RELATIONSHIP BETWEEN BOND AND STOCK MARKET PERFORMANCE IN MALAYSIA, SINGAPORE AND SOUTH KOREA

Phang Chia Yi

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RELATIONSHIP BETWEEN BOND AND STOCK MARKET PERFORMANCE IN MALAYSIA, SINGAPORE AND SOUTH KOREA

PHANG CHIA YI
(11031919)

This project is submitted in particular fulfillment of the requirements for the Corporate Master in Business Administration (CMBA)

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Statement of Originality

The work described in this Corporate Business Project, entitled "Relationship between bond and stock market performance in Malaysia, Singapore and South Korea" is to the best of the author's knowledge that of the author except where due references is made.

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(Date submitted)

(Student's signature)
Phang Chia Yi
11031919
ABSTRACT

RELATIONSHIP BETWEEN BOND AND STOCK MARKET PERFORMANCE IN MALAYSIA, SINGAPORE AND SOUTH KOREA

By Phang Chia Yi

This study aims to examine the relationship between bond and stock market performance in Malaysia, Singapore, and South Korea by using ordinary least square (OLS), correlation analysis, Augmented Dickey-Fuller (ADF) Unit Root, Johansen & Juselius (J&J) co-integration, Vector Error Correction Model (VECM), and Granger Causality test. The financial crisis will influence bonds and stock market performance. The findings of the study indicated that the bonds and stocks are positively related in Malaysia and Singapore but there is a negative relationship between bonds and stocks in South Korea. The results are important in order to determine the asset allocation by investors and portfolio managers. In addition, macroeconomic variables such as inflation rate, exchange rate, and interest rate have been used in the regression models to determine the impact on macroeconomic variables towards the bond and stock market performance. The most influential variables for the relationship between bond and stock market is exchange rate in Malaysia and Singapore. However, inflation rate is the most influence variable in South Korea for the period 2001 to 2012.

Keywords: Bond, stock, inflation rate, exchange rate, interest rate, Malaysia, Singapore, and South Korea.
ABSTRAK

HUBUNGAN ANTARA BOND DAN PRESTASI PASARAN SAHAM DI MALAYSIA, SINGAPURA, DAN KOREA SELATAN

Oleh
Phang Chia Yi


Kata Kunci: Bond, Saham, kadar inflasi, kadar pertukaran wang asing, dan kadar faedah, Malaysia, Singapura dan Korea Selatan.
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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The relationship between different assets are important for portfolio management such as bonds and stocks due their changes over time and create a need to update information for investment portfolio so that portfolio managers can determine the desired level of risk.

From a theoretical perspective, the relationship between bonds and stocks was treated as present value due the result of bonds and stocks are unexpected with the current situation. The relationship between bonds and stocks moves between positive and negative values in some markets. Johansson (2010) stated that the correlation is positive between bonds and stocks because the increasing of discount rate may lead to the prices for both assets decrease.

However, there are also some arguments that the relationship between bonds and stocks are negatively correlated. The “flight to quality” argument says that investors give out of their investment due to the current market situation which stated in the study of Johansson (2010). If the market situation is unstable, the investors will rearrange their investment and invest in more secure and stable market to gain higher return on investment (ROI). Investors are more concern on the return on their investment. They prefer to invest in the asset that involved higher return. The investment of asset that has higher return on investment involved higher risk level.
The relationship between bonds and stocks will increase during the periods of market turmoil in every country (Johansson, 2010). Besides, Patoda and Jain (2012) stated that the bonds and stocks are positively correlated during economic richness. Therefore, it is important for portfolio managers understand the market environment in decided on asset allocation and risk management of the portfolio.

1.2 Overview of the Bond and Stock Market Performance

Bonds are long term debt obligation that is secured by specified asset. Bond plays important role in the investment portfolio. By adding bonds in a portfolio can reduce the overall risk by diversifying the portfolio management.

According to Abdul Hamid (2000), bonds can be divided into three types, which are domestic bonds, foreign bonds and Eurobonds. Domestic bonds means the bonds issued in the domestic market home country and each market have different and unique name in each country so that investors will automatically know which market is referred to. The domestic bonds are called as treasuries in the United States, Gilts in the United Kingdom and Japanese Government Bonds (JDBs) in Japan. The second types of bond are foreign bonds which are the bonds that are issued by a borrower in a foreign market and in the currency of the foreign market traded in their country (Abdul Hamid, 2000). The foreign bonds are called as Yankee bonds in the United States, Bulldog bond in the United Kingdom and Samurai bond in Japan.
However, Eurobond means the bonds issued by the borrower in foreign markets and the currency is not necessary of the foreign market. Eurobond is the second largest debt market issuers by any nationality and sold to Europe, Asia, Australia and U.S (Abdul Hamid, 2000).

The Malaysian government bonds are called as Malaysian Government Securities (MGS) and the bonds issued by corporations are called as private debt securities (Abdul Hamid, 2000). According to Asian Bonds Online (2013), the government bonds in Singapore are called as Singapore Government Securities (SGS). There are three types of government bonds in South Korea which are central government bonds, central bank bonds and finance debentures.

Table 1.1: Size of the Bond Markets in Malaysia, Singapore and South Korea

<table>
<thead>
<tr>
<th>Year</th>
<th>Malaysia</th>
<th>Singapore</th>
<th>South Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>17.60</td>
<td>9.30</td>
<td>16.40</td>
</tr>
<tr>
<td>1996</td>
<td>23.30</td>
<td>10.80</td>
<td>17.40</td>
</tr>
<tr>
<td>1997</td>
<td>20.60</td>
<td>11.20</td>
<td>11.00</td>
</tr>
<tr>
<td>1998</td>
<td>33.80</td>
<td>14.80</td>
<td>31.30</td>
</tr>
<tr>
<td>1999</td>
<td>43.30</td>
<td>19.60</td>
<td>26.00</td>
</tr>
<tr>
<td>2000</td>
<td>45.20</td>
<td>21.20</td>
<td>23.00</td>
</tr>
<tr>
<td>2001</td>
<td>47.80</td>
<td>30.00</td>
<td>26.70</td>
</tr>
<tr>
<td>2002</td>
<td>40.70</td>
<td>31.70</td>
<td>20.90</td>
</tr>
<tr>
<td>2003</td>
<td>43.30</td>
<td>32.60</td>
<td>27.70</td>
</tr>
<tr>
<td>2004</td>
<td>42.00</td>
<td>33.70</td>
<td>26.90</td>
</tr>
</tbody>
</table>

Note: Ratio between local currencies of bond issuance to GDP

Table 1.1 shows the corporate bond that issuance as a percentage of local currency of bond issuance to GDP in Malaysia, Singapore and South Korea from the year 1995 until 2004. The value of ratio in small percentage means that there are a lot of corporate issuance
bonds. South Korea has many corporate bond issuances compared with Malaysia and Singapore in 1997 to 2004. However, Singapore has the largest corporate bond issuance in the year 1995 until 1996 compared to Malaysia and South Korea. The reason that the corporate bond in South Korea was more than Malaysia and Singapore is because of the financial crisis influence the stock market in South Korea. Therefore, there is a lot of corporate bond issuance in the year 1997 in order to stable the economy in South Korea.

The Kuala Lumpur Composite Index (KLCI) in Malaysian stock market is known as capitalization-weighted stock market index. The KLCI was launched in 1986 and functioned as an accurate performance indicator in Malaysia stock market. In addition, the Straight Time Index (STI) in Singapore stock market is also the capitalization of stock market index. The STI was average 2387 points where the highest is 3876 points in 2007 and the lowest is 1214 points in 2003. In South Korea, the stock market index was called as KOSPI. The average of KOSPI is 793 points where the highest is 2229 points in 2011 and the lowest is 93 points in 1981 (Trading Economics, 2012).

The bond and stock market performance relates to diversified portfolio management in order to reduce the risk of investment. However, the relationship between bond and stock market changed over time, especially during the financial crisis. The pattern of investment will change due to the crisis may affect the stock market performance. Investors might be changed their investment in the bond market due its more secure and low risk during the period of financial crisis.
1.3 Problem Statement

Before the market crash in 1997, most investors tend to invest in the stock market with the view that to gain maximum return. However, the investment allocation pattern is changing because the stock market is influenced by the financial crisis.

According to Abdul Hamid (2000), the capital market suffers the most during the Asian Financial Crisis in 1997. Although the private debt securities (PDS) were increased from RM 976 million in 1986 to RM 46.6 billion in 1997, it just covered around 17% of the bank loan in Malaysia. The crisis influenced all the market in Asian countries. The attacks on the exchange rate which directly influence the stock market in Asian countries. With the decreased in the stock market index, investor lose confidence and switch their investment to bond market because it is the most stable source of long term financing.

However, different period of research may have consistent different findings. The financial crisis in 2007, lead to different results of the relationship between bond and stock market performance. Therefore, research should be done to determine the relationship between bond and stock market performance. The findings are important for portfolio and risk managers in order to have better understanding about the current market performance on deciding asset allocation. The research question in the study is “what are the relationship between bond and stock market in Malaysia, Singapore and South Korea during the period 2001 to 2012”.
1.4 Research Objectives

The general objective of the study is to examine the relationship between bond and stock market performance in Malaysia, Singapore and South Korea from the year 2001 until 2012.

The specific objectives of the study include the followings:

i.) to examine the relationship between bond and stock market performance in the long run;

ii.) to determine the short term relationship between bond and stock market performance and

iii.) to determine the factors that influence bonds and stock market performance
1.5 Significant of the Study

The research seeks to enhance understanding the relationship between bond and stock market performance in Malaysia, Singapore and South Korea to determine the main factors that influence the performance. The financial crisis will influence bonds and stock market performance. The research seeks to enhance investors to know the current market situation about the bond and stock market performance in Malaysia, Singapore and South Korea so that investors can diversify their asset allocation during the current market situation.

Besides, the relationship between bond and stock market performance are important in order to determine the asset allocation by investors. A well-diversified portfolio consists of fixed assets (bonds) and equity (stocks). The correlation between bond and stock plays important roles in asset allocation in a portfolio diversification. The strategies of asset allocation of capital resources among the asset classes are bond and stock which it can be the most critical decision making in order to determine the investment performance.

The correlation can used as the determination of the level of diversification of a portfolio that may lead investor can expect as the correlation is the most important factor that use to determine the portfolio performance. It's also important in determining the bond and stock are co-integrated in the long run. The findings of this study have important for international investors as well as policy makers. The finding in the three countries which are Malaysia, Singapore and South Korea will effect on investors in their portfolio management.
Besides, the findings also have an impact on policy makers in these countries. The relationship between bond and stock market performance affects how governments can set up the financial market and the ability to issue debt. If the debt is related to the stock market, it will affect the performance of the bond market. This study also uses macroeconomic variables as the factors that influence the bond and stock market performance.

1.6 Conclusion

Since the early 1990s, the relationships between the bond and stock market performance of a portfolio management have been analyzed by many researchers. However, there are limited empirical findings relating macroeconomic variables to bond and stock markets for Asian countries. This study was different from earlier studies on bond and stock market performance relationship in two ways. First, this study uses macroeconomic variables such as inflation rates, interest rates and exchange rates. Second, this study used bond and stock market information from the period 2001 to 2012 in order to determine the newest information about the relationship between the two assets. Overall, this chapter describes about the overview of the bond and stock market performance. The rest of the paper is organized as follows. Chapter 2 is the literature review on the relationship between bond and stock market and the factors that influence the market performance of the two assets. Chapter 3 provides a description of the data and empirical methodology of this study. Next, chapter 4 reports the findings of the empirical tests of this study, while a brief conclusion is presented in chapter 5.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The general objective of the study is to determine the relationship between bond and stock market. There are many studies about the relationship between bond and stock market performance. The macroeconomic variables such as inflation rates, interest rates and exchanged rates are used to determine the possible factors that influence the relationship between bond and stock market performance in Malaysia, Singapore and South Korea.

This chapter discussed about the empirical studies that are related to the study in order to determine the relationship between bond and stock market performance with some variables such as inflation rate, exchange rate and interest rate. There are many studies done to examine the relationship between bond and stock with important economic variables such as inflation rate, exchange rate, GDP and industrial production index.

This chapter is divided into two sections: review on the relationship between bond and stock market performance and review of the macroeconomic variables that influence the bond and stock market performance.
2.2 Relationship between Bond and Stock Market Performance

Campbell and Ammer (1991) have used a log linear asset pricing framework and vector autoregressive models to test the movement of the bond and stock return with the variable such as stock dividends, short term real interest rate, inflation and excess return of bond and stock. They use monthly data from 1952 until 1962 in the country such as Unites States and the finding in their study was stock move with the inflation. They found that bond and stock is interrelated.

Besides, Kwan (1996) conducted a study about the individual stock and bond performance with the data from 1986 until 1990 on 702 corporate bonds that issued by 327 firms. The finding of the study was the relationship between individual bonds and stock is negatively related. The lead-lag between stock and bond depends on the firm size.

Lim, Gallo and Swanson (1998) analyzing the relationship between bond and stock market. They found that there is bidirectional causality exists between bond and stock markets. The result of the study was in line with Shillers and Beltratti (1992) and Solnik, Boucrelle and Le (1996). They found that the relationship between bond and stock and stated that stock prices will overreact the bond and this will influence the stock market in foreign countries.

Chordia, Sarkar and Subrahmanyam (2001) use VAR method in determining the relationship between bond and stock return in New York for the data period 1991 until 1998. They found that the return of bond and stock is negatively correlated during the crisis in 1997. They concluded that during a crisis, the trading volume of the stock market was reduced and
the government bond was increased. However, increased mutual fund will increase the trading in the stock market during normal periods.

The study of Stivers and Sun (2002) found that the stock and bond returns move in the same direction during the low stock market uncertainty. The data period analysis of the study was about 1988 to 2000. They found that stock and bond were negative relationship during the stock market uncertainty. However, stock and bond have little relationship when the period of the high market stock uncertainty. Stocks and bonds are the diversification in asset allocation for a portfolio management when the condition in the market is highly uncertain.

Cheng and Ryan (2002) was predicting the relationship between bond and stock market performance from 1948 until 2000 with the variables such as bond index, stock index, GNP growth rate and interest rate with the idea to create a new model on the correlation between bond and stock. They found that the stock was depended on the growth of earning and interest rate. When there is high interest rate and growth rate will lead to higher correlation between the return of bond and stock.

Chordia, Sarkar and Subrahmanyam (2003) used a vector autoregressive model (VAR) of liquidity and volatility in the stock and bond market. They use daily data from 17 June 1991 to 31 December 1998 to determine the stock and bond market's liquidity during the crisis. They found that the monetary expansion during crisis will increase the stock liquidity in the market. Many investors change their investment from stock in the bond market during the crisis in the year 1997.
Ogden (2003) used GDP, unemployment rate and the return of stock and bond data for some countries such as the United Stated, German, Japan and United Kingdom. The sample period in the study was from 1973 to 2000 to determine the relationship between stocks and bonds during seasonal times. He found that in the seasonal does affect the bonds and stocks return. The expected return on stocks and bonds varied over time.

Fang, Lim and Lin (2006) conducted a study about the volatility of the stock and bond market in Japan and U.S with multivariate GARCH model. The sample data in the research is daily data which started on 1 January 1988 until 13 February 2004. The result of the study is the bond and stock performance is positively correlated and bonds are the most popular in asset allocation in a portfolio diversification.

Some research on the relationship between stock and bond market in Malaysia and South Korea. The latest study was done by Ammer (2007) about the macroeconomic factors on the stock and bond in Malaysia and South Korea from 1995 to 2004. The macroeconomic factors in the study are interest rate, inflation rate and stock market performance. The finding of the study is an interest rate will influence the trading volume of stock and bond market. However, this study also determines the relationship between bond and stock market performance in Malaysia and South Korea but the sample period of the study from 2001 to 2012 which show the latest information about the bond and stock market performance.

Ali Ahmed (2009) has done a study about the correlation, co-integration and volatility between stock and bond market index in Malaysia from 1994 until 2004. He uses Johansen co-integration, Vector Error Correction Model and GARCH with the model of MDH to
determine the long term relationship between stock and bond market index in Malaysia. The finding of the study is there is a short term relationship but the bond cannot as the best explanation in the stock market. The conclusion of the study is that there is a positive correlation of bonds and stocks observe in the crisis and disaster period.

In addition, Padhi and Lagesh (2010) also determining the relationship between bond and stock market in India with the monthly data from December 2003 to March 2010 by using multivariate conditional volatility model. They use two tests which are Bollerslev constant conditional correlation model and DCC GARCH model in determining the correlation between the two assets in a portfolio. The finding is there is a relationship between stock and bond market in India.


Besides, Ameer and Othman (2010) conducted a study about the stock market reaction toward the bond issuance in the Malaysia banking sector. They use 15 financial institution time series data from 2001 to 2007 of the event study methodology to determine the relationship on KLCI. The result of the study is a stock market negative reaction to the bond issues by Malaysian banks. The abnormal resulting analysis by Ameer and Othman (2010) found that there is a different cash flow prediction to different type of the bond issues by the banks of valuation toward stock market with the lag on the abnormal return by determining the event.