

INTEREST RATES AND CURRENCIES EFFECTS ON ISLAMIC AND CONVENTIONAL BONDS

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Abstract

Bond markets have not been well developed in emerging countries. Realizing its important role, especially after the 1997 crises and the Islamic economics development, emerging countries have started to develop such markets. This research examines the effect of interest rates and currencies on Islamic and conventional bonds in Bursa Malaysia. The analysis on Islamic bonds shows that interest rates and currencies do not influence Islamic bonds, which supports the prohibition of interest in Islam. The analysis on conventional bonds finds evidence that both interest rates and currencies affect conventional bond. It also finds evidence of a negative association between interest rates and a conventional bond.

Keywords: Interest rate, currency, conventional bond, Islamic bond

JEL classification numbers: G11, G12, G15

Abstrak

Pasar obligasi belum berkembang dengan baik di negara-negara berkembang. Menyadari arti penting pasar obligasi, terutama pasca krisis 1997 dan berkembangnya ekonomi Islam, negara-negara berkembang mulai membangun pasar obligasi tersebut. Penelitian ini menguji pengaruh suku bunga dan mata uang pada obligasi syariah dan obligasi konvensional di Bursa Malaysia. Analisis terhadap obligasi syariah menunjukkan bahwa tingkat suku bunga dan mata uang tidak mempengaruhi obligasi Islam, yang mendukung pelarangan bunga dalam Islam. Analisis terhadap obligasi konvensional menemukan bukti bahwa suku bunga dan mata uang mempengaruhi obligasi konvensional. Hasil analisis juga menunjukkan bukti adanya hubungan negatif antara tingkat bunga dan obligasi konvensional.

Keywords: Tingkat bunga, mata uang, obligasi konvensional, obligasi Islam

JEL classification numbers: G11, G12, G15

INTRODUCTION

Bonds are long-term debt obligations that are secured by a specified asset or a promise to pay. This means that a bond investor lent money to the bond issuer. In return, the issuer of that bond promises to pay interest and to repay the principal on maturity. The

certificate is an evidence of a lender-creditor relationship. It is a security because unlike a car loan or home improvement loan, the debt can be bought and sold in the open market. In fact, a bond is a loan which is intended to be bought and sold. It is clear from this definition that in the conventional system of bond issuance and trad-

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ing the issue of interest is at the centre of any transaction.

Interest rates fluctuate widely throughout the year then rose dramatically by the end of that year, which causes the bond market to lose significant value. When interest rates rise, market values of bonds drop because bond interest rates are fixed and the present value of a bond's stream of interest payments also fluctuates. These factors might cause panic among the investors, encourage them to sell their bond, and leave the fund managers with no choices but to sell these long term bonds at a reduced price as a way to generate cash for redemptions. The higher nominal yield of long bond funds has not been enough to compensate the investor for their highly volatile prices. Investors have not, historically speaking, been compensated for the higher risk of long term bonds.

In contrast, in the Islamic financial system, *usury* and interest are the first elements to be avoided. However, this does not mean that the door of debt financing or, more generally, the possibility of bonds issuance and trading is closed to Islamic finance. However, it shall be noted that beside the rejection of the obvious system of interest in bond trading, the Islamic finance must also avoid any transaction of debt and credit on future basis which may involves *usury* and interest. Considering the fact that bond issuance and trading are important means of investment in the modern economic system, Muslim jurists and economists are striving to find the Islamic alternative. However, to meet the various demands of investors Islamic bonds, certificates should be diversified.

Islamic finance is no longer just a niche market and is now considered as a mainstream. Most of the funding in some regions is now through *sukuk*, not through commercial bonds. *Sukuk* is shooting through the roof. The middle class's demand is driving Islamic finance. Now *sukuk* are almost always oversubscribed. It is

because while there are many interested in halal products, however there are not many halal products being offered (Azmi, 2008).

Malaysia is the world's leading issuer of the *sukuk* and has the world's largest *sukuk* market, estimated in 2007 at USD 60 billion. To cement its market leader position, the Malaysian Islamic Financial Centre (MIFC), a joint initiative by the Central Bank and the Securities Commission, was launched in 2006 to develop and internationalize the Malaysian Islamic capital markets. The Malaysian bond market is an international market. Issuers of Islamic bonds in Malaysia are not restricted to only Malaysian companies. Eligible foreign issuers such as sovereigns, quasi-sovereigns, multilateral development banks, multilateral financial institutions and multinational corporations can also issue bonds in Malaysia.

At the end of the days, the growth of conventional bond is slowing down in Malaysia while as that of Islamic bonds is picking up. This can be attributed to several reasons, the interest rates are considered by the investors who invest in conventional bonds and returns on international investments are affected by the changes in exchange rates. Besides the risk of changing exchange rates, investing in foreign securities has several special costs.

Capital market analysis shows that the interest rates and currencies have been fluctuating in the market from 2001 to 2008. The data on the investors in Malaysia have made it more interesting to invest in Islamic bonds. During two years, namely between 2006 and 2007, the market for *sukuk* has become more than doubled, reaching \$62 billion—up from \$27 billion. From 2001 to 2006, *sukuk* grew by a compound annual growth rate of 123 per cent. The increasing acceptance of Islamic finance applications which are becoming more of a global phenomenon has played a major role in this rapid growth. Currently, the Islamic banking and finance market are worth more

than \$500 billion and is growing at 15 to 20 per cent annually.

The principle of all contracts in Islamic bonds is based on *shariah* law that ordains avoid of the interest and usury. Affluent Muslim investors are looking for some serious investment options that comply with *shariah*. It is estimated that 20 per cent of Muslim investors, with billions to invest, would now spontaneously choose an Islamic financial product over a conventional one with a similar risk-return profile (Karen, 2008). These issues would give ideas and spirit to the researcher in doing this research.

Sukuk (Arabic) is plural of *Sakk*, or legal instrument. Deed and check are the Arabic name for a financial certificate but can be seen as an Islamic equivalent of bond. However, fixed income, interest bearing bonds are not permissible in Islam, hence *sukuk* is a security that comply with the Islamic law and its investment principles, which prohibits the charging, or paying of interest. Financial assets that comply with the Islamic law can be classified in accordance with their tradability and non-tradability in the secondary markets.² *Sukuk* may be understood as a *shariah* complaint 'bond'. In its simplest form *sukuk* represents ownership of an asset or its usufruct. The claim embodied in *sukuk* is not simply a claim to cash flow but an ownership claim. This also differentiates *sukuk* from conventional bonds as the latter proceed over interest bearing securities, whereas *sukuk* are basically investment certificates consisting of ownership claims in a pool of assets.³

Although there is no compulsory to comply with the rulings of the Fiqh Academy of the Organization of the Islamic Conference, their rulings carry considerable weight with most Islamic financial institutions and their *shari'a* committees and advisers. At the request of delegates from

Jordan, Pakistan and Malaysia, the Fiqh Academy considered the question of Islamic investment certificates at their fourth annual plenary session held in Jeddah in February 1988.⁴

Sukuk can be of many types depending upon the type of Islamic modes of financing and trades used in its structuring. However, the most important and common among those are *ijarah*, *shirkah*, *salam* and *Istisna*. However, it should be noted that although some of these instruments have been generally accepted as being in compliance with Islamic principles so that they can be traded in the secondary market, the negotiability of certain others is still a point of debate and controversy due to their legal acceptability or compliance with *shari'ah*. Therefore, some of these bonds can be traded in the secondary market while the trade of others is limited to the primary market because they can be exchanged only at face value, such as *salam* bonds⁵, *ijarah* bonds⁶, *istisna'* bonds⁷, *mudarabah* bonds⁸, *musharakah* bond⁹.

⁴ The Fiqh academy noted that the *Shari'a* encourages the documentation of contracts as stipulated in Surah 2:282 of the Holy Qur'an: "When ye deal with each other, in transactions involving future obligations in a fixed period of time, reduce them to writing. It is more just in the sight of God, more suitable as evidence and more convenient to prevent doubts among your selves".

⁵ *Salam* is the sale of a specific commodity, well defined in its quality and quantity which will be delivered to the purchaser on a fixed date in the future at the price paid at the spot as it is the condition according to the majority of Muslim jurists or three days according to the Maliki school (El-Gari, 1999).

⁶ *Ijarah* is a contract according to which a party purchases and leases out equipment required by the client for a rental fee. The duration of the rental and the fee are agreed in advance and ownership of the asset remains with the lessor. Hence, the relationship between the parties differs from that of a debtor-creditor relationship since it is based on buyer-seller of an asset. *Ijarah* bonds, on the other hand are securities of equal denomination of each issue, representing physical durable assets that are tied to an *ijarah* contract as defined by *shari'a*, (Monzer, 1997).

² www.ibisonline.net

³ www.financeislam.com

Bonds are securities that establish a creditor relationship between the purchaser (creditor) and the issuer (debtor). The issuer receives a certain amount of money in return for the bond, and is obligated to repay the principal at the end of the lifetime of the bond (maturity). Typically, bonds also require coupon or interest payments. Since all these payments are determined as part of the contracts, bonds are also called fixed income securities. A straight bond is one where the purchaser pays a fixed amount of money to buy the bond.

At regular periods, she receives an interest payment, called the coupon payment. The final interest payment and the principal are paid at a specific date of maturity. Bonds usually pay a standard coupon amount, C , at regular intervals and this represents the interest on the bond. At the maturity of the bond, the final interest

payment is made plus the principal amount (or par amount) is repaid. Some bonds do not make a coupon payment. These bonds are bought for less than their face value (we say such bonds are bought at a discount). Bonds that do not pay coupons are often called Zero Coupon Bonds.

Bonds offer a business a number of benefits. First, it offers an alternative source of capital. In businesses have traditionally relied on shareholders' equity and bank loans. Alternative sources of funds like bonds mean that businesses have a wider choice and more flexibility in funding. Second, leverage borrowing can increase shareholder returns. Let's say you build a new factory and finance this through a mix of borrowing and equity. If you can borrow at an interest rate that is lower than the return from the factory, the return to shareholders will increase. This is called leverage. Bonds can be one method of leverage. Third, it offers less frequent payments. Coupons are typically paid every three, six or twelve months, depending on the bond. This may be more flexible and convenient for the issuer compared to a bank loan which requires monthly interest payments. A bullet bond goes even further by paying all coupons and principal at maturity.

Fourth, it allows for delayed principal repayments. Compared to the typical bank loan which requires that the principal is repaid in instalments, the bond principal is paid as a lump sum on maturity. A zero coupon goes even further. This type of bond is issued at a discount to its face value and pays no coupons. The net present value of the difference between the face and the issue price is the internal rate of return which compensates investors for not getting coupons during the life of the bond with a big capital gain at maturity. Fifth, it offered a fixed interest rate. The interest rates can be fixed by issuing a fixed rate bond. In this way, if interest rates increased, the issuer has locked in its interest rate. And finally is flexibility. Bonds can be structured in many

⁷ *Istisna'* is a contract to sell a manufacturable thing with an undertaking by the seller to present it manufactured from his own material, according to specified description and at a determined price. The suitability of *istisna'* for financial intermediation is based on the permissibility for the contractor in *istisna'* to enter into a parallel *istisna'* contract with a subcontractor. Thus, a financial institution may undertake the construction of a facility for a deferred price, and sub contract the actual construction to a specialised firm (Monzer, 1997).

⁸ *Muqaradah* means an agreement between two parties according to which one of the two parties provides the capital for the other to work with on the condition that the profit is to be shared between them according to an agreed ratio. In light of the above definition, *muqaradah* is regarded as an Islamic way of financing completely different from the The Malikis and Shafis use *qirad*. *Riba* mode of financing which is based on a predetermined rate of interest, (Khayrullah, 1994).

⁹ *Musharakah* bonds based on the *musharakah* contract are relatively similar to *muqaradah* bonds. The only major difference is that the intermediary-party will be a partner of the group of subscribers represented by a body of *musharakah* bondholders in a way similar to a joint stock company while in *mudarabah* the capital is only from one party. It should be noted that almost all the criteria applied to *mudarabah* bonds are also applicable to the circulation of *musharakah* bonds, (Hamoud, 1998).

ways, to suit the needs of the issuer. For example, the issuer can choose how often coupons are paid, the term, whether the coupon rate is fixed or floating and the type of embedded options.¹⁰

There are three economic mechanisms that could link currency crashes to bond market crashes. First, exchange rate depreciations may be expected to push up domestic inflation through higher prices for imported goods and services. Investors are likely to demand a higher nominal rate of return to compensate for expected inflation. This is the “Fisher effect” or inflation expectations channel. Second, investors may expect that the monetary authority will raise short-term interest rates even more than the increase in inflation in order to prevent higher inflation from becoming entrenched. This is the “monetary reaction” channel. Finally, the currency crash could cause investors to demand a higher risk premium on bonds because of heightened uncertainty about future inflation, future real interest rates, or even the possibility of a future default (Roubini and Brad, 2005).

Since 1985, inflation rates have been low and stable after currency crashes, and these outcomes are related to the tendency of bond yields to decline or at least not to rise (Gagnon and Jane, 2004). Moreover, bond yields do not appear to be particularly sensitive to changes in net purchases of a country’s bonds by foreigners. Current account deficits appear to be associated with the occurrence of currency crashes, but the size of the deficit has only a small effect on the change in bond yields after a crash. The other side at longer horizons, however, the situation is different (Popper, 1993) demonstrates, firms use currency swaps to hedge the currency risk associated with foreign currency bonds.

Covered currency bargains exist if the spread between bond yields and swap rates differ across currencies. Thus, the

firm can achieve borrowing cost savings on covered foreign currency borrowing. Covered foreign currency borrowing provides savings for the firm whenever the spread between foreign currency bond yields and swap rates exceed the analogous spread for the domestic currency. If the foreign currency spread less than corresponding domestic currency spread, the firm lowers its (fixed) borrowing costs in domestic currency by swapping foreign currency bond payments into domestic currency instead of issuing in domestic currency directly. Once again, because it receives sufficient foreign currency to repay its principal at maturity, it achieves these savings without incurring currency risk.

McBrady (2003) said that average spreads between bond yields and currency swap rates differ considerably across a broad sample of currencies. The firm achieves cost savings without incurring currency risk, the same borrowing behaviour should be observed for risk-neutral and risk averse firms. Johnson (1988), Alayannis et al. (2003), and Henderson et al. (2006), all of whom argue that firms increase foreign currency bond issuance in response to nominal yield differentials.

As we have seen, interest rates affect a bond’s value. The bond price may be higher or lower than its face value depending on how its interest rate (the coupon rate) compares with interest rates available on other investments. Take a bond with a fixed coupon rate of 6%. The coupon rate never changes even though interest rates may. Let’s say when the bond is first issued, similar bonds and other investments were also paying 6%. Therefore the bond’s coupon rate is in line with the market and its price will be equal to its face value. This bond is said to be trading at par.

What happens if the market interest rate dropped to 4%? Now the bond is still paying 6% so is more attractive than other investments paying only 4%. Investors will be willing to pay more for this bond. This

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is why a bond's price can be higher than its face value. This bond is said to be trading at a premium. What happens if market interest rates increased to 8%? The bond is still paying 6% so is now less attractive than other investments paying 8%. Investors will want to pay less for this bond. This is why a bond's price can be lower than its face value. This bond is said to be trading at a discount.

To summarise, a bond's value and the interest rates in the market are like a see-saw. As one goes up, the other goes down. An increase in interest rate leads to a fall in bond price and vice-versa. The price of typical bond will change in the opposite direction from a change in interest rates; as interest rates rise, the price of bond will fall, as interest fall, the price of a bond will arise.

Growth of conventional bonds is mostly influenced by the dimensions or factors interest rates and currencies. But Islamic bonds do not have positive correlation between interest rates and growth of bonds, because it avoids usury and interest rates. Many researchers and article argue that there is have a positive relationship between interest rates toward conventional bond. It means if interest rates increase, price and demand of bonds would be decrease and if interest rates decreased price and demand of bonds would be increased. Besides that, fluctuation of currency impact growth of bonds. Investors consider if currency in one country is weak over other country, for instance Ringgit Malaysia toward Dollar United State. Thus foreign would not be interested to invest in that country. It will reduce the value of assets when they invest in those bonds.

Shi (2005), in equilibrium, newly issued bonds is sold at a discount for money and thus they bear positive interest, regardless of whether matured bonds circulate as a medium of exchange. A permanent increase in the issuing of bonds in the open market, accompanied by a change in the lump-sum monetary transfer to maintain

the growth rate of privately held money stock constant. Consider an increase in the money growth rate, achieved by increases in lump-sum monetary transfers. When bonds circulate as a medium of exchange, higher money growth reduces real output and consumption. When bonds do not circulate as a medium of exchange, real output rises with money growth if the money growth rate is initially low, and falls when the money growth rate is high. However, higher money growth increases the nominal interest rates.

Sudin and Norafifah, (2004), the existence of the utility maximization theory among the Muslim customers is further confirmed by the negative relationship between the interest rate of conventional banks and the amount deposited in interest free deposit facilities. Muslims should be guided by Islamic doctrines when making their economic decisions. These doctrines require that Muslims should not place profit maximization as the sole factor in establishing relationship with Islamic banks.

This study argued that interest rates did not have correlation with Islamic banks. Because the system operational of Islamic bank based on syari'ah that avoid usury and interest rates. Moreover Islamic bonds (*sukuk*) also based on syari'ah that avoids the usury and interest rates. It can conclude that interest rates do not have relationship with Islamic bonds (*sukuk*). This previous studies have given some information related with the research would like to do. Even though the information was not complete because lack of references that link to Islamic bonds. And also lack of reference that related the relationship between currencies upon bonds.

METHODS

This research explains the relationship between interest rates and currencies upon growth of nominal conventional and Islamic bonds. Secondary data was gathered from by Bank Negara Malaysia. This study

also wants to identify the dominant factor that has any relationship between interest rates and currencies upon growth of nominal conventional and Islamic bonds. The study was conducted in Bursa Malaysia. The area of study is the interest rates and currencies provided quarterly by Bank Negara Malaysia and the scope of currencies compared was Dollar US (USD) towards Ringgit Malaysia (MYR).

This research used secondary data which were gathered from Bank Negara Malaysia websites. The data provided completely included interest rates, currencies and nominal of conventional and Islamic bonds. The target sample size for this study were interest rates, currencies and nominal of conventional and Islamic bonds provided quarterly by Bank Negara Malaysia since 2001 to 2008.

The technique analysis used in this research was quantitative by using statistical analysis. For the purpose of this study, independent variables that are interest rates and currencies and dependent variables there are conventional and Islamic bonds were developed to provide comprehensive conceptual framework. Finally, the data was processed through computational statistical application; Eviews 5 for statistic computation. The data are analyzed using multiple regressions and GARCH model. The dependent variables are Islamic bond and conventional bond and also have two independent variables that are interest rates and currencies. The models are as follow:

$$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + e \quad (1)$$

$$Y_2 = \alpha + \beta_1 X_1 + \beta_2 X_2 + e \quad (2)$$

where α is constant, β is coefficient of regression, Y_1 is conventional bonds, Y_2 is Islamic bonds, X_1 is interest rates, X_2 is currency (USD/MYR) and e is error term

To analyze the data, definition of operational variable gives the measurement to do the research. In this research there are

two independent variables; there are interest rates and currencies and also dependent variables there are conventional and Islamic bonds. First, Interest rates are the interest that happened at capital market or financial market in one period and listed in Bank Negara Malaysia. Second, currency is the exchange rates of money between one country with the other country, in this study is the exchange rate of USD toward MYR or opposite.

Third, conventional bond is a bond represents a loan obligation of the bond issuer by the government, corporation and individual to the bondholder or investor. And finally, Islamic bond is a legal instrument that name for a financial certificate but can be seen as an Islamic equivalent of bond. The Islamic bonds usually call as *Sukuk*. *Sukuk* are securities that comply with the Islamic law and its investment principles, which prohibits the charging, or paying of interest.

Normality Test

Each variable regression model should be a normal distribution. This study tests the normality of variables using the Jarque-Bera test. Jarque-Bera test is a statistical test to determine whether the data is normally distributed, and to measure the Jarque-Bera test by looking for differences in skewness and kurtosis. Probability indicates the possibility of Jarque-Bera value exceeds the value observed under the null hypothesis. Small probability values tend to rejection of null hypothesis of normal distribution of data.

In this research also using classical assumption test, are; Autocorrelation Heteroscedasticity, and multicollinearity test. Autocorrelation is intended to identify whether there is a correlation between a state variable disturbance in a certain period with variable disturbance in other periods. Autocorrelation is the dominant symptom occurs in time series data, Gujarati (2003). Detection of deviations classi-

cal assumptions for autocorrelation can be seen in the value of Breusch-Godfrey serial correlation LM test. If Obs. R-squared value was not significant, it does not autocorrelation data.

Heteroscedasticity occurs if the variance disturbance term (μ_i) conditions explanatory variable value is not constant. The existence of heteroscedasticity causes the estimated regression coefficients to be inefficient. To detect heteroscedasticity using White's General Heteroscedasticity test (Gujarati, 2003). If the χ^2 value is not significant, data does not occurred heteroscedasticity. In addition, this study use time series data that show volatility in financial market data are difficult to avoid. Under these conditions, the behavior of time series data is tendency of have a constant variance error terms from time to time. Based on the fact that it time series data contains elements heteroscedasticity, we test the heteroscedasticity use ARCH-LM test.

Multicollinearity is a very strong relationship between the explanatory variables in the regression model. Multicollinearity resulting estimates produced becomes less precise (see Gujarati, 2003). This multicollinearity can be detected by high-value determinations, a high F -statistic, and low t -statistic. It also can be detected by the correlation coefficient matrix between variables was high (> 0.8). If the above is found it is necessary to do auxiliary regression, Rule of thumb suggests, that multicollinearity may cause problems if coefficient determination obtained from

the auxiliary regression is greater than the overall determination coefficient.

RESULTS DISCUSSION

This chapter discusses the descriptive analysis, the diagnostic tests including normality, autocorrelation, multicollinearity and heteroscedasticity toward conventional and Islamic bond. This chapter also analyzes data by using multiple regressions and GARCH model upon conventional and Islamic bonds. Finally, this chapter presents the research findings.

Descriptive Analysis and Normality Data

The descriptive analysis shows that there are positive mean of *SOCB*, *SOIB*, Interest and Currencies which is 21.6661, 22.4561, 1.0768 and 1.3032, respectively. The median of *SOCB*, *SOIB*, Interest and Currencies also show the same trends as mean. Standard deviation is to measures of variability equal to the square root of the variance. From the descriptive analysis standard deviation for *SOCB*, *SOIB*, Interest and Currencies are 1.90642, 0.62018, 0.12271, and 0.05228, respectively (Table 1). The Interest skewness is positive at 0.536. It means the distribution has a long tail to the right. The mean of interest is greater than median. Besides, the *SOCB*, *SOIB*, Currencies skewness are negatively which -0.792, -0.527, and -0.1624, respectively. It means the distribution a long tail to the left. The mean of *SOCB*, *SOIB* and currencies are below than median.

Table 1: Test for Descriptive Analysis

| Statistics | <i>SOCB</i> | <i>SOIB</i> | Interest | Currency |
|--------------|-------------|-------------|----------|----------|
| Mean | 21.6661 | 22.4561 | 1.0768 | 1.3032 |
| Median | 22.3250 | 22.4900 | 1.0200 | 1.3350 |
| Maximum | 24.24 | 23.44 | 1.25 | 1.34 |
| Minimum | 17.95 | 20.88 | 0.91 | 1.17 |
| Std. Dev | 1.90642 | .62018 | .12272 | 0.05228 |
| Skewness | -0.792 | -0.257 | 0.536 | -1.624 |
| Kurtosis | -0.656 | 0.026 | -1.457 | 1.527 |
| Sum | 606.65 | 628.77 | 30.15 | 36.49 |
| Observations | 28 | 28 | 28 | 28 |

Source: Data calculation.

The Jarque-Bera test shows value probability from both of Jarque-Bera test not significant. The value of Jarque-bera probability test for equation 1 shown 3.320620 did not significant. The same result founded in equation 2 where value of Jarque-bera probability test 0.876871 did not significant too. It can be concluded that distribution data of growth of Islamic bond and conventional bonds is normal.

Effect Interest Rate and Currency to Conventional Bond

The estimation results of the data to analyze the effect of interest rates and currencies on conventional bonds in used multiple regression analysis as follows.

$$\begin{aligned}
 SOCB &= 69.86 - 5.35INTEREST \\
 t & \quad (4.088) \quad (-3.166) \\
 prob & (0.000) \quad (0.0004) \\
 \\
 & - 8.77CURRENCY \quad (3) \\
 & \quad (-2.570) \\
 & \quad (0.017)
 \end{aligned}$$

$$\begin{aligned}
 AdjR^2 &= 0.23 \\
 F &= 5.058 \\
 Prob(F) &= 0.014 \\
 DW-stat &= 1.638
 \end{aligned}$$

The computing device using Eviews 5 shows that coefficient of determination for this model is still very weak, amounting to 0.28, meaning that 28% of variation can be explained conventional bond interest rate and currency in the model equations and the remaining 72% explained by other variables outside the model, which is summarized in the error. Calculation results also show that this regression model has a calculated *F*-value of 5.057 is significant at the 1% confidence level. So, stated that all the independent variables included in the model have no effect jointly dependent variables can be rejected. That is, support that was all the independent variables i.e. interest rate and currency simultaneously

able to explain the dependent variable that is the value of conventional bonds.

Significance test results individually, as seen from the value of *t* statistics, shows that both variables significantly affect the value of the bonds of interest rate and currency. This is seen from the significant value of *t* statistics 1%. Because of the significant regression coefficient value means that the sign has a meaning. First, mark the negative coefficient for interest rate showed a negative association between interest rate with a conventional bond. The higher the level of interest rate the lower the total value of conventional bonds, the reverse. Regression coefficient of -5.35 indicates that if interest rates rise 1% will affect the decline in the value of conventional bonds amounting to 5.35%. Second, the negative sign is also produced by the currency, it also gives an indication that the negative relationship between the currency with a value of conventional bonds. Coefficient of regression of -8.77 shows that if the currency rates increased by 1% will affect the decline in the value of conventional bonds 0.0877%.

The paper also estimates the interest rate and currency to conventional bond using GARCH models. The estimation results show that the model has independent variables that jointly affect the value of conventional bond too, it can be stated that all independent variables are significant. In the other words, interest rate and currency have a significant impact on conventional Bond. Besides, the equations that describe a variant of the residual model also shows that all significant coefficients. This indicates the GARCH modelis appropriate.

The GARCH model estimation results of interest and currency on *SOCB* is as follows.

$$\begin{aligned}
 SOCB &= 70.267 - 5.29INTEREST \\
 z & \quad (1.741) \quad (-1.795) \\
 prob & (0.082) \quad (0.072)
 \end{aligned}$$

$$- 8.93CURRENCY \quad (4)$$

$$\begin{matrix} (-1.030) \\ (0.303) \end{matrix}$$

$$h_1 = 0.056 - 0.163\varepsilon_{t-1}^2 + 1.165 h_{t-1}$$

$$z \quad (1.571) \quad (-6.23) \quad (584.4)$$

$$prob(0.116) \quad (0.000) \quad (0.000)$$

$$AdjR^2 = 0.103$$

$$F = 1.620$$

$$Prob(F) = 0.196$$

$$DW-stat = 1.582$$

The results GARCH model estimation shows that the regression coefficient for variable interest rate and currency is negative, that means relationship to the conventional Bond contrary way. This condition is in accordance with the theory¹¹. The regression coefficient of -5.219000 variable interest rate which means that any increase in 100 % interest rate will lead to conventional bond fell -5.21 %. The regression coefficient for the currency is -8.926482, which means any increase in 100 %. it will lead to conventional bond falling value of -8.92 %.

Effect Interest Rate and Currency to Islamic Bond

To analyses the data and get effect interest rates and currencies to Islamic bonds used multiple regression analysis as follows:

$$SOCB = 17.55 + 0.830INTEREST$$

$$t \quad (2.836) \quad (1.536)$$

$$prob \quad (0.001) \quad (0.187)$$

$$+ 0.66CURRENCY \quad (5)$$

$$\begin{matrix} (0.537) \\ (0.596) \end{matrix}$$

$$AdjR^2 = 0.048$$

$$F = 1.688$$

$$Prob(F) = 0.205$$

$$DW-stat = 1.722$$

We can see that computational results using Eviews 5 show different results with the results to test the effect of interest and currency to conventional bond on the previous. Computational results showed no significant results. More clearly the results of calculations show that coefficient determination for this model is still very weak, amounting to 0.11, meaning that 11% of variation can be explain conventional bond interest rate and currency in the model equations and the remaining 89% explain by other variables outside the model, which summarized error in the error. The test result for regression of interest and currency on *SOIB* is as follows.

The calculation also shows that this regression model has a calculated *F*-value of 1.68, which indicates that all independent variables in the model do not jointly influence the dependent variable. Individual significance test using *t* statistics shows that these two variables do not significantly affect the value of the bonds of interest rate and currency.

The results of GARCH model estimation shows that the independent variables do not jointly affect the value of Islamic bonds. This means that interest rate and currency do not significantly influence Islamic bond. The equations that describe a variance of the residual model show that all coefficients are significant. This indicates that the GARCH model is appropriate. That this means for the case of Islamic bond that proved the theory of Islam prohibits interest, is supported by the existing data.

The GARCH model estimation results of interest and currency on *SOIB* is as follows:

$$SOCB = 15.30 + 1.104 INTEREST$$

$$z \quad (4668435) \quad (4.648)$$

$$prob \quad (0.000) \quad (0.000)$$

$$+ 1.038CURRENCY \quad (6)$$

$$\begin{matrix} (1.030) \\ (0.000) \end{matrix}$$

¹¹For the relationship between interest rate and bond markets, please read Brennan and Xia (2000).

$$h_1 = 0.387 - 0.288\varepsilon_{t-1}^2 - 0.488 h_{t-1}$$

| | | | |
|-------------|---------|---------|----------|
| z | (1.236) | (1.134) | (-0.554) |
| prob(0.217) | (0.257) | (0.580) | |

$$AdjR^2 = 0.103$$

$$F = 1.620$$

$$Prob(F) = 0.196$$

$$DW-stat = 1.582$$

Test of Classical Assumptions

This study tested the classical assumptions. The results show that the classical assumption of this study was free from autocorrelation and heteroscedasticity problem, but it does not pass to the multicollinearity. The table Breusch-Godfrey Serial Correlation LM Test interest, currency to *SOIB*, Breusch-Godfrey Serial Correlation LM Test interest, currency to *SOCB* shows value Obs*R-squared 0.542327 and Obs*R-squared 0.804416. It can look that the value of d is between under and upper boundary. It can be seen that has not any autocorrelation at the model.

Based on the table white heteroscedasticity test interest, currency to *SOIB* and White heteroscedasticity test interest, currency to *SOCB* shows that each value Obs*R-squared 6.007022 and Obs*R-squared 7.501350. It can be concluded that there is not any indication of homocedasticity or the regression model fulfills heteroscedasticity diagnostic. Furthermore, by using the ARCH-LM test in the search for the volatility of the data found that the Obs*R-squared interest rate and currency on *SOCB* is 0.000371 with probability of $\alpha = 0.9846$ or 98.46%. While the Obs * R-squared interest rate and currency against *SOIB* with probability equal to 0.450452 0.5021 or $\alpha = 50.21\%$. Thus we can say that is not statistically significant, so accept the hypothesis that means residual variance is constant or in other words the model does not elements of ARCH.

Based on the table auxiliary regression founded value of R-squared 0.741260, there is greater than both value R-squared regression interest, currency to *SOIB*

0.118961 and value R-squared 0.288071 regression interest, currency to *SOCB*. It can be concluded that there is any multicollinearity between independent variables.

CONCLUSION

The paper measured and analyzed the relationship between interest rates, currencies conventional bonds, and Islamic bonds. It used quarterly data of Interest rate and currencies which are provided by Bank Negara Malaysia, ranged from 2001 to 2008.

The analysis on Islamic bond (*SOIB*) showed that interest rates and currencies had no significant results. This provided additional support to the prohibition of interest in Islamic bond. The analysis on conventional bond (*SOCB*) suggested that currency and interest rate had significant effects on conventional bonds value.

Based on the aforementioned result, this paper suggests the some recommendation for improving future research. First, it is still possible to consider other independent variables in the model. Second, investors should consider the interest rates and currencies if they wish to invest in conventional bonds because these variables have significant impact on investor in deciding to trade conventional bonds. Third, the investors wish to buy Islamic bond should exercise it without considering interest rates and currencies, because all of practice in Islamic bonds are based on shariah that avoids interest and usury. Fourth, the researchers wish to conduct the future research especially in Islamic bonds should use other factors like inflation, demand supply, recession, etc. The investors who wish to invest in bonds, it is suggested to invest in Islamic bonds (*sukuk*) because this investment has a good prospect to develop economy to the future.

This research contains some limitations, mostly due to the small sample size. The sample only provided 28 periods quarterly and lack of previous study related with Islamic bonds. Besides that, in data analysis, researcher didn't separate the in-

terest rates and currencies that have the same value in long period. To get the best result, after analyzing the whole data that provided, it is better to analysis partially to find whether there is any relationship be-

tween interest rates and currencies upon growth of nominal conventional bonds if those variables (interest rates and currencies) have the same values each for periods.

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