

**VALUE VS GROWTH STOCKS RETURNS
ON THE INDONESIA STOCK EXCHANGE**

Study to Companies Listed on Indonesia Stock Exchange

2003-2013 Period



BACHELOR THESIS

Submitted as a requirement to complete Bachelor Degree (S1) Program
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MOTTO

Go for it! Only by great risks can great results be achieved.

Be the one who sets the course, the one who focuses on the right things
at the right time.

Unless you try to do something beyond what you have already mastered,
you will never grow.

Keep going and never quit! The champion is never quit.

*God is able to make all grace abound to you,
so that in all things at all times, having all that you need,
you will abound in every good work
2 Corinthians 9:8*

I dedicated this
To My Father God in Heaven that let me finish this thesis and bless it.
For my Father Ishak Daniel who has be with God in Heaven
and my Mom PriskilaMaryati who gives me unending support
through all times.
Also for my big family of Elma; Elma Natalia, Elma Katherina, Elma Yohan S.
Elma David Elkana, Elma Cynthia and Elma Ester Yosephine
who love me unconditionally,
always cherish and give colours to my life.
Thank you, I love you all

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I admit that there are still many lacks in this thesis. Therefore, I gladly accept all critics and advices in order to improve this thesis. At last, I hope that this thesis will contribute knowledges to public, civitasacademica, and for myself. Thank you very much.

Semarang, June 26, 2014

Elma Yesica

ABSTRACT

This research aims to determine the difference in returns between value and growth stocks. This research conducted on 30 stocks listed in Indonesia Stock Exchange 2003-2013 period. This research is conducted following previous researches such as Capaul et al (1993), Hoekjan (2011). This research use three ratio to classify the stocks, such as Price-to-Earnings ratio (P/E), Price-to-Book ratio (P/B) and Price-to-Cashflow ratio (P/C).

The portfolio formation method in this research is refers to return portfolio approach by Capaul et al (1993), Using this method, portfolios formed and determine its returns and Sharpe ratios. After that, ANOVA test will be performed to determine the difference in returns and Sharpe ratios for portfolio formation 2002 and 2007.

The results showed that there is no difference in returns among categories and Sharpe ratios in both time period of portfolio formation, for all ratios used in this research, during 2003-2013 on Indonesia Stock Exchange.

Keywords: value stock, growth stock, price-to-earnings ratio, price-to-book ratio, price-to-cash flow ratio, return, Sharpe ratio.

ABSTRAK

Tujuan penelitian ini adalah untuk mencari perbedaan return saham antara *value stocks* dan *growth stocks*. Penelitian ini dilakukan pada 30 saham yang terdaftar di Bursa Efek Jakarta periode 2003-2013. Penelitian ini dilakukan mengikuti penelitian sebelumnya, seperti penelitian Capaul et al (1993) dan Hoekjan (2011). Penelitian ini menggunakan tiga rasio untuk mengklasifikasikan saham, antara lain; *Price-to-Earnings rasio*, *Price-to-Book rasio* dan *Price-to-Cash flow rasio*.

Metode pembentukan portfolio dalam penelitian ini mengacu pada return portofolio oleh Capaul et al (1993). Dengan metode ini, portofolio dibentuk dan ditentukan return dan Sharpe rasionya. Setelah itu tes ANOVA dilakukan untuk mengetahui apakah ada perbedaan pada return dan Sharpe ratio untuk portofolio yang dibentuk pada tahun 2002 dan 2007.

Hasil penelitian menunjukkan bahwa tidak ada perbedaan pada return dan Sharpe ratio di kedua tahun pembentukan portofolio, untuk semua rasio yang digunakan dalam penelitian ini dan dalam periode 2003-2013 di Bursa Efek Jakarta.

Kata kunci: value stock, growth stock, price-to-earnings ratio, price-to-book ratio, price-to-cash flow ratio, return, Sharpe ratio.

TABLE OF CONTENT

APPROVAL.....	i
APPROVAL	ii
BACHELOR THESIS ORIGINALITY STATEMENT	iii
MOTTO	iv
ACKNOWLEDGEMENT	v
ABSTRACT	viii
ABSTRAK	ix
LIST OF TABLE	xv
LIST OF FIGURE AND GRAPH	xviii
APPENDIX	xix
CHAPTER I INTRODUCTION	1
1.1 Background	1
1.2 Problem Formulation	8
1.3 Research Objectives and Utility.....	9
1.3.1 Research Objectives	9
1.3.2 Research Utility	9
1.4 Thesis Structure	10
CHAPTER II LITERATURE REVIEW	12
2.1 Theoretical Review	12
2.1.1 Investment	12
2.1.2 Classification of Stocks	12

2.1.2.1 Value and Growth Stocks	14
2.1.2.1.1 Value Stocks	15
2.1.2.1.2 Growth Stocks	16
2.1.2.2 Classifying Stocks as Value or Growth	17
2.1.2.2.1 Price-to-Earnings	17
2.1.2.2.2 Price-to-Book	18
2.1.2.2.3 Price-to-Cash Flow	20
2.1.3 Value-Premium	22
2.1.3.1 Value Premium in Emerging Market	23
2.1.3.2 Value Premium in Recession	24
2.1.4 Stocks and Portfolio Returns	25
2.1.5 Sharpe Ratio	26
2.2 Previous Research	28
2.3 Research Framework	30
2.3.1 Separation of Value and Growth Stocks	30
2.3.2 Portfolio Construction of Value and Growth Stocks	30
2.3.3 Portfolio Returns of Value and Growth Stocks	30
2.3.3.1 Total Portfolio Return	31
2.3.3.2 Sharpe Ratio	31
2.3.4 Statistical Testing	31
2.4 Hypotheses	32
CHAPTER III RESEARCH METHODS	33
3.1 Research Variables	33

3.2 Research Population and Samples	35
3.3 Types and Data Resources	36
3.4 Data Collection Method	37
3.5 Data Analysis	38
3.5.1 ANOVA	38
3.5.1.1 Test of Homogeneity Variance	39
3.5.1.2 Test of Between-Subjects Effects	39
3.5.1.3 Post Hoc Test	39
3.5.1.4 Homogenous Subsets	40
3.5.2 Stock Formation	40
3.5.3 Hypotheses Testing	40
3.5.3.1 H1	40
3.5.3.2 H2	41
CHAPTER IV RESULTS AND ANALYSIS	43
4.1 Description of the Research Object	43
4.1.1 Description of the Research Variables	43
4.1.2 Description of the Research Population and Samples	44
4.2 Descriptive Statistics	45
4.2.1 Separation of Value and Growth Stocks	46
4.2.2 Portfolio Construction of Value and Growth Stocks	48
4.2.2.1 Portfolio Construction of Value and Growth Stocks in 2002	48
4.2.2.2 Portfolio Construction of Value and Growth Stocks in 2007	50
4.2.2.3 The Exclusion of Outlier Data	52

4.2.3 Portfolio Returns of Value and Growth Stocks	54
4.2.3.1 The Total Portfolio Return for Portfolio Constructed in 2002	55
4.2.3.2 The Total Portfolio Return for Portfolio Constructed in 2007	57
4.2.3.3 The Sharpe Ratio for Portfolio Constructed in 2002	59
4.2.3.4 The Sharpe Ratio for Portfolio Constructed in 2007	61
4.2.4 Statistical Testing	63
4.2.4.1 Test of Homogeneity Variance	63
4.2.4.1.1 Test of Homogeneity Variance for Portfolio Const in 2002.....	64
4.2.4.1.2 Test of Homogeneity Variance for Portfolio Const in 2007.....	65
4.2.4.2 Test of Between-Subjects Effects	67
4.2.4.2.1 Test of Between-Subjects Effects for Port Const in 2002	67
4.2.4.2.2 Test of Between-Subjects Effects for Port Const in 2007	70
4.2.4.3 Post Hoc Test	74
4.2.4.3.1 Post Hoc Test for Portfolio Constructed in 2002	74
4.2.4.3.2 Post Hoc Test for Portfolio Constructed in 2007	78
4.2.4.4 Homogenous Subsets	81
4.2.4.4.1 Homogenous Subsets for Portfolio Construction in 2002	82
4.2.4.4.2 Homogenous Subsets for Portfolio Construction in 2007	86
4.3 Hypotheses Testing	90
4.4 Interpretation of Results	92
4.4.1 The Difference in Portfolios Returns among Categories	92
4.4.2 The Difference in Portfolio Sharpe Ratio among Categories	93
CHAPTER V CONCLUSIONS.....	95

5.1 Conclusions	95
5.2 Theoretical Implications	96
5.3 Research Limitation	97
5.4 Suggestions	98
BIBLIOGRAPHY	100
APPENDIX	105

LIST OF TABLE

Table 2.1 Previous Research	28
Table 3.1 Operational Definiton of Variables	33
Table 3.2 List of Samples used in the Research	36
Table 4.1 Data to count P/E, P/B, P/C 2002	46
Table 4.2 Portfolio Construction Based on P/E, P/B and P/C in 2002	49
Table 4.3 Portfolio Construction Based on P/E, P/B and P/C in 2007	51
Table 4.4 Portfolio Construction 2002 after the exclusion	53
Table 4.5 Portfolio Construction 2007 after the exclusion	54
Table 4.6 TheAnnual Average Portfolio Returns Constructed in 2002	55
Table 4.7 The Annual Average Portfolio Returns Constructed in 2007	58
Table 4.8 The Sharpe Ratio of Portfolio Constructed in 2002.....	60
Table 4.9 The Sharpe Ratio of Portfolio Constructed in 2007.....	62
Table 4.10 Levene’s Test of Portfolio returns 2002	64
Table 4.11Levene’s Test of Portfolio Sharpe ratio 2002	65
Table 4.12Levene’s Test of Portfolio returns 2007	66
Table 4.13Levene’s Test of Portfolio Sharpe ratio 2007	66
Table 4.14Test of Between Subject Effects return P/E 2002.....	67
Table 4.15 Test of Between Subject Effects return P/B 2002.....	68
Table 4.16 Test of Between Subject Effects return P/C 2002.....	68
Table 4.17 Test of Between Subject Effects Sharpe ratio P/E 2002.....	69
Table 4.18 Test of Between Subject Effects Sharpe ratio P/B 2002.....	69

Table 4.19 Test of Between Subject Effects Sharpe ratio P/C 2002.....	70
Table 4.20 Test of Between Subject Effects return P/E 2007.....	71
Table 4.21 Test of Between Subject Effects return P/B 2007.....	71
Table 4.22 Test of Between Subject Effects return P/C 2007.....	72
Table 4.23 Test of Between Subject Effects Sharpe ratio P/E 2007.....	72
Table 4.24 Test of Between Subject Effects Sharpe ratio P/B 2007.....	73
Table 4.25 Test of Between Subject Effects Sharpe ratio P/C 2007.....	73
Table 4.26 Post Hoc Test Return P/E 2002	74
Table 4.27 Post Hoc Test Return P/B 2002	75
Table 4.28 Post Hoc Test Return P/C 2002	75
Table 4.29 Post Hoc Test Sharpe Ratio P/E 2002	76
Table 4.30 Post Hoc Test Sharpe Ratio P/B 2002	77
Table 4.31 Post Hoc Test Sharpe Ratio P/C 2002	77
Table 4.32 Post Hoc Test Return P/E 2007	78
Table 4.33 Post Hoc Test Return P/B 2007	79
Table 4.34 Post Hoc Test Return P/C 2007	79
Table 4.35 Post Hoc Test Sharpe Ratio P/E 2007	80
Table 4.36 Post Hoc Test Sharpe Ratio P/B 2007	80
Table 4.37 Post Hoc Test Sharpe Ratio P/C 2007	81
Table 4.38 Homogenous Subsets Return P/E 2002	82
Table 4.39 Homogenous Subsets Return P/B 2002	82
Table 4.40 Homogenous Subsets Return P/C 2002	83
Table 4.41 Homogenous Subsets Sharpe Ratio P/E 2002	84

Table 4.42 Homogenous Subsets Sharpe Ratio P/B 2002	84
Table 4.43 Homogenous Subsets Sharpe Ratio P/C 2002	85
Table 4.44 Homogenous Subsets Return P/E 2007	86
Table 4.45 Homogenous Subsets Return P/B 2007	87
Table 4.46 Homogenous Subsets Return P/C 2007	87
Table 4.47 Homogenous Subsets Sharpe Ratio P/E 2007	88
Table 4.48 Homogenous Subsets Sharpe Ratio P/B 2007	89
Table 4.49 Homogenous Subsets Sharpe Ratio P/C 2007	89
Table 4.50 Post Hoc Test for Portfolio Constructed in 2002.....	91
Table 4.51 Post Hoc Test for Portfolio Constructed in 2007.....	91

LIST OF FIGURE AND GRAPH

Figure 1.1 IHSG Graph	3
Figure 1.2 Development of The Market Index ASEAN Countries	8
Graph 4.1 Annual Average Portfolio Returns Constructed in 2002	57
Graph 4.2 The Annual Average Portfolio Returns Constructed in 2007	59

APPENDIX

Appendix 1.1 Data to count P/E, P/B, P/C for each Sample in 2007

Appendix 1.2 Monthly Returns of Portfolios Constructed in 2002

Appendix 1.3 Monthly Returns of Portfolios Constructed in 2007

CHAPTER I

INTRODUCTION

1.1 Background

Nowadays, investment has growth bigger in economic area. The investors and managers continuously invest their money in any kind of investment instrument. As we know, one of the investment instrument that becomes more popular is securities.

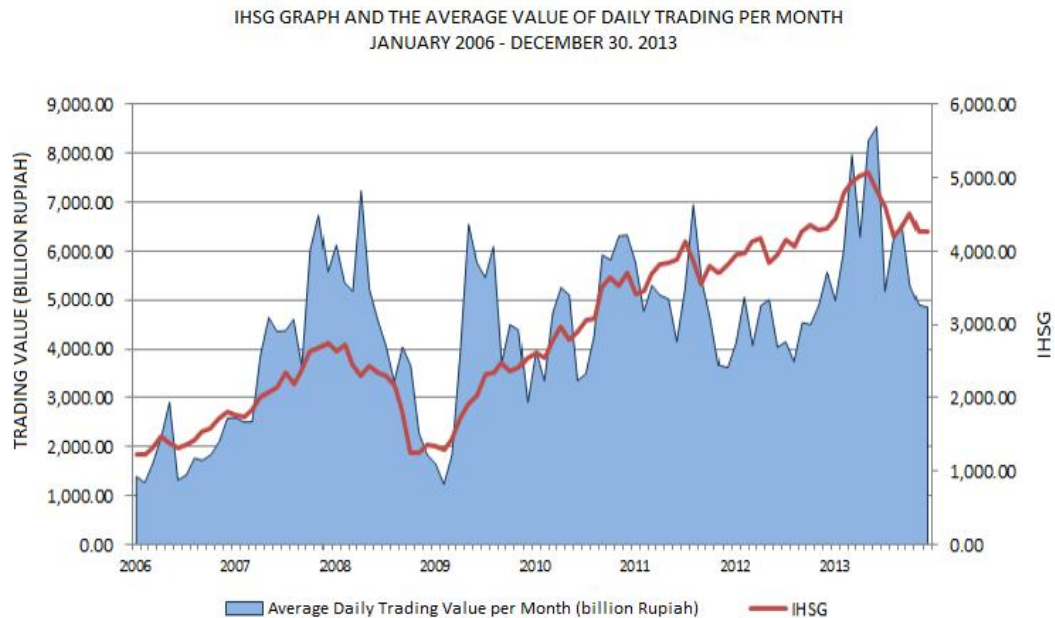
Securities that are traded in capital markets has bloomed to flood the markets since its traded by remote trading and online. The development of technology gives very important contribution to the increasing of investment in securities. Since its traded online, everyone can access it and doing the trading through any securities company they want, everywhere they are. It also happens in Indonesia. *Official website of Indonesia Stock Exchange* (n.d) said that since the government gave supports to the capital market in Indonesia through incentives and regulations, it grew rapidly. In early 2000 scripless trading system was introduced for the first time in Indonesia's Capital Market. Then in 2002 JSX (Jakarta Stock Exchange) started to implement the remote trading system. That made the trading activities became easier.

The government merged Surabaya Stock Exchange into Jakarta Stock Exchange (JSX) in 2007. As a result, JSX changed its name into Indonesia Stock Exchange (IDX).

IDX has modernized its trading operations by launching a new platform named "JATS-NextG" in March 2009. It replaced two trading systems which previously used at Jakarta and Surabaya Stock Exchange, which in 2007 merged to form IDX. With JATS-NextG, IDX was able to trade all its financial products, including equities, derivatives, mutual funds and bonds, on one single platform. The system also enabled significantly increased trading volume and had greater flexibility to accommodate the fast growing and dynamic Indonesian market."The aim of the new system is to meet the future needs of the Indonesia capital market and to maintain proper, efficient and orderly trading. To meet with future demands, the JATS-NextG is designed to handle up to 1,000,000 orders and 500,000 transactions per day, a much bigger capacity compared to the previous system that could handle 360,000 orders and 200,000 transactions per day. The new system also facilitates the trading of all financial products in one platform and enables an integrated distribution of trading information and surveillance on all products traded in the Exchange," said Mr. Erry Firmansyah, President Director of IDX. (NasdaqOMX, 2009)

The total amount of average daily trading in capital market Indonesia, can be shown in figure 1.1.

Figure 1.1



Source: OJK Capital Market Statistic December 2013, week 4.

The figure 1.1 shows the value of daily trading in Indonesia Capital market, written monthly since January 2006 until December 30, 2013 and the IDX Composite (formerly: JSX Composite, Indonesian: *Indeks Harga Saham Gabungan*, IHSG) that is an index of all stocks that trade on the Indonesia Stock Exchange.

In January 2006, the value of daily trading in Indonesia capital market was below 2,000 Billion rupiah, then increased continually until 2013, the value of trading around 5,000 billion rupiah in 2013. It also happened with the IDX composite index, in 2006, IHSG still around 1,000 to 2,000, but increased continually till its peak on 2013 reached amount 5,000, the value increased three times from the value in 2006.

In 2008, the Financial Crisis of US affected the whole world, including Indonesia. News of the downfall of one of the largest investment banks, Lehman Brothers, as a result of the housing credit crisis in the United States made a global stock exchange reeling. At the beginning of the event, European stock exchanges weakened to 5 percent in afternoon trading. In London, the price of shares of banking group HBOS fell to 20.2 percent. In Germany, Commerzbank shrank 11.7 percent and Deutsche Bank fell 8.24 percent. The Dow Jones Industrial Average (DJIA) fell 2.53 percent shortly after the opening of the market. In Indonesia, October 8, at 11 AM, Indonesia stock exchange did the suspension, a closure of all transactions on the trading floor. It was recognized as an unprecedented action in the history of the trading floor in Indonesia, after Russia had also done the same thing. IDX composite index (IHSG) had dropped to 1,111. But the crisis didn't stay long, apparently by mid-year the economy situation got healthier, later on we know that 2010 was one of the golden years of the Indonesia Stock Exchange. IHSG was recorded as the best growth market index in Asia Pacific that year. In 2012, the financial crisis tried to haunt the world capital markets again. Indications of the default or unable to pay the bonds issued by some European governments created panic for investors. Countries which were at risk of crisis at the time were Greece, Spain, Italy and Portugal. IHSG was still growing quite well although squeezed by the news. Despite the current trading value declined slightly. In 2013, Indonesia Stock Exchange consecutively broke the high record. But a bit disturbed by the condition Cyprus countries in Europe that considered as a potential crisis. In this year also trading hours on the

Indonesia Stock Exchange changed and Bapepam LK has merged into FSA (Financial Services Authority, Indonesian: OJK, Otoritas Jasa Keuangan). In late 2013, the value of rupiah weakened, it impact the value of trading and also the IDX composite index (IHSG) (Nityaryana, 2013).

Through the graph in the figure 1.1 we can know that the development of the capital market in Indonesia is quite good and well-regarded by investors. And because the main purpose of investment is to make a profit, either through shared stock returns or through capital gains from the difference between the stock prices. It is become our concern to analyze which stock or which type of investment will give greater return. To achieve superior gain, investors are applied various techniques and strategies. The allocation of securities can be classified into various manners. But one classification that derived its popularity decades ago and on which, as Bourguignon and De Jong (2003) acknowledge, investors and analysts do not seem to agree upon regarding superiority lies within the classification of value and growth stocks. Graham and Dodd (1934) were one of the first scholars to make a distinction between value and growth stocks (glamour stocks). The simplest definition of value and growth stocks is: *value stocks* are those stocks that trade at low prices compared to the fundamentals of the listed company (e.g. earnings, book value, cash flow, dividends) whereby *growth stocks* are those stocks that trade at high prices compared to the fundamentals of the listed company (Fama and French, 1993).

The topic about value stocks and growth stocks had wide spread all over the world and invites scholars to analyze and examine about it. Various scholars,

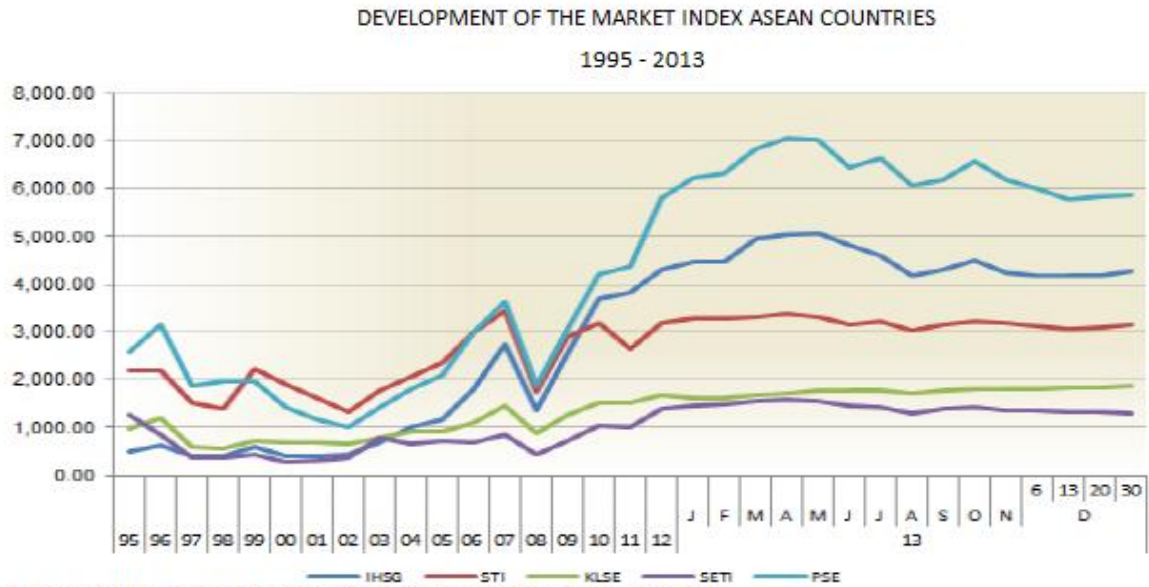
including Lakonishok et al (1994), Fama and French (1998; 2007), Bauman and Miller (1998) and Black and McMillian (2004; 2006), studied the subject of value and growth stocks in relation with return, risk, and overall performance. Results of these studies show that value stocks are likely to generate higher total return and higher outcomes on risk-adjusted measures than growth stocks both in national and international markets. However, the performance of value stocks versus growth stocks during times of crisis remains, to some degree, unveiled. The recent research about value and growth stocks during crisis done by Hoekjan (2011) the result shows that the value stocks provide a higher total return than growth stocks during crisis, on a global scale. However, the results are too small and statistically insignificant to insinuate the existence of a global value premium because the results obtained from individual countries are invalid to derive statistical meaning and conclusions.

The evidence of existence the value-growth phenomenon not only found in US, or European countries, but also internationally. Since Graham and Dodd (1934) made differentiation about value and growth stocks, scholars continuously examine this kind of stocks all over the world. Graham and Uliana found the evidence of value-growth phenomenon in South Africa. Capaul, Rowley, Sharpe (1993) do cross sectional between US and Japan, and found that value stocks outperform glamour stocks in years. A study focusing on the emerging market Singapore was performed by Yen et al (2004) the result was although value stocks have tendency to outperform growth stocks between 1975-1997, the value premium only significant for the first two years. And a recent research did by the

Brandes institute (2012) found that value premium is also evident in our neighbor country, Singapore, the value stocks outperformed glamour stocks by 13% for all-cap, annualized average 5 year return. Another recent study, performed by Gonenc and Karan (2003) did not observe value premium in Turkey. While growth stocks had the tendency to outperform value stocks b 0.38 to 4.87 percent return, the performance was not significant. Brown et al (2008) examined the Asian emerging markets and documented the existence of a value premium in Hong Kong by 0.72 percent, Korea by 0.42 percent and Singapore by 0.42 percent but a value discount in Taiwan of 1.26 percent.

Here we see a chance to gain greater return from our portfolio, since in Singapore found a value premium evident by 13% outperforming glamour stock since June 1980-June 2012 (Brandes, 2012). But also found a value discount, where growth stocks outperform value stocks of 1.26 percent in Taiwan. The figure 1.2 shows the development of the market index from 5 ASEAN countries; Indonesia (IHSG), Singapore (STI), Malaysia (KLSE), Thailand (SETI), and Philippine (PSE). In the 1995, IHSG was the lowest index in ASEAN, but since 2004, IHSG growth exceed Thailand and Malaysia, even surpassed Singapore after the Financial Crisis in 2007-2010 till now. An interesting phenomenon that IHSG rise dramatically after the crisis in 2007-2010, can be said that the capital market in Indonesia also have a high value and growth, and attractive enough for investors.

Figure 1.2



Therefore research on the phenomenon of the value premium fairly interesting to do in Indonesia Capital Market including the time during Financial crisis 2007-2010. Based on data, phenomenon and research gap that has found above, the title of this research is:

“Value vs Growth Stock Returns on the Indonesia Stock Exchange”

1.2 Problem Formulation

In the investment world, gain big profit is the primary goal. Securities that provide a higher return will attract more investors. Hence, based on previous studies, the phenomenon of value-growth stock is quite interesting to be explored further in Indonesia. Since the previous studies found a value premium in Singapore and a value discount in Taiwan. Then, the concern questions of this research are:

1. Is there any difference of portfolio returns among stock categories on Indonesia Stock Exchange?
2. Do value stocks have higher returns than glamour stocks on Indonesia Stock Exchange?
3. Is there any difference of portfolio Sharpe ratios among stock categories on Indonesia Stock Exchange?
4. Do value stocks have higher Sharpe ratios than glamour stocks on Indonesia Stock Exchange?

1.3 Research Objectives and Utility

1.3.1 Research Objectives

Appropriate to the problem of research and the concern questions of this research, then the objectives of this research are:

1. To analyze the difference of portfolio returns among stock categories.
2. To analyze the returns of value stocks and growth stocks on Indonesia.
3. To analyze the difference of portfolio Sharpe ratios among stock categories.
4. To analyze the Sharpe ratios of value stocks and growth stocks on Indonesia.

1.3.2 Research Utility

And the utility of this research as following:

1. Theory

To get an overview of the returns of value stocks and growth stocks on Indonesia Stock Exchange during the research period, and the risk premium return

earned per unit of total risk that measured by Sharpe ratio from each stocks, thus give further knowledge for academicians. Also to give support for the next research that related to this topic.

2. Practice

This research can give further information about return between value stocks and growth stocks in Indonesia. Thus, the information can help them to make decisions, choose investment and arrange their portfolio.

1.4 Thesis Structure

This research has structure as following:

Chapter I : Introduction

This chapter discuss about the background of evidence value premium phenomenon in global areas that become foundation to this research, the problem formulation, research objectives and utility, also thesis structure are discussed in this chapter.

Chapter II : Literature Review

The literature review start with the definition of investment and the term “investment” in this research are concern about. Then discussing the classification of stocks and the definition of value and growth stocks. Also the theory about multiples of classification of stocks that is used in this research. Moreover, the performance of value and growth stocks reviewed based on former research did

by scholars around the world. The research framework and hypothesis also discussed in this chapter.

Chapter III : Research Method

In this chapter, the research variables and the operational definition, the population and sample, types and data sources, data collecting method, and analysis method are discussed.

Chapter IV : Result and Analysis

This chapter will discuss about the description of sample research, result of statistic analysis and the interpretation of result.

Chapter V : Closing

Here discussing about the conclusion of this research and the limitation of this research, also the suggestion for further research that can be done.

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Investment

An investment is the current commitment of money or other resources in the expectation of reaping future benefits (Bodie et al, 2011). Riley and Brown (2011) define investment as the current commitment of dollars for a period of time in order to derive future payments that will compensate the investor for (1) the time the funds are committed, (2) the expected rate of inflation, and (3) the uncertainty of the future payments. The “investor” can be an individual, a government, a pension fund, or a corporation. Similarly, this definition includes all types of investment, including investments by corporations in plant and equipment and investment by individuals in stocks, bonds, commodities, or real estate. In all cases, the investor is trading a known dollar amount today for some expected future stream of payments that will be greater than the current outlay. This research concern to investment that usually done by individual investors who invest their money in a portfolio consist of stocks.

2.1.2 Classification of Stocks

In general, people consciously or unconsciously make classifications, which gives allowance to categorize similar entities in order to provide better understanding (Barberis and Shleifer, 2003). The principle of classification also

exists in the world of investing, in which investors pursue specific strategies in order to create increasable and sustainable returns (Graham and Dodd, 1934; Barberis and Shleifer, 2003; Black and McMillian, 2004). The principle of classification in the world of investment is defined as *style investing*. The preference of pursuing a specific style depends, as Bourguignon and De Jong (2003) argue, upon personal- or organizational characteristics as well as the economic behavior. The motivation of investors to get involved in style investing is explained by Barberis and Shleifer (2003). First, it gives a simplification of the decision-making procedure in order to process data more efficiently. Barberis and Shleifer (2003) give the example that a portfolio of ten stocks belonging to a certain style can be more efficiently tracked than 100 non-identical and independent stocks. Second, forming specific classes of individual securities comforts towards the appraisal and examination of the performance more cautiously. Third, it proliferates and upsurges the management and control of the overall risk for investors more efficiently (Barberis and Shleifer, 2003).

Bauman and Miller (1997) contend that selecting an investment style is a preliminary necessity in the decision making practices of investment. According to Barberis and Shleifer (2003), the style investing approach share common characteristics. These characteristics can be based on legal (e.g., government securities), markets (e.g., large-cap securities), or fundamentals (e.g., commodities). Some style approaches have a permanent status (e.g., U.S. treasury securities) while others are of short duration (e.g., rail-road securities) (Barberis and Shleifer, 2003). In the stock market, various style investing approaches exists. The list of

style investing approaches is long since it only takes two opposing entities sharing same characteristics to create a style approach. However, there are some popular styles to be recognized in the stock markets that each has its proponents and opponents. Popular style categories include large-cap versus small-cap stocks and technology versus nontechnology stocks. Typically, investors and analysts have different beliefs which style provides the highest return on the short-term and long-term. However, one of the most popular and long-lasting styles in the financial markets, in which investors and analysts does not seem to agree upon, are the investments made in either value or growth stocks (Bourguignon and De Jong, 2003). The assumption can be made that the reason behind the popularity of these stock styles lies in the fact that value and growth function as an umbrella for other style investing approach. The style categories in large-cap versus small-cap stocks and technology versus nontechnology can all be classified as either value or growth. This means, for example, that large-cap and small-cap stocks can also be classified in value and growth stocks.

2.1.2.1 Value and Growth Stocks

Bourguignon and De Jong (2003) argue that investment managers always have a preference against one of these classes of stocks. However, value and growth stocks are, each other's opponents. One of the first scholars acknowledging this opposition was Graham and Dodd (1934). The definitions raised by Graham and Dodd (1934) were prominent, hence the definitions about value and growth stocks haven't changed till now.

2.1.2.1.1 Value Stocks

According to Graham and Dodd (1934), value stocks are stocks whose price-to-earnings, price-to-book, and/or price-to-cash flow is/are low relative to the market average. This definition is shared by multiple scholars (see e.g., Capaul et al, 1993; Lakonishok et al, 1994; Fama and French, 1998; Bourguignon and De Jong, 2003; Chan and Lakonishok, 2004; Cahine, 2008; Athanassakos, 2009). Graham and Dodd (1934) document that this exaltation is due to poor performance in the past in which the expectation arises that this performance will continue in the future. However, poor performance does not have to refer in particular towards default. It could also be a signal that the company reached its maturity in which the company's growth becomes stable and does not give any indication anymore of excessive growth that investors expect or do not have (profitable) investment opportunities within a particular year (as compared to competitors). These value stocks are, 'out of favour' by investors. While Graham and Dodd (1934) argue that stocks become value stocks due to poor performance or maturity and stability, Fama and French (1998) assume that 'value' companies are in distress and are therefore trading at low prices. The assumption of distress was also acknowledged by Athanassakos (2009). These scholars suggest that, besides distress, other factors such as high financial leverages, overcapacity, and uncertainty in future earnings make them 'out of favor' by a large group of investors.

2.1.2.1.2 Growth Stocks

Growth stocks are generally defined as those stocks that are trading at high prices relative towards a stock's fundamentals (e.g. earnings, book value, cash flow and dividends) (see e.g., Graham and Dodd, 1934; Capaul et al, 1993; Fama and French, 1998; Bourguignon and De Jong, 2003). Growth stocks are characterized as those stocks whose earnings expectation and growth rates are substantially higher than the market averages and continuous to raise further (Bourguignon and De Jong, 2003). These stocks, in which investors believe in a continuous rise, are referred to as growth (also called glamour) stocks. Recently, Beneda (2002) defines growth stocks as those stocks from which companies have future capital appreciation that are higher than market averages. Investors pursuing this type of stock are defined as *growth investors*. These growth stocks have the tendency to be extremely popular in the market due to the (potential) creation of innovative products and grasping market opportunities. Investors expect that returns of growth stocks can be obtained when the market value of those companies rise further (Bourguignon and De Jong, 2003). According to Bourguignon and De Jong (2003), growth investors are selecting companies for the long-term based on the expectation that companies are likely to change structurally while value investors are selecting companies for the short-term in order to benefit from possible price momentums. This assumption contradicts the arguments as proposed by Graham and Dodd (1934).

Capaul et al (1993) argue that growth in earnings and/or market share does not create added value unless the expectation arises that this growth result from

aberrantly gainful investment opportunities. Nevertheless, the majority of scholars defines and classifies stocks as either value or growth by using price-ratios. By meaning of scholars it is usual and considered to make sense to use price-ratios as a classification tool to separate stocks into value and growth (Hoekjan, 2011).

2.1.2.2 Classifying Stocks as Value or Growth

There are various ratios exist that could be used to classify stocks as either value or growth, but three ratios are mostly used by the scholars. These ratios are price-to-earnings (P/E), price-to-book (P/B), and price-to-cash flow (P/C) or equivalents of these ratios, such as market-to-book, book-to-market, earnings-to-price, and cash flow-to-price. According to Fama and French (1998), these ratios are commonly used since they produce stable results in returns. Cahine (2008) argues that using only one ratio, to classify stocks, would not generate appropriate results. Classifying stocks using various ratios would give more applicable results since ratios are analyzed from different perspectives. So, this research using these three ratios to classify stocks as value or growth stocks.

2.1.2.2.1 Price-to-Earnings

The P/E ratio, or price-earnings ratio, is the ratio of the current stock price to last year's earnings per share. The P/E ratio tells us how much stock purchasers must pay per dollar of earnings that the firm generates (Bodie et al, 2011). The P/E ratio is important since the comparison of earnings and stock price gives, according to Bragg (2007), universal representation of investor's perceptions

towards the eminence of a firm's earnings. Lower (higher) rates in P/E give the perception that the expectation on future earnings will also be lower (higher) (Bodie et al, 2009). Consequently, stocks with a low P/E ratio are characterized as value stocks and stocks with a high P/E ratio are characterized as growth stocks. According to O'Shaughnessy (2005) and Pinto et al (2010), a lower indication on the P/E ratio gives investors the intention that they are paying less for earnings and could therefore be a sign how expensive or cheap a firm's stock is compared to other stocks. A stock with a high P/E may indicate that investors believe and expect that the company's future earnings are decent and acceptable (O'Shaughnessy, 2005; Pinto et al, 2010). Athanassakos (2009) found that value portfolios classified on P/E have the tendency to perform superior and more consistently regarding the identification of value stocks and derive more consistent value premiums than value portfolios classified on P/B.

$$P/E = \frac{\bar{P}_y}{EPS_f} \quad (2.1)$$

Where \bar{P}_y is the daily average closing price of a company's stock in fiscal year y , EPS_f is Earning per share at fiscal-year-end (FYE) f .

2.1.2.2.2 Price-to-Book

The price-to-book ratio, or P/B ratio, is a financial ratio used to compare a company's current market price to its book value. It is also sometimes known as a Book-To-Market ratio (Wikipedia, n.d.). Investopedia (n.d) define P/B ratio as a ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value

per share. A lower P/B ratio could mean that the stock is undervalued. However, it could also mean that something is fundamentally wrong with the company. As with most ratios, be aware that this varies by industry. This ratio also gives some idea of whether you're paying too much for what would be left if the company went bankrupt immediately. Also known as the "price-equity ratio" (Investopedia, n.d.). Graham and Dodd (1934) explained this ratio as a measure of expected return on equity, Fama and French (1998) have used it as a ratio to separate value and growth stocks. The price-to-book ratio is often used as an equivalent towards the market-to-book ratio and book-to-market ratio. This P/B ratio is important since this ratio is assessed by investors to analyze whether the market price of a stock is in excess/lower than a company's book value (Bragg, 2007). A higher (lower) market price of a stock gives an indication that investors have assigned additional (no) value to a company (Bodie et al, 2009). The stocks that have a low P/B ratio are characterized as value stocks and stocks that have a high P/B are characterized as growth stocks. A low P/B ratio may indicate that the company experiences problems regarding the fundamentals of the company whereas a high P/B ratio may indicate that investors have high expectations regarding the (future) performance of the company (Bragg, 2007). Fama and French (1998; 2007) document that value portfolios classified on book-to-market (as an equivalent to P/B) provides significantly higher and more consistent returns than portfolios classified on other ratios. This result was also found by Bauman et al (1998). These scholars also argue that P/B is one of the most predominant explanatory variables towards cross-sectional returns as was performed in the United States.

Davis and Lee (2008) entirely devoted their research of value and growth stocks on the performance of ratios. These scholars contend that the best choice of classifying portfolios of value and growth stocks is by the usage of B/P (as an equivalent of P/B) compared to E/P and C/P (as equivalents to P/E and P/C) (Hoekjan, 2011).

$$P/B \text{ ratio} = \frac{\bar{P}_y}{TA_f - (IA_f + TL_f)] / Total\ Shares} \quad (2.2)$$

Where \bar{P}_y is the daily average closing price of a company's stock in fiscal year y , TA_f is total assets at FYE f , IA_f is intangible assets at FYE f , and TL_f is total liabilities at FYE f .

2.1.2.2.3 Price-to-Cashflow

The price/cash flow ratio is used by investors to evaluate the investment attractiveness, from a value standpoint, of a company's stock. This metric compares the stock's market price to the amount of cash flow the company generates on a per-share basis. This ratio is similar to the price/earnings ratio, except that the price/cash flow ratio (P/CF) is seen by some as a more reliable basis than earnings per share to evaluate the acceptability, or lack thereof, of a stock's current pricing. The argument for using cash flow over earnings is that the former is not easily manipulated, while the same cannot be said for earnings, which, unlike cash flow, are affected by depreciation and other non-cash factors (Loth, n.d.). The price/cash flow ratio (also called price-to-cash flow ratio or P/CF), is a ratio used to compare a company's market value to its cash flow. It is calculated by dividing the company's market cap by the

company's operating cash flow in the most recent fiscal year (or the most recent four fiscal quarters); or, equivalently, divide the per-share stock price by the per-share operating cash flow. In theory, the lower a stock's price/cash flow ratio is, the better value that stock is (Wikipedia, n.d.). According to Bauman et al (1998), P/C is not much used in previous studies to classify value and growth stocks. Chan and Lakonishok (2004) argue that the P/C has become extremely popular to classify value and growth stocks since it views the company's performance from a different point of cash in- and outflows as compared to earnings. The price-to-cash flow ratio is a ratio that measures the prospects of the market regarding a company's future health from a financial point of view (Bragg, 2007). Therefore, stocks with a low P/C ratio are characterized as value stocks and stocks with a high P/C ratio are characterized as growth stocks. The P/C ratio is considered as an additional ratio of the P/E since both ratios give indications regarding firms' current and future performances (Yen et al, 2004). This ratio is important since this ratio is used in the financial market to define a particular stock price that a company is expected to attain when it generates a certain cash flow level (Bodie et al, 2009).

$$P/C = \frac{\bar{P}_y}{NOCF_f / TS} \quad (2.3)$$

Where \bar{P}_y is the daily average closing price of a company's stock in fiscal year y , $NOCF_f$ is Net Operating cash flow at FYE f , and TS is total shares.

2.1.3 Value Premium

According to Capaul et al (1993) value premium or value-growth spread exists when value stocks outperform growth stocks within particular setting. This “value-effect” was first acknowledged by Graham and Dodd (1934) who examine value and growth stocks during the great depression. The value premium refers to the (positive) difference between the returns obtained from portfolio composed of value stocks and portfolio composed of growth stocks (Capaul et al, 1993). This premium is important since the outcome refers to whether investors are more contented in purchasing value stocks or growth stocks. The higher value premium, the more likely it is that investors give preference to value stocks due to the providence of higher returns compared to growth stocks (Bird and Casavvechia, 2007). When this figure lies around zero, it would indicate the indifference on the purchase of value or growth stocks. When this figure lies below zero it would indicate the existence of a value discount, which means that growth stocks provide higher returns than value stocks. When the value premium is significantly and substantially larger than the market return, then a potential bubble is shaped (Brown et al, 2008). It is logical to assume that beta is responsible for the difference in returns between value and growth stocks. However, most scholars study the value premium only by the difference in returns (by means of a t-test). Moreover, Petkova and Zhang (2005) also studied whether there is a beta premium observed within value stocks. These scholars found that the covariance between the beta and value premium is too small in order to

explain the magnitude of the difference in return between value and growth stocks.

2.1.3.1 Value Premium in Emerging Markets

Emerging countries or usually called as development countries are those countries who still in the process of improving the quality of all human lives, three equally important aspects of development are (1) raising people's living levels-their incomes and consumption levels of food, medical services, education, etc., through relevant economic growth processes; (2) creating conditions conducive to the growth of people's self-esteem through the establishment of social, political, and economic systems and institutions that promote human dignity and respect; and (3) increasing people's freedom by enlarging the range of their choice variables, as by increasing varieties of consumer goods and services (Todaro, 2000). Moreover, Todaro (2000) define emerging-country stock markets as equity markets used to finance private corporations in newly industrializing countries such as Mexico, Malaysia, and South Korea. Indonesia counted as rank 10 on the top 20 Emerging Markets issued by Bloomberg 2013.

Fama and French (1998) analyzed possible value premiums in 16 emerging markets. From the observation, found evidence of a value premium that was remarkably high (14.13 percent) compared to developed international markets. Chen and Zhang (1998) documented similar results when studied emerging markets in Asia. A more recent study performed by Huang and Yang (2008) also observed stable positive value premiums in the China stock market from 1998 to

2008. Another recent study by Gonenc and Karan (2003) did not observe value premiums in Turkey, while growth stocks had the tendency to outperform value stocks by 0.38 to 4.87 percent return, the performance was not significant. Brown et al (2008) examined the Asia emerging markets and documented the existence of a value premium in Hong Kong (0.72 percent), Korea (0.42 percent) and Singapore (0.42 percent) but a value discount in Taiwan (1.26 percent).

Since Brown et al (2008) found a value premium in Singapore, also the figure 1.2 shows in the 1995, IHSG was the lowest index in ASEAN, but since 2004, IHSG growth exceed Thailand and Malaysia, even surpassed Singapore after the Financial Crisis in 2007-2010 till now. An interesting phenomenon that IHSG rise dramatically after the crisis in 2007-2010, can be said that the capital market in Indonesia also have a high value and growth, and attractive enough for investors. Thus, the research about the existence of value-premium phenomenon is interesting to be done in Indonesia. Therefore, two hypotheses can be built as:

H1 : There are differences in Portfolio returns among categories in Indonesia Stock Exchange during 2003-2013.

2.1.3.2 Value Premium in Recession

Most studies do not discuss results obtained in time of recession and crises, in which stocks tend to decline. But, Lakonishok et al (1994) evidence that value stocks are generate higher returns than growth stocks in recessions. According to the National Bureau of Economic Research, four recessions occurred during 1969-1970, 1973-1975, 1980-1980, and 1981-1982 (Lakonishok

et al, 1994). In the worst months during the study, positive value premiums were observed from 1.10 to 1.80 percent. Huang and Yang (2008) also observed similar results. Brown et al (2008) documented that value premium during the recovery of the Asian financial crisis become larger, from 0.93 percent to 1.56 percent. Chan and Lakonishok (2004) found that value stocks were more suffering than growth stocks when the market or economy performed poorly. These results suggest that, while in general stocks decline during crises and recession, value stocks are expected to produce higher returns than growth stocks. Also during the Financial crisis 2007-2010, value stocks expected to give higher returns than growth stocks in Indonesia. Because of that, the time period of Financial Crisis 2007-2010 will be used as second time period of research portfolio formation.

2.1.4 Stocks and Portfolio Return

Bodie et al (2011) defines return on investment as the change in wealth resulting from this investment. This change in wealth can be either due to cash inflows, such as interest or dividends, or caused by a change in the price of the asset (positive or negative). According to Jogiyanto (1998) return is the result or outcome from the investment activity. Return divided into two form, that is realized return (return that actually happened) and expected return (return that expected by investors). Return for stocks consist of capital gain (loss) and yield (Jogiyanto, 1998).

Systematically, the calculation of stocks returns is:

$$R_i = \frac{P_1 - P_0 + D_1}{P_0} \quad (2.4)$$

Where R_i is the return for stock i , P_1 is Price for time 1 , P_0 is price for time 0 , D_1 is dividend for time 1 .

And for calculating portfolio return, this research use this formula:

$$\bar{R}_{py} = \sum_{i=1}^n w_i R_i \quad (2.5)$$

Where \bar{R}_{py} is the monthly portfolio return in month y , w_i is the individual weight of a stock in a portfolio, R_i is the return of stock i .

2.1.5 Sharpe Ratio

Sharpe ratio is a measure of the reward obtained per unit of risk. For an investment, reward is measured by the average excess return (return minus a riskless rate) and risk by the standard deviation of excess returns (Capaul et al, 1993). It seeks to measure the total risk of the portfolio by including the standard deviation of returns rather than considering only the systematic risk summarized by beta. Because the numerator is the portfolio's risk premium, this measure indicates the risk premium return earned per unit of total risk (Bodie et al, 2011).

$$S_i = \frac{\bar{R}_i - \overline{RFR}}{\sigma_i} \quad (2.6)$$

Where \bar{R}_i is the average rate of return for portfolio i during a specified time period, \overline{RFR} is the average rate of return on risk-free assets during the same time period, this research use the BI rate as risk-free rate, and σ_i is the standard deviation of the rate of return for portfolio i during the time period.

The higher Sharpe ratio is, the better and higher the performance and return of the investment. Capaul et al(1993) found that in every case, the value index provided the best results. Moreover, each value index provided results superior to those of the corresponding market index (Capaul et al, 1993). Because of that, this research will evaluate whether value stocks in Indonesia have higher Sharpe ratio than growth stocks on Indonesia Stock Exchange during the time period of research. Therefore, two hypotheses can be built as:

H2 : There are differences in Portfolio Sharpe ratio among categories in Indonesia Stock Exchange during 2003-2013.

2.2 Previous Research

Table 2.1

Previous Research

Title / Researchers	Period	Country / Sample	Ratio	Result
“International Value and Growth Stock Returns” Capaul et al (1993)	1981-1992	US,UK,France, Germany,Japan,S witzerland	P/B	Value stocks outperform growth stocks on average in each country during the period studied.
“Contrarian Investment, Extrapolation, and Risk” Lakonishok et al (1994)	1963-1990	US	P/E P/B P/C	Value strategies yield higher returns because these strategies exploit the suboptimal behavior of the typical investor and not because these strategies are fundamentally riskier.
“Value vs Growth: The International Evidence” Fama and French (1998)	1975-1995	US and 12 major of EAFE (Europe, Australia and the Far East)	B/M E/P C/P D/P	Value stocks outperform growth stocks on 12 of 13 major markets.
“Evidence of a Value-growth	1987-1996	South Africa	P/B	1987-1992 growth stocks outperform value stocks,

Phenomenon on The Johannesburg Stock Exchange” Graham and Uliana				but in post-1992, value stocks outperform growth stocks.
“The Performance of Value VS Growth Stocks During The Financial Crisis” Hoekjan (2011)	2007-2010	US, UK, France, Germany, China	P/E P/B P/C	There exists a positive value-growth spread for at least two of the three price-ratios on which value and growth stocks are classified. However, the results are too small and statistically insignificant to insinuate the existence of a global value premium.
“Value VS Glamour : A Global Phenomenon” The Brandes Institute (2012)	1968-2012	24 countries including US,UK, Australia,Canada, France,Germany, Italy,Japan, Singapore.	P/E P/B P/C	Value premium is persistent for the world’s developed markets in aggregate and on individual country basis.

Source: Journals and Theses

2.3 Research Framework

2.3.1 Separation of Value and Growth Stocks

The stocks separated into value and growth stocks using three ratios, that are price-to-earnings ratio, price-to-book ratio and price-to-cash flow ratio, that already explained in literature review.

2.3.2 Portfolio Construction of Value and Growth Stocks

The portfolio construction held in two period, the first is portfolio construction in the beginning time period of research, in 2002 and then in the start of Financial Crisis, in 2007. The portfolio constructed by divided the samples into three groups of portfolio, the first, with the highest ratio, is classified as Growth, the middle group is classified as Medium, and the lowest ratios classified as Value.

2.3.3 Portfolio Returns of Value and Growth Stocks

After portfolio construction, portfolio return calculated by total portfolio return also calculating portfolio return per unit of risk using Sharpe ratio. The return of portfolio constructed in 2002 will be compared with the return of portfolio constructed in 2007 until the end time period of research, 2012.

2.3.3.1 Total Portfolio Return

For calculating portfolio return, this research using this formula:

$$\bar{R}_{py} = \sum_{i=1}^n w_i R_i \quad (2.5)$$

Where \bar{R}_{py} is the monthly portfolio return in month y , w_i is the individual weight of a stock in a portfolio, R_i is the return of stock i . Therefore, the weights of stocks within portfolios on this research are equal-weighted, to avoiding wrong indication of results (Black and McMillian, 2004).

2.3.3.2 Portfolio Return per Unit of Risk (Sharpe Ratio)

The portfolio return per unit of risk on this research, examined using Sharpe ratio. Which the outcomes of this measurement are called the risk-adjusted outcomes (Capaul et al, 1993).

$$S_i = \frac{\bar{R}_i - \overline{RFR}}{\sigma_i} \quad (2.6)$$

Where \bar{R}_i is the average rate of return for portfolio i during a specified time period, \overline{RFR} is the average rate of return on risk-free assets during the same time period, and σ_i is the standard deviation of the rate of return for portfolio i during the time period.

2.3.4 Statistical Testing

Then, the statistical testing used to examine the difference of portfolios returns, using ANOVA. Include the Levene's Test, Test of Between-Subjects Effects, Post Hoc Test and Homogenous Subsets.

2.4 Hypotheses

Based on the background of the problem, the problem formulation, research objectives, theoretical basis and previous research, as well as the research framework that has been outlined above, then the alternative hypothesis proposed in this study is as following:

H1 : There are differences in Portfolio returns among categories in Indonesia during the time period of research.

H2 : There are differences in Sharpe ratios among categories in Indonesia during the time period of research.

CHAPTER III

RESEARCH METHODS

3.1 Research Variables

The aim of this research is not to prove the causal relationship or influence something to something, but to analyze the existence of value premium in Indonesia Stock Market. Then, the variables used in this research are Price-to-earnings (P/E), Price-to-book (P/B) and Price-to-cash flow (P/C), which used to separate the stocks into value and growth stocks, and return of the portfolio.

Table 3.1

Operational Definition of Variables

Variable	Definition	Indicator	Scale
Price-to-Earnings (P/E)	The P/E ratio, or price-earnings ratio, is the ratio of the current stock price to last year's earnings per share (Bodie et al, 2011).	$\frac{\bar{P}_y}{EPS_f} = \frac{\text{ator}}{EPS_f}$ $\bar{P}_y = \text{the daily average closing price of a company's stock in fiscal year } y$ $EPS_f = \text{Earnings per share at fiscal-year-end (FYE)}$	Ratio
Price-to-Book (P/B)	Graham and Dodd (1934) explained this ratio as a measure of expected return on equity.	$\frac{\bar{P}_y}{\bar{B}_y} = \frac{\text{ator}}{[TA_f - (IA_f + TL_f)] / TS}$ $\bar{P}_y = \text{the daily average closing price of a company's stock in fiscal year } y$ $TA_f = \text{total assets at FYE}$ $IA_f = \text{intangible assets at Fiscal-year-end (FYE)}$ $TL_f = \text{total liabilities at FYE}$	Ratio

		TS = total shares	
Price-to-Cash flow (P/C)	The price / cash flow ratio (also called price-to-cash flow ratio or P/CF), is a ratio used to compare a company's market value to its cash flow.	$\frac{P}{C} = \frac{\overline{P}_y}{\frac{\text{1 share}}{\text{NOCF}_f / \text{TS}}}$ $\overline{P}_y = \text{the daily average closing price of a company's stock in fiscal year } y$ $\text{NOCF}_f = \text{Net Operating cash flow at FYE}$	Ratio
Return of Portfolio	Return of portfolio is the result or outcome from the investment activity, that gained from the average return of each stock that include in the portfolio.	$\overline{R}_{py} = \sum_{i=1}^n w_i \overline{R}_i$ $\overline{R}_{py} = \text{the monthly portfolio return in month } y$ $w_i = \text{the individual weight of a stock in a portfolio}$ $\overline{R}_i = \text{the return of stock } i$	Ratio
Sharpe ratio	Sharpe ratio is a measure of the reward obtained per unit of risk. For an investment, reward is measured by the average excess return (return minus a riskless rate) and risk by the standard deviation of excess returns (Capaul et al, 1993).	$S_i = \frac{\overline{R}_i - \overline{RFR}}{\sigma_i}$ $\overline{R}_i = \text{average rate of return for portfolio } i$ $\overline{RFR} = \text{average rate of return on risk-free assets, this research use the BI rate as risk-free rate}$ $\sigma_i = \text{standard deviation of the rate of return for portfolio } i$	Ratio
Value Stocks	According to Graham and Dodd (1934), value stocks are stocks whose price-to-earnings, price-to-book, and/or price-to-cash flow is/are low relative to the market average.	Stocks with the lowest P/B, P/E and P/C ratio.	Ratio
Growth Stocks	Growth stocks are generally defined as those stocks that are trading at high prices relative towards a stock's fundamentals (e.g. earnings, book value, cash flow and dividends) (Graham and Dodd, 1934).	Stocks with the highest P/B, P/E and P/C ratio.	Ratio

3.2 Research Population and Samples

Population on this research is all companies that listed in Indonesia Stock Exchange (IDX) during the time period 2001-2013. Then the samples taken from the population using purposive sampling method. Samples must fulfill these criteria: already listed in Indonesia Stock Exchange since 2000 and the data needed completely available during 2002-2013. The companies that are new-listed and delisted during time period of research aren't included. Fama and French (1993) argue that inclusion of financial institutions could provide biases when stating conclusions related towards the value premium since the leverages and financial multiples are not equally the same as for non-financial institutions. Due to this reason, financial institutions are excluded from the sample. Based on criteria above, 30 stocks are obtained as samples for this research. Table 3.2 presented the list of Stocks in Indonesia Stock Exchange used as samples in this research.

Table 3.2

List of Samples used in the Research

Code	Companies Name
AIMS	PT Akbar Indo Makmur Stimec Tbk
ASII	PT Astra International Tbk
BAYU	PT Bayu Buana Tbk
BIPP	PT Bhuwanatala Indah Permai Tbk
BNBR	PT Bakrie & Brothers Tbk
CENT	PT Centrin Online Tbk
FAST	PT Fast Food Indonesia Tbk
GMTD	PT Gowa Makassar Tourism Development Tbk
HERO	PT Hero Supermarket Tbk
INTP	PT Indocement Tunggul Prakarsa Tbk
KIJA	PT Kawasan Industri Jababeka Tbk
LAMI	PT Lamicitra Nusantara Tbk
LPLI	PT Star Pacific Tbk

LTLS	PT Lautan Luas Tbk
PANR	PT Panorama Sentrawisata Tbk
PNSE	PT Pudjiadi and Sons Tbk
RBMS	PT Ristia Bintang Mahkotasejati Tbk
RIMO	PT Rimo Catur Lestari Tbk
SAFE	PT Steady Safe Tbk
SDPC	PT Millennium Pharmacon International Tbk
SHID	PT Hotel Sahid Jaya International Tbk
SMDM	PT Suryamas Dutamakmur Tbk
SMDR	PT Samudera Indonesia Tbk
SONA	PT Sona Topas Tourism Industry Tbk
TIRA	PT Tira Austenite Tbk
TKGA	PT Toko Gunung Agung Tbk
TMPO	PT Tempo Inti Media Tbk
UNTR	PT United Tractors Tbk
WAPO	PT Wahana Phonix Mandiri Tbk
WICO	PT Wicaksana Overseas

Source: processed data

3.3 Types and Data Resources

Type of data that used in this research are secondary data, which is data that not obtained by researcher directly. Secondary data is a data compiled by bank data from institution or organization and published to public and data user. As said by Sekaran (2000), secondary data are company resources or archive, government publication, and industry analysis offered by media such as website, paper release, internet and other publication. Data used in this research are secondary data as follows:

- a. Historical prices data for each sample during the research period
- b. Earnings per Share (EPS) for each sample during the research period
- c. Total Assets for each sample during the research period
- d. Intangible Assets for each sample during the research period

- e. Total Liabilities for each sample during the research period
- f. Net operating cash flow (NOCF) for each sample during the research period
- g. Total shares for each sample during the research period
- h. BI rate as the risk-free rates during the research period

All the data are used to count Price-to-book (P/B), Price-to-cashflow (P/C) and Price-to-earnings (P/E) ratio, then to be categorized as the glamour (growth) stocks or value stocks, the return of each sample also the Sharpe ratio. Data that used in this research obtained from books, articles, and websites related to the topics which have been selected such as those financial reports which published in range 2002-2013.

3.4 Data Collection Methods

Data in this research are collected by following methods:

1. Documentation

Documentation performed by data collection from bank data like Indonesia Stock Exchange Corner or by downloading data objects via websites. Websites used as source of this research are as follows:

- a. www.idx.com
- b. finance.yahoo.com
- c. Bloomberg
- d. Kemenkeu

2. Sampling Method

The samples aren't picked randomly. Sampling method used in this research is purposive sampling. It means samples are picked and designed to fulfill several requirements to be count as proper sample for the research. The number of samples is not specifically designed. It may be as many as possible as long as those samples meet the requirements.

3. Literature Study

Literature study used to collect data which couldn't obtained from financial reports or historical data such as theories, definitions, previous research, etc. The data obtained from books, journals, theses, websites, etc.

3.5 Data Analysis

This research use quantitative analytical methods. Quantitative analytical methods used in this research such as mathematics and statistical models. Mathematics models to determine the variables and statistical models to determine the characteristics of the data.

3.5.1 ANOVA

Analysis of variance is a method to test the relationship between one dependent variable (metric scale) and one or more independent variable (non-metric scale or categorical with more than two category) (Ghozali, 2013). This

research uses three ratios (P/E, P/B and P/C). Where each ratio divided into 3 portfolio categories, that is Growth, Medium and Value.

3.5.1.1 Test of Homogeneity Variance

Levene's test of homogeneity variance counted by SPSS to test the ANOVA assumption, that every group (category) independent variable has same (equal) variance. If Levene's test is significant in 0.05, we can reject the null hypothesis that said every group has same (equal) variance.

3.5.1.2 Test of Between-Subjects Effects

Test of Between Subject Effects is used to know whether the independent variable affect/ influenced the dependent variable and how much it affected.

3.5.1.3 Post Hoc Test

The difference of Portfolio return and Sharpe Ratio of each category can be shown in the output of Tukey test and Bonferroni test. The mean differences show the difference between mean of the categories, whether it is higher or lower. If it is positive, the mean of first category is higher, if negative, the mean value is lower. Then the Tukey HSD test and Bonferroni will show that they significant if p value is in 0.05 ($p < 0.05$). If the p value is higher than 0.05 ($p > 0.05$) the test result is statistically not significant.

3.5.1.4 Homogenous Subsets

Homogenous Subsets give additional information about sample size, average of dependent variable for each Category and the difference. If the variables are in one column of subset, it means there is no difference among variables.

3.5.2 Stock Formation

Stock formation period in this research is twice. The time interval between January 2002 and December 2013 is divided by two period of formation, first formation in 2002 with research period on 2003-2013 and second formation in 2007, the beginning of Financial Crisis in US with research period on 2008-2013.

3.5.3 Hypotheses Testing

3.5.3.1 H1: There Are Differences in Portfolio Returns Among Categories in Indonesia During The Time Period of Research.

To proceed, this research compute average returns of portfolios formed by calculating past stock performance. The formation period is two times, in the beginning of time period of research, 2002 and in the beginning of Financial Crisis, 2007. The stocks are first classified into Growth, Medium, and Value categories by its P/E, P/B and P/C ratio. So, there are three groups of categories. A stock is classified as Growth if its ratio is in the top one-third of the reference period and classified as Value if its ratio is in the bottom one-third of the reference period. A stock is classified as Medium if its ratio is in the middle one-third of the

reference period. So, the each Growth, Medium and Value category consists of 10 stocks. This happen the same for three groups, based on the P/E, P/B and P/C ratio.

The portfolios categories formed at two formation period then evaluated annually. For portfolios formatted in 2002 are evaluated annually over period of 2003-2013, for portfolios formatted in 2007 are evaluated annually over period of 2008-2013. After all the average returns in each category and group are calculated, ANOVA test will be performed to determine the difference between Portfolio returns among categories in Indonesia during the evaluation periods. H1 will be accepted if p value is significant in 0.05 ($p > 0.05$).

3.5.3.2 H2: There Are Differences in Sharpe Ratios Among Categories in Indonesia during The Time Period of Research.

To examine this possibility, this research uses the same classification technique as before. The stocks are first classified into Growth, Medium, and Value categories by its P/E, P/B and P/C ratio. So, there are three groups of categories. A stock is classified as Growth if its ratio is in the top one-third of the reference period and classified as Value if its ratio is in the bottom one-third of the reference period. A stock is classified as Medium if its ratio is in the middle one-third of the reference period. So, the each Growth, Medium and Value category consists of 10 stocks. This happen the same for three groups, based on the P/E, P/B and P/C ratio.

The portfolios categories formed at two formation period then evaluated annually. For portfolios formatted in 2002 are evaluated annually over period of 2003-2013, for portfolios formatted in 2007 are evaluated annually over period of 2008-2013. After all the average Sharpe ratio in each category and group are calculated, ANOVA test will be performed to determine the difference between Portfolio Sharpe ratios among categories in Indonesia during the evaluation periods. H2 will be accepted if p value is significant in 0.05 ($p > 0.05$).