

Managerial Finance

Determinants of Islamic and conventional deposits in the Malaysian banking system

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Determinants of Islamic and conventional deposits in the Malaysian banking system

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Abstract

Purpose – The objective of this study is to investigate the impact of selected economic variables on deposits level in the Islamic and conventional banking systems in Malaysia.

Design/methodology/approach – Both long- and short-run relationships between these variables are measured by using advanced time series econometrics. These techniques are co-integration and error correction framework, which are conducted within the vector autoregression framework.

Findings – By applying recent econometric techniques, we find determinants such as rates of profit of Islamic bank, rates of interest on deposits of conventional bank, base lending rate, Kuala Lumpur composite index, consumer price index, money supply and gross domestic product have different impact on deposits at both Islamic and conventional banking systems. In most cases, customers of conventional system behave in conformity with the savings behaviour theories. In contrast, most of these theories are not applicable to Islamic banking customers. Therefore, there is a possibility that religious belief plays an important role in the banking decisions of Muslim customers.

Research limitations/implications – As customers are sensitive to rewards, they receive from their deposits, rates of profit of Islamic system must at any time be similar to those of the conventional system. Finally, religious dimension can be considered as an important element to attract more people to deposit their funds in the Islamic system.

Originality/value – To the best of the authors' knowledge, this is the first attempt to empirically examine the depositor's behaviour in the Islamic banking environment.

Keywords Malaysia, Banks, Banking, Islam, Consumer behaviour

Paper type Research paper

1. Introduction

The importance of savings has long been recognised in the history of mankind from both religious and economic perspectives. One of the most famous religious stories on savings can be traced back to the Hyksos Dynasty of the Pharaoh of Egypt (somewhere between nineteenth and the seventeenth century BC) during the reign of Joseph as the Prime Minister. In order to overcome the problems of famine owing to a seven-year drought, which had befallen his people, Joseph had successfully introduced a special savings plan on food. From the economic perspective, savings are important because of its direct link to economic growth and prosperity of a country. To date, there is abundance of literature related to savings. This literature can be loosely clustered into several categories such as measuring private savings behaviour of a particular country, the determinants of savings, the effect of monetary and fiscal policies on savings and the relationship between savings and institutional profitability and public policy. Although bankers are now focusing more efforts into off-balance sheet activities, traditional banking business of supplying funds to the economy is still of great importance. For example, most business organisations especially in developing countries are highly dependent on bank loans as a source of capital. Thus, the ability of banks in giving out loans depends very much on their ability of attracting deposits. Unlike, those days where banking was among the most heavily regulated industry, now policies such as the maximum interest rates could be paid on deposits, minimum



capital-to-asset ratios, statutory reserve requirements, lending direction, range of products and services offered are no longer strictly imposed by the monetary authority. The process of financial liberalisation had also created a more competitive environment in the banking industry. This forces commercial banks to compete aggressively for deposits and such competition takes many forms. First, banks are unconstrained in terms of deposit facilities they can offer. Thus, the range of products is much broader than what was previously available. Therefore, customers are free to negotiate any minimum denomination, rates of return and maturity period prior to placing their deposits with a particular financial institution. Second, deposit facilities are now also available at other non-financial institutions. In light of these changes, to remain ahead of its competitors, commercial banks have to be more sensitive on pricing, products offering and quality of service offered to their customers.

Since the role of commercial banks as the most important financial intermediary will persevere, studies in savings management will continue to become a topic of interest for many researchers. Of all the topics widely discussed in the savings literature, we find that studies on saving determinants emerged at the top of the list. These studies, however, focused mainly on economic variables and none have included religious dimension as one of the saving determinants. Over the last 30 years, we have seen the emergence of Islamic financial institutions that uses religious doctrines in providing services to their customers. These new institutions not only operate side-by-side with conventional banks in Muslim countries but have also spread their wings to Western countries like the USA, UK and Australia (there is abundance of literature that discusses the operations of these institutions). Therefore, it is interesting to know whether religious dimension does play an important role in determining the savings behaviour of customers, particularly Islamic bank customers. The objective of this study is to examine the effect of selected economic variables on deposits placed at the conventional and Islamic banks in Malaysia. Both long- and short-run relationships between these variables are measured by using advanced economic techniques. To the best of our knowledge, this is the first attempt to empirically examine the depositor's behaviour in the Islamic banking environment. This paper is divided into seven sections: an overview of the Malaysian banking system is given in section 2; section 3 elaborates theoretical considerations on customers' savings behaviour; section 4 reviews the selected literature on savings determinants; section 5 explains the methodology used in analysing the relationship between variables selected in this study; section 6 presents the findings; and section 7 gives the conclusion and some policy recommendations.

2. Overview of the banking system in Malaysia

Malaysia is one of the unique countries which operate a dual banking system where the Islamic banking system operates in parallel with the conventional system. At the end of 2004, the banking system consists of 25 commercial banks, ten merchant banks and six finance companies. Total assets in the banking system as at end of 2004 was RM1,189.9 billion of which RM737.1 billion or 41.8 per cent was held in the commercial banks. With regard to the funds deposited in the banking system, total deposits at the end of 2004 was RM547.4 billion of which RM504.8 billion was placed in the current (RM87.9 billion), savings (RM74.1 billion) and fixed deposit (RM342.8 billion) accounts of the commercial banks. The Islamic banking system in Malaysia started in 1983 when the first Islamic bank, Bank Islam Malaysia Berhad commenced its operations. In the process of increasing the number of players in the system, rather than allowing a

new Islamic bank to operate, the government introduced a scheme known as the "Interest-Free Banking Scheme" in 1993. This scheme often known as "Islamic windows" allows existing conventional banks to introduce Islamic banking products to customers alongside their conventional banking services. Following the successful setting-up of the first Islamic Bank and the increasing number of Muslims who wanted to realign more to Islamic practices in their economic activities, these paved the way for the establishment of a second Islamic bank. In October 1999, the government granted a license for the establishment of the second Islamic bank known as Bank Muamalat Malaysia Berhad. An important milestone taken by the government in positioning Malaysia as an international Islamic financial hub was to bring forward the liberalisation of its Islamic banking sector to 2004, three years ahead of the World Trade Organisation's deadline, by granting three new Islamic bank licenses to foreign institutions. These three Islamic financial institutions are from the Middle East, namely Kuwait Finance House, Al-Rajhi Banking & Investment Corporation and a consortium of Islamic financial institutions represented by Qatar Islamic Bank, RUSD Investment Bank Inc. and Global Investment House. As the Islamic banking industry progresses into a more advance stage of development, the government also issued five new licenses for domestic banks to create Islamic subsidiaries. The underlying philosophy for this establishment is to further strengthen the institutional structure of the Islamic banking operations. The RHB bank is the first local bank to have a full fledged Islamic bank subsidiary, known as RHB Islamic bank, which commenced operation on 16 March 2005 and followed by Commerce Tijari Bank Berhad, which started operation on 15 April 2005 and Hong Leong Islamic Bank Berhad on 19 July of the same year.

Similar to conventional banks, all banking facilities such as deposit account, financing and other products and services are available at Islamic banks. At the end of 2004, the central bank, Bank Negara Malaysia, had introduced more than 44 banking products and services for the Islamic banking system in Malaysia (www.bnm.gov.my). The comparative growth figures of funds deposited in various deposits facilities of conventional and Islamic facilities are shown in Table I. The Islamic banking sector has registered a strong growth of 19 per cent per annum from 2000-2005. With the exception of 2003, the yearly growth figures for Islamic deposits have exceeded those deposits of conventional banks. Looking at the individual figures, it is apparent that in many instances the growth of various types of Islamic deposits was greater than the

Table I.
Annual growth of
various deposits
facilities at commercial
banks (%)

	2000	2001	2002	2003	2004	2005
<i>Conventional deposits</i>						
Demand	14.2	2.9	7.2	16.3	11.5	8.2
Savings	14.3	8.3	9.2	8.1	8.2	1.5
Fixed	5.0	(-4.4)	1.6	5.6	4.7	3.7
Growth of conventional deposits	4.9	(-2.0)	3.4	7.6	6.3	4.2
<i>Islamic deposits</i>						
Demand	22.1	(-1.8)	42.4	19.5	17.4	14.6
Savings	30.2	24.7	30.7	26.6	22.8	12.7
Investment	39.6	40.3	5.5	(-2.6)	17	9.7
Growth of Islamic deposits	33.8	30.1	13.7	5.0	17.9	11.2

Source: Bank Negara Malaysia (2000-2005)

growth of deposits in the conventional system. As at the end of 2005, market shares of the Islamic banking deposits was 11.7 per cent of the banking system. In light of this, we can safely conclude that Islamic banking deposit facilities have gained its popularity amongst Malaysians. This could well be the reason why both local and foreign owned commercial banks in Malaysia are aggressive in doubling their efforts in promoting Islamic banking products and services. The Malaysian government has also put forward its target to have 20 per cent of the total banking assets in the country held in the Islamic banking system by the end of 2010.

3. Theoretical considerations

Commercial banks, both conventional and Islamic, are dependent on depositor's money as a source of funds. According to the Keynesian theory of demand for money, there are three main motives why people hold money: transactions, precautionary and investment. In order to cater for these motives, commercial banks offer three categories of deposit facilities that are demand, savings and time deposits. Demand deposit facility is most commonly referred to as current account and is designed for those who need money for transaction purposes. This motive can be looked at from the point of view of consumers who want income to meet their household expenditure and from the viewpoint of businessmen who require money and want to hold it in order to carry on their business. Hence, the purpose of deposit facility is for convenience or for making daily commitments. The second category of deposit is the savings account, which caters the need of those who wishes to save money but at the same time want to earn an income. Depositors of savings account hold money because of precautionary motives while are simultaneously induced by their investment motives. Precautionary motives for holding money refer to the desire of people to hold cash balances for unforeseen contingencies. The final category of deposit facility is time (fixed) deposits. Such facility is offered by banks to cater for the investment motives of customers who normally have idle funds and are looking for better returns on their money.

However, from the depositor's perspective there are three main theories related to savings behaviour: the traditional models of the life-cycle hypothesis (Modigliani and Brumberg, 1954) and the permanent-income hypothesis (Friedman, 1957); and the more recent buffer-stock theory of savings behaviour (Deaton, 1991; Carroll, 1992). The life-cycle model of savings behaviour predicts that consumption in a particular period depends on the expectations about lifetime income, which implies that people save in order to smooth consumption over time. Therefore, since income tends to fluctuate systematically over the course of a person's life, saving behaviour is determined by one's stage in the life-cycle where they become net savers during their working years and dissavers during retirement. The permanent-income hypothesis predicts that higher future income reduces current saving. The permanent-income hypothesis makes a distinction between permanent and temporary income. Temporary income changes are met by consumption smoothing whereby part of today's income windfall is saved to sustain higher spending tomorrow. Permanent income changes, on the other hand, do not justify current saving since more can be consumed now and in the future. According to the buffer-stock theory of saving, consumers hold assets mainly so to shield their consumption against unpredictable fluctuations in income. The buffer-stock behaviour arises because when consumers face important income uncertainty, they are both impatient and prudence. Impatience means that if incomes are certain, consumers would like to borrow against future income to finance current consumption and prudence in the sense that they have precautionary motives. Carroll (1992) showed

that under plausible circumstances this tension would imply the existence of a target wealth stock. Whenever wealth is below the target, fear or prudence will dominate impatience and consumers will try to save. Meanwhile, if wealth is above the target, impatience will have a stronger role and consumers will start to dissave.

The term "Islamic banking" means the conduct of banking operations in consonance with Islamic teachings. In view of this definition, Islamic banks are expected not to have the same philosophies and objectives as adopted by the conventional banks; but theirs must be in line with the teachings of Islam. Islamic business entities are required to engage themselves in legitimate and lawful business, and to fulfil all obligations and responsibilities. All transactions are based on the concept of honesty, justice and equity. Similarly, the status of the relationship between Islamic banks and their suppliers of funds is dependent on the principles of *Shariah* used in creating that relationship. Theoretically, this relationship is bounded by three general principles which dominate the economic behaviour of Muslims, namely, belief in the Day of Judgment and life in the hereafter, Islamic concept of riches and Islamic concept of success (Khaf and Ahmad, 1980). All these principles are expected not only to have a significant impact on the decision-making process of Muslims, but also to have an influence on their perceptions towards Islamic banks. The first principle mentioned above has an impact on the suppliers' (depositor's) behaviour and their decision-making process. The choice of action is not only based on the immediate returns but also in the hereafter. Therefore, the decision to have a banking relationship with Islamic banks is not because of profit motive but rather to gain the blessings of Allah. One of the ways to gain blessings is to support any program that will improve the Muslim community. Verse 20 of Chapter 9 of the Quran states:

Those who believe, and suffer Exile and strive with might and main, in Allah's cause, With their goods and their persons, have the highest rank In the sight of Allah: They are the people Who will achieve (salvation).

The word *fthad* or "strive in the cause of Allah" as indicated by the above verse refers to a form of self-sacrifice. Ali (1989) believed that the essence of self-sacrifice consists of (i) true and sincere faith, and (ii) earnest and ceaseless activity, involving the sacrifice (if need be) of life, person, or property, in the service of Allah. Since Islamic banks operate on an interest-free basis and their establishment is to improve Muslim communities, their existence therefore is in the service of Allah. In the case of the second principle, Islam has given a clear guideline that wealth is a bounty from Allah and is a tool that may be used for good or evil. Poverty is, in some instances, associated with disbelief and riches are considered a gift from Allah (Khaf and Ahmad, 1980). Wealth itself is considered as an important means by which man can pave the way for the attainment of his ultimate objective. All persons are exhorted to work to earn a living and to accumulate wealth. Accumulating wealth is considered among the highest blessing bestowed on man and everyone is encouraged to strive for wealth. Verse 10 of Chapter 62 of the Quran states:

And when the Prayer is finished, then may ye Disperse through the land, And seek of the Bounty Of Allah: and celebrate The Praises of Allah Often (and without stint): that ye may prosper.

The above verse suggests that Muslims must work and acquire wealth upon completion of prayer. The *Shariah* defines the methods of earning, possessing, and disposing of wealth. The best method in accumulating wealth as defined by *Shariah* is

by striving on one's own and not from the income generated by other people's efforts. Striving for your own food is in line with many *Hadiths* in which the Prophet (*pbuh*) had given his advice to Muslim followers to work for their own food. For example, the Prophet (*pbuh*) is reported to have said (Al-Bukhari, 1986 pp. 162-3):

Nobody has ever eaten a better meal than that which one has earned by working with one's own hands. The Prophet of Allah, David, used to eat from the earnings of his manual labour.

Therefore, the practice of treating or expecting the returns given by Islamic banks as one of the main sources of income to support living is inappropriate from Islamic perspective. Rewards should only be considered as a complimentary income and should have no significant influence on one's financial position. The Islamic concept of riches also serves as an important factor which influences Muslims' perceptions toward the existence of Islamic banks. The following *Hadiths* give the meaning of richness from the Islamic perspective:

Abu Hurairah reported Allah's Messenger (*pbuh*) as saying: Verily Allah does not look to Yourface and "your wealth but He looks to your heart and to your deeds". (Sahih Muslim, Vol. 4, p. 1362)

Abu Hurairah reported that Messenger of Allah (*pbuh*) said: Richness does not lie in the abundance of (worldly) goods but richness is the richness of the soul (heart, self) (Sahih Muslim, Vol. 2, p. 501)

As indicated by the above *Hadiths*, Islam defines success as the level of obedience to Allah and not as the accumulation of wealth. Service and obedience may be rendered by the positive use of capabilities and resources given by Allah. According to the Islamic teachings, if a man really wants to serve Allah, the utilisation of the natural and human resources made available to him is not only a privilege but also a duty and obligation prescribed by Allah. This is in line with Verse 27 of Chapter 8 of the Quran which commands Muslims not to betray the trust given by Allah and His Apostle. Applying this principle to a bankercustomer relationship would mean that the suppliers of funds should not be discouraged by low-profit returns or the overall success of the bank. In the light of these three principles, we expect Islamic bank customers not to be guided by profit motive. Instead, the reason for placing their monies with the Islamic banks is more towards getting blessings from Allah and this action is considered the best way in administering the resources given by Allah. Since it is the belief of every Muslim that all properties belong to Allah, returns on their deposits are also considered a gift from Allah irrespective of amount. Similarly, in the case of losses, it is also from Allah.

4. Literature review

Despite an extensive literature on savings behaviour, there are not many studies, which specially focused on the factors that determine the level of deposits at the commercial banks. In the past, efforts were made by researchers to determine private saving behaviour not only for a particular country but also for cross-country comparisons. These studies, however, focused mainly on private and household savings and none on the business and government sectors. Lambert and Hoselitz (1963) were among the first researchers to compile the works of others on savings behaviour. They edited the works of researchers who studied the savings behaviour of households in Ceylon (now Sri Lanka), Hong Kong, Malaya (now Malaysia), Pakistan, India, Philippines and Vietnam. Snyder (1974) did a similar study but reviewed the econometric models

employed by others. Since then, studies on savings have continued to become an area of interest by researchers. Some of the recent works on savings behaviour of a particular country are those by Cardenas and Escobar (1998), Loayza and Shankar (2000), Athukorala and Sen (2003), Ozcan *et al.* (2003), Athukorala and Tsai (2003), Qin (2003) and Hondroyannis (2004).

Cardenas and Escobar (1998) studied the savings behaviour in Colombia and found several interesting results:

- (1) higher government expenditure led to lower national savings;
- (2) savings and investment were perfectly correlated;
- (3) in the causality sense, savings were found to cause growth; and
- (4) higher taxation, urbanization and age dependency had negative effect on savings.

Loayza and Shankar (2000) used co-integration approach in measuring the relationship between savings in India and factors such as real interest rate, per capita income, the dependency ratio, financial development, the government saving rate and the share of agriculture in gross domestic product (GDP). Their results revealed that real interest rate, per capita income and the share of agriculture in GDP had a positive relationship with savings, whereas inverse relationship were found for financial development, inflation and the dependency ratio. Another study that used India as a sample was conducted by Athukorala and Sen (2003) and they ascertained that except for the changes in the external trade, factors such as rate of growth, real interest rate on bank deposits, spread of banking facilities and inflation had significant positive relationship with savings. Ozcan *et al.* (2003) studied factors that determine private savings behaviour in Turkey. Their study found that with the exception of government savings; income level, financial depth and measures, as well as inflation all had a positive impact on savings. Athukorala and Tsai (2003) used the standard life-cycle framework in estimating the impact of population dynamics, growth of disposable income, social security contribution, and credit availability and financial reforms on savings. Income growth, aging of the population, changes in social security contributions and the availability of credit were found to be significant determinants of savings performance. While interest rate had a significant positive impact, inflation seems to move in an opposite direction. Qin (2003) examined the savings behaviour of Mainland Chinese and found that expected savings potential was the chief determinant of bank deposits. Similarly, just like their Taiwanese counterparts, interest rate seems to be important to Mainland Chinese in making deposits. Precautionary was also one of the important factors that motivated them to save. The most recent literature on savings behaviour is a study by Hondroyannis (2004). He applied co-integration techniques to estimate the savings behaviour of Greece households and found that in the long run, savings function is sensitive to fertility changes, old dependency ratio, real interest rate, liquidity and public finance.

There is also a number of empirical literatures that makes cross-country comparison. The works of Doshi (1994), Masson *et al.* (1998), Loayza *et al.* (2000), Agrawal (2001), Sarantis and Stewart (2001), Cohn and Kolluri (2003) are worth reviewing. Based on the life-cycle framework, Doshi (1994) examined the effect of population growth (measured by the age structure and life expectancy period) and productivity growth [measured by the gross national product] level and GDP (growth) on savings in 129 countries. This study found that life expectancy had a positive effect

on savings in less-developed countries, whereas an inverse relationship was recorded for the high-income countries. While demographic variables have an important effect on the savings ratio in Asia, per capita income in Africa and income growth in Latin America was found to be important. The determinants of private savings behaviour of industrial and developing countries was studied by Masson *et al.* (1998) and they found that factors such as GDP growth, real interest rate and changes in the term of trades were found to be positively related to savings in both countries, though there was a slight different in term of the magnitude of these relationships. Loayza *et al.* (2000) investigated the effects of policy and non-policy variables on savings and reported that:

- (1) private saving rates are highly serially correlated;
- (2) positive saving rates with the level and growth rate of real per capita income and the influence of income is larger in developing than in developed countries;
- (3) life-cycle hypothesis is supported by the negative relationship between dependency ratio and saving rate;
- (4) inflation was found to have a positive impact on saving thus supporting the precautionary motive for saving;
- (5) fiscal policy is a moderately effective tool to raise national saving; and
- (6) financial liberalisation is detrimental to private saving rates because greater credit availability reduces saving rate and similarly larger financial dept and higher real interest rate do not increase saving.

The relationship between saving and growth in seven Asian countries (South Korea, Taiwan, Singapore, Malaysia, Thailand, Indonesia and India) was investigated by Agrawal (2001). The author reported that both high rate of growth of income per capita, and the rapidly declining age dependency ratio contributed to the high rate of saving in these countries. As for the interest rate, a significant positive relationship was found for Malaysia and Thailand and negative for Indonesia.

Sarantis and Stewart (2001) investigated the saving behaviour in the Organisation for Economic Co-operation and Development (OECD) countries and presented some interesting findings. Demographic factors and credit constraints were significant and had the anticipated sign in the overwhelming majority of OECD countries. Greater financial liberalisation and integration minimized the liquidity constraints, thus leading to lower savings. One of the interesting findings forwarded by the authors is that government deficit does not increase savings and this is in contrast with the Ricardian Equivalence. Cohn and Kolluri (2003) also used highly developed nations in their study. They examined the long-run relationship between per capita households saving and the real rate of interest, government savings and social security contributions. Their results indicated that interest rate was positively related to savings, while negative between government saving and social security contributions. Until to date there is no comprehensive saving behaviour study, which include religious as one of the determining factors. However, there are few studies especially in the bank patronage literature that incorporates religious dimension in examining the factors that influenced the public when deciding in which bank to deposit their money. For example, El-Bdour and Erol (1989), Haron *et al.* (1994), Gerrad and Cunningham (1997), Metawa and Almosawi (1998) and Naser *et al.* (1999) studied the influence of Islamic teaching on the reasons of why customers patronize Islamic banks. While customers in Bahrain perceived religion as the most important element in selecting

their banks, customers in Jordan, Malaysia and Singapore believed both profit and religion were equally important in their decision-making.

5. Data and methodology

The vast empirical literature on savings behaviour has listed a number of variables that determine the level of private saving. Based on the discussion and elaboration presented in sections 3 and 4, the explanatory variables selected for this study are the interest rates on savings account (RS_{CV}) and fixed deposit accounts ($ARFD_{CV}$), rates of profit for Islamic savings account (RS_{IS}) and Islamic investment accounts (ARI_{IS}) (instead of calling fixed deposit accounts, this facility is known as investment account facilities at Islamic banks), base lending rate (BLR), Kuala Lumpur composite index (KLCI), consumer price index (CPI), money supply (M3) and GDP. In the case of the Islamic banking environment, the selected variables are expected not to have any relationship with the deposit level at Islamic banks (refer back to the theoretical consideration). Though it is hard to believe that Muslim customers are not influenced by any of these determinant variables, we seek to investigate whether these variables do have any similar impact on both conventional and Islamic banks.

Interest rates on savings and fixed deposit facilities of conventional banks and rates of profit for savings and investment account facilities of Islamic banks are considered financial variables in the literature and have always been featured as one of the important considerations in explaining the savings behaviour of individuals. Savings, according to classical economists, is a function of the rate of interest. The higher the rate of interest, the more money will be saved, since at higher interest rates people will be more willing to forgo present consumption. Based on utility maximization, the rate of interest is also at the centre of modern theories of consumer behaviour, given the present value of lifetime resources. However, the results of a change in the rate of return, is theoretically ambiguous because of potential offsetting substitution and income effects. For a net saver, an increase in the rate of interest will have an overall effect which is composed of two partial effects: an income effect leading to an increase in current consumption and a substitution effect leading to a reduction in current consumption. Since net lender (net saver) receives more in investment income than he has to pay to service his debt, high interest rates increases net investment income, thus encouraging present consumption and lessening the need to save in order to finance future consumption. However, if the substitution effect is stronger, an increase in rate of return tends to encourage consumers to postpone consumption and increase savings in the present period in order to achieve higher consumption levels later. This variable is used to validate the existence of smoothing consumption theory and life-cycle model where individual will keep their monies during working years for usage during their retirement period. We decided to include rates of profit given by Islamic bank to their depositors given that no restriction is imposed on customers who wishes to move their funds from one system to another. Therefore, it is interesting to know whether customers of conventional bank are sensitive to rewards given by Islamic bank.

Base lending rate is yet to be used by other researchers as one of the determinant of savings. BLR represents the lowest interest rate charged for bank loans. Changes in the rate will have a direct relationship with credit available to customers. Increase in the rate means higher cost of borrowing to customers and also serves as an indicator whether they can easily obtain financing for their needs as well as their capacity to pay back the loans. When people are refrained from extensive borrowings due to high BLR, they are induced to save in anticipation of future consumption needs that cannot be

financed through credit. Therefore, BLR is expected to have a positive relationship with savings. This variable also can be used as proxy for financial liberalisation. In most cases, central bank is responsible in determining the BLR of banks in the country. One of the indicators for liberalisation is that banks are free to choose their rates. Hence, frequent changes in lending rates reflect the openness of the country. Based on this conjecture, we hypothesise that as a country becomes liberal, savings rate will rise in tandem with this development. Another new variable introduced in this study is the KLCI. This variable represents the future growth in the economy and the confidence level of people towards the economy of the country. If people are optimistic about the economic growth, instead of putting their money in the bank accounts, they will buy stocks hoping that they will benefit from higher dividend rates and capital gains. Therefore, it is expected that this variable will have an inverse relationship with deposits.

Consumer price index is used as a proxy for inflation. Inflation may influence savings through several channels. First, theory postulates that greater uncertainty should raise savings since risk-averse consumers set resources aside as a precaution against possible adverse changes in income and other factor. Hence, inflation may increase precautionary savings by individuals. Second, inflation can influence saving through its impact on real wealth. If consumers attempt to maintain target level of wealth or liquid assets relative to income, saving will rise with inflation. Finally, savings may rise in inflationary period if consumers mistake an increase in the general price level for an increase in some relative prices and refrain from buying (Deaton, 1991). Money supply or M3 is one of the tools used by the government in managing its monetary policy. Changes in M3 can have a major impact on economic conditions. An increase in M3 makes loanable funds cheaper, thus reducing cost of borrowing for corporate and individual customers. Hence, it is expected that people will increase consumption and reduce savings. Therefore, M3 is presumed to have an inverse relationship with deposits. The growth in the economy is represented by GDP. Most empirical literature has shown an ambiguous relationship between savings and growth. Similarly, the direction of causality between these variables is still under much debate. The simple permanent-income theory postulates that higher growth reduces current savings because of higher anticipated future income. Thus, urging people to dissave against future earnings. But in the life-cycle model, growth has an ambiguous effect on savings, depending on which age cohorts benefit the most from the growth, how steep their earning profile are, and the extent to which borrowing constraints apply.

Based on the above explanations, we formulated six different models as follows:

- $CR_{is} = f [ARI_{is}, ARFD_{cv}, BLR, KLCI, CPI, M3, GDP];$
- $CR_{cv} = f [ARI_{is}, ARFD_{cv}, BLR, KLCI, CPI, M3, GDP];$
- $S_{is} = f [RS_{is}, RS_{cv}, BLR, KLCI, CPI, M3, GDP];$
- $S_{cv} = f [RS_{is}, RS_{cv}, BLR, KLCI, CPI, M3, GDP];$
- $I_{is} = f [ARI_{is}, ARFD_{cv}, BLR, KLCI, CPI, M3, GDP];$ and
- $FD_{cv} = f [ARI_{is}, ARFD_{cv}, BLR, KLCI, CPI, M3, GDP].$

where CR_{is} , balance in current account of Islamic banking system; CR_{cv} , balance in current account of conventional banking system; S_{is} , balance in savings account of Islamic banking system; S_{cv} , balance of savings account of conventional banking

system; I_{is} , balance of investment account of Islamic banking system; FD_{cv} , balance of fixed deposit of conventional banking system.

The data for this study are taken from the monthly statistical bulletin of Bank Negara Malaysia (www.bnm.gov.my). The study uses monthly data covering the period January 1998 to December 2003. In examining the determinants of deposit levels of both Islamic and conventional banks, the paper employs recent advances in time series econometrics. These techniques are co-integration and error correction framework, which are conducted within the vector autoregression (VAR) framework. The first step of the analysis is to test for the presence of unit roots of the variables in the system using the Augmented Dickey-Fuller (ADF) test. Once the stationary condition is examined, the next step is to conduct a co-integration test. A multivariate test for co-integration developed by Johansen (1988) and Johansen and Juselius (1990) is used in this study. The Johansen-Juselius (JJ) procedure of co-integration test is based on the maximum likelihood estimation of the VAR model. The test is carried out through a VAR system such as follows:

$$D_t = \beta_1 D_{t-1} + \beta_2 D_{t-2} + \dots + \beta_k D_{t-k} + \alpha + v_t, \quad t = 1, \dots, T \quad (1)$$

where D_t is a $(n \times 1)$ vector of $I(1)$ variables; β_i are $(n \times n)$ matrices of parameters; α is a $(n \times 1)$ vector of constant; v_t is a vector of normal log distributed error with zero mean and constant variance; and k is the maximum number of lag length processing the white noise. The trace and maximum eigenvalue statistics are calculated to test for the presence of r co-integrating vectors. If co-integration is found, a vector error correction model (VECM) is constructed. However, if no co-integration is found, the analyses will be based on the regression of the first differences of the variables using a standard VAR model. Engle and Granger (1987) showed that co-integration implies, and is implied by, the existence of an error correction term. This means that changes in the dependent variable are a function of the level of disequilibrium in the co-integrating relationship (captured by the error correction term) as well as changes in other explanatory variables. Once the variables are found to be co-integrated, a VECM will be used to investigate the dynamic interactions among them in the system. The Granger representation states that for two co-integrated variables, an error correction model (ECM) can be found in the following form:

$$\Delta Y_t = \beta_0 + \beta_1 \Delta X_t + \beta_2 \epsilon_{t-1} + v_t \quad (2)$$

where ϵ_{t-1} represents the error correction term which captures the adjustment toward the long-run equilibrium and β_2 is the short-run adjustment coefficient. For each variable in the system, innovation accounting techniques can be used to ascertain how each variable respond over time to a shock in itself and in another variable. This can be done through impulse response analyses. An impulse response function essentially maps out the dynamic response path of a variable to a change in one of the variable's innovations. This function shows the degree of international transmission among variables as well as the speed and length of time of the interaction between them.

6. Findings

This section applies the techniques of co-integration, VECM and impulse response analyses to investigate which factors determine the deposit level of both Islamic and conventional bank as well as the strength and speed of transmission between them.

6.1 Unit root tests results

The VAR model requires that all variables in the system to be stationary. Thus, it is necessary to test the stationarity of each data series. Results of the ADF unit root tests for all variables are shown in Table II. Overall, the results indicate that the null hypothesis of unit root cannot be rejected for series levels at the 5 per cent significance level. However, the first-difference of the series rejects the hypothesis of a unit root which implies that each data series are integrated in the first order, i.e. $I(1)$.

6.2 Co-integration test results

Table III presents the results of the Johansen maximum likelihood co-integration test. Based on the results from the maximum eigenvalue and trace statistics tests, three co-integrating vectors for current deposits of Islamic bank, current deposits of conventional bank and savings deposits of Islamic bank were identified. Whilst two co-integrating vectors for savings deposits of conventional bank, investment deposits of Islamic bank and fixed deposits of conventional bank were documented. The results

Variable	Level	First difference
lnCR _{is}	-0.958	-5.4471*
lnCR _{cv}	-1.353	-4.7911*
lnS _{is}	0.4128	-5.6296*
lnS _{cv}	-2.891	-3.0746*
lnI _{is}	-2.687	-3.9602*
lnFD _{cv}	-2.532	-3.4203*
RS _{is}	-2.542	-3.4101*
RS _{cv}	-2.839	-3.6637*
ARI _{is}	-2.34	-4.1340*
ARFD _{cv}	-2.744	-4.6431*
BLR	-2.773	-3.1086*
lnKLCI	-2.369	-3.1614*
lnCPI	-0.543	-4.8654*
lnM3	0.5941	-4.6197*
lnGDP	-1.544	-4.1373*

Table II.
Results of the ADF unit
root tests

Hypothesis			Dependent variable					
Null	Alternative	5% critical value	lnCR _{is}	lnCR _{cv}	lnS _{is}	lnS _{cv}	lnI _{is}	lnFD _{cv}
<i>Test statistics: max eigenvalue</i>								
$r=0$	$r=1$	54.17	129.21*	107.25*	103.80*	76.86*	107.68*	108.30*
$r \leq 1$	$r=2$	48.57	87.20*	85.99*	71.44*	69.69*	81.25*	88.33*
$r \leq 2$	$r=3$	42.67	43.56*	53.24*	45.59*	38.94	36.13	37.47
$r \leq 3$	$r=4$	37.07	33.39	28.56	33.73	23.5	32.51	34.54
<i>Test statistics: trace</i>								
$r=0$	$r \leq 1$	174.88	345.45*	329.34*	299.58*	255.10*	305.43*	312.38*
$r \leq 1$	$r \leq 2$	140.02	216.24*	222.10*	195.78*	178.25*	197.75*	204.08*
$r \leq 2$	$r \leq 3$	109.18	129.04*	136.11*	124.34*	108.56	116.51	115.76
$r \leq 3$	$r \leq 4$	82.23	85.49	82.87	78.75	69.62	80.38	78.28

Note: *Denotes rejection of the null at 5 per cent significance level

Table III.
Results of the
co-integration test

suggest the presence of a strong long-run relationship between the dependent variables and their determinants. This implies that all of the series in the deposit functions move together in the long run, even if some move at different speed than others in the short run.

The present study finds multiple co-integrating vectors. In common practice, a single co-integrating equation is preferred from a case of multiple co-integrating vectors. Hence, a scaling factor as proposed by Cheung and Lai (1993) was used to adjust the critical values to make finite-sample corrections. The scaling factor used to adjust the critical values is $T/(T-nk)$, where T is the sample size, n is the number of variables in the model and k is the lag length in VAR. The results of the co-integration test with the adjusted critical values are reported in Table IV.

From Table IV, conflicting results were given by the maximum eigenvalue and trace statistics. Johansen (1991) argued that trace test tends to have more power than the maximum eigenvalue test since it takes into account of all $N-r$ of the smallest eigenvalues. Thus, in conflicting cases, the decision is made based on trace statistics, which establishes the presence of a single co-integrating vector. Having verified the existence of a long-run relationship in all six equations, we investigated whether each variable entered statistically significant in the co-integrating vector by way of imposing restrictions and likelihood ratio tests which are asymptotically distributed as a chi-squared distribution with one degree of freedom. The co-integrating vector is normalised on the dependent variables. The LR test statistics, given in parentheses, are used to test the null hypothesis that each coefficient is statistically zero. The results are shown in Table V.

Table V measures the long-run relationship between the explanatory variables and various deposit facilities at conventional and Islamic systems. Surprisingly, this study finds reverse behaviour between Islamic and conventional customers. This is reflected by the opposite signs of coefficient of the variables. Conceptually, we believe that customers of Islamic banking system are not guided by profit motive and thus, any changes in the rates of interest of conventional bank and rates of profit of Islamic bank should not have any significant impact. On the contrary, this study observed that any movement in ARI_{is} and $ARFD_{cv}$ does have a significant impact on the level of current and investment accounts in the Islamic banking system. Similarly, RS_{is} and RS_{cv} were also found to have a significant impact on the level of Islamic savings accounts. Therefore, this study indicates that Islamic system customers place profit motive above their religious motive when making economic decisions. Rate of profit given by Islamic system does have a positive relationship with their customers but not to the

Table IV.
Results of the
co-integration test with
adjusted critical value

Hypothesis		Adjusted critical value	lnCR _{is}	Dependent variable				
Null	Alternative			lnCR _{cv}	lnS _{is}	lnS _{cv}	lnI _{is}	lnFD _{cv}
<i>Test statistics: max eigenvalue</i>								
$r=0$	$r=1$	97.51	129.21*	107.25*	103.80*	76.86	107.68*	108.30*
$r\leq 1$	$r=2$	87.43	87.20*	85.99	71.44	69.69	81.25	88.33*
$r\leq 2$	$r=3$	76.81	43.56	53.24	45.59	38.94	36.13	37.47
<i>Test statistics: trace</i>								
$r=0$	$r\leq 1$	314.78	345.45*	329.34*	299.58*	255.10*	305.43*	312.38*
$r\leq 1$	$r\leq 2$	252.04	216.24	222.1	195.78	178.25	197.75	204.08
Note: *Denotes rejection of the null at 5 per cent significance level								

Note: *Denotes rejection of the null at 5 per cent significance level

Variable	lnCR _{is} coefficient	lnCR _{cv} coefficient	lnS _{is} coefficient	lnS _{cv} coefficient	lnI _{is} coefficient	lnFD _{cv} coefficient
RS _{is}			0.2497* (10.3579)	-0.2624 (0.6752)		
RS _{cv}			-0.4921* (9.3314)	0.62198* (4.7983)		
ARI _{is}	1.2550* (17.6825)	-0.21028* (9.7600)			-0.38940* (24.5060)	0.31117* (30.0112)
ARFD _{cv}	-2.2463* (24.8115)	0.55309* (26.617)			1.1853* (56.4595)	-0.56804* (30.3262)
BLR	1.6112 (35.5703)	-0.44814* (37.5817)*	-0.0079 (0.0884)	0.03149* (11.3047)	-0.8793* (55.601)	0.43378* (21.7800)
lnKLICI	-0.59728* (26.4464)	0.018957* (40.1054)	-0.3245* (5.934)	0.24642* (11.6024)	0.10428* (54.6054)	-0.073738* (39.8269)
lnCPI	-28.5276* (30.5113)	5.7798* (28.4163)	1.4700 (0.2263)	-4.5342* (8.8715)	0.38486* (55.8406)	-7.1662* (40.4664)
lnM3	-3.1570* (27.7652)	0.084248* (26.6959)	-32.132* (8.7481)	3.0690* (11.7284)	6.9988* (60.5765)	-2.9184* (68.8687)
lnGDP	0.63162* (26.2728)	-0.27154* (28.9291)	0.4237 (1.9486)	-0.61120* (8.6201)	1.1306* (60.8929)	-0.089082* (68.7046)

Notes: The figure in parentheses represents the LR test statistics; *denotes significant at the 5 per cent level

Table V.
Johansen co-integration
results

customers of conventional banks. The interest rate of conventional savings account does have an impact on both theirs and Islamic system customers. An increase in the savings account rate of conventional bank will increase the saving deposits at conventional bank and decrease the saving deposits of Islamic banks. This indicates the norm behaviour of customers in both systems, thus supporting the substitution effect in the conventional system. In the case of return to the investment account given by Islamic banks (ARL_{is}), it is shown to have a significant impact to both customers but not necessarily to the advantage of Islamic banks. In line with the *Shariah* principle, rates of profit of investment accounts of Islamic bank are only known by depositors at the end of the deposit or maturity period, whereas, rates of interest for conventional deposits are known in advance. Under normal conditions, increase in profit takes place after a rise in the interest rate of conventional bank. Given this stipulation, there is a possibility that Islamic bank customers will liquidate their deposits and move to conventional banks for better returns. With regards to the interest paid by conventional banks to their fixed deposit accounts, any movement of this rate will have a significant impact to both conventional and Islamic bank customers. However, instead of a positive relationship, we found that an increase in this rate resulted in the declining amount of deposits. In contrast, investment deposits at Islamic system exhibited a positive sign. One of the possible reasons is that customers expect higher returns will be paid by Islamic banks at maturity.

In the case of BLR, any increase in this variable should result in an increase in the amount of bank deposits. This is true for conventional but not for Islamic bank customers. One feasible explanation is that they believe Islamic bank will uphold Islamic teachings and continue its effort in providing services and giving out loans to its customers even during poor economic and financial conditions. In the case of current account, a negative relationship is found with the current account of

conventional banks. A possible reason that can be forwarded is that most of these customers have credit facilities, and thus they have to pay more for their loans. With regards to the KLCI, which indicates growth and portfolio selection of customers, a negative relationship is found for fixed deposit account holders of conventional bank. This result indicates that conventional bank customers are more involved in stock market activities as compared to Islamic bank customers. A plausible justification for this is because Muslims believe that activities in stock market involve gambling and speculation, which are prohibited in Islam. Theory postulates that higher inflation increases savings. Our finding reveals that this theory is only applicable to Islamic banks customers only. The result indicates that both deposits at fixed and saving facilities are reduced when there is an increase in CPI. In the case of M3, we found evidence to support the negative relationship between M3 and savings in the fixed deposits of conventional system and savings account of Islamic system. For investment deposits of Islamic system, a positive relationship was observed. This is as expected as dictated by the past experience of Islamic banking system in Malaysia, whereby rates of profit given by Islamic system have always been higher than that of the conventional system whenever the market is flooded with excess supply of money. As predicted, higher growth (GDP) led to lower savings because of anticipated higher future income. This finding lends support for the permanent-income hypothesis. Our result indicates that customers of all deposit facilities of conventional banks tend to dissave during period of high growth. In contrast, customers of Islamic bank tend to save more. A possible explanation for this behaviour is that Muslims are encouraged to save and not to spend lavishly.

6.3 Results of the ECMs

Since all deposit structure of both Islamic and conventional banks and their corresponding explanatory variables exhibit co-integrating (long-run) relationships, VECMs were estimated to model short-run dynamics of each system. The size and the statistical significant of the error correction term (ECT) measures the extent to which each dependent variable has the tendency to return to its long-run equilibrium. Results from the VECMs test are shown in Table VI. The results reveal that the ECTs are negative and statistically significant for all deposit functions in the case of Islamic and conventional banks. This implies that all dependent variables have the tendency to adjust to any deviations in the long-run equilibrium. The significance of these ECTs provides further evidence for a co-integration relationship among the variables in the all the deposit functions.

The estimated coefficients of the ECT indicate that the speed of adjustment among the variables is toward long-run equilibrium within a year. Current, savings and investment accounts of Islamic banks correct about 9.9, 43 and 13.9 per cent of the system disequilibrium in a single year, respectively. For conventional banks; current account, savings account and fixed deposits correct for only about 14.6, 10.3 and 3 per cent of the disequilibrium, respectively. The estimated coefficients of the lagged first different variable capture short-run effects (Engle and Granger, 1987). The results reveal that in the short run, all of the determinants show different effects on the deposit functions. For the current account function of Islamic bank, only ARI_{is} is significant, which indicates that about 24 per cent of the deviations from the long-run relationship are corrected the next month. In the case of savings account of the Islamic bank, it is ARI_{is} and BLR that are significant. Meanwhile, the short-run variation in the investment account of the Islamic bank is mainly determined by variations in ARI_{is} and BLR . The adjustments are rather small where only

Variable	Deposit structure of Islamic banks			Deposit structure of conventional banks		
	Current account ($\Delta \ln CR_{is}$)	Savings account ($\Delta \ln S_{is}$)	Investment account ($\Delta \ln I_{is}$)	Current account ($\Delta \ln CR_{cv}$)	Savings account ($\Delta \ln S_{cv}$)	Fixed deposit ($\Delta \ln FD_{cv}$)
$\Delta RS_{is(t-1)}$	—	-0.0778 (-1.1865)	—	—	-0.0087 (-0.5124)	—
$\Delta RS_{cv(t-1)}$	—	-0.4446 (-3.4762)*	—	—	-0.0251 (0.7338)	—
$\Delta ARI_{is(t-1)}$	0.2372 (1.8754)***	—	0.10564 (1.9678)***	0.01511 (0.48332)	—	-0.04002 (-3.6191)*
$\Delta ARFD_{cv(t-1)}$	0.13999 (1.2686)	—	-0.0787 (-1.5544)	0.0266 (0.09505)	—	-0.0201 (-1.9695)***
$\Delta BLR_{(t-1)}$	-0.0099 (-0.0893)	-0.1561 (-5.3902)*	0.0904 (1.7084)***	-0.00434 (-0.1526)	0.0984 (1.300)	0.01704 (1.6554)
$\Delta \ln KLCI_{(t-1)}$	0.0959 (0.5031)	-0.0583 (-0.6116)	-0.1506 (-1.5853)	-0.00969 (-0.1980)	0.00866 (0.0342)	0.00145 (0.07797)
$\Delta \ln CPI_{(t-1)}$	-6.3170 (-0.8960)	3.4684 (1.0782)	2.1271 (0.6490)	2.5867 (1.4409)	0.93344 (1.1114)	-0.31939 (-0.050554)
$\Delta \ln M3_{(t-1)}$	2.5126 (1.0952)	0.0749 (0.0692)	1.2757 (1.1769)	-0.2896 (-0.4763)	0.2779 (0.9613)	-0.32543 (-1.4996)
$\Delta \ln GDP_{(t-1)}$	0.4716 (0.6316)	-0.1717 (-0.4931)	-0.3078 (-0.8618)	0.1987 (1.0720)	-0.0748 (-0.8424)	-0.08437 (-1.2486)
$ECT_{(t-1)}$	-0.0989 (-2.8579)*	-0.4325 (-5.6119)*	-0.13925 (-3.8559)*	-0.14619 (-4.0435)*	-0.10311 (-4.6859)*	-0.02986 (-2.6511)*

Notes: *, ** and *** denotes significant at the 1 per cent, 5 per cent and 10 per cent level

Table VI.
Estimation of ECMs

about 10.5 and 9 per cent of the deviations are corrected by the changes in these two explanatory variables the next month, respectively. Although we could not find any short-run relationship between the explanatory variables with the current and savings account of conventional bank, they are related in the long-run in that both dependent variables react to any disturbances to the relationships. For fixed deposit of the conventional bank, short-run variations in the dependent variable are mainly determined by the variations in the average return on investment in Islamic bank and the average return on fixed deposit in the conventional bank.

6.4 Impulse response analyses results

Figures 1-6 present the generalised responses of dependent variables to shocks on their independent variables. It can be seen in Figure 1 that current account of Islamic bank responds immediately to a shock in all the explanatory variables except for KLCI. The responses are positive when shocks are introduced in ARI_{is} , KLCI, CPI and GDP. However, it responded negatively to a shock from $ARFD_{cv}$ and BLR, respectively. Overall, the responses are small and tend to start to dampen after four months before dying out in six or seven months. Similarly, the response of current account of conventional bank to a 1 per cent shock in the SD of its' explanatory variables are small and dampens out in month 4. Figure 2 shows the response of current account in conventional bank to a 1 per cent shock in its' explanatory variables. Except for KLCI, the current account responded immediately to the other variables. It responded positively to ARI_{is} , KLCI, CPI, M3 and GDP and negatively to $ARFD_{cv}$ and BLR. All responses die out after month 6. With

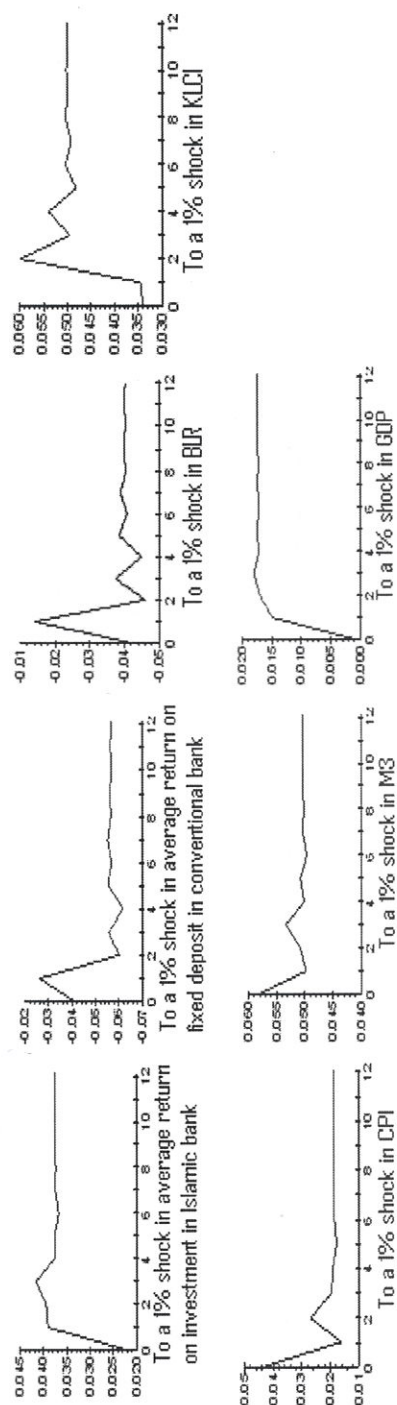


Figure 1.
Responses of current
account in Islamic bank

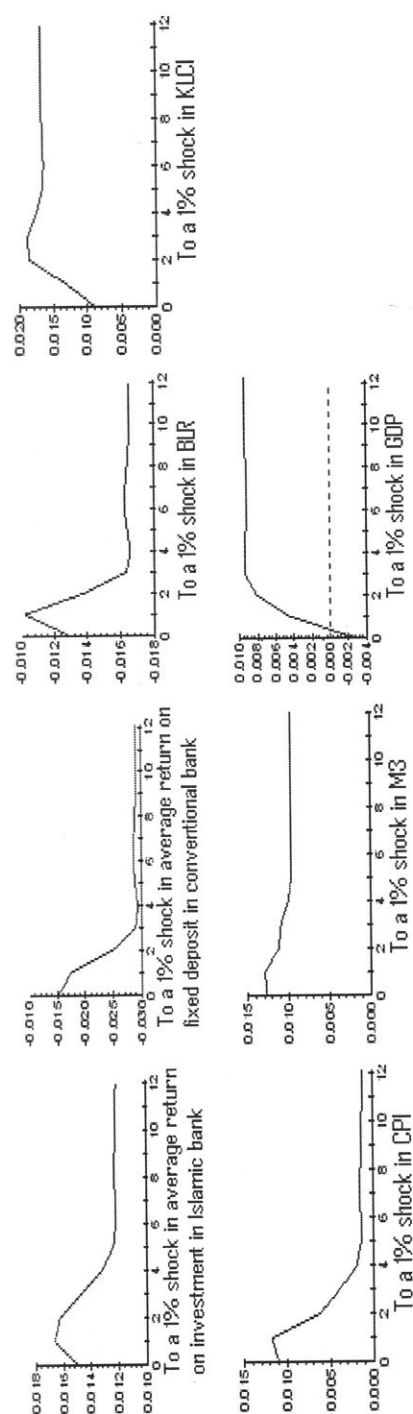
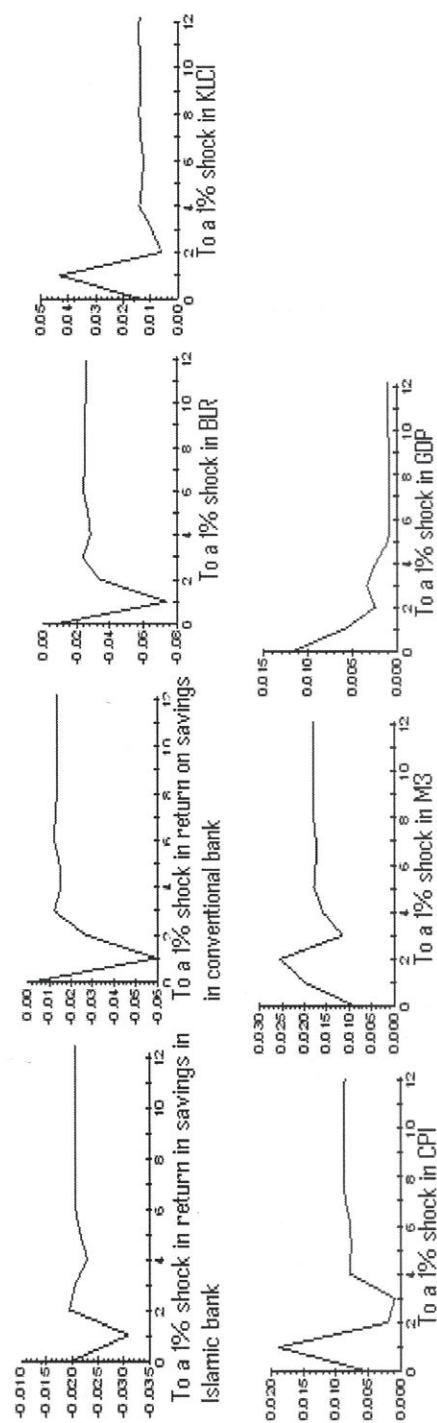


Figure 2.
Response of current
account in conventional
bank

Figure 3.
Response of savings
account in Islamic bank



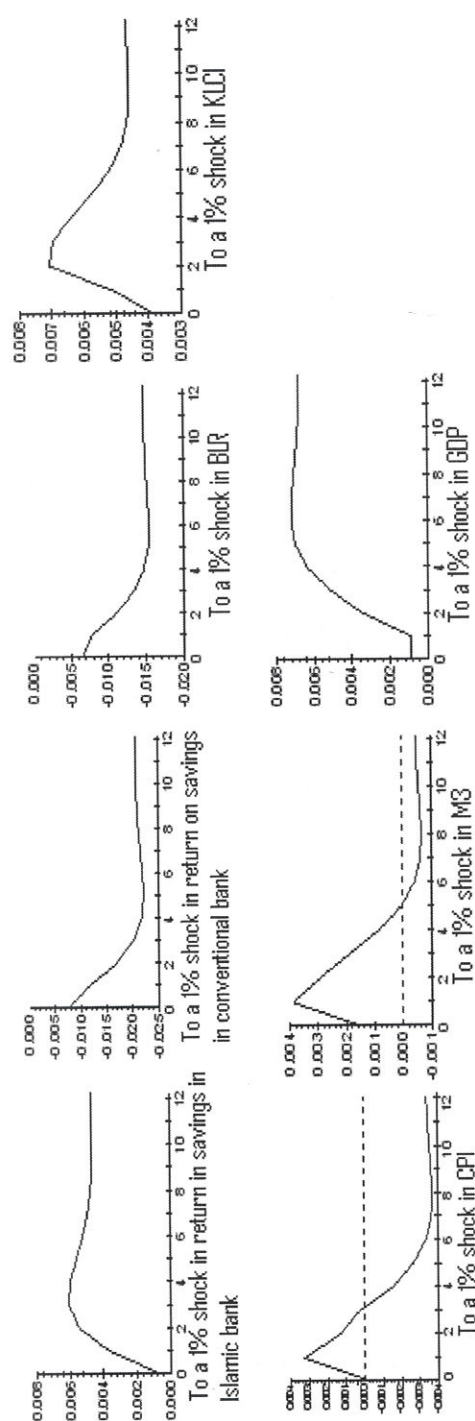


Figure 4.
Response of savings
account in conventional
bank

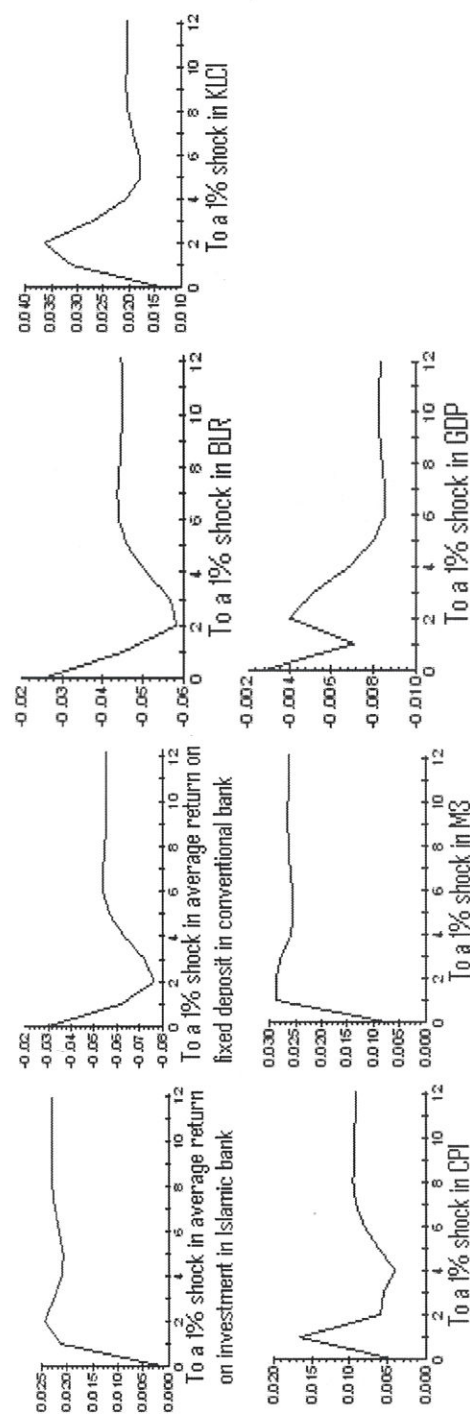


Figure 5.
Response of investment
account in Islamic bank

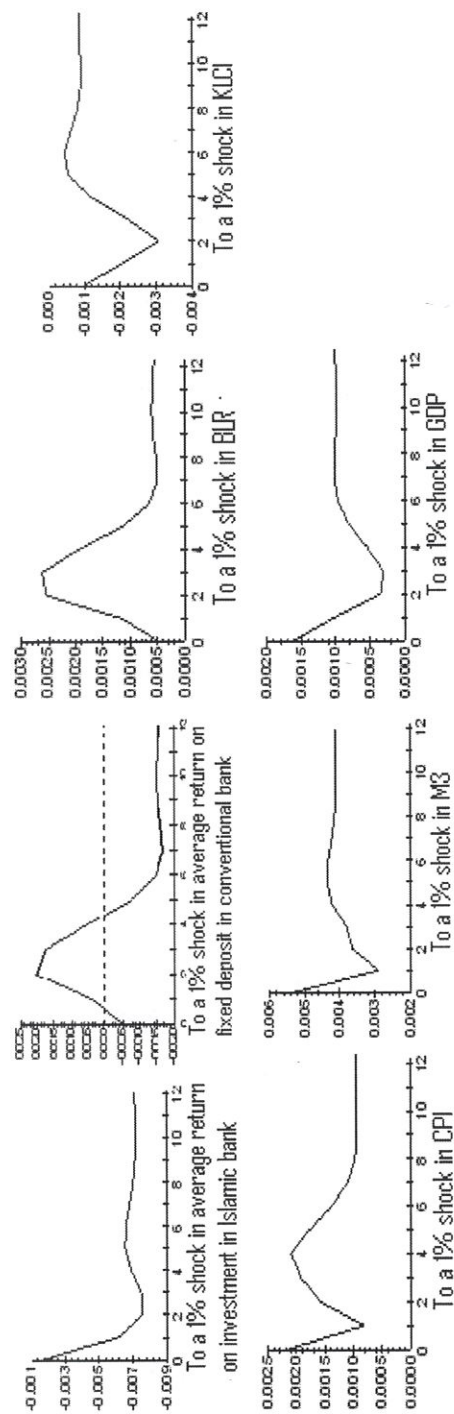


Figure 6.
Response of fixed deposit
in conventional bank

respect to savings account in Islamic bank, Figure 3 shows that this dependent variable responded immediately but in a small magnitude to a shock in KLCI, CPI, M3 and GDP and negatively to RS_{is} , RS_{cv} and BLR. The response of savings account in conventional bank responded positively and immediately to a shock in RS_{is} , KLCI, M3 and CPI. However, when GDP was shocked, it did not respond until after month 1.

Savings account in conventional bank responded negatively to a 1 per cent shock in the SD in GDP (refer to Figure 4). Similarly, the responses of both savings accounts dampen in month 4 and die out in months 6 and 7. As shown in Figure 5, investment account in Islamic account responded immediately and positively to ARI_{is} , KLCI, CPI and M3, but negatively to a shock in $ARFD_{cv}$, BLR and GDP. In the case of fixed deposit account in conventional bank (Figure 6), it responded positively to BLR, CPI and GDP. However, with respect to $ARFD_{cv}$, it responded positively in months 1 and 2 before turning to a negative respond thereafter. In both accounts, the responses die out after month 6.

7. Concluding remarks

To the best of our knowledge, this is the first study that uses co-integration techniques to validate empirically whether religious dimension plays an important role in determining deposits level of both Islamic and conventional banking system. The findings confirm that economic variables such as BLR, KLCI, CPI, M3 and GDP, have significant long-run relationship with deposits placed by customers at these two systems. The direction and strength of relationship however, are different between those two. With the exception of CPI, other variables have significant impact on deposits of conventional system in line with the existing conventional savings behaviour theories. In the case of CPI, which is a proxy for inflation, this study finds it has a negative relationship with savings account and fixed deposit facilities of conventional system. This result indicates that people in Malaysia are not bound by the precautionary savings concept. Instead of saving more, they will continue to spend because history had thought them that the Malaysian Government will always maintain good monetary and fiscal policy in managing the country's economy. We also found evidence to support the permanent-income hypothesis in the conventional system. In the case of deposits at Islamic system, with the exception of BLR, other economic variables have a significant positive relationship with the savings function. One possible reason for this deviation in the behaviour of Islamic system customers from the conventional economic theory is the results of Islamic teachings. There are many verses in the Qur'an that encourage followers to save irrespective of economic situations. Therefore at any time when there is growth in the economy and an increase in M3, composite index, and CPI, they will continue to increase deposits at Islamic system. However, it is interesting to observe whether they will continue to save even during economic downturn.

Customers of both systems are, however, sensitive to the rewards received on their deposits. With the exception of fixed and investment deposits, any increase in rates of interest, deposits at conventional system will increase and deposits at Islamic system will decrease, and vice-versa. As for the fixed and investment deposits, we find ambiguous results. One possible explanation for this is that rates of profit for deposits at Islamic system are known at the end of the deposit period and not at the beginning as opposed to the conventional system. Since, all deposit structure of both conventional and Islamic banks and their explanatory variables are found to have a long-run relationship, an ECM is then estimated to model the short-run dynamics of each of the system. The results reveal that the error-correction terms are negative and statistically significant for all deposit functions, which implies that all dependent

variables adjust to any deviations in the long-run equilibrium within a year. The significance of these ECTs provides further evidence for a co-integration relationship among the variables, and it rejects the weak form exogeneity hypothesis of the dependent variable. Finally, the impulse response analysis showed that there was a quick transmission of shocks among all deposit functions. The responses of the deposit functions to a shock in their explanatory variables dampen in month 4 and die out after month 6. This indicates that there exist short-term linkages between the variables. If we accept the major findings of this paper, then the policy makers of Islamic system should take more effort in fulfilling both the financial and religious needs of their customers. In the case of financial needs, customers are sensitive to rewards they receive from their deposits. Any upward changes in interest rate of conventional system will have an adverse impact to the deposit levels in the Islamic system. Therefore, rates of profit of Islamic system must at any time be similar to those of the conventional system. Finally, religious dimension can be considered as an important element to attract more people to deposit their funds in the Islamic system. This could also be the reason why more and more conventional banks are starting to offer Islamic banking facilities to their customers not only in Malaysia but also to other parts of the world.

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