CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

Department of Economics

BACHELOR THESIS

Economic Analysis of Samsung Electronics Co., Ltd Stocks

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BACHELOR THESIS ASSIGNMENT

Fryš Filip

Economics and Management

Thesis title

Economic Analysis of Samsung Electronics Co., Ltd Stocks

Objectives of thesis

Evaluate shares of Samsung electronics Co., Ltd with the purpose to find out the intrinsic value of a stock and subsequent investment recommendation.

Methodology

Fundamental and technical analysis methods are used in the practical section. For the literature review, methods of extraction, synthesis and others are utilized.

Schedule for processing

9/2012 literature review
1/2013 analysis
3/2013 thesis submission

The proposed extent of the thesis

35-45 pages

Keywords

Samsung Electronics Co., Ltd., fundamental analysis, technical analysis, technical indicators, investment recommendation

Recommended information sources

Security Analysis: Principles and Technique, Benjamin Graham, David L. Dodd, ISBN: 978-0-07-160313-3

Trhy cenných papírů, P. Musílek, ISBN: 80-86119-55-6

The Bachelor Thesis Supervisor

Procházka Petr, Ing., MSc, Ph.D.

Last date for the submission

March 2013

prof. Ing. Miroslav Svatoš, CSc.
Head of the Department

prof. Ing. Jan Hron, DrSc., dr.h.c.
Dean

Prague March 6. 2013

DECLARATION

I hereby declare that I have worked on my Bachelor Thesis titled "Economic Analysis of Samsung Electronics Co., Ltd. Stocks" solely and I have used the literature and sources listed in bibliography.

In Prague, 15th March 2013

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Filip Fryš

ACKNOWLEDGEMENT

I would like to thank to my supervisor Ing. Petr Procházka, MSc, Ph.D. for his expert suggestions, recommendations and assistance with my bachelor thesis.

Further acknowledgement belongs to my parents for supporting me in all possible ways and for giving me the opportunity of university education.

Economic Analysis of Samsung Electronics Co., Ltd. Stocks

Ekonomická analýza akcií firmy Samsung Electronics Co., Ltd.

Summary

The bachelor thesis "Economic Analysis of Samsung Electronics Co., Ltd. Stocks" focuses on fundamental economic analysis and its application on selected Korean company Samsung Electronics Co., Ltd. The thesis is divided into two main parts, literature review and practical part. The literature review consists of principles and methods of developing the theory of fundamental economic analysis. The practical part consists of practical application of the theoretical part on the company Samsung Electronics Co., Ltd. The overall outline about the economic situation and electronic industry around the world will be described. Afterwards, the focus will be on the calculation of the intrinsic value of stock. The findings will be summarized and recommendation whether worth to invest into the stock of the company will be carried out.

Keywords

Samsung Electronics Co., Ltd., Fundamental analysis, Economic analysis, Intrinsic value, Investment recommendation

Souhrn

Bakalářská práce „Ekonomická analýza akcií firmy Samsung Electronics Co., Ltd." se soustředí na ekonomickou fundamentální analýzu a její aplikaci na vybranou korejskou společnost Samsung Electronics Co., Ltd. První část se skládá z principů a metod vytváření fundamentální ekonomické analýzy. Druhá část se zaměřuje na praktické využití teoretické části na společnost Samsung Electronics Co., Ltd. Nejprve bude vypracován světový ekonomický přehled a přehled elektronického průmyslu. Další zaměření bude na výpočet vnitřní hodnoty akcie. Poznatky budou shrnuty a vypracováno investiční doporučení zda se vyplatí do akcií společnosti investovat.

Klíčová slova

Samsung Electronics Co., Ltd., Fundamentální analýza, Ekonomická analýza, Vnitřní hodnota, Investiční doporučení

Content

1. INTRODUCTION

In 2012, we have been witnessing the financial crisis, which according to someone is comparable to the crisis from the late 20th of the 20th century. Magazine Forbes reported[1] Warren Buffet who became rich by buying and selling securities, is 4th on the list of the richest people in the world. Warren Buffet is a follower of Benjamin Graham. Both prefer the stock picking based on common sense rather than on sophisticated approaches. Graham talked about his approach as a "smart investment". The thesis is built on these principles of economic analysis, especially the corporate fundamental analysis part.

Fundamental analysis is not designed for everyone. The target group are the investors, which are synonymous for "long-term investors" with aim to find such titles of market price significantly lower than the intrinsic value. W. Buffet said: "Price is what you pay, value is what you get."[2]

The question of future movement of stock prices daily employs thousands of individual investors, small traders, speculators and institutions trying to maximize the value of their portfolios. As a useful tool to evaluate the value of stock is economical analysis of company, and therefore the stock.

[1] Forbes, The World´s Billionaires [online] March [cit. 2013-03-07] available at: http://www.forbes.com/billionaires/

[2] GURUFOCOUS, "Price Is What You Pay. Value Is What You Get." What Warren Buffett Really Meant: The Principles Of Valuation, Historical Proofs - Part 1. [online] December [cit. 2013-03-07] available at: http://www.gurufocus.com/news/115975/price-is-what-you-pay-value-is-what-you-get-what-warren-buffett-really-meant-the-principles-of-valuation-historical-proofs--part-1

2. OBJECTIVES AND METHODOLOGY

2.1 Objectives

The main objective of the thesis is to familiarize the reader with the concept of economic analysis. The emphasis is on the valuation of stock and on the basic fundamental economical analysis calculations of the intrinsic value of the stock using different methods.

The theoretical part is focused on global analysis, analysis of sector and its integral parts and corporate analysis. The corporate analysis is devoted to models used for evaluation of stock and important ratios as a quick source of information about the financial situation of company.

In practical part these findings will be applied on the chosen company Samsung electronics Co., Ltd. The main purpose is to find out the intrinsic value of stock and to develop the investment recommendation.

2.2 Methodology

All information about Samsung Electronics Co., Ltd. are obtained from the annual financial statements of the company and other presentations freely available on the website of company. The information for the fundamental economical analysis are gathered from the literature sources available from the library of the Czech University of Life Sciences, paid OECD library and other sources. The theoretical sources are studied and the elaboration is processed to achieve the aims of the theoretical part.

Intrinsic value of the stock is calculated on the basis of different calculation methods in software Microsoft Office Excel 2007. Methods which were calculated include Dividend Discount Model (DDM) based on the Gordon model, P/E ratio, P/S value, P/BV value model and model Free-Cash-Flow-to-Equity (FCFE). Subsequently, these results are puts in average to obtain the intrinsic value of the stock. Required data of stocks for calculation intrinsic value are obtained mostly from internet source Yahoo.finance.com.

3. LITERATURE REVIEW

3.1 Intrinsic value of stock

The basic term in the stock market is the market price of the stock. Market price can be found from stock quotes on the internet, stock markets or from economic newspaper. Intrinsic value is the real value of the stock intended by inner factors without any relation to its market value.[3] Based on comparison of the intrinsic value and market value there are three options:

- intrinsic value > market value - undervalued stock
- Intrinsic value = market value - correctly valued stock
- Intrinsic value < market value - overvalued stock

When buying undervalued stock, future grow in its price is expected. The investor has the option to adjust business strategy with regards to expected grow in stock price. In case of buying overvalued stock, is expected future decline in its price is expected. In this case, investor adjusts its business strategy to gain profit on the decline of price or decide to not even invest in it. Therefore, fundamental analysis is trying to find the incorrectly priced instrument with subsequent use of this situation in our favour.

3.2 Fundamental economic analysis

Economic fundamental analysis is one of the basic approaches used for valuation of a security (stock, bond, shares) of a company and at the same time it is one of the most popular and the most widely used approaches during making investment decision. Its purpose is to find out such stock, which intrinsic value differs from the market price. Its value is determined by macroeconomic, microeconomic and also non-economic factors. It studies the company economic situation in-depth.

[3] GRAHAM B., DODD D.: Security Analysis: The Classic 1940 Edition. 2nd Edition. The Mcgraw-Hill Companies, Inc., 2002. ISBN 978-0-07-141228-5

Fundamental analysis can be divided into three parts:[4]

- Global fundamental analysis
- Fundamental analysis of sector
- Corporate fundamental analysis

3.3 Global fundamental analysis

Global fundamental analysis examines the economy as a whole. In the case of international investment foreign economy and market must be included as well. The main purpose is to determine wealth of economies and its future development, which can affect the value of selected stock.

Development of stock index is affected by several macroeconomic factors and variables. The real gross domestic product (real GDP) and international capital movements belong to group of factors with have a positive effect on growth of stock indexes. On the other hand interest rates, inflation and government debt are the factors with negative effects on the growth, and therefore they cause decreasing value of stock indexes. It is also important at which stage of economic cycle the economy is.

There are also other important circumstances beside these macroeconomic factors, which are related to political development of specific country, geographical location or social situation.

3.4 Fundamental analysis of the sector

Into the fundamental economical analysis is included fundamental analysis of the sector. It focuses primary on identification of characteristic factors, features and specifics of the sector in which the company operates. The analysis of the sector looses importance in comparison with the global or corporate analysis. It is because this analysis doesn't have such a great impact on the movement of stock quotes such as macroeconomic factors. The analysis of the sector we can divide into three groups:[5]

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[4] VESELÁ, J. - *Investování na kapitálových trzích.* 1. Vyd. Praha: ASPI, a.s., 2007. 278 p. ISBN978-80-7357297-6

[5] REJNUŠ, O. - *Finanční trhy.* Key Publishing, s. r. o., 2008. 222 p. ISBN 978-80-87071-87-8

- Sensitivity to the economic cycle
- Market structure
- Life cycle of industry

The industry specifications can stand for the volatility or stability of the profits and sales, therefore the contribution to the formation of the value of stock.

3.4.1 Sensitivity to the economic cycle

There are three groups of the sensitivity according to how is the sector influenced by the economic cycle:[6]

- Cyclical
- Counter-cyclical
- Neutral

Cyclical industry

In the stage of prosperity the companies reach the highest profits and on contrary low profits in recession. In recession consumers postpone the purchase of goods and services at a better time. Stock quotes in cyclical industry follow the course of the economic cycle. As an example, automotive industry, construction industry and clothing industry, etc. can be used.[7]

Counter-cyclical industry

In the stage of recession companies reach the highest profits and on contrary during economic prosperity their profits decrease. The same is with the stock quotes. Generally, it is possible to speak of inferior goods also known as "emergency goods". The example canned food and potatoes can be used.[8]

[6] VESELÁ, J.: Analýza trhu cenných papírů – 2. Díl – Fundamentální analýza., Praha: Oeconomica, 2003. ISBN 80-245-0506-1.
[7] MUSÍLEK, P.: Trhy cenných papírů., Ekopress, s. r. o., 2002, 290 p., ISBN 80-86119-55-6
[8] REJNUŠ, O.: Finanční trhy., Key Publishing, s. r. o., 2008, 223 p., ISBN 978-80-87071-87-8

Neutral industry

The companies in this industry are not too affected by this economic cycle. These are the companies that manufacture products with low price elasticity. It can be for example food producing industries, brewing and production of alcoholic and non-alcoholic beverages, cigarettes and toilet paper, etc.[9]

3.4.2 Market structure

Market structures can be divided into perfect and imperfect competition. Imperfect competition distinguishes monopoly, oligopoly and monopolistic competition. It is important to recognize the structure of the market because, in the various sectors, the structures can have a big impact on the prognosis of sales and profits of company.

Table 1: Characteristics of competition (Source: own processing based on: VESELÁ, J. - Investování na kapitálových trzích. 1. Vyd. Praha: ASPI, a.s., 2007. ISBN978-80-7357297-6

Market structure					
Type of Market	Number of Producers	Kind of Competition	Barriers to Entry	Another Name for Firms	Special Traits
Monopoly	One	None	No entry possible	Price-setter	Only one firm
Oligopoly	A few	Primarily non-price competition	Medium barriers (difficult entry)	N/A	Firms can collude and behave as a monopolist
Monopolistic Competition	Many	Non-price competition; price competition	Low barriers (easy entry)	Price-maker	Product differentiation and branding
Perfect Competition	A great many	Price competition	No barriers (free entry)	Price-taker	Perfectly elastic demand

From the table 1 it is evident that the most pleasant form of imperfect competition (ie. the form that is closest to perfect competition) is monopolistic competition.

3.4.3 Life cycle of industry

Life cycle of industry is generally divided into three phases:[10]

- Pioneer phase
- Phase of development

[9] MUSÍLEK, P.: Trhy cenných papírů., Ekopress, s. r. o., 2002, 293 p. ISBN 80-86119-55-6
[10] MUSÍLEK, P.: Trhy cenných papírů., Ekopress, s. r. o., 2002, 294-295 p., ISBN 80-86119-55-6

- Phase of stabilization

Pioneer phase

This phase is characterized by a sharp increase in demand, therefore profit. This profit attracts the competitors, who are due to this possibility of profit, entering a new market. The industry rapidly changes the relative position of individual companies. The stock quotes show high volatility. After some time the firms that survive get to the stage of development.

Phase of development

There is a certain stabilization of the industry but the competition is still high. The profits and sales are growing due to still relatively high demand and the companies are becoming stronger. The stocks of the companies no longer exhibit such high volatility, because the volatility of their profits decreases.

Phase of stabilization

For this phase is typical high stability of sales, profits and stock quotes. Dominant position is occupied by strong companies. Industry loses the ability to grow and begins to decline. Prices are going down and some companies begin to leave.

3.5 Corporate analysis

When calculating the intrinsic value we must always bear in mind that the calculated value is not objective and accurate. Two different analysts usually get different results of intrinsic values. The results depend on the used model. In addition, the intrinsic value is not constant but varies in time. These are the reasons why the calculation is only approximate[11]. Most of these models operate with the expected values and so their results are questionable. We are often forced to settle for only approximate calculations. There is a number of methods and models for the determination of intrinsic value. This thesis focuses on the basic ones:

[11] GLADIŠ. D. Naučte se investovat. Grada Publishing, a.s., 2005 , 51 p., ISBN:978-80-247-1205-5

- Dividend discount models
- Profit models
- Cash Flow models

3.5.1 Dividend Discount models (DDM)

Dividend Discount Model is the most popular and most widely used model to calculate the present value of stock. In DDM models the main variable in the dividend. The dividend is the part of the profit that is distributed to shareholders. The DDM was derived from the fact that the intrinsic value in each period is determined by dividends and market price in the next period, therefore the future market price must reflect expected future dividends[12]. DDM models:

- Stable model
- One-stage model
- Two-stage Model
- Three-stage model
- H-model

Models require knowledge about the company´s current stock price, growth patterns, future interest rates, time value of money. DDM models are further divided into more groups. The thesis emphasis to the models: the one-stage model with infinite holding and one-stage model with finite holding.

The first model is one-stage model with infinite holding

This model is very popular among analysts because it offers a very simple, fast and not very complicated method of calculating the intrinsic value. Often, according to its creator Myron J. Gordon from the University of Toronto is called the Gordon model.

[12] MUSÍLEK, P.: Trhy cenných papírů., Ekopress, s. r. o., 2002, . 306 p., ISBN 80-86119-55-6

$$V_0 = \frac{D_1}{r - g} \qquad \text{where,} \tag{1-1}$$

V_0 = intrinsic value

g = growth rate in perpetuity expected for the dividend

r = cost of equity

D_1 = value of the dividend

The second model is One-stage model with finite holding

$$V_0 = \sum \frac{D(1+g)^n}{(1+r)^n} + \frac{P_N}{(1+r)^N} \quad \text{where,} \tag{1-2}$$

V_0 = intrinsic value

g = constant growth rate in perpetuity expected for the dividend

r = constant cost of equity for company

D_0 = value of the dividend

P = stock price

N = period (number of years)

3.5.2 Profit models

As already mentioned, the ratios may help us in calculating intrinsic value. Unlike the dividend discount model, where the main variable is the dividend, not depending whether it is normal or expected value. The main variable of profit models is net profit. Profit models can be classified according to the ratios on which they are based. Selected models for this thesis are:

- P/E
- P/BV
- P/S

P/E ratio (Price-to-Earnings Ratio, Price/Earnings Ratio)

P/E is an indicator used in the stock market. P/E Ratio is very common indicator for analysts in their analysis, estimations and recommendations. It is possible to find this ratio in the business press, on the internet or in television on stock market news. It is caused due to the simple calculation and high informative value of the ratio. This ratio can be used as comparison of share of the company in the same industry of the sector. It expresses the ratio between the current market share price of the company and its EPS (earnings per share). P/E determines how much the investors are willing to pay for one dollar of profit and provides the idea about the stock, whether it is „cheap" or „expensive". Generally, the higher this ratio is the more expensive shares are and also more risky because of higher expectations.

P/E ratio = Market Value per Share / Earnings per Share (EPS) (1-3)

The formula (1-3) is used to calculate a simple PE (PE). Besides this simple P/E there exists normal PE (PE^N). This is a value that can help in determining the intrinsic value of the profit models. Based on Gordon DDM and PE_N the intrinsic value can be calculated. Intrinsic value is calculated as the product of PE_N and EPS_1, which is the earnings per share next year.

$$PE_N = \frac{EPS\ (1-b)}{r-g} * \frac{1}{EPS} = \frac{p}{r-g} \quad \text{where,} \tag{1-4}$$

b = dividend payout ratio

g = growth rate in perpetuity expected for the dividend

r = cost of equity

EPS = earnings per share

PBV ratio

P/BV is the ratio of historical average market price of stock to its historical average of book value. This criterion gives the insight to what times of the book value we pay in the market price. It indicates that the lower the value is, the more acceptable the price is. On the other hand very low P/BV can indicate problems in company related to the possible

bankruptcy. Again, this model is popular mainly for its simplicity of calculation and easy access to information that can be found in the annual financial statements of companies. The model is applicable to a company that does not pay dividends or a company is in loss.

$$P/B = \frac{P}{BV_0} \quad \text{where,} \tag{1-5}$$

P = market price

BV_0 = historical book value

Intrinsic value is obtained by multiplying the P/BV and current book value of stock (BV).

$$V_0 = P/BV * BV \tag{1-6}$$

P / S Ratio model

P / S ratio gives information on how many times the investor values the stock. Another advantage is that it can calculate the intrinsic value based on the P / S ratio. P / S ratio can be used for comparison with similar companies. The actual intrinsic value of the stock is calculated by dividing the historical market price of stock with the average historical level of earnings per share.

$$P/S = \frac{P_0}{EPS_0} \quad \text{, where} \tag{1-7}$$

P_0 = historical average of market price of shares

EPS_0 = historical average of earning per share

Intrinsic value (P) of the stock is obtained by multiplying P / S ratio by current EPS.

$$P = P/S * EPS \tag{1-8}$$

3.5.3 Cash flow models

Cash flow models are one of the basic methods of valuation. A cash flow for the period is the difference between income and expenditures, therefore it can be classified as an inflow or outflow of money.

DCF models can operate with different values of cash flow. In terms of its specification, we distinguish the following options, depending by which cash flows are determined:

- FCFF – Free Cash Flow to the Firm
- FCFE – Free Cash Flow to Equity
- DDM – Dividend Discount Model

In this paper is explained and applied the model of Free-Cash-Flow-to-Equity

Model FCFE – Free-Cash-Flow-to-Equity

Model Free-Cash-Flow-to-Equity establishes the intrinsic value of stock using data on the basis of Free-Cash-Flow, which remains to the company and shareholders as net profit after paying interest costs, loan payments, principals and coupon interest payments on issued bonds and after funding capital expenditures such a for example acquisition of new assets. FCFE is used when it is a business with stable financing structure and if FCFE can be calculated in advance with the requisite degree of reliability. FCFE has a higher explanatory power than the dividend. Its use appears to be justified in cases where companies are not negotiable on the capital market.

$$\begin{aligned} FCFE = \quad & + \text{Net Income} \\ & - \text{Net Capital Expenditure} \\ & - \text{Change in Net Working Capital} \\ & + \text{Net Debt} \end{aligned} \tag{1-9}$$

Intrinsic value is obtained by multiplying the $FCFE_1$ (expected FCFE) by number of outstanding share to get EPS and then substitute to equation (1-2).

3.5.4 Required rate of return (r)

The required rate of return is one of the fundamental data for all evaluation models that respect the time value of money. P / E ratio, P / BV ratio and P / S ratio and also models with operating cash flow would not work well without the required rate of return. It is therefore an irreplaceable tool for calculating the present value of future cash flows. The value includes also the inflation, the level of interest rates and the level of investment risk. Therefore, the accuracy and adequacy of the calculation of the required rate of return is vital.

Financial theory provides several different methods for calculating this value. In this thesis, will be calculated the required rate of return made on the basis of the CAPM and risk premium.

3.5.5 CAPM model

CAPM model was introduced in 1964 by William F. Sharpe as an extension of Harry Markowitz's 1959 treatise on Modern Portfolio Theory (MPT). In 1990, Sharpe shared the Nobel Prize in Economics with Harry Markowitz and Merton Miller for their contribution to the field of financial economics.

The CAPM is a very frequently used model for pricing an individual security of a portfolio. CAPM takes into account the sensitivity of the asset to market risk represented by Beta (β), the expected return of the market and the expected return of a risk-free asset represented mostly by government bonds. CAPM equation:

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f) \text{ where,} \quad (1\text{-}7)$$

$E(R_i)$ = expected return on the capital asset

R_f = risk-free rate of interest such as interest arising from government bonds

B_i = beta factor

$E(R_m)$ = expected return of the market

$(E(R_m) - R_f)$ = sometimes known as the *market premium* (the difference between the expected return of the market and the risk-free rate of return).

3.5.6 Beta factor (B_i)

Beta reflects the number describing the volatility of an asset in relation to the volatility of the benchmark that asset is being compared to. This benchmark is usually the overall financial market represented by stock index. Beta is calculated by using regression analysis.

$$\beta_a = \frac{\mathrm{Cov}(r_a, r_b)}{\mathrm{Var}(r_b)}, \quad \text{where,} \tag{1-2}$$

B_i = beta factor

r_a = rate of return of the asset,

r_b = rate of return of the portfolio benchmark

$cov(r_a,r_b)$ = covariance between the rates of return.

3.6 Samsung Electronics Co., Ltd.

3.6.1 Description of the Company[13]

Samsung Electronics Co., Ltd. with headquarter in Suwon; South Korea is a multinational electronics conglomerate. This company is subsidiary of the Samsung Group. Nowadays Samsung belongs to the world's largest information technology company measured by revenue since 2009[14]. In 2011 they had approximately 220,000 employees around the world. The major competitors are Japanese Sony and Panasonic Corporation and SK Hynix Inc. from South Korea. Other competitors of Samsung are recognised only in specific sector of electronic industry. Samsung Electronics Co., Ltd. has a wide range of products in its portfolio (DVD players, digital TVs, digital cameras, computers, colour monitors, LCD panels, printers, semiconductors such as DRAMs, static RAMs, flash memory, display drivers, communications devices ranging from wireless handsets and

[13]SAMSUNG, *Facts & Figures 2012* [online] [cit. 2013-02-26] available at: http://www.samsung.com/uk/images/aboutnew/2012_Facts-and-Figures.pdf

[14]FINANCIAL TIMES, *Samsung beats HP to pole position* [online] January 29 [cit. 2013-02-26] available at: http://www.ft.com/intl/cms/s/2/c48d477a-0c3b-11df-8b81-00144feabdc0.html#axzz2LeVR2JDS

smart phones to networking gear, microwave ovens, refrigerators, air conditioners, washing machines, etc.).

3.6.2 History highlights

In 1988, Samsung Electric Industries merged with Samsung Semiconductor & Communications to form Samsung Electronics. Samsung Electronics launched its first mobile phone in 1988, in the South Korean market.[15] In 2007, Samsung Electronics became the world's second-largest mobile-phone maker.[16] In 2009 become the world's largest technology company measured by sales.[17] The company has invested aggressively in research and development. The company has 24 research-and-development centres around the world. In the first quarter of 2012, the company became the highest-selling mobile phone company when it overtook Nokia, selling 93.5 million units compared to Nokia's 82.7 million units and became the largest smart phone maker.[18]

3.6.3 Performance by Region

Largest participation by income consists of business in America and Europe and together it counts for more than 50% of all sales and in money terms for more than 86 trillion KRW (see Graph 1 and Table 2).

Graph 1: Proportion of sales by region in 2011 (Source: own processing based on SAMSUNG, *Facts & Figures 2012)*

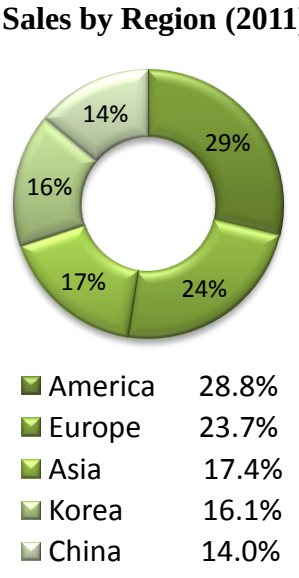


Table 2: Worldwide sales by region expressed in trillion KRW (Source: own processing based on SAMSUNG, Facts & Figures 2012

Sales by Region			(KRW trillion)
	2009	2010	2011
America	33,8	43,5	47,5
Europe	35,1	36	39,1
Asia	21,7	24,9	28,8
Korea	21,9	25,9	26,5
China	23,8	24,3	23,1

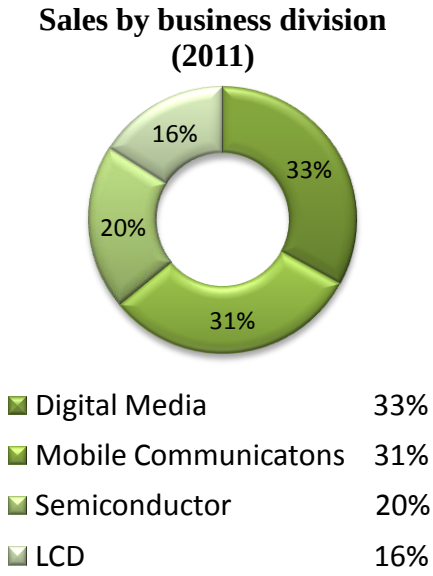
[15] http://www.mobiledia.com/phones/samsung/page1.html
[16] http://www.businessweek.com/stories/2007-12-26/motorolas-pain-is-samsungs-gainbusinessweek-business-news-stock-market-and-financial-advice
[17] http://koreatimes.co.kr/www/news/special/2010/01/133_59924.html
[18] http://techcrunch.com/2012/04/27/samsung-may-have-just-become-the-king-of-mobile-handsets-while-sp-downgrades-nokia-to-junk/

Sales in America and Europe are followed by sales in Asia and China. Korea accounts for 16,1% of all sales and with only 50 milion inhabitants creates the best ration of sale/population in region. The succes of this performance is caused by constant development of new products. In 2011 the R&D expenses were KRW 10.3 trillion which was equivalent to 6.2% of sales. The actual trend of business activity and hunger for technology all around the world is rising year after year.

3.6.4 Business performance by dividison

Samsung Electronics Co., Ltd. has a diverse business portfolio (see Table 2). This portfolio consists of Digital Media & Communications which encompasses the business units that manufacture and sell digital TVs, monitors, computers, mobile phones, communication systems, air conditioners, refrigerators and other appliances; and Device Solutions which includes businesses that specialize in semiconductor memories, system LSI, LED and other products.

Graph 2: Proportion of sales by business division (Source: own procession based on SAMSUNG, *Facts & Figures 2012)*



Thanks to the growth in demand of LED TVs, the division Digital Media & Communications had another successful year making Samsung Electronics Co., Ltd. the top selling TV brand for the sixth consecutive year. Sales from Mobile Communications also under the Digital Media & Communications, increased sharply by KRW 15.4 trillion thanks to sales of smart phones. On the other side semiconductor and LCD businesses were affected by slow market conditions from the second quarter of 2010, recording sales decrease in 2011 of 0.6 trillion KRW and 0.7 trillion KRW, respectively, compared to 2010.[19] The biggest sales were recorded under the division of Digital Media and the second biggest under Mobile communication (see Table 3).

[19] SAMSUNG, *Facts & Figures 2012* [online] [cit. 2013-02-26] available at: http://www.samsung.com/uk/images/aboutnew/2012_Facts-and-Figures.pdf

These finding will be used in the global and sectoral analysis. When examining the relevant factors in the global fundamental analysis, it is important to focus on the main indicators in the countries with the largest participation in creation of the profit Samsung Electronics Co., Ltd.

Table 3: Sales by division in trillions KRW (Source: own processing based on SAMSUNG, Facts & Figures 2012)

Business Performance by Division			(KRW trillion)
	2009	2010	2011
Digital Media	52,4	58,4	58,9
Mobile Communications	36,5	40,1	55,5
Semiconductor	26,8	37,6	37
LCD	25,8	29,9	29,2

4. PRACTICAL PART

4.1 Global fundamental analysis

4.1.1 Macroeconomic development in the world

The world economy is still recovering from the financial crisis in 2008. The economy shows the first signs of slowdown. Since the beginning of 2011 the economy output weakened because of the recession in the euro area. The same trend was reported in emerging market economies.

The negative spillover from the euro crisis is one of the factors behind the economic slowdown. Due to the adverse development dropped global activity and confidence in reducing long-term debts after the crisis. The doubts about past policy tightening appear more and more frequently.

The growth in OECD countries outside the euro area oscillated around a modest trend and still threatens that the high unemployment and weak confidence could limit economic activity. Overall, the stabilization of the economy remains uncertain and further development depends on the global cooperation in solving recent situation and setting the corresponding policy.

Table 4: World economic indicators (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

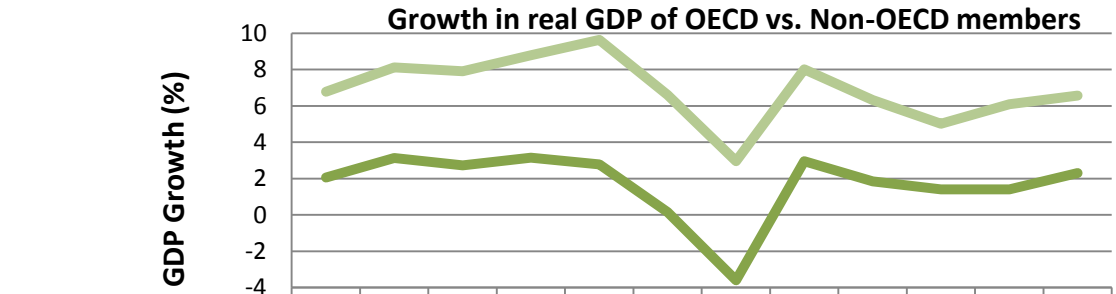
	Average 2000-2009	2010	2011	2012	2013	2014	2012	2013 Q4 / Q4	2014
				Per cent					
Real GDP growth[1]	1.7	3.0	1.8	1.4	1.4	2.3	1.0	1.9	2.5
United States	1.7	2.4	1.8	2.2	2.0	2.8	1.8	2.2	3.2
Euro area	1.3	1.9	1.5	-0.4	-0.1	1.3	-0.5	0.6	1.6
Japan	0.5	4.5	-0.7	1.6	0.7	0.8	0.3	2.0	-0.1
Output gap[2]	0.8	-2.7	-2.5	-2.9	-3.3	-2.9			
Unemployment rate[3]	6.5	8.3	8.0	8.0	8.2	8.0	8.1	8.1	7.9
Inflation[4]	2.5	1.9	2.6	2.1	1.7	1.9	2.0	1.7	2.0
Fiscal balance[5]	-2.8	-7.7	-6.5	-5.5	-4.6	-3.6			
Memorandum Items									
World real trade growth	4.9	12.8	6.0	2.8	4.7	6.8	3.2	5.9	7.2
World real GDP growth[6]	3.3	4.9	3.7	2.9	3.4	4.2	2.9	3.9	4.4

1. Year-on-year increase; last three columns show the increase over a year earlier.
2. Per cent of potential GDP.
3. Per cent of labour force.
4. Private consumption deflator. Year-on-year increase; last 3 columns show the increase over a year earlier.
5. Per cent of GDP.
6. Moving nominal GDP weights, using purchasing power parities.

Source: OECD Economic Outlook 92 database.

The world expected growth in real GDP for 2013 is at level 1,4% and 2,3% in 2014 which will result in positive effect on the growth of stock indexes, and therefore stock quotes (see Table 4). Average unemployment was at the end of 2012 at level of 8%, which is still high in comparison with the pre-crisis unemployment rate around 6,5%. The trend in unemployment rate will remains the same in near future. Developing countries led by China and India will record faster growth in real GDP relative to the U.S. and European Union countries. The faster growth of China and India can be explained because of their economy is mainly aimed on export. China belongs to Non-OECD members and its development. The slow growth can be expected in the OECD countries in next few years. (see Graph 3).

Graph 3: Growth in real GDP of OECD vs Non-OEDC (Source: own processing based on: OECD, OECD Economic Outlook No. 92)



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
OECD - Total	2,059	3,135	2,727	3,153	2,787	0,158	-3,603	2,961	1,849	1,402	1,405	2,310
Non-OECD Member Economies	6,790	8,115	7,918	8,793	9,644	6,607	2,965	8,014	6,316	5,015	6,088	6,572

4.1.2 Macroeconomic development in the USA

The USA is gradually recovering from the crisis from 2008. Economic activity has been expanding lightly over its potential. The labour market has shown only a slow recovery after 2008.

On the basis of past development, the Federal Reserve plane further measures to support recovery of the economy through a new round of long-term assets purchases, causing low levels of the federal funds rate in next two years. This step will have positive impact on the stock indexes.

Table 5: USA: Development of economic indicators and estimation for 2013 and 2014 (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

United States: **Employment, income and inflation**

Percentage changes

	2010	2011	2012	2013	2014
Employment[1]	-0.7	0.9	1.5	1.6	1.5
Unemployment rate[2]	9.6	8.9	8.1	7.8	7.5
Compensation per employees[3]	2.9	2.9	2.1	2.2	2.9
Labour productivity	3.1	0.9	0.8	0.4	1.3
Unit labour cost	-0.1	2.2	1.3	1.5	2.0
GDP deflator	1.3	2.1	1.8	1.8	1.9
Consumer price index	1.6	3.1	2.1	1.8	2.0
Core PCE deflator[4]	1.5	1.4	1.8	1.7	1.9
PCE deflator[5]	1.9	2.4	1.8	1.8	2.0
Real household disposable income	1.8	1.3	1.4	1.0	2.8

The continue decreasing trend of unemployment is one of the factors which will result in support of the growth in economy outcome. At 2010 the level of unemployment was at 9,6% and 8,1% in 2012. This trend is about to continue in future, where it is predicted the level of 7,5% in 2014. Inflation is low at level of 1,8% and the prediction is to remain stable in future years (see Table 5).

Table 6: USA: Financial indicators and interest rates (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

United States: **Financial indicators**

	2010	2011	2012	2013	2014
Household saving ratio[1]	5.1	4.2	3.7	2.7	2.7
General government financial balance[2]	-11.4	-10.2	-8.5	-6.8	-5.2
General government gross debt[2]	97.8	102.2	109.8	113.0	114.1
Current account balance[2]	-3.0	-3.1	-3.0	-3.0	-3.2
Short-term interest rate[3]	0.5	0.4	0.4	0.4	0.5
Long-term interest rate[4]	3.2	2.8	1.8	2.0	2.6

Ongoing expansionary monetary policy of Federal Bank continue with very low short-term and long-term interest rates (see Table 6). The trend of low short-term interest rates stay constant at the level of 0,4 in 2013 and 0,5% in 2014. For upcoming years the long-term interest rates are expected to remind below the level of 3%.

The gains of residential companies have improved and nowadays almost reaching pre-crisis level. But on the other hand, the decline in growth of earnings was registered. The fiscal stimulus policy of USA and increase in government reflected in expected

growth in private consumption in 2013 at low level of 2,1% and 2,9% in 2014 (see Table 7).

Table 7: USA: Demand and output of economy (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

United States: **Demand and output**

	2011	2012	2013	2014	Fourth quarter 2012	Fourth quarter 2013	Fourth quarter 2014
	Current prices $ billion	Percentage changes from previous year, volume (2005 prices)					
GDP at market prices	15 075.7	2.2	2.0	2.8	1.8	2.2	3.2
Private consumption	10 729.1	1.9	2.1	2.9	2.0	2.4	3.2
Government consumption	2 579.6	-1.0	-0.5	-0.8	-0.3	-0.7	-0.8
Gross fixed investment	2 298.5	5.7	4.4	7.1	3.3	5.9	7.7
Public	480.2	-4.0	-0.6	-1.1	-3.2	-0.9	-1.1
Residential	338.7	11.8	12.4	15.6	13.7	12.9	17.1
Non-residential	1 479.6	7.4	3.8	6.9	3.0	5.9	7.2
Final domestic demand	15 607.2	2.0	2.1	3.0	1.8	2.4	3.3
Stockbuilding[1]	36.6	0.2	0.0	0.0			
Total domestic demand	15 643.7	2.2	2.1	3.0	1.6	2.5	3.3
Exports of goods and services	2 094.2	3.6	4.1	6.2	3.2	5.4	6.7
Imports of goods and services	2 662.3	2.8	4.0	6.6	1.7	6.0	6.7
Net exports[1]	- 568.1	0.0	-0.1	-0.3			

4.1.3 Macroeconomic development in Euro Area

The recession in the euro area is accompanied by a large weakening in confidence which is reflected to the end of 2012 and the beginning of 2013. The growth seems to be rising slowly in upcoming years. Attempts to strengthen the economy in euro zone by fiscal policy will limit the economic activity. The private demand will increase and regain confidence with the financial sector improvement. The big issue is how the policy makers will be successful together with solving the current situation in Europe and if the progress will be sufficient to overcome the euro crisis. The Inflation should continue to remain at low level between 1 and 2% per year (see Table 8)

Table 8: Euro area: Economy indicators in euro area (Employment, Income, Inflation) (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

Euro area: **Employment, income and inflation**

Percentage changes

	2010	2011	2012	2013	2014
Employment	-0.5	0.1	-0.5	-0.8	0.0
Unemployment rate[1]	9.9	10.0	11.1	11.9	12.0
Compensation of employees	1.3	2.6	1.2	1.3	2.1
Labour productivity	2.4	1.2	0.2	0.6	1.3
Unit labour cost	-0.8	0.8	1.2	1.1	0.5
Household disposable income	1.2	1.9	0.7	0.9	2.0
GDP deflator	0.8	1.2	1.2	1.3	1.0
Harmonised index of consumer prices	1.6	2.7	2.4	1.6	1.2
Core harmonised index of consumer prices[2]	1.0	1.4	1.5	1.3	1.2
Private consumption deflator	1.7	2.5	2.0	1.3	1.1

The central banks tend to reduce interest rates in order to increase investments and consumption in the economy (see Table 9). Short-term interest rates fell from 0,8% in 2010 to 0,6% in 2012. In upcoming years further decrease in short-term interest rates to 0,1% in 2014 is expected. Long-term interest rates fell to 3,8% in 2012 and this level should remain in the next two years. The high burden of households and corporate debts in some euro area, such as is Greece, Spain, etc., requires deleveraging, holding back consumption and investment.

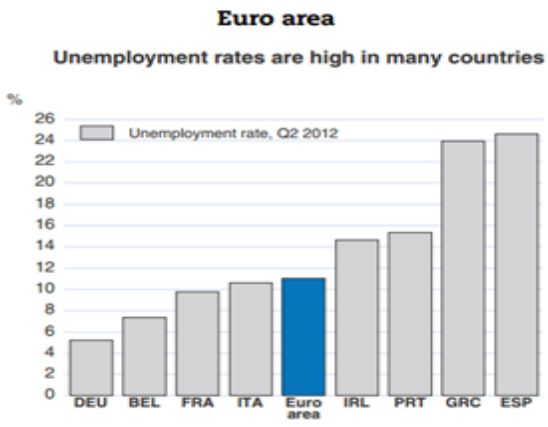
Table 9: Euro area: Financial indicators (interest rate) (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

Euro area: **Financial indicators**

	2010	2011	2012	2013	2014
Household saving ratio[1]	8.6	8.0	7.7	7.6	7.7
General government financial balance[2]	-6.2	-4.1	-3.3	-2.8	-2.6
General government gross debt[2]	93.1	95.2	100.6	102.5	103.4
General government debt, Maastricht definition[2]	85.7	88.1	93.6	95.4	96.3
Current account balance[2]	0.5	0.5	1.4	1.9	2.2
Short-term interest rate[3]	0.8	1.4	0.6	0.2	0.1
Long-term interest rate[4]	3.5	4.2	3.8	3.5	3.7

Among the states in Euro area, the lowest unemployment rates were recorded in Germany and Belgium at level of 5%, beside highest recorded in Greece and Spain at the level of more than 23% (see Graph 4). The average unemployment EU in 2012 is 11.1% (see Table 8).

Graph 4: Unemployment rates among the euro area in 2012 (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)



4.1.4 Macroeconomic development in China

In 2012, the output growth of GDP of China has dropped to 7,5% (see Table 10), the lowest growth in the last decade. It was caused by a weak demand for goods and services in Europe and USA, and therefore a decrease in the export of China (see Table 11). The situation should improve as the confidence in reducing long-term debts rise and the global market demand in euro area and USA should restore.

Table 10: China: Macroeconomic indicators (growth in real GDP, GDP deflator) (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

China: **Macroeconomic indicators**

	2010	2011	2012	2013	2014
Real GDP growth	10.4	9.3	7.5	8.5	8.9
GDP deflator (per cent change)	6.6	7.8	1.5	2.4	1.5
Consumer price index (per cent change)	3.2	5.5	2.6	1.5	1.4
Fiscal balance (per cent of GDP)[1]	-0.7	0.1	-2.0	-2.2	-1.7
Current account balance (per cent of GDP)	4.0	2.8	2.9	2.9	2.2

Inflation has fallen to less than 2% and it is expected to rise up in medium-term to 4% (see Table 10). Chinese economy will slightly grow month-by-month to reach expected 8,5% in 2013 and it is on a good track to reach 10% in economy growth from pre-crisis times.

Table 11: China: external indicators (export) (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

China: **External indicators**

	2010	2011	2012	2013	2014
			$ billion		
Goods and services exports	1 743.6	2 086.6	2 248.6	2 508	2 809
Goods and services imports	1 520.6	1 898.4	2 018.9	2 269	2 615
Foreign balance	223.0	188.2	229.7	239	195
Net investment income and transfers	14.7	13.6	8.0	26	26
Current account balance	237.7	201.8	237.7	265	220
			Percentage changes		
Goods and services export volumes	27.6	8.9	5.5	9.9	10.9
Goods and services import volumes	20.6	9.7	6.4	9.9	12.9
Export performance[1]	12.9	2.6	2.3	5.0	3.8
Terms of trade	- 9.5	- 3.4	2.2	- 0.8	- 1.0

4.1.5 Macroeconomic development in Korea

In mid-2012, the output growth is projected to pick up gradually to around 4,5% by 2014, it led by a rebound in exports as world trade gains. Private consumption is likely to

remain subdued, given by the high level of household debt. The nflation has fallen to less than 2% and is expected to return to the central bank's target range of 2.5-3.5% (see Table 12). The output growth slowed during 2012 as exports fell, reflecting weaker demand from the European Union, USA and China, Korea's major trading partner. The fall of overseas demand led to stagnant industrial production and weak fixed investment growth. Fiscal policy has focused on the medium-term target of a balanced consolidated central government budget (excluding the social security surplus) by 2014. The focus on a balanced budget has contained gross public debts at 36% of GDP. Meanwhile, the Bank of Korea reduced its policy interest rate by a total of 50 basis points in the second half of 2012, to 2,75%. The key domestic uncertainty is the pace of deleveraging by highly indebted households.

Table 12: Korea: demand, output and prices (Source: OECD, OECD Economic Outlook, Volume 2012 Issue 2)

Korea: **Demand, output and prices**

	2009	2010	2011	2012	2013	2014
	Current prices KRW trillion	Percentage changes, volume (2005 prices)				
GDP at market prices	1 065.0	6.3	3.6	2.2	3.1	4.4
Private consumption	576.0	4.4	2.3	1.7	2.7	3.2
Government consumption	170.3	2.9	2.1	4.3	4.0	3.0
Gross fixed capital formation	309.7	5.8	-1.1	-0.1	2.8	4.6
Final domestic demand	1 056.0	4.6	1.2	1.6	3.0	3.6
Stockbuilding[1]	- 30.4	2.5	0.8	-0.2	-0.1	0.0
Total domestic demand	1 025.6	7.2	2.0	1.4	2.8	3.5
Exports of goods and services	529.6	14.7	9.5	4.3	8.8	12.9
Imports of goods and services	490.2	17.3	6.5	3.0	8.6	11.6
Net exports[1]	39.5	-0.6	1.8	0.8	0.3	1.0
Memorandum items						
GDP deflator	_	3.6	1.7	1.3	1.6	1.5
Consumer price index	_	2.9	4.0	2.2	2.7	3.0
Private consumption deflator	_	2.6	3.8	2.2	2.4	2.8
Unemployment rate	_	3.7	3.4	3.4	3.6	3.4
Household saving ratio[2]	_	4.3	3.1	2.8	3.0	3.3
General government financial balance[3]	_	1.3	0.5	0.9	1.6	1.7
General government gross debt[3]	_	34.3	36.1	36.4	36.4	36.7
Current account balance[3]	_	2.9	2.4	3.3	2.4	1.8

4.1.6 Development of major stock indexes[20]

All the stock indexes experienced since the March of 2009 up to present strong growth and almost climb to values of pre-crisis times. Leading U.S. stock index Dow Jones Industrial Average increased from a low at 2232,45 points in March 3, 2009 by 113% to

[20] Data from Yahoo.finance.com

4776,95 points in January 28, 2013. A similar development has also shown another main index S&P 500, which since March 3, 2009 rose by almost 114% to 1513 points. We can expect rapid slowdown in the growth and it can be expected a neutral trend in he development of indexes in near future.

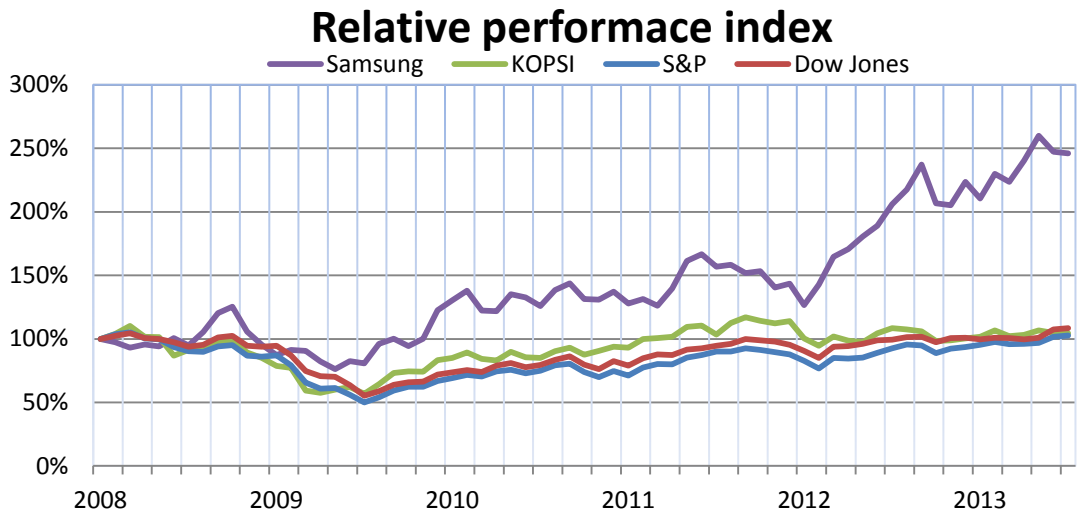
The main indexes in European countries shows a similar development shows. The stock index of 100 largest companies based in the UK FTSE 100 recorded from the March 3, 2009 increase by 78% to 6285 points. The least negative impact of the financial crisis showed the German index DAX, which showed the growth of almost 115% to 7858 point since the beginning of the crisis. This growth was caused by the strong improvement in the German economy.

The situation in Asia was quite similar as well as in the rest of the world. The main index in Hong Kong HIS – Hang Seng Index rose from the bottom in March 2009 at value of 11921 by 97% to current value of 23580 points. The Korean KOSPI Composite Index showed the rice by 84% from the bottom of 1055 points in March 2009 to January 2013.

Chinese index SCI 300 – Shanghai Composite Index 300 recorded slightly different growth. Since March 2009, the index was copying the growth of the other main indexes and until January 2010 and since then SCI 300 showed the continuous decrease in its value to 2743 points in January 2013 with the growth just of 24% since March 2009. It could be caused by the slowdown of the growth in Chinese economy and also as they are mostly dependent on the export into the other countries.

During the reporting period, the Samsung had a better growth in relation to the Dow Jones Composite Average index, S&P 500 index and the Korean KOPSI. In a long-term the stocks of Samsung Electronics continuously outperform other stock indexes. After achieving the bottom value in October 2008 on the value of 446.804 KRW the current value of the shares of Samsung electronics Co., Ltd is located at 1.442.000 KRW, which is an increase of almost 320% (see Graph 5). There is an increase by 170% since 2007, through a slump during the financial crisis and subsequent rise until beginning of 2013. This is due to the strong global representation and successful diversification of the production portfolio including the successful integration between the best manufacturers of mobile phones and smart phones.

Graph 5: Relative performance index of Samsung stock vs. main stock indexes (Source: own processing)



4.1.7 Evaluation of global fundamental analysis

In general, there was a significant recovery of the global economy from the time of the recession and many indicators are already at the pre-crisis values. But the global recovery has slowed down in past year and the growth dropped to below 3% in 2012. The recession in the Euro area influences the rest of the world and the most emerging market economies. Low inflation remains stable in all countries in the range of 0.5% to 3%. The unemployment around the world is at quite high level of 8% and in the Euro area at the level of 11%. The slowdown in economy lead to lower demand for goods and services and will cause the decrease in purchasing power of households. The overall situation of the world economy can be described as stagnant or it increases slightly in the upcoming years.

4.2 Fundamental analysis of sector

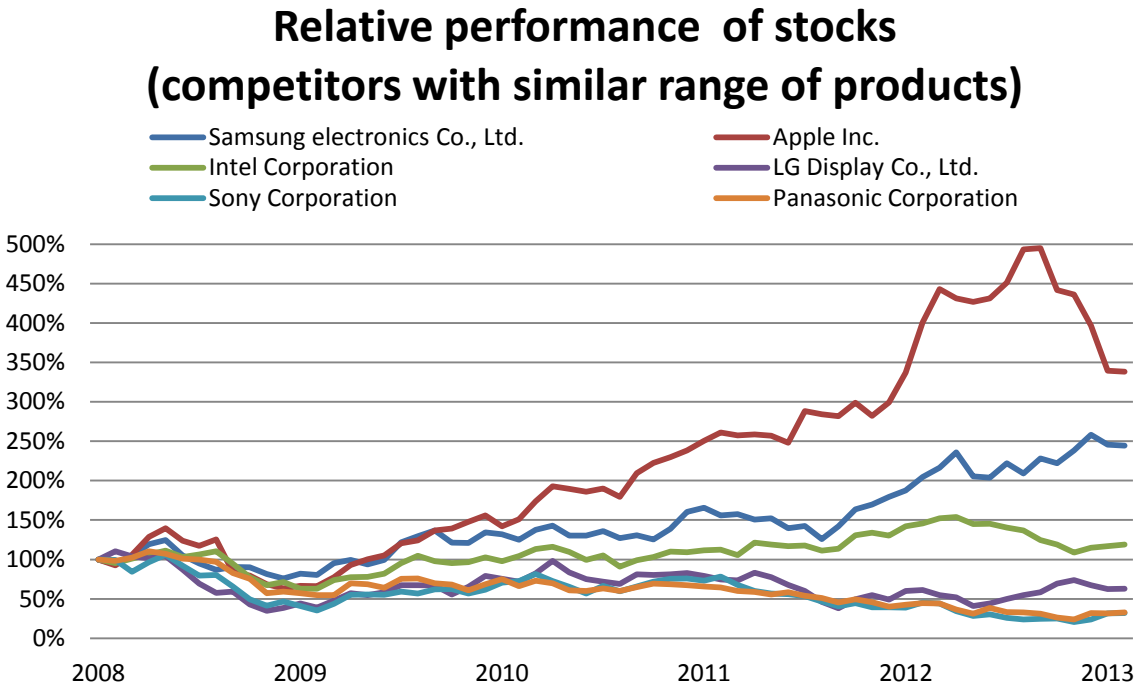
4.2.1 Market structure and competitors

Biggest competitors of Samsung electronics Co., Ltd on the global market are Sony Corporation Company and Panasonic Corporation, that has almost the same range of

products. Other competitors, which do not have the same range of product but just a part of them, is Apple Inc. which produce PCs, smart phones, and gadgets for support their products, Intel Corporation which produces electronic chips, semiconductors and components for PC and LG Display Co., Ltd (TVs, LCD and monitors).

In comparison with the biggest competitors of Samsung Electronics Co., Ltd. the strongest development on the stock market has Apple Inc. (smart phones, PCs, tablets) and Intel Corporation (electronic chips, semiconductors, components for PC) since the first half of 2009 (see Graph 6). The reasons why these companies are so strong are that they produce high quality goods, they invest large sums of money into R&D and they belong between the best companies in theirs sector.

Graph 6: Relative performance of stock of Samsung vs. competitors (2008 - 2009) (Source: own processiong)



4.2.2 Electronic sector analysis

Due to the economic crisis in 2008, we can say that companies producing electronics are divided into two groups. The first group consists of companies that were already strong before the crisis and have enough financial capital withstand the crisis and nowadays they are one of the strongest players on the market. The second group are companies that were

moderate or weak and those, which failed to recover. These companies are now struggling to compete with strong competitors.

Influenced by European Countries in the debt crisis in 2012, the consumer electronics market remains depressed and the sales did not reach the expectations of the firms. It can again influence the second group of moderate or weak companies which leads to lower profitability and thus less money for development of new products and increasing lead of the competitors.

In spite of the crisis the electronic industry demand in 2012 showed moderate growth. It is caused by the trend of demand for a new technologies and consumer electronic. This sector is characterized by a high potential for further expansion and future development potential activities in electronics industry.

4.2.3 Global megatrends

Population exceeded 7 billion people on the earth and more than 53% of people live in cities. It is expected in 2030 the population will be over 8,3 billion and over 60% of all people will live in cities. 95% of world population growth is in developing countries and life expectancy in 2010 reached 69,64 years on average and in 1960 it was only 52,62 years on average. According to NASA (National Aeronautics and Space Administration), the average surface temperature increased by 1°C since 1950 and its reason is the dramatic increase in CO2 emissions. The globalization in past 50 years results into flowing of capital and technologies across boundaries and continents. It made easier for people to communicate, travel and make business all around the world.

4.2.4 Evaluation of fundamental analysis of sector

The product portfolio of Samsung electronics Co., Ltd creates a solid base in the electronic industry. The variety of the products, quality and design helped Samsung overcome the financial crisis and become one of the strongest electronic companies around the world, which is able to keep up with the competitors. Currently, Samsung Electronics

is strengthening its leadership in various markets. In 2012 became the no. 1 in production of semiconductors, visual displays and smart phones.[21]

We can expect further development of new technologies in the electronics industry that will meet current needs and also the needs in the future. The electronics industry is like an endless circle that knows no end.

4.3 Corporate analysis

4.3.1 Beta factor (B_i)

Beta-Factor was calculated in Microsoft Office Excel 2007 using regression tool. The data of stock quotes of Samsung electronics Co., Ltd. (005930.KS) and Korean KOPSI index (^KS11) were used in period from January 2, 2008 till February 1, 2013. The stock quotes were available on the Yahoo.finance.com. The regression showed high correlation R^2 0,73122.

The result of Beta-factor is **0,999838**.

4.3.2 Calculation of CAPM value

As a risk-free rate is selected South Korean 10-Year Bond. The Monetary Policy Committee of the Bank of Korea decided to leave the base rate at 2.75% for the next medium term period.[22] The average return of the market was calculated as a geometric average of the development of KOPSI index from January 1997 to December 2012 with result of 8,2859%. Beta factor is 0,999838 (see chapter 4.3.1.1). All these data were substituted into the equation (1-7) and then calculated.

[21] SAMSUNG, *Facts&Figures2012* [online] [cit. 2013-02-20] available at: http://www.samsung.com/us/aboutsamsung/sustainability/sustainabilityreports/download/2012/2012_Facts_and_Figures_FINAL.pdf

[22] TRADING ECONOMICS, *South Korea Interest rate* [online] January 25 [cit. 2013-02-21] http://www.tradingeconomics.com/south-korea/interest-rate

The final result of the CAPM model is **8,284959%**, and therefore this value substitute the value of required rate of return (r).

4.3.3 Dividend Discount model DDM

Required rate of return is 8,285.[23] In December 2012, value of dividend was 152000 KRW, market price of stock 1442000 KRW and 5 year dividend growth is 0%[24].

One-stage DDM model with infinite holding

Calculation of equation (1-1) equals **1.834.641 KRW.**

One-stage DDM model with finite holding

Calculation of equation (1-2) equals **1.472.041 KRW**.

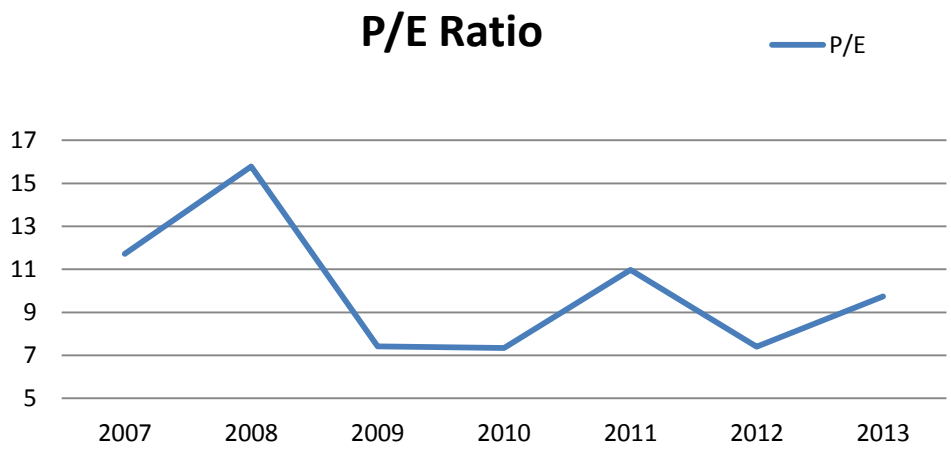
4.3.4 P/E ratio

Market price of stock in December 2012 was 1.442.000 KRW and the earnings per share for the last twelve months are 152000 KRW. The last dividend payout ratio according to the annual report of Samsung Electronics in 2011 was 6% Co. Ltd. By computing the equation (1-3) the resulting P / E ratio is **9,486842.**

For comparison it is presented the P / E Ratio of shares Samsung from 2007 to early 2013. On the graph can be seen that the P / E oscillate around value of 9.5 and the calculation can be considered as correct.

[23] Result of CAPM (pg. 33)
[24] YAHOO.FINANCE, *Samsung electronics Co., Ltd*., [online] March 4 [cit. 2013-02-21] http://finance.yahoo.com/q/ks?s=005930.KS+Key+Statistics

Graph 7: Development of P/E ratio since 2007 to the beginning of 2013 (Source: own processing)



PE_N is calculated on the basis of equation (1-3)

PE_N = 0,94/ (8,285 – 0)

PE_N = 11,34581

$V_0 = PE_N * EPS$

V_0 = 1757442

The intrinsic value based on P/E_N ratio equals to **1.757.442 KRW.**

4.3.5 P / S Ratio model

Historical average of the market price of stock was 1346000 and the average EPS 133500. The data were calculated from Yahoo.finance.com from last 12 months.

Equation (1-7)

P/S = 1346000/ 133500 = 10,082397

P/S is substitute into equation (1-8)

V_0 = 8,71197411 * 152500 = 1532524

The value of the intrinsic value of stock on the basis of the P / S ratio is **1.532.524 KRW.**

4.3.6 P/BV Ratio model

The average book value calculated from 2010 to 2012 is 768020 KRW[25] and the historical price average of stock is 1337000 KRW calculated on the basis of the historical data at Yahoo.finance.com. The current book value 931953.

The equation (1-5)

P / BV = 1337000/ 768020 = 1,7408393

The substitution to the equation (1-6)

V_0 = 1,7408393 * 931953 = 1616969

The intrinsic value based on the model of P / BV ratio is equal to **1.616.969 KRW**.

4.3.7 Model FCFE – Free-Cash-Flow-to-Equity

The growth of FCFE model is calculated using the geometric average of the growth in the period of 2008-2012. The result 7.36% represents the average growth over a year.

Table 13: Calculation of FCFE 2010 -2012 (Source: own processing based on annual reports of Samsung Electronics Co., Ltd.)

		2010	2011	2012
	Formula			expected
+	Net income	16147000000000	13734000000000	
+	depreciation	10847374000000	12934274000000	
-	NWC	5668035000000	4057345000000	
+	Net debt	45250000000000	48871000000000	
=	**FCFE**	**66576339000000**	**71481929000000**	76748980948938

$FCFE_1$ (76748980948938) / Outstanding stocks (170132764)

Subsidiary into the equation (1-2)

The intrinsic value based on the FCFE model is equal to **1.831.602 KRW.**

[25] SAMSUNG, Samsung Electronics annual report (2010, 2011 and 2012) available at: http://samsung.com

4.3.8 Evaluation of Corporate analysis

Some methods of calculation of the intrinsic value of stock can be considered as very difficult and time consuming. It concerns especially the calculation of FCFE model. The results of the individual models are often different and it is practically impossible to determine objectively the correct one intrinsic value. The reason is that the calculation itself carries a certain amount of subjectivity. The objective of the investor is to minimize the subjectivity and to create an idea in which range the intrinsic value moves around (See Table 14). All models were very close to each other, and therefore can be considered as correctly calculated. As the most accurate calculation of the intrinsic value can be considered the geometric mean of all calculated models, which is equal to **1.666.969 KRW** (see Table 15). Current market price is 1.442.000 KRW (December 2012), therefore it is an undervalued stock with a potential to growth of 15%.

Table 14: Intrinsic values based different methods of calculation (Source: own processing)

Used model:	Intrinsic value
One-stage DDM with infinite holding	1.834.641
One-stage DDM with finite holding	1.472.041
P/En	1.757.442
P/S ratio model	1.532.524
P/BV ratio model	1.616.969
FCFE	1.788.198

The final intrinsic value based on the weighted average of the calculation of all models:

Table 15: The average of all calculated intrinsic values (Source: own processing)

Average intrinsic value	1.666.969

5. CONCLUSION AND INVESTMENT RECOMMENDATION

5.1 Conclusion

The main objective of the thesis was to familiarize the reader with the concept of fundamental economic analysis and to calculate the intrinsic value of the selected stock. This objective was reached using the Global, Sectoral and Corporate analysis.

The global analysis showed a significant recovery of the global economy from the time of recession in 2008 and many macroeconomic indicators are already at the pre-crisis values. But the global recovery has slowed down in the past year due to the recession in the euro area. The overall situation of the worl economy is stagnant and it can slightly grow in the upcomming years. The majon indexes showed the strong trend of growth since March of 2009 when they reached the historical bottom of the last decade. Most of the major indexes already reached the pre-crisis values and they are about to continue with the trend of growth in future years.

The analysis of the sector proved that Samsung Electronics Co., Ltd is one of the biggest and strongest companies in the electronic industry with a solid base of products characterized by a high quality. Currently, Samsung is strengthening its leadership on the market of electronic industry and outperform all main stock indexes and the market as a whole.

The result of the corporate analysis based on different methods of calculation is intrinsic value of stock of Samsung Electronics Co., Ltd. of **1.666.969 KRW**. The current market price is 1.442.000 KRW (December 2012), therefore it is an undervalued stock with a potential to growth of 15%.

5.2 Investment recommendation

Based on the findings from the fundamental economic analysis a conclusion that stock of Samsung Electronic Co., Ltd. outperform the market and stock indexes and has a potential growth of 15% is presented. Therefore, the investment recommendation is: buy stocks and hold until it rise up in its price.

This investment recommendation assumes the stocks of Samsung Electronics Co., Ltd. on Korean stock exchange will growth more than stock index itself and the market as a whole. For long-term the stock should follow the trend of outperforming, and therefore strategy buy & hold is the best in this situation.

6. RESOURCES

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7. LIST OF VISUALS

7.1 List of tables

7.2 List of graphs