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Share repurchases in South Korea

Stock price performance around buyback
announcements

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Abstract

Share repurchases have become an important method of corporate pay-out for companies in many countries in recent decades. This study uses a sample of 77 repurchase announcements of KOSPI-listed firms between 2003-2014 and tries to examine the effect of these repurchases on the short term stock price behaviour using an event study. The sample is divided in two subsamples to find a possible difference between companies belonging to a Korean business group (chaebol) and independent companies. The results show a significantly positive cumulative average abnormal return for the share prices of Korean companies after a share buyback announcement on the short run. This effect is higher for independent companies than for chaebol-affiliates.

1. Introduction

This study investigates the share price behaviour of South Korean listed firms announcing an open market share repurchase. Share repurchases are a relatively new form of corporate pay-out in South Korea and is quickly gaining popularity as an alternative for paying out dividends. However, there is little research on the influence of share repurchases on the share price performance of Korean firms.

As companies make a profit, they have to decide how to spend the net income. Over the last few decades the way net income has been spent by U.S. corporations has drastically changed. In the first decades after the Second World War, companies would typically distribute a portion of net income to shareholders by paying dividends and another portion on investments for the future. Investments on innovation and job creation by corporations helped the U.S. economy stay competitive internationally and kept middleclass workers employed (Lazonick, 2012). Since the 1980s however, net income has been allocated differently. In the early 1980s, only 3% of net income was used to buy back stock, rising to 35% at the end of that decade. In the 1990s it rose further up to 50%, before reaching almost 90% in 2007. The dividend pay-out ratio had an average between 40-50% of profit over this period, so very little of the earnings remained to invest for future purposes. According to Lazonick (2012), U.S. firms have become obsessed with short-term gains through financial manipulations, such as buybacks, and the lack of long-term investments is harming the U.S. economy.

The possibility to perform a share repurchase gives a company financial flexibility (Jagannathan, Stephens & Weisbach, 2000). In addition, share repurchases can be used to signal what management considers is an undervaluation of a firm (Dann, 1981) and can also be useful in attempts to avoid a hostile takeover (Bagwell, 1991). Critics of share repurchases focus on the way share repurchases are used by corporate executives in order to boost their personal compensation (Kahle, 2002); (Fenn & Liang, 2001). The personal income of U.S. corporate executives depends largely on the share price of the company they work for. The executives benefit from high share prices, thus they spend most of their time trying to raise their company's share price. For these managers, repurchasing stock is a useful tool to boost the stock price of the company. This is beneficial to the managers of U.S. companies themselves as the compensation they receive often depends on the earnings per share (EPS) of the company. Reducing the number of shares by simply repurchasing shares and retiring those shares is a very easy and tempting way for managers to meet their EPS target. In addition, as part of their compensation, managers typically hold personal stock-option programmes in the firm. The boost in share price that a buyback gives the U.S. firm is a great way to increase the EPS and the

value of stock options in a short period of time. In his study, Lazonick (2012) discusses the emergence of stock buybacks performed by U.S. firms and the harmful consequences they have for the U.S. economy. Maximizing shareholder value became more and more important in corporate strategy. Companies started to distribute more profit to shareholders, through increasing dividends and even more so through the emergence of share repurchases. Several studies have shown that buyback announcements lead to positive abnormal stock performance for U.S. firms, especially in the few days following the announcement (Vermaelen, 1981); (Grullon & Michaely, 2002). This supports the idea that profits are used to perform buybacks for short-term gains instead of spending it on investments for future profits.

This thesis initially started of as a research on why conglomerates have become nearly extinct in the United States and other developed countries, while they are still very successful in some developing economies. Conglomerates in most developed countries face a 'conglomerate discount'. Investors rather diversify themselves by investing in several focused companies than investing in a diversified company (Ammann, Hoechle & Schmid, 2012). Those companies would be unable to manage several businesses as well as a single industry company manages a single business. South Korea seems to be an exception. From around the year 2000, South Korea has been considered to be a developed economy, although large conglomerates known as *chaebol*, still dominate the South Korean economy. The chaebol, which are typically owned and controlled by their founding families, do not seem to suffer as much from the conglomerate discount as conglomerates do in other developed economies. In South Korea, stock repurchases are used considerably less than in the United States and little research has been performed on the impact of Korean buybacks. However, share repurchases are increasingly popular with Korean firms. The founding families have different incentives than professional managers (that only stay in a firm for a few years) have. As the control of the chaebol is passed on to new generations of the controlling families, the families behind the chaebol are much more concerned about long-term performance than short-term gains. In order to keep the subject of conglomerates in this thesis, I will focus on share repurchases in South Korea and the possible difference between buybacks performed by chaebol and single industry companies.

The purpose of this study is to examine the effect of Korean stock repurchase announcements by large Korean firms on the share prices on the short and medium run. A sample of 77 share repurchase programmes performed between 2003 and 2014 by KOSPI-listed companies is analysed using an event study. Of special interest is the difference of this effect between stand-alone firms which are mostly run by professional managers and publicly owned, and chaebol firms, conglomerates that are family owned and controlled. This study tries to give better understanding on why firms decide to perform a share repurchase programme. In addition, it

tries to determine if chaebol-affiliates have other incentives to perform a share buyback than stand-alone firms have.

This paper is organized in seven chapters. Chapter 2 provides a literature review on share repurchases and the South Korean economy and share repurchase regulation. Chapter 3 presents the results from former studies on share behaviour of share repurchase announcements and formulates the hypotheses of this study. Chapter 4 explains the methodology and data used and Chapter 5 presents the results of the event study. Chapter 6 discusses the role of controlling families on chaebol and executive compensation in Korea and Chapter 7 contains the conclusion and limitations of this study.

2. Literature review

2.1 *Maximizing shareholder value*

Shareholder value is the part of capitalization of a company that consists of equity, roughly the share price times the number of shares. For publicly listed companies, especially in the United States, the main goal of the company is to generate as much value for shareholders as possible (Bratton, 2001). Under the shareholder value model, the success of a company is measured by the extent to which it enriches shareholders. Maximizing shareholder value as a principle of corporate governance took off in the early 1980s among a few big U.S. firms that dominated the American economy (Lazonick & O'Sullivan, 2000). Until then, corporate strategy was mainly oriented on reinvesting retained earnings so that earnings could prosper in the future. However, the shift to a corporate strategy, which maximizes shareholder value, seemed beneficial to both shareholders and top executives. To shareholders, shareholder value maximization would be a great way to overcome the principal-agent problem they faced with managers.

The principal-agent problem occurs when the interests of corporate management ('agents') is not in line with the interest of shareholders ('principals') (Hill & Jones, 1992). The interest of many investors is for their own shares to gain in value, while managers are mostly interested in the benefits and compensation they receive for their services. If executive compensation rises with shareholder value (for instance, through bonuses or stock options) there is no apparent conflict in self-interests anymore and the principal-agent problem is solved. During the 1980s and 1990s stock-based compensation for executives was advocated on a large scale and it was believed that this would benefit the economy as a whole (Jensen & Murphy, 1990). Lazonick (2012) shows that over the last two decades, CEOs of the largest U.S. corporations received more than half of their compensation in stock options. Since the personal income of executives largely depends on the company's stock price, the executives' main objective has become to boost the stock price on the short run. For these managers, repurchasing shares and paying dividend is a useful tool to manipulate the share price.

2.2 *Share repurchasing*

A share repurchase, share buyback or stock buyback occurs when a company uses cash – net profits for instance – to reduce the number of outstanding shares. By reacquiring its own stock, the company reduces its public stock by paying out cash to shareholders by offering to buy a significant number of shares outstanding. The company can then retire the acquired stock or

keep it as treasury stock, which leaves the option to re-issue the stock later on. Common share repurchases can be performed in three different methods:

(i) *Open-market share repurchase* – The open-market share repurchase is the simplest and most widely used method of repurchasing shares. The repurchasing firm buys the shares in the open market at the prevailing market price. This mostly leads to an increase in the share price. In most countries, there is a restriction on how many shares can be bought back per day. In both Korea and the U.S. no more than 25% of average daily volume can be bought back per day. (Vermaelen, 1981).

(ii) *Fixed-price tender offer* – A company can present a tender offer to shareholders to sell all or a portion of the shares to the company at a fixed price which is often above the market price. The tender offer contains the number of shares the company wants to buy back and the purchase price the company is offering. Shareholders can react to the offer by stating the number of shares they are willing to sell at the specified price. The offer has to be open for a certain period of time. If less shares are tendered than the company seeks to repurchase, the offer period can be prolonged. (Lie & McConnell, 1998).

(iii) *Dutch auction tender offer* – This type of tender offer allows the company to offer a price range instead of a fixed price at which the shares will be bought. Shareholders can tender their stock at any price within the price range set by the company. The lowest price that enables the company to buy the desired portion of stock becomes the purchase price. All shareholders tendering their shares at or below this price receive this purchase price for their shares. (Persons, 1994).

In addition to the different methods of how shares can be repurchased, it is important to understand the reasons why companies buy back their stock. The most important reasons for companies to repurchase their shares are listed below.

(i) *Maximizing shareholder value* – Firms often state in the announcement of a repurchase that the buyback is performed to maximize shareholders' wealth. Profits or cash can be used to distribute among shareholders or to invest in the company's future. If a company cannot find investment opportunities that will yield sufficient profits in the future, thus increase shareholder value in the future, it might decide that it is best to distribute a larger share of excess cash to shareholders now (Auerbach, 1971). In addition, share repurchases can lower the tax costs for investors. Most countries shareholders pay tax over the dividends and stock sales

proceeds. As dividend income is taxed more heavily than the profit from capital gains, share buybacks can be useful to reduce tax costs for the shareholders of a firm (Shoven, 1987).

(ii) Undervaluation – A share buyback can be a useful tool when a firm believes that its current share price is below the real value of the shares. An undervaluation could stem from an information asymmetry, i.e., unsophisticated investors might not be able to value shares accurately whilst an insider has better information to do so. A repurchase can then be used to buy back undervalued shares, increase the earnings per share (EPS) and to signal the market that the shares are undervalued (Dann, 1981).

(iii) Avoiding takeovers – Bagwell (1991) argues that repurchases can be used against a possible takeover. Assuming an upward-sloping supply curve and heterogeneity among shareholders, the shares of shareholders with the lowest reservation price will be bought first in a share repurchase. Now only the shareholders with a relatively high reservation price will remain. This makes it more expensive to purchase shares, thus the company becomes a less attractive target for a hostile takeover. In most cases, this higher share price only holds for a certain period of time. However, if the timing is correct, the repurchase of shares can be a useful defence for a takeover (Dittmar & Dittmar, 2002). Although hostile takeovers are rare in South Korea, especially among conglomerates, Korean corporations are nevertheless concerned about the possibility of hostile takeovers (Choi, 2007).

(iv) Executive compensation – Another reason for a stock buyback can be to boost the financial compensation for corporate executives. The rewards for executives often depend on measurements of performance, such as earnings per share (EPS). Earnings per share can easily be boosted by a share repurchase. Reducing the number of publicly held shares, while profit stays equal, ensures that the EPS of the remaining shares increases (Bhargava, 2013). In addition, in an attempt to reduce the principal-agent problem between shareholders and top executives, U.S. executives are predominantly compensated through stock-options. Lazonick (2012) argues that this is the main reason for the remarkable increase of share repurchases and top executive pay in the United States. Since the personal income of executives largely depends on the company's stock price, the executive's main interest has become to boost the stock price on the short term. For these kind of managers, repurchasing shares is a useful tool to manipulate the share price, giving it a boost on the short-run and then to cash in on their stock-options. Share repurchases in the United States have risen from 35,3% of corporate net income in 1987 to 89% in 2007. In the meanwhile, the compensation for the Top-3000 executives in the

United States has increased four-fold. Lazonick (2012) warns that this will result in far too less investments by firms and will eventually seriously harm the U.S. economy.

2.3 *South Korea*

The aftermath of World War II had Korea divided between the North and the South and separate governments were set up. Both the northern and southern government claimed to be the legitimate government for all of Korea and by 1950, this conflict had escalated into the Korean War. Engraved by the Cold War between the United States and the Soviet Union, both North Korea and South Korea had suffered many civilian casualties and their infrastructures were severely damaged when the war came to an end in 1953 (Chung, 2007).

Unlike in the North, the South Korean economy recovered remarkably well after the war and saw growth rates that few would have considered possible for this country. In 1961 South Korea was still one of the world's poorest countries with a GDP per capita of only \$92 (current US\$)(World Bank, 2014). However, in the three decades that followed, Korea would become 'The Miracle of the Han river' (List-Jensen, 2008). During this period, South Korea rapidly transformed from a war-torn agricultural country into a wealthy and developed nation. By 1990, the GDP per capita had risen to \$6.642 (current US\$) and after the 'Miracle'-decades it further increased to \$22.151 in 2010 (World Bank, 2014). When looking at these numbers on a purchasing-power parity basis, it is even more impressive, as Korea is currently above the EU average.

In the 1960s, Korea thrived from the textile industry, a labour-intensive industry in which Korea had a large competitive advantage. Their workers were about two and a half times more productive than the American workers were and still were paid only a tenth of the American wages (Cumings, 2005). The Saemaul movement, initiated by the Korean government, was launched to modernize the economy and make it more export-oriented. During the 1970s, the infrastructure greatly improved and companies were encouraged to start more heavy industries which involved major capital investments (Horikane, 2005). From the 1980s onward, the government also encouraged Korean companies to vastly increase their private R&D expenditures (Nagano, 2006). Nominally, Korea has been amongst the top-10 R&D-spenders in the world for the last decade and in 2012 it had the highest R&D-spending as percentage of GDP (4,36% of GDP PPP) globally (OECD, 2014). The vast investments in capital and R&D made Korea a highly industrialized and advanced economy and its major export sectors are amongst heavy, petrochemical and high-tech industries (WTO, 2014).

As the only 'developed country' among the Next Eleven – eleven countries with a high potential to succeed amongst the largest economies in the 21st century – many believe Korea will continue to grow for the decades to come (O'Neill et. al., 2005). A forecast from Citigroup expects Korea to be the world's fifth wealthiest nation in terms of GDP per capita by 2030 and fourth by 2040 (Buitter & Rahbari, 2011). However, these expectations are based on the assumption that both the public and private investment rates will sharply increase over the next few years. Business investments have been a key driver of the Korean economic growth, but these were halved from the 1990s (30% of GDP) to 2010 (17% of GDP) (The Economist, 2011). Therefore, this raises questions whether the assumption of growing investment rates is accurate. The top four conglomerates represent 90% of Korea's corporate profits (Kato, 2014). If these profits are increasingly used to distribute to investors – using share repurchases for instance – this could seriously hamper the required investments.

2.4 Conglomerates and chaebol

In the 1960s and the 1970s, the corporate world was dominated by conglomerates. Conglomerates are companies conducting business activities in several different industries. Back then, a repeating bear/bull market in combination with low interest rates resulted in the conglomerate being a popular corporate structure. After the Second World War, especially during the third merger wave of 1965-1969, also called the conglomerate merger wave, the number of conglomerates in the United States rose quickly (Matsusaka, 1993). Since the 1980s however, the number of conglomerates in both the U.S. and Europe fell and nowadays only a few European and American conglomerates still exist. The best known U.S. example of a conglomerate is General Electric. In Europe and the U.S. people do not believe in the strength of conglomerates any longer and in fact a 'conglomerate discount' is applied to the share prices of conglomerates (Ammann & Verhofen, 2006). The benefit of diversification can also be achieved by the investor himself by purchasing multiple stocks. This is different in countries like India, China and South Korea, where conglomerates are thriving and are said to be the backbone of the Asian miracle. Here, instead of a 'conglomerate discount', shares of listed conglomerate companies enjoy a premium on the stock market, and during crises, this premium tends to rise (The Economist, 2014). Asian conglomerates performed very well and during the 2000-10 decade and Asia's biggest conglomerates entered many new businesses. In South Korea, the top 10 conglomerates in revenue together entered 119 new businesses during this decade (Martin, Sven & Yoo, 2013).

A company that chooses to diversify by entering new lines of industry might do so to reduce investment risk (Levy & Sarnat, 1970), to create an internal capital market so the external capital market can be avoided (Lewellen, 1971), or to show earnings growth by acquiring companies with lower valued shares than the shares of the company itself (Mead, 1969). A number of disadvantages of the conglomerate firm are: increased costs through multiple management layers (Van Lelyveld & Schilder, 2003), value destruction through culture clashes (Bligh, 2006) and conglomerates often trade at a discount because investors rather diversify their investments themselves by investing in several focused companies (Laeven & Levine, 2007).

The Korean form of a business conglomerate is called *chaebol*. Chaebol are typically owned and controlled by their founding families instead of business professionals, as are the Japanese business groups, *keiretsu*. Japan and Korea are the only developed nations in which business groups – chaebol and keiretsu – play a significant role. It is hard to name a Japanese brand that is not involved in a keiretsu and the same holds for Korean brands and chaebol. In 2012 the top-ten chaebol accounted for 85% of Korea's GDP and the top-four for 51% (Jung-soo, 2014). An important difference between the Japanese and Korean business conglomerate forms is the financial institutions. Keiretsu typically have their own affiliated bank incorporated within. These banks grant the keiretsu almost indefinite credit access. This is not the case in Korea, where chaebol are not allowed to own a private bank. Instead, chaebol hold stronger relationships with the government. Government support has been vital to the emergence of chaebol. Although chaebol do not rely on credit and assistance from the government as in the early days, chaebol and politics are still heavily intertwined, granting the chaebol special favours. (Lim, 2012)

2.5 *Share buybacks in Korea*

Share buybacks in Korea were legalized in 1994, much later than countries like Canada, The United States and The United Kingdom, where buybacks were already widely used by then. Buybacks quickly became popular in Korea, although they are still used much less than, for example, in the United States. An important question is if this is structural or that Korea is just lagging behind. The Korean government has gradually loosened its regulation on buybacks since the introduction in 1994 and is likely to continue to do so. However, share repurchases are still subject to a lot of restrictions that have already been loosened (or never existed) in regulation in the U.S. and many other countries. The most important aspects of Korean share repurchase regulation are discussed here:

(i) *Repurchase within 3 months* – An important restriction on Korean buybacks is that the buyback has to be performed within three months after the buyback announcement, which also disables Korean firms to send false announcements about buybacks. This is different in most other countries, buybacks generally take more than one year and often the number of shares actually bought back is much lower than initially announced. (Kim, Schremper & Varaiya, 2005)

(ii) *Only open-market repurchases* – Korean law only allows firms to repurchase shares through open-market repurchases. Often used methods, as fixed price or Dutch auction tender offers are not allowed as share repurchase methods in Korea. (Jung, Lee & Thornton, 2005).

(iii) *No borrowed money* – An important difference is that a Korean company cannot use borrowed money to perform a share buyback as is allowed in the U.S. Thus, firms can only use internally generated funds to perform a stock repurchase. (Kim, 2012)

(iv) *Mandatory announcement and filing* – For U.S. companies, it is allowed to buy back shares without an announcement in advance. Neither do they have to state the number of shares actually bought back afterwards. These requirements do apply for Korean firms. The repurchase plan has to be announced, stating how many shares the company plans to buy and afterwards a file has to be reported with the number of shares that were actually bought during the 3-month buyback period. This makes it easy to compare the actual versus the announced number of shares repurchased. (Jung, Lee & Thornton, 2005).

3. Hypotheses

This study tries to determine the effect of a buyback announcement on the stock performance of Korean firms in the short and medium run. Many researchers have performed a similar study for other countries, so for a hypothesis of the research question, the results of these earlier studies can be useful. Table 1 summarizes the effect found in ten other studies.

Table 1: Short term abnormal returns from share repurchase announcements

Study	Country	Period	Event window	CAR
Andres, Betzer, Doumet & Theissen (2014)	Germany	1998-2008	[0]	3.21%
			[-1, +1]	3.55%
Hackethal & Zdantchouk (2006)	Germany	1998-2003	[0]	1.47%
			[-1, +1]	2.53%
			[-5, +5]	5.21%
Zhang (2002)	Japan	1995-1999	[-1, +2]	4.58%
Hatakeda & Isagawa (2004)	Japan	1995-1998	[0]	0.91%
			[-1, +1]	1.24%
Kato, Lemmon, Luo, Schallheim (2005)	Japan	1997-2001	[-1, +1]	1.58%
			[-2, +2]	2.06%
Chatterjee & Mukherjee (2015)	India	2008-2012	[-1, +1]	-0.32%
			[-2, +2]	-0.96%
			[-5, +5]	-2.39%
			[-10, +10]	-2.96%
Thirumalvalavan & Sunitha (2006)	India	2002-2004	[-1, +1]	3.2%
			[-2, +2]	3.2%
			[-5, +5]	1.95%
Vermaelen (1981)	United States	1970-1978	[-1, +1]	3.0%
Grullon & Michaely (2002)	United States	1980-1997	[-1, +1]	2.7%
Manconi, Peyer & Vermaelen (2013)	United States	1998-2008	[-1, +1]	2.18%
			[-2, +2]	2.13%
			[-3, +3]	2.02%
	Rest of the world	1998-2008	[-1, +1]	1.27%
			[-2, +2]	1.38%
			[-3, +3]	1.48%

Apart from the study by Chatterjee & Mukherjee (2015), all studies listed in Table 1 show significant positive abnormal returns in the short run after a buyback announcement. Supported mainly by the worldwide study by Manconi, Peyer & Vermaelen (2013), the abnormal returns seem to be larger for U.S. firms than for firms from the rest of the world. Therefore, the expectation is that Korean firms, as do firms in other countries, will show a significantly positive abnormal return in the short run. However, it is likely to be smaller than the positive stock performance observed for U.S. firms in the days after the buyback.

In order to predict the difference between chaebol and stand-alone firms one might argue that the Chatterjee & Mukherjee (2015) study can be useful. Most Indian firms are controlled by their founding families, just as most chaebol are in Korea. This especially holds for Indian companies that perform share repurchases. In addition, the Indian economy largely depends on big conglomerates that are family-owned and controlled and have diversified into many different industries (Kim, Kandemir & Cavusgil, 2004). Thus, these conglomerates are much alike the Korean chaebol. Considering the findings of Chatterjee & Mukherjee (2015), a negative abnormal return is expected for the chaebol subsample. However, the buybacks included in the Indian study are mostly performed by rather small and unknown companies, which is not the case for the chaebol included in this study.

Of much more interest than the Indian sample is the study by Zhang (2002). Zhang found an average short-term effect of 4.58% abnormal return after a buyback announcement by Japanese firms. However, the effect is very different for the keiretsu-affiliates within the sample compared to the stand-alone firms included, 3.09% vs. 5.15% respectively. According to Dewenter & Warther (1998), keiretsu-affiliates “*face less information asymmetry and fewer agency conflicts than U.S. firms.*”. Therefore, the signalling role is less important for keiretsu than for independent firms. This does not mean that keiretsu are less active when it comes to buying back shares. According to Choi, Huh & Park (2009) keiretsu, where ultimate owners have relatively low control rights, are the most dominantly active in buying back shares. These keiretsu are more likely to repurchase stock in order to improve the control rights of the owners than trying to signal the market. The similarities between chaebol and keiretsu make Zhang’s findings the best prediction for the difference between chaebol and independent firms in this study.

Based on the above findings of earlier studies, I have formulated the following hypothesis:

Hypothesis I:

In the event of a share buyback announcement, I expect an abnormal increase in the share prices of Korean firms on the short run.

For the difference in share price behaviour after a buyback between chaebol and non-chaebol companies, based on Zhang's (2002) findings, I have formulated the second hypothesis as follows:

Hypothesis II:

The observed abnormal increase in share prices is expected to be larger for independent firms than for chaebol-affiliates.

4. Methodology & Data

4.1 Methodology

This study uses event study methodology in order to examine the effect of share buyback announcements on the share price reaction, abnormal return, of a firm around the date of announcement. For this analysis, the first step is to determine the expected rate of return. Then the abnormal returns can be determined and the mean abnormal return can be tested. The market model is used to find the expected rates of return (Fama et al., 1969) (MacKinlay, 1997):

$$\hat{R}_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

Where \hat{R}_{it} is the rate of return of a firm's (i) stock on day t and R_{mt} is the rate of return for the market portfolio (KOSPI). Using ordinary least squares (OLS) the parameters of the market model are estimated. The estimation window runs from 260 trading days before the announcement until 21 trading days before the announcement day [0], thereby covering 220 trading days [-260; -21]. Starting the estimation 260 trading days before the announcement day results in an estimation window that starts exactly one year before the announcement. The parameter of the market model can be used to determine the normal return. Subtracting the normal return from the actual provides the abnormal return (AR):

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \quad (2)$$

The cumulative abnormal return (CAR) for a certain event window ($t_1; t_2$) can be found through the sum of the abnormal returns:

$$CAR_i(t_1; t_2) = \sum_{t=t_1}^{t_2} AR_{it} \quad (3)$$

To test if the cumulative abnormal return is significantly different from zero, it has to be tested. The null hypothesis is as follows:

$$H_0 : E(CAR_i) = 0 \quad (4)$$

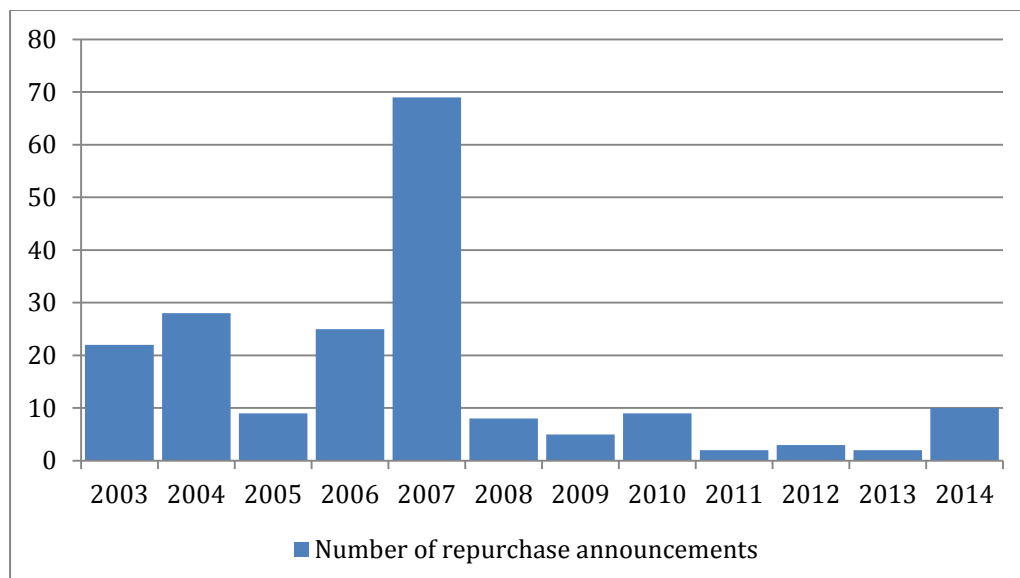
The *t*-statistic is found by using equation (5):

$$TS = \frac{CAR_i}{\sqrt{N} * \sigma(AR_i)} \quad (5)$$

4.2 Data

The data sample consists of Korean share repurchase announcements between 2003 and 2014. The share repurchase announcements used in this study are retrieved from Zephyr. In total 192 announcements of open-market share repurchase programmes were found. The distribution of these announcements over the years is shown in Figure 1. As can be seen in the figure, much more repurchase programmes were announced annually before 2008, with a peak of 69 announcements in 2007. During and after the 2008 financial crisis, only about five repurchase programmes per year were announced until 2013. This corresponds with the conclusion of Dittmar & Dittmar (2002) that share repurchases often occur in waves. They find that higher earnings, both transitory and permanent, lead to a higher number of shares repurchase programmes. This could explain the much higher number of buybacks before 2008.

Figure 1: Number of repurchase announcements per year (N=192) (Zephyr, 2015)

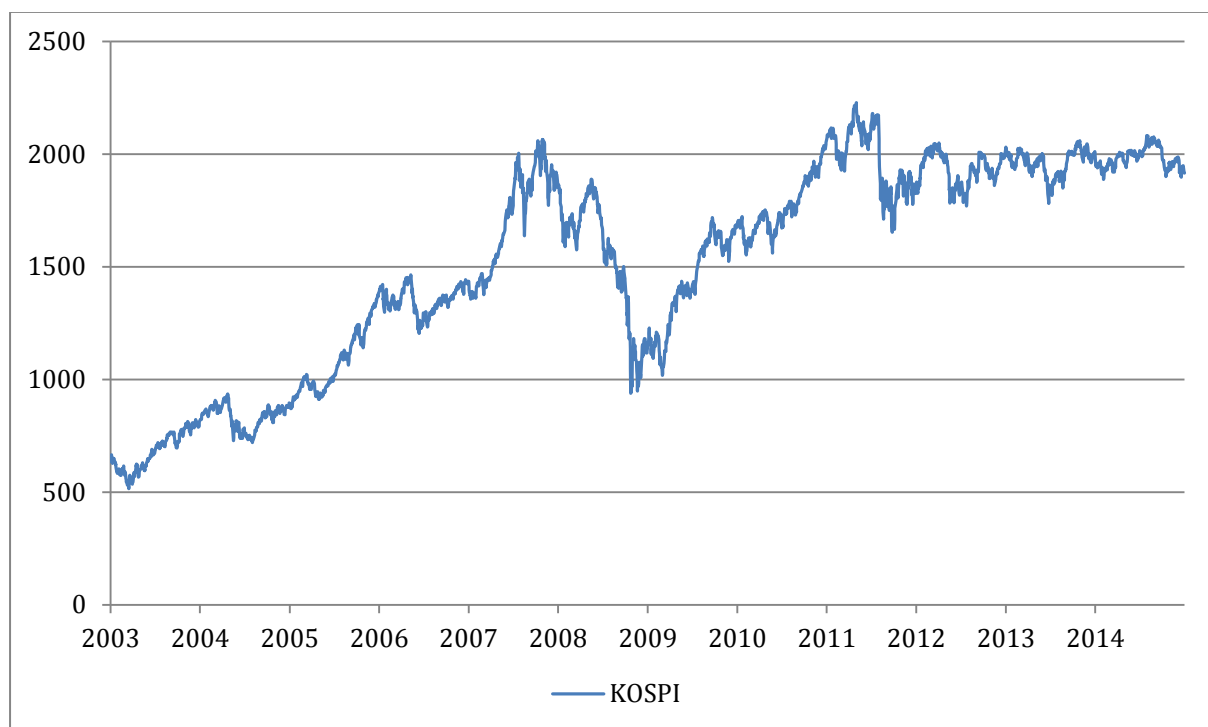


All 192 buyback programmes together represent 47.755 billion Won worth of shares bought back. Among these 192 programmes are 8 repurchases by Samsung Electronics Co., Ltd.,

Samsung's largest affiliate. The total value of the 8 repurchase programmes by Samsung Electronics is 15.360 billion Won. This means that the company was responsible for 32% for the amount of money spent on share repurchases in Korea between 2003 and 2014, which makes it Korea's top share repurchasing company by far.

Stock price data is retrieved from DataStream. Daily share price data from a year before the buyback announcement until 20 trading days after the announcement was available for 106 repurchases. Data from the Korea Composite Stock Price Index (KOSPI), the index of all stocks traded on the KRX, is also retrieved from DataStream and is used to determine the market return. Figure 2 shows the daily closing value of the KOSPI between 2003 and the end of 2014. As the figure shows, the index was growing very quickly in the first five years of the period of interest (2003-2007). Those were also the years that most repurchase programmes were announced as Figure 1 showed.

Figure 2: KOSPI (2003 - 2014) (Datastream, 2015)



Two or more repurchases by the same firm within one year are excluded as this may bias the estimation. This leaves 77 repurchase programmes, 48 chaebol and 29 non-chaebol, performed by 52 different companies. All of these companies are listed on the Korea Exchange (KRX).

Table 2 lists all 52 companies included in the study, the name of the chaebol that the chaebol affiliates belong to and the number of repurchase programmes performed per company between 2003 and 2014. As the table shows, many of the repurchase programmes are performed by affiliates of specific chaebol. 36 of the 48 chaebol share repurchase programmes are performed by Samsung (20 repurchases), Hyundai (9 repurchases, Hyundai Heavy Industries excluded) and SK group (7 repurchases). Also from the 192 announcements originally retrieved, it appears that Samsung, Hyundai and SK group are the chaebol most active in repurchasing stock. Other large chaebol such as LG Group, GS Group and Hanwha have performed only a few (and much smaller) repurchase programmes between 2003 and 2014 or even none at all.

The average size of the buybacks announced used in this study is 4.27%, with the smallest buyback 0.17% and the largest buyback 27.0% of outstanding public shares. The average worth of shares bought back is 348 billion Won, this average is larger for chaebol-affiliates (310 billion Won) than for independent firms (205 billion Won). However, the percentage of outstanding shares bought back is much larger for the non-chaebol, 6.14% vs. 2.82%. So independent firms buy back a larger portion of their publicly trading shares.

Table 2: List of companies

Company	Chaebol group	Number of repurchase programmes
Baeksan Co., Ltd.	-	1 (2003)
CJ Cheil Jedang Corporation	CJ Group	1 (2010)
Daeduck Electronics Co., Ltd.	-	1 (2007)
Daishin Securities Co., Ltd.	-	3 (2003, 2004 & 2007)
Dongkuk Steel Mill Co., Ltd.	-	1 (2003)
GS Engineering & Construction Corporation	GS Group	1 (2007)
Hanatour Service Inc.	-	1 (2007)
Hanjin Heavy Industries & Construction Co., Ltd.	Hanjin Group	2 (2003 & 2007)
Hyundai Elevator Co., Ltd.	Hyundai	1 (2004)
Hyundai Heavy industries Co., Ltd.	Hyundai Heavy Indus.	1 (2007)
Hyundai Mobis Co., Ltd.	Hyundai	2 (2003 & 2004)
Hyundai Motor Company	Hyundai	3 (2005, 2009 & 2014)
Hyundai Securities Co., Ltd.	Hyundai	1 (2003)
Hyundai Steel Co., Ltd.	Hyundai	1 (2006)
Ilung Pharmaceuticals Co., Ltd.	-	1 (2007)
Kia Motors Corporation	Hyundai	3 (2003, 2010 & 2014)
Korea Electric Power Corporation	-	1 (2006)
Korea PetroChemical Ind. Co., Ltd.	-	1 (2010)
KT Corporation	-	2 (2003 & 2007)
KT&G Corporation	-	3 (2003, 2006 & 2007)
Kumho Electric Co., Ltd.	Kumho Asiana Group	1 (2007)
LG Electronics Inc.	LG Group	1 (2003)
Miwon Commercial Co., Ltd.	-	1 (2007)
NAVER Corporation	-	1 (2014)
NCSoft Corporation	-	2 (2007 & 2008)
NH Investment & Securities Co., Ltd.	-	1 (2007)
Nongshim Co., Ltd.	-	1 (2006)
PaperCorea Inc.	-	1 (2007)
POSCO Co., Ltd.	-	3 (2003, 2004 & 2007)
S1 Corporation	Samsung	2 (2004 & 2010)
Samsung C&T Corporation	Samsung	1 (2007)
Samsung Electro-Mechanics Co., Ltd.	Samsung	1 (2009)
Samsung Electronics Co., Ltd.	Samsung	4 (2003, 2004, 2007 & 2014)
Samsung Engineering Co., Ltd.	Samsung	2 (2007 & 2010)
Samsung Fine Chemicals Co., Ltd.	Samsung	1 (2007)
Samsung Fire & Marine Insurance Co., Ltd.	Samsung	2 (2007 & 2014)
Samsung Heavy Industries Co., Ltd.	Samsung	2 (2007 & 2014)
Samsung Life Insurance Co., Ltd.	Samsung	1 (2014)
Samsung SDI Co., Ltd.	Samsung	2 (2003 & 2004)
Samsung Securities Co., Ltd.	Samsung	2 (2007 & 2014)
Sempio Foods Company	-	1 (2012)
Shinhan Engineering & Construction Co., Ltd.	-	1 (2013)
Shinhan Financial Group Co., Ltd.	-	1 (2012)
Shinyoung Securities Co., Ltd.	-	1 (2006)
SK Chemicals Co., Ltd.	SK Group	1 (2004)
SK Corporation	SK Group	1 (2006)
SK Gas Co., Ltd.	SK Group	1 (2006)
SK Holdings Co., Ltd.	SK Group	1 (2014)
SK Telecom Co., Ltd.	SK Group	3 (2003, 2006 & 2010)
Telcowa Co., Ltd.	-	1 (2012)
Whanhin Pharmaceutical Co., Ltd.	-	1 (2007)
Woongjin Thinkbig Co., Ltd.	-	1 (2006)

5. Results

Table 3 shows the daily average abnormal return (AAR) in percentage for the 5 days before and after a buyback announcement. The repurchase announcements result in a significant share price increase of 0.85% on the announcement day. The day after the announcement, the increase is even slightly higher, 0.89%. For chaebol affiliates, a significant average price increase of 0.95% is observed, followed by an increase of 0.71% on the day after, however less significant. Notable is the negative return of the chaebol group on day 5 of -0.45%, although only significant at the 10%-level. The non-chaebol companies do not show a significant price increase on the announcement day. However, on the day after the announcement, the increase is significant and higher than the Overall group, 1.2%. Figure 3, 4 and 5 show the AAR graphically.

Table 3: Average Abnormal Returns

Day	Average abnormal return %		
	Overall	Chaebol	Independent
-5	0.135	0.192	0.039
-4	-0.205	-0.430	0.167
-3	0.060	-0.018	0.188
-2	0.184	0.521	-0.372
-1	0.361	0.035	0.901
0	0.846**	0.948**	0.676
1	0.892**	0.708*	1.190*
2	0.007	-0.020	0.051
3	0.213	0.249	0.153
4	-0.085	-0.227	0.148
5	-0.164	-0.450*	0.292

* Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

Figure 3: Average Abnormal Return - Overall (N=77)

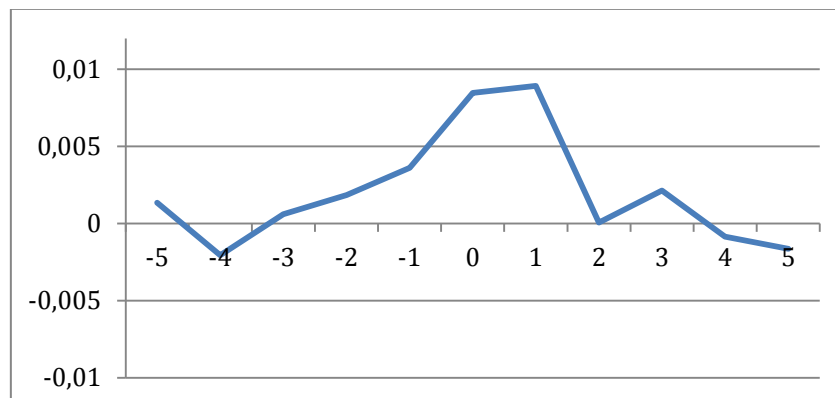


Figure 4: Average Abnormal Return - Chaebol (N= 48)

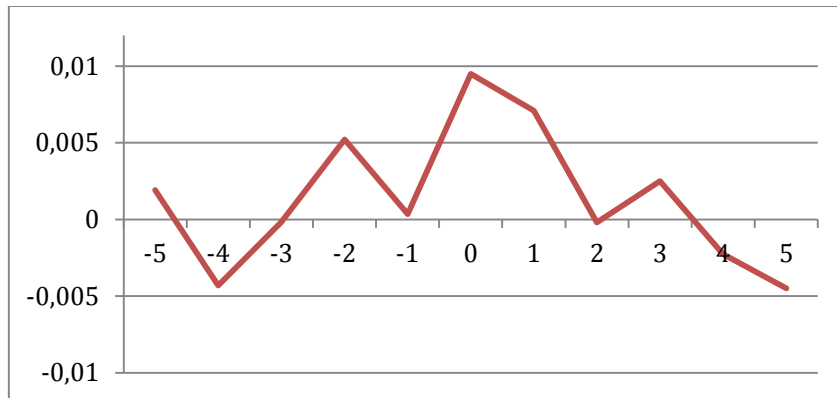


Figure 5: Average Abnormal Return - Independent (N =29)

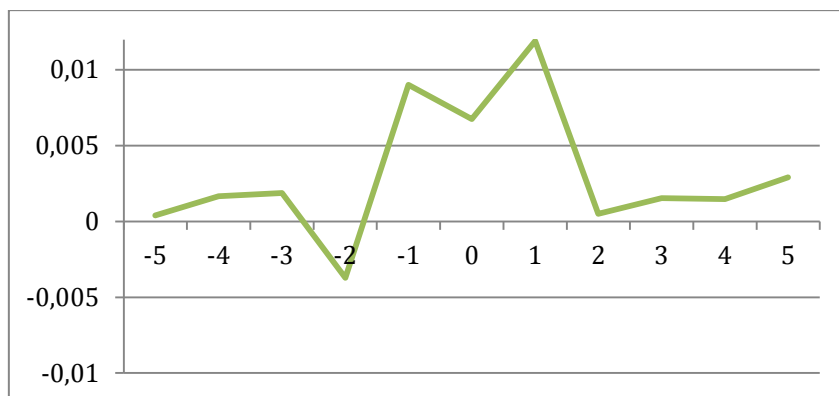


Figure 6 depicts the cumulative average abnormal return (CAAR) over the 11-day period around the repurchase announcements. For the period before the announcements, Figure 6 shows no sign of negative cumulative abnormal return in the days before the repurchase announcements, i.e. the cumulative returns are not significantly different from the normal line. This makes it unlikely that the firms have timed the announcements in order to signal undervaluation of their shares to the market (Ikenberry, Lakonishok & Vermaelen, 1995). For all three groups, overall, chaebol affiliates and independent companies, the figure shows a big jump in CAAR around the announcement day. The increase is higher for non-chaebol firms and the difference becomes larger when the time horizon is expanded. This can be observed more easily in Table 4, where the CAAR and corresponding p-values are given for all three groups for different event windows. As Figure 6 and Table 4 show, the abnormal increase in share prices is about 2.29% for Korean firms in the days around the announcement of a repurchase [-2; +2]. This increase is higher for the 'independent'-group, 2.95%, and slightly lower for the 'chaebol'-group, 2.19%. The 11-day event window [-5; +5] shows a significantly positive CAAR of 3.43%

for the 'independent'-group and 2.24% overall. For the 'chaebol-group, this 11-day window shows no significant result.

Figure 6: Cumulative Average Abnormal Returns - 11-day window (N=77)

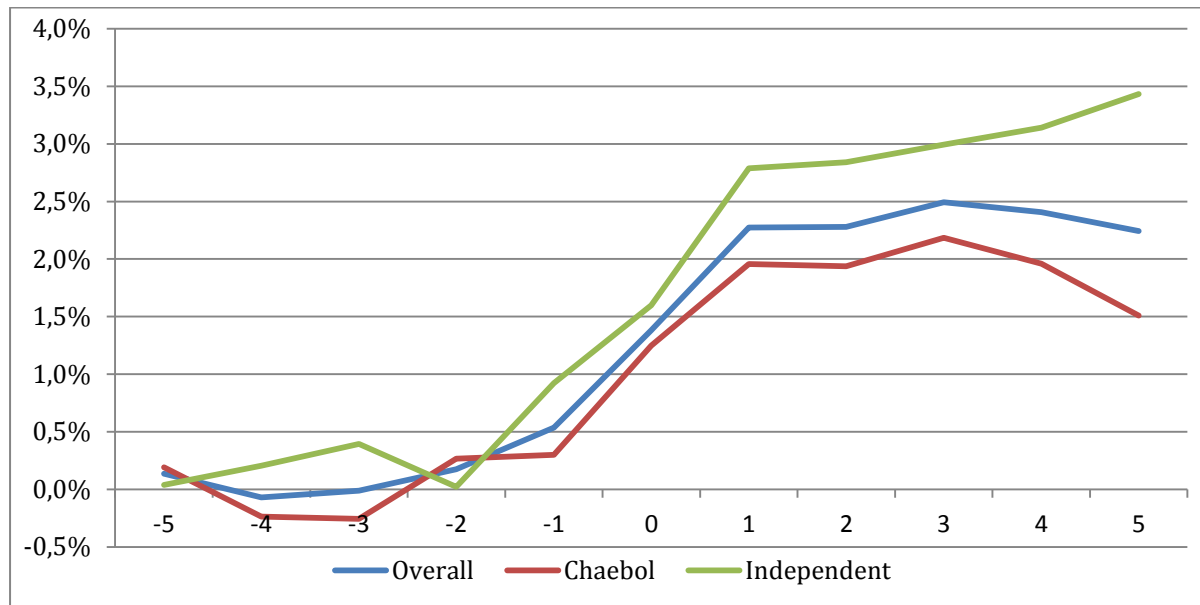


Table 4: Cumulative Average Abnormal Returns (N=77)

	[0]	[-1; +1]	[-1; +2]	[-2; +2]	[-5; +5]
<u>Overall</u>					
CAAR (%)	0.85	2.10	2.11	2.29	2.24
(p-value)	0.025**	0.000***	0.001***	0.001***	0.016**
<u>Chaebol</u>					
CAAR (%)	0.90	1.69	1.67	2.19	1.51
(p-value)	0.020**	0.006***	0.012**	0.004***	0.224
<u>Independent</u>					
CAAR (%)	0.68	2.77	2.83	2.95	3.43
(p-value)	0.370	0.013**	0.021**	0.044**	0.012**

* Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

Including a 4 day-event window [-1; +2] makes it easy to compare the results to the results found by Zhang (2002). The overall effect of 2.11% is considerably lower than the 4.58% Zhang found for Japan. However, a similar difference is found between chaebol and non-chaebol, 1.67% vs. 2.83%, as Zhang found between kereitsu and non-kereitsu 3.09% vs. 5.15%.

6. Discussion

6.1 *Chaebol versus Independent effect*

The results of this study show a similar (lower) effect of a buyback announcement on the share price for chaebol compared to independent firms as Zhang (2002) found for *keiretsu* versus non-*keiretsu* companies in Japan. One reason for the difference found between Zhang's subsamples is that *keiretsu* face less information asymmetry compared to non-*keiretsu* companies. This is because information is easily exchanged between *keiretsu*-affiliates and the affiliates tend to monitor each other (Dewenter & Warther, 1998). This monitoring and exchange of information also leads to a lower agency problem than independent Japanese companies would face (Hatakeda & Isagawa, 2004). Because of the higher agency problem and information asymmetry, the signalling effect of a share repurchase announcement is much larger for independent companies than for *keiretsu* (McNally, 1999).

Keiretsu and chaebol are much alike and this might explain the similarity of results found by Zhang (2002) and this study. For chaebol the agency problem seems to be less of a problem than for independent Korean companies. The controlling family is mostly concerned about long-term performance of the chaebol's subsidiaries, just like most of the non-family shareholders are. This is in line with Jensen & Meckling (1976) who argue that the interest and incentives of a controlling family are often in line with the interests and incentives of other shareholders. As the structure of the chaebol is pyramidal and much cross-shareholding exists between the subsidiaries there is also less information asymmetry between management and shareholders (Jiang & Kim, 2000).

6.2 *Controlling ownership*

Korea's most important share repurchasing company, both in value of repurchased shares as frequency of repurchase programmes, is Samsung Electronics. Also in the sample of this study Samsung's most important subsidiary is the number one share repurchasing company in size and frequency. Since 2002 the company repurchased about 2 trillion Won worth of shares per year and did so until 2007. Maximizing shareholder value is the only reason mentioned by the company for the buybacks between 2002 and 2007, stated in the annual reports as "*We also ... invested ... to repurchase shares as part of our ongoing efforts to increase shareholder value.*" (Samsung Electronics, 2004, 2006 & 2007) and "*gaining greater market confidence in the company's sustainable growth.*" (Samsung Electronics, 2005). After 2007 Samsung Electronics

did not repurchase shares until it announced a major share repurchase programme (2.2 trillion Won) on November 26, 2014. A more recent buyback programme, that is not in the this study's sample, was announced on October 29, 2015. With 11.3 trillion Won worth of shares to be bought back and cancelled, it is Korea's largest share repurchase announcement to date. The buyback is performed because the company thinks its shares are undervalued and next to defending the share price the company has to get rid of some of the approximately 60 trillion Won of cash and short-term assets (Se Young Lee, 2015). However, next to these reasons, it is likely that the founding family of the Samsung Group wants to reduce the number of publicly trading shares in order to enhance their control of Samsung Electronics (Joh & Ko, 2007).

Samsung Electronics is not the only Samsung subsidiary that is active in share repurchasing. As Table 2 shows, the Samsung Group as a whole performs a lot of buybacks and so do the Hyundai Group and SK Group. As it turns out, these chaebol are also Korea's most profitable chaebol. Together they represent almost 86% of total net profits of South Korea's top 30 chaebol in 2013 (Kato, 2014). Apart from Samsung, Hyundai, SK and LG, the Korean conglomerates seem to have lost their economic power and are unable to achieve (high) profits as before the Asian crisis starting in 1997 (Kim, 2013). As Korean companies are not allowed to perform stock buybacks with borrowed money, the lack of profitability and cash of most chaebol explains why these chaebol are not actively buying back shares and the profitable chaebol are.

6.3 *Executive compensation in Korea*

One of the arguments to repurchase shares, by some believed to be the most important in the United States and other western countries nowadays, is because top managers can boost their compensation by repurchasing shares. This is based on the principle that executives are rewarded when they boost the performance of the company they work for. Stock prices are commonly used as a measurement of performance of a company. Kato, Kim & Lee (2007) show that the way executive compensation is determined is no different in Korea. The overall results of their research show that "*cash compensation of Korean executives is significantly related to stock market performance*" (Kato, Kim & Lee, 2007). However, the interesting part of their study starts when they distinguish between the chaebol and non-chaebol firms. It seems that the overall result does not hold for the chaebol companies, no link is found between executive compensation and stock performance for these companies. This complements an earlier study by Campbell & Keys (2002) who primarily blamed the poor corporate governance within chaebol compared to regular Korean firms and chaebols' focus on other goals than profit maximization. Cashing in on short-term stock price increases that are provoked by buybacks

seems to be of less importance to chaebol. Controlling families are more interested in the long-term benefits that holding the chaebol can provide and are less interested in short-term price boosts.

In addition, the chaebol-families are mostly concerned about their own wealth, not the wealth of other shareholders (that do not belong to the family). The founding families of chaebol often have much control through voting rights in the business group, but own just a small portion of all shares. Cross-holding among the firms that belong to the same chaebol is very common. Combined with the pyramid ownership structure, with the founding family at the top of the pyramid, makes that the family can control all of the affiliates even if only a minority of about 2% of total stake is owned (Baek, Kang & Lee, 2006); (Kim, Sonu & Choi, 2015). In this way, the controlling family can benefit from the chaebol's resources at the cost of other shareholders (Claessens, Djankov, Fan & Lang, 2002). Controlling families are blamed to enrich themselves at the cost of outside shareholders (Kato, Kim & Lee, 2007). This makes that the family is not concerned about the profit or loss of a single subsidiary rather than the whole enterprise's performance.

The study by Bae, Kang & Kim (2002) that showed that chaebol member firms face a drop in stock price when acquiring another firm, while the acquisition leads to increasing share prices for the other firms of the chaebol. This means that the controlling shareholders gain from the merger, while the minority shareholders lose. This is a form of 'tunneling', the extraction of corporate resources to the benefit of the controlling shareholders through both legal or illegal transactions (Friedman, Johnson & Mitton, 2003). Tunneling is common among chaebol and Moskalev & Park (2010) show several examples of tunnelling that benefitted chaebol families, among which are Samsung and LG.

Their business groups have made the controlling families very wealthy, the inequality between the families and the rest of the country is very high (Campbell & Keys, 2002). The income inequality that results from share buybacks is one of the main reasons why Lazonick (2010) thinks buybacks should be abolished in the United States. However, the Korean example shows that such inequality can also arise without massive repurchases, the beneficiaries being the shareholding family instead of the stock-optioned CEO.

7. Conclusion

7.1 Limitations

The research on share repurchases performed in this paper has several limitations. An interesting group of buybacks had to be excluded. This group consisted of companies that announced a buyback within one year after listing on the Korea Exchange. Stock price data of 260 trading days before the announcement of a buyback was required for each firm in the sample in order to construct the estimation window. For a number of 86 announcements no or not enough stock price data before the announcement was available. Most of the excluded announcements were by non-chaebol companies. As the remaining sample had only 29 non-chaebol companies, this implies that many independent companies announce a buyback soon after they list on the stock exchange or do not perform a buyback at all.

Secondly, in order to avoid biased results, buyback announcements performed by the same company within a short period after a previous repurchase announcement had to be excluded. To meet this requirement, a number of 29 repurchase announcement had to be removed from the sample. This reveals the interesting fact that about 38% of the companies in the sample announced a second buyback within a year after the initial buyback. It also means that for the most frequent share repurchasing companies, such as Samsung Electronics, only a part of the buybacks are included in the sample.

Another limitation of this study is the comparison to the effect of share repurchase announcements in other countries. The requirement of Korean repurchase regulation to perform an announced buyback within 3 months is specific for Korea and is absent in the repurchase regulation of most other countries. This makes that false announcements about buybacks appear much less than in Korea than in other countries. It also means that Korean firms often start the actual repurchasing of shares within days after the announcement and this might bias the 11-day [-5,+5] event window. This makes it hard to compare the results to countries where companies only start to buy back shares weeks after the announcement or even do not repurchase at all.

7.2 Conclusion

Share repurchases have become an important method of corporate pay-out for companies in many countries in recent decades. Repurchasing stock gives a company financial flexibility and can increase shareholder value, avoid a hostile takeover and enables the management of a company to signal undervaluation of the company's shares to the market. Critics of share repurchase warn for the use of buybacks in order to increase the value of executives' stock options.

This study has examined the effect of share repurchases on share price behaviour of South Korean firms. An event study has been performed on 77 share repurchase announcement by 53 KOSPI-listed companies between 2003 and 2014. The study also examines the difference of this effect between chaebol and non-chaebol companies by dividing the 77 announcements into two subsamples. The overall result shows a statistically significant average abnormal return (AAR) of 0.85% on the announcement day. The cumulative average abnormal return (CAAR) found for the [-1,+2] 4-day event window is 2.11% and highly significant. The CAAR increases for longer event windows (to 2.24% for the [-5,+5] 11-day window), but decreases in significance as the event window increases in length. The results of the subsamples show a higher CAAR of 2.83% for non-chaebol compared to 1.67% for chaebol companies on the 4-day event window (both significant). For chaebol-affiliates the CAAR is only significantly positive for a maximum of two days after the announcement. I conclude that there is indeed an abnormal increase in share prices of Korean firms in the short run after a share buyback announcement. Also, this effect is larger for independent firms than for chaebol-affiliates.

The lower effect for chaebol-affiliates can be explained by less information asymmetry and a lower agency problem that chaebol-affiliates face compared to independent companies. Non-chaebol companies might start a buyback in order to cash in on short-term stock price increases that are provoked by buybacks. However, chaebol controlling families are more interested in the long-term benefits that holding the chaebol can provide and are less interested in short-term price boosts. In addition to the usual motives for a share buyback, a chaebol might perform a repurchase in order to increase the control of the founding family over a certain subsidiary. However, there is no reason to believe that chaebol perform a buyback in order to boost executive compensations through stock options.

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