

CHAPTER II

THEORITICAL BACKGROUND

2.1 Literature Review

2.1.1 Macroeconomy Indicators

As stated by Coleman and Tetey (2008), generally, the barometers for measuring the performance of the economy include real GDP growth rate, rate of inflation and interest rate. These three macroeconomic indicators actually related to each other. Researcher will analyze these relations first before discuss each indicators. This relations can be understood by theory of money demand.

The quantity theory of money holds as the supply of money increases relative to the demand of money (Hirt and Block, 2006). The demand of money is the amount of wealth that individuals, households, and businesses choose to hold in the form of money. Increase in real GDP raise the nominal volume of transactions and thus demand of money also increase (Frank and Bernanke, 2001). In the long run, the main influence on aggregate demand is the growth rate of the quantity of money. At times when the quantity of money increase rapidly, aggregate demand increases quickly and the inflation rate is high (Parkin, 2008). When the inflation rate is increase the interest rate tend to increasing as well. This relationship is called as *Fisher effect*.

This is the direct effect of money on stock prices sometimes referred to as the liquidity effect. As an increase or decrease in the money supply influences economic activity, it will eventually impact corporate earnings, dividends, and returns to investors (Hirt and Block, 2006).

2.1.1.1 Gross Domestic Product

Gross Domestic Product is the value of all final goods and services produced in the country within a given period (Frank and Bernanke, 2001). Economic growth is a sustained expansion of production possibilities measured as the increase in real GDP over a given period (Parkin, 2008). GDP can be distinguished to nominal GDP and real GDP. When GDP is calculated using the price from a base year, rather than the current year's prices it is called real GDP.

In this research, the economic growth rate expressed by the percentage change of GDP. To calculate this growth rate, according to Parkin (2008) the formula is :

$$GDP \text{ growth rate} = \frac{GDP \text{ current period} - GDP \text{ previous period}}{GDP \text{ in previous period}} \times 100$$

The growth rate of GDP tells how rapidly the total economy is expanding. This measure is useful for telling about potential changes in the balance of economic power among nations.

2.1.1.2 Inflation

Inflation is a persistent rise in the average of all prices (Parkin, 2008 : 471). Unpredictable inflation brings serious social and personal problems because it retributes income and wealth, and diverts resources from production.

Economists have long realized that during periods of high inflation, interest rate tend to be high as well (Frank and Bernanke, 2001). This relationship can be explained by *Fisher effect* which is the tendency for nominal interest rate to be high when inflation is high and low when inflation is low (Frank and Bernanke, 2001).

This tendency actually hurts stock market performance in two ways. First, it slows down economic activity, reducing the expected sales and profit companies whose sahres are traded in stock market. Lower profits, in turn, reduce dividends those firms are likely to pay their shareholders. Second, higher real interest rate reduce the value of stocks by increasing the required return for holding stocks, reducing the demand for stock and reduce the stock price as well.

2.1.1.3 Interest Rate

The interest rate is the amount of interest paid per unit of time expressed as a percentage of the amount borrowed (Samuelson and Nordhaus, 2002). Economists refer to the annual percentage increase in the real purchasing power of a financial asset as the real interest rate.

According to Rose and Marquis (2009), the rate of interest performs a number of important functions to support the smooth, efficient functioning of the economy :

1. It facilitates the flow of current savings into investments that promote economic growth.
2. Interest rates allocate the available supply of credit to those investment projects with the highest returns.
3. Adjustment in interest rate can bring the supply of money into balance with demand.
4. Interest rates are an important tool of government policy through their influence on the volume of saving and investment.

Higher interest rates provide incentives to increase the supply of funds, but at the same time they reduce the demand for those funds. Lower interest rates have the opposite effects (Rose and Marquis, 2009 : 119). High interest rate reduce the present value of future cash flows, thereby reducing the attractiveness of investment opportunities (Bodie *et al*, 2003).

As explained in their book, Rose and Marquis (2009) stated that as with bonds and other debt securities, there tends to be an inverse relationship between interest rates and corporate stock prices as well. If interest rates rise, debt instrumets now offering higher yields become more attractive relative to stocks, resulting in increased stock slaes and declining equity prices. Conversely, a period of falling interest rates often leads investors to

dump their lower-yielding bonds and switch to equities, driving stock price upward.

2.1.2 Stock Market Performance

Capital markets are the channels through which firms obtain financial resources to buy physical capital resources (Parkin, 2008: 400). Stock market is a place where the shares in publicly owned companies, the titles to business firms, are bought and sold (Samuelson and Nordhaus, 2002: 531). A market can be classified as primary and secondary. Primary markets are security markets where new issues of securities are initially sold. A secondary market is a market where securities are resold. In this research study, secondary markets are discussed.

Stock market performance can be figured out by indexes. Indexes allow investors to measure the performance of their portfolios against an index that approximates their portfolio composition. Each index is intended to represent the performance of stock traded in a particular exchange or market.

2.1.2.1 Market Liquidity

Liquidity is a measure of the speed with which an asset can be converted into cash at its fair market value. Liquid market exist when continuous trading occurs, and as the number of participants in the market becomes larger, price continuity increases along with liquidity. Because the

liquidity feature of financial assets tends to lower their risk, liquid assets carry lower interest rates than illiquid assets (Rose and Marquis, 2009 : 218).

The liquidity of the market can be measured by trading volume, frequency of trades, and average trade size. Bongdan *et al.* (2012) stated that trading volume measure is trying to capture the quantity of shares per time measure the depth dimension of liquidity, it is also an increasing function of liquidity. Stock with a higher volume are more liquid, they also have lower spreads. In this research study, the market liquidity measured by volume of transaction on an average monthly basis.

2.1.2.2 Market Capitalization

Market capitalization can be a tool to know the performance of capital market. Market capitalization is the total dollar market value of all of a company's outstanding shares. Market capitalization is calculated by multiplying a company's shares outstanding by the current market price of one share. The investment community uses this figure to determine a company's size, as opposed to sales or total asset figures (www.investopedia.com).

2.1.2.3 Market Return

According to investopedia.com, a return is the gain or loss of a security in a particular period. The return consists of the income and the capital gains relative on an investment. It is usually quoted as a percentage.

The return on an investor's portfolio during a given interval is equal to the change in value of the portfolio plus any distribution received from the portfolio, expressed as a fraction of the initial portfolio value (Fabozzi and Modigliani, 2009). Based on Hirt and Block's book (2006), the rate of return from an investment can be measured as :

$$\text{Rate of return} = \frac{(\text{Ending value} - \text{Beginning value})}{\text{Beginning value}}$$

2.1.3 The Relation Between Economic Condition and Capital Market

As written by Hirt and Block (2006), the direct effect of money on stock price sometimes referred to as the liquidity effect. The quantity theory of money holds that as the supply of money increases relative to the demand for money, people will make adjustment in their portfolio assets. The supply of money here is the M2 that includes cash, savings deposit, money market mutual funds, and other time deposits. According to investopedia, M2 includes assets that are highly liquid but not cash. A consumer or business typically won't use savings deposits and other non-M1 components of M2 when making purchases or paying bills, but it could convert them to cash in relatively short order. Indirect effect of money on stock prices would be its impact on gross domestic product and corporate profits. As an increase or decrease in the money supply influences economic activity, it will eventually impact corporate earnings, dividends, and returns to investors.

2.2 Review on Previous Researches

There are some researchers who have studied the impact of macroeconomy indicators to stock market performance. There are several researches related to the topic :

Raza *et al.* (2015) investigated the impact of foreign capital inflows and economic growth on stock market capitalization in Pakistan by using the annual time series data from the period of 1976 to 2011. They used autoregressive distributed lag bound testing cointegration approach, the error correction model and the rolling window estimation procedures to analyze the long run, short run, and behavior of coefficients. Results indicate that FDI, workers' remittances and economic growth have a significant positive relationship with the stock market capitalization in long run as well as in short run. It is also suggested that the economic growth is a better leading indicator for stock market capitalization in Pakistan.

Karam Pal and Ruhee Mittal (2011) examined the long run relationship between the Indian capital market and key macroeconomic variables such as interest rates, inflation rate, exchange rates and gross domestic savings (GDS) of Indian economy. Quarterly time series data spanning the period from January 1995 to December 2008 has been used. The unit root test, the co-integration test and error correction mechanism have been applied to derive the long run and short term statistical dynamics. They found that there is co-integration between macroeconomic variables

and Indian stock indices which is indicative of a long-run relationship. The capital markets indices are dependent on macroeconomic variables even though the same may not be statistically significant in all the cases.

Hussainey and Ngoc (2009) investigated the effects of macroeconomic indicators (the interest rate and the industrial production) on Vietnamese stock prices. They used monthly time series data from January 2001 to April 2008. This paper provides the first empirical evidence that there are statistically significant associations among the domestic production sector, money markets, and stock prices in Vietnam. It found that the industrial production has a positive effect on Vietnamese stock prices. They also found that the long and short term interest rate are not affecting stock price in the same direction.

Kyereboach-Coleman and Agyire-Tettey (2008) examined how macroeconomic indicators affect the performance of stock markets by using the Ghana Stock Exchange as a case study. Quarterly time series data covering the period 1991 – 2005 were used. Cointegration and the error correction model techniques are employed to ascertain both short and long run relationship. They found that macroeconomic indicators such as lending rates and the inflation rate affect on stock market performance. They found that lending rates from deposit money banks have an adverse effect on stock market performance and particularly serve as major hindrance to business growth in Ghana. Inflation rate is found to have a negative effect on stock

market performance, the results indicate that it takes time for this to take effect due to the presence of a lag period.

Table 1
Summary of Previous Researches

No.	Author & Journal	Title of Article	Variables Used	Results
1.	Raza <i>et al.</i> (2015) Journal of Chinese Economic and Foreign Trade Studies Vol. 8	<i>“Is stock market sensitive to foreign capital inflows and economic growth? Evidence from Pakistan”</i>	Economic growth, Foreign Direct Investment, Workers’ remittances	FDI, workers’ remittances, and economic growth have a significant positive relationship with the stock market capitalization. The economic growth is a better leading indicator for stock market capitalization in Pakistan.
2.	Karam Pal and Ruhee Mittal (2011) The Journal of Risk Finance vol.12	<i>“Impact of macroeconomic indicators on Indian capital market”</i>	Interest rates, inflation rate, exchange rates and gross domestic savings (GDS)	There is cointegration between macroeconomic variables and Indian stock indices which is indicative of a long run relationship.
3.	Hussainey and Ngoc (2009) The Journal of Risk Finance Vol. 10	<i>“The impact of macroeconomic indicators on Vietnames stock price”</i>	Stock prices, Domestic industrial production, Domestic interest rates, US	The industrial production has a positive effect on Vietnamese stock prices. The long and short term interest rates are not affecting

			macroeconomic indicators	stock prices in the same direction.
4.	Kyereboach - Coleman and Agyire – Tettey (2008) The Journal of Risk Finance vol. 9	<i>“Impact of macroeconomic indicators on stock market performance. The case of Ghana Stock Exchange”</i>	Lending rates Inflation rate	Lending rates from deposit money banks have an adverse effect on stock market performance and particularly serve as major hindrance to business growth in Ghana.

2.3 Hypothesis Development

Raza *et al.* (2015) in their research concluded that economic growth have a significant positive relationship with the stock market capitalization in long run as well as in short run. It is also suggested that the economic growth is a better leading indicator for stock market capitalization in Pakistan. So based that theory and previous research, the researcher can conclude that real gross domestic product growth rate give positive impact to stock market performance.

H1 : There is positive impact of real Gross Domestic Product growth rate to stock market performance.

In their book, Frank and Bernanke (2001), explained that inflation hurts stock market performance. It slows down economic activity, reducing the expected sales and profit companies whose shares are traded in stock

market. Lower profits, in turn, reduce dividends those firms are likely to pay their shareholders. Kyereboach-Coleman and Agyire-Tettey (2008) examined how macroeconomic indicators affect the performance of stock markets by using the Ghana Stock Exchange as a case study, their result concluded that Inflation rate is found to have a negative effect on stock market performance. Based on that theory and previous research, researcher conclude that the inflation rate have negative impact to the stock market performance.

H2 : There is negative impact of inflation rate to stock market performance.

According to Rose and Marquis (2009), as with bonds and other debt securities, there tends to be an inverse relationship between interest rates and corporate stock prices as well. Kyereboach-Coleman and Agyire-Tettey (2008) in their research found that lending rates from deposit money banks have an adverse effect on stock market performance and particularly serve as major hindrance to business growth in Ghana. Based on that reason, the researcher conclude that interest rates have negative impact to the stock market performance.

H3 : There is negative impact of interest rate to stock market performance.