigate the co-movement between interest rate of fixed deposits at conventional banks and the rate of return of investment deposits at Islamic banks. Based on published reports of Bank Indonesia[4], the investment accounts in Islamic banks have the largest proportion amongst the other type of source of funds[5]. Whilst, for conventional banks, fixed deposits are accounted for the largest one. Therefore, any change in level of those deposits, should be carefully observed by the bank. Hence, we will take the rate of return of those deposits as variables in our model due to their relative importance to the each particular bank.

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[4] Islamic banking statistics and Indonesian banking statistics, both reports are published on monthly basis by Bank Indonesia.

[5] Based on yearly data starting from 2005 to 2008, the proportion of *mudaraba* investment accounts out of total source of funds is 54.68%. Whilst the share of conventional banks fixed deposits out of total source of funds is 45.99%

Indonesia as a country with the largest muslim population is a potential target market for Islamic banking and finance industry.. To date, Islamic banking sector in Indonesia is accounted for only less than 5% of total banking sector and there should be a lot of things to do to enhance this fast-growing sector. Moreover, similar to Malaysia, Indonesia with a dual banking system, might be exposed to the connectivity between between profit rate and deposit rate.

The linkage between deposit rate in conventional banks and profit rate of Islamic banks may surprise people. However, due to the existence of dual banking system in Indonesia, competition among commercial banks, Islamic and conventional, can not be avoided. One way to attract costumers to deposit their funds is by promising an attractive pre-determined rate. Though, the case usually happens in conventional banks, however, in practice, Islamic banks also promise a pre-determined rate, but they use different term such as "indicative rate". This study is therefore conducted to capture the relationship between profit rate and deposit rate both in the short run and long run within a dual banking system. Moreover we would discuss the implication of this relationship on the size of deposits of and share of profit to Islamic banks in Indonesia.

1.3. OBJECTIVES OF THE STUDY

The objectives of this study are as follows:

1. To investigate the correlation between 1-month *Mudaraba* Investment Account Profit Rate and 1-month Fixed Deposit Interest Rate in Indonesia
2. To examine the long run relationship between 1-month *Mudaraba* Investment Account Profit Rate and 1-month Fixed Deposit Interest Rate in Indonesia

3. To examine the short run dynamics between 1-month *Mudaraba* Investment Account Profit Rate and 1-month Fixed Deposit Interest Rate in Indonesia

The reason for choosing 1-month profit and deposit rate, is discussed in detail in chapter three.

1.4. SIGNIFICANCE OF THE STUDY

To the best of our knowledge, Chong and Liu (2008) , Bacha (2004) and Kasri (2008) are the studies which investigate the linkage between profit rate of *mudaraba* investment deposits and interest rate of fixed deposits. Chong and Liu (2008) uses data from all types of deposits rate offered by Islamic banks and conventional banks, whereas Bacha (2004) uses data of the 3-months deposits only. Kasri (2008) investigates the determinants of Islamic banking growth in Indonesia. In this research, Kasri (2008), tests the relationship between *mudaraba* investment account profit rate and fixed deposits interest rate. To analyze the long run relationship and to capture the short run dynamics between those variables, Chong and Liu (2008) employs VAR based Johansen Procedure and error correction model. On the other hand Bacha (2004) employs OLS and Granger Causality. In this study, we use data of profit rate 1-month *mudaraba* investment deposits and interest rate of 1-month fixed deposits from February 2000 to February 2009. To investigate the long run relationship between those rates we employ Engle-Granger and Johansen Cointegration test. Furthermore to capture the short run dynamics, unlike Chong and Liu (2008), we utilize impulse response function and variance decomposition. Where the two previous studies analyze the relationship between profit rate of *mudaraba* investment deposits and interest rate of fixed deposits in Malaysia, we investigate the relationship of those variables in Indonesia which is somewhat similar to Kasri (2008) but with extended data and deployment of Granger causality test[6]s. Therefore, this study will add the literature of Islamic banking development in Indonesia.

1.5. STRUCTURE OF THE STUDY

This paper will be divided into five chapters, chapter two is the review of the relevant literatures, chapter three comprises the research method, data and sample used, chapter four consists of empirical result, and chapter five comprises of the conclusion, implication of study and suggestions for further research.

[6] Kasri (2008) uses monthly data starting from March 2000 to August 2007. We expand the data starting from February 2000 to February 2009 and by employing Granger causality test, we will examine the causal relationship between *mudaraba* investemen account profit rate and fixed deposit rate.

CHAPTER TWO

LITERATURE REVIEW

2.1. ISLAMIC BANKING CONCEPT AND PRINCIPLES

Islamic banking system, basically, is a response to muslims need to have an economic and financial system that is free from *riba* (interest). Since *riba* is strongly prohibited in Islam, thus, muslim scholars have considered the idea of having interest-free banking system to gradually replace the dependency on the conventional banking system in muslim countries. In Al-Qur'an, Al-Baqarah verse 275, Allah SWT mentions the prohibition of riba (usury) and the permissibility of trading;

> "Those who eat Riba (usury) will not stand (on the Day of Resurrection) except like the standing of a person beaten by shaitan (satan) leading him to insanity. That is because they say:"Trading is only like Riba (usury)", whereas Allah has permitted trading and forbidden Riba (usury)...

The original idea of interest-free banking system is to eliminate interest in the financial system in particular and develop a just and fair economic system in general. One of the early literatures on Islamic banking was written by Muhammad Nejatullah Siddiqie. Moreover Siddiqie (1983) proposed an idea of implementing Profit and Loss Sharing (PLS) mechanism to replace interest based mechanism in banking industry. Moreover Chapra (1985) advocates a more comprehensive idea of implementing interest-free model in financial system. For Islamic banking system, Chapra (1985) also encourages the utilization of PLS mechanism. However, Chapra (1985) realizes that PLS can not be used to satisfy all banking businesses. Therefore, there should be other type of financing and mechanism that are legitimately accepted by Sharia and also feasible for banking business. Chapra (1985) suggests the utilization of lease financing and *bay muajjal* or *murabahah* to overcome the shortcoming of PLS method.

Lewis and Algaoud (2001) divide Islamic banking and financial system into two categories, the first one is Chapra's Model, and the second one is Ismail's Model. The Chapra's Model comprises of a comprehensive Islamic financial system that adopts western-style financial system, but with some modifications that can bring the system to be legally accepted by Sharia principles. Moreover, Chapra's Model, especially in banking system, advocates PLS arrangement as an alternative of interest-based arrangement. Furthermore, according to Lewis and Algaoud (2001) Chapra's Model suggest that Islamic banking system seem similar to Germany or European-style bank, that bank should be performing as universal or multi-purposes banking such as commercial bank, investment bank, underwriter, and investment management company. In essence, the Chapra's Model advocates an Islamic banking system that is responsible for the spread of welfare to the society and Islamic teachings to every element of financial system from central bank to Islamic financial institutions.

On the other hand, the Ismail's Model, however, states that Islamic bank is a part of commercial sector in economy (tijari sector), (Lewis and al Gaoud, 2001). Thus, they are only responsible to comply with the commercial sector requirement, for instance to earn profit. Thus, the duty to spread the welfare to the public should be in the hand of public institution which is performed by the government in this case. In Dusuki (2007), Ismail's Model acknowledges the debt-based product to be offered by Islamic banks. Moreover Dusuki, (2007) adds that this model suggest the overemphasis placed of PLS to be inappropriate and can not be found in Quranic text. Though, the Ismail's model seems to be followed by most of Islamic banks nowadays, but, we can not justify that it is the ideal and the correct one. The spirit of Ismail's financing and *bay muajjal* or *murabahah* to overcome the shortcoming of PLS method.

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