Master Thesis Finance

Wealth effects of equity carve-outs:
Evidence from Asian companies

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Abstract

Economic research about the value creation of equity carve-outs is mainly based on the US market and the European market. This master thesis conducts a research on the market in Asia in the period from January 1, 2000 until December 31, 2012. The existing empirical literature shows mainly positive abnormal returns around the equity carve-out announcement period. The long-term evidence presents mixed results for both parent and subsidiary returns. In this master thesis the value creation around the announcement period and the long-term wealth effects of equity carve-outs has been tested. Furthermore, the paper analyses the determinants of value creation. The results show positive short-run wealth effects and negative long-run wealth effects. Further there is evidence that supports the divestiture gains hypothesis, rejects the asymmetric information and cannot conclude that there are differences between countries based on law origin or shareholder rights.

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1 Introduction

1.1 Background and motivation

In 1986 one of the first studies on equity carve-outs is performed by Schipper and Smith (1986) and is based on US data. After that study many more academics followed them with research on the US market. Well known examples are the papers by Michaley and Shaw (1995), Allen and McConnell (1998), Vijh (2002) and Powers (2003). The description "The initial public offering of some of the stock of a wholly owned subsidiary" was given by Schipper and Smith (1986). They desribe an equity carve-out (ECO) as a special restructuring method with a restructuring and a financing element and both these elements create value.

According to Vijh (1999) a parent firm raises capital with an equity carve-out by selling a part of the equity in a completely owned subsidiary to the public market by an initial public offering (IPO). Pojezny (2006) describes that an equity carve-out has six stages. First, the equity carve-out is a public listing. Second, the parent firm is listed on the exchange. Third, the subsidiary must be controlled by a majority. Fourth, the subsidiary has to be a separated and legal entity. Fifth, the offer has to be public. The sixth and last stage is that the definition of an equity carve-out shows no information about the controlled stake by the parent firm. Previous research on the wealth effects of the US presents positive abnormal returns around the announcement period.

The results of the long-run wealth effects studies show negative returns for parent firms. The research is based on holding periods till four years after the ECO. The results of the long-run wealth effects contradict with each other with positive and negative long-run abnormal returns for the subsidiaries.

Research on Europe has been done by Elsas and Löffler (2001), Stienemann (2003) , Fucks (2003), Bühner (2004), Wagner (2005), Rüdisuli (2005) and Pojezny (2006). Their conclusions on the short-run announcement return was the same as in the US, because they all reported

positive short-run wealth effects. Elsas and Löffler (2001) and Stienemann (2003) used a German sample for their research about the announcement return of ECOs. Bühner (2004), Rüdisuli (2005) and Pojezny used a sample of firms from whole Western-Europe.

The presence of research on the long-run wealth effects of ECOs from Europe are minimal. Research by Rüdisüli and Pojezny on long-run wealth effects in Europe presents negative long-run wealth effects for both the parent firm and the subsidiary firm.

For explaining the wealth effects there are various kinds of theories. Explainable factors for the wealth effects are corporate focus, incentives management, financing and investment motives, complexity, undervaluation and pure-play, reducing information asymmetry, wealth transfers from bondholders to equity holders, tax implications, relative size of the ECO, timing of the ECO, retained stake by the parent firm, geographical focus and origin of the law system and shareholder rights.

Schipper and Smith (1986) mention restructuring of asset management and incentives of the management as one reason for value creation. This reason for value creation can be divided into two reasons, the first is restructuring of asset management and the second is incentives management.

Vijh (2002) reported a positive relationship between increasing focus and positive wealth effects and Powers (2003) states that parents create subsidiaries to create a more efficient organisation. Improved managerial incentives is mentioned by Aron (1991) as factor that creates value in his research by spin-offs. Allen and McConnel (1998) described that abnormal returns of ECOs are higher when proceeds are used to repay debt and no longer managed by the management.

Second reason mentioned by Schipper and Smith are the financing motives. The financing motives can be divided into the financing strategy and the investment strategy. The financing

strategy creates value regarding Lang, Poulsen and Stulz (1995). They present the finding that as financially distressed firms use their proceeds for meeting their financial obligations they experience positive stock price reactions.

McConnel and Muscarella (1985) and Pojezny (2006) mention that the investment strategy also creates value. The reason McConnel and Muscarella found is the positive stock price reaction on the capital expenditure plans and Pojezny mentions that an equity-carve out allows the parent firm to reduce the weighted average cost of capital.

The complexity, undervaluation and pure-play hypothesis is created by Vijh (2002). He suggests that by separating the parent firm and the subsidiary the subsidiary has to reports its own financial statements with as result a better understanding for the investors. The better understanding helps to a better estimation of the firm value and undervaluation will disappear.

In contrast to the complexity, undervaluation and pure-play hypothesis is the asymmetric information hypothesis. The asymmetric information hypothesis is developed by Nanda (1991). Nanda assumes that not every investor has the same information available and that it is difficult to estimate value of different company divisions. With a theoretical model he concludes that an ECO reveals negative information about the subsidiary and positive about the parent firm. The combined value will be positive because the size of the assets of the firm will be larger than that of the subsidiary.

Pojezny (2006) mentions a wealth transfer from bondholders to equity holders as possible reason for positive wealth effects. In the case of a carve-out the variance of the subsidiary increases and because of that the value of the equity could increase, while the total value stays equal. The increase in equity comes at the cost of debt and is thus a wealth transfer from the bondholder to the equity holders.

The relative size of the carve-out compared to the parent firm is a factor that can explain the wealth effects. Allen and McConnel (1998), Vijh (2002) and Rüdisüli (2005) find that the excess returns increase with the relative size of the subsidiary.

Timing the market is an important determinant in the restructuring decision and the most achievable restructuring method following Jung, Kim and Stulz (1996). Womack (1996) concludes that analysts have the ability to time the market and Holden (2005) mentions that managers have an incentive to time the market when they have shares or options in the firm or care about the interest of the shareholders. Hand and Skantz (1999) found an accurate correlation between ECOs and an overvalued stock market.

The retained stake can also be a possible factor that influences the abnormal returns. Powers (2003) found a positive relationship between the long-term excess returns and the retained stake. Boone, Haushalter and Mikkelson (2003) found a negative relationship between the operating performance and the retained stake.

Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) mention law origin system and shareholder rights as factor that influence value creation. Veld and Veld-Merkoulova (2004) did research with the data from La Porta et al and found the positive effect of origin of law system and high shareholder rights.

Other reasons for value creation can be tax implications and geographical focus. The difference in results presented by Veld and Veld-Merkoulova (2004) of the focus and non-focus group were not significant.

1.2 Research problem and objectives

The goal of this paper is to study the wealth effects for Asian ECOs and the factors that might influence these wealth effects. The studies on wealth effects of ECO announcements are mainly based on the United States and Europe. Previous research mainly examined the short-run wealth effects. However, there are enough studies done on the long-run wealth effects of parent firms and subsidiaries. The main idea in finance research papers is that all information is directly and perfectly processed in the share prices of the markets and firms.

The main question of the thesis:

Do Asian equity carve-outs create wealth for the shareholder and through which factors is this shareholder wealth created?

To test this main question the literature review will do research on previous academic literature of ECOs. In the literature review the short-run wealth effects for the parent firms and the long-run wealth effects for both the parent and subsidiary will be reviewed.

The empirical research will test the short-run and long-run wealth effects and examine the earlier mentioned factors that might explain these wealth effects. The factors that might influence the shareholder wealth will be tested with univariate tests and a univariate and multivariate regression analysis. The long-run abnormal returns of the parent firms and subsidiaries will be analysed with a multivariate regression analysis.

The main focus of this thesis is based on the papers by Schipper and Smith (1986), Vijh (2002), Powers (2003), Rüdisüli (2005) and Pojezny (2006). Also the papers by Sun and Chen (2009), Otsubo (2011) and Sun and Shu (2011) are used for the literature review. Sun and Chen (2009) used as sample 129 Taiwanese ECOs between 1994 and 2007, Sun and Chen (2011) based their research also on a sample of Taiwanese ECOs in the period between 1994 and 2007. The difference was that their empirical research was done with a sample size of 136 companies.

1.3 Structure of the research paper

The structure of the paper is as follows, chapter 2 presents the theoretical framework of ECOs. The characteristics of the ECO will be described and the factors that might explain the wealth effects of the carve-outs. Chapter 3 presents the shareholder wealth effects from existing studies. The first subsection presents the main findings on short-run shareholder wealth effects and the second subsection presents the main findings on the long-run shareholder wealth effects. Chapter 4 presents the main research question of the thesis and the hypotheses based on the theoretical framework. Chapter 5 presents the selected data, descriptives, methodology and the proxy variables. In chapter 6 the empirical results will be presented and analysed for both in the short-run as well as in the long-run. Finally, chapter 7 will be used for the interpretation of the results and the limitations and suggestions for further research.

2 Theoretical framework

In this chapter the definition and characteristics of an equity carve-out will be described and the motives for an equity carve-out will be discussed by the academic literature. Secondly, the wealth effects of equity-carve outs on the short-run and in the long-run will be reviewed by previous empirical research. Finally, the factors that can explain shareholder wealth effects will be reviewed and discussed.

2.1 The definition, characteristics and reasons of an equity-carve out

In previous research are different types of definitions given for ECOs. Wagner (2005) defines that the creation of equity carve out is the public offering of shares of a subsidiary that was not formerly trading in the public market, the shares before the event of public offering were hold by its parent firm. Schipper and Smith (1986) give the description "the initial public offering of some of the stock of o wholly owned subsidiary" to an ECO. Vijh (1999) describes that in an ECO the parent firm raises funds by selling a part of the equity in a completely owned subsidiary to the public market by an IPO.

The event of creating an equity-carve out can be divided in six stages (Pojezny, 2006). He distinguishes the following stages in the creating process of an ECO.

1. The equity carve-out is a public offering;
   The subsidiary company has to go public, that will say that a private held company has to change to a publicly held firm, the equity has to be offered to a broad range of investors, possible to buy shares in the firm for investors, shares offered in a secondary market and the creation of an ECOs raises funds for the subsidiary or the parents' shareholders.
2. The parent firm is listed on an exchange;
   It is important that the parent firm is listed on the exchange, because it will give the opportunity to do research on the value creation of the ECO on the long-term.

3. The subsidiary has to be controlled by majority;

   The parent company has to have a majority of the voting rights, more than 50 percent. This is in contrast to the requirement set by Vijh (1999), because he requires that the subsidiary is totally owned by the parent company.

4. The subsidiary has to be a separated and legal entity;

   The subsidiary has to be a separated and legal entity, it could already exist prior to the announcement of the ECO or it can be created in the process of the initial public offering.

5. The offer has to be a public offer;

   The offering of shares has to be public, but it does not foreclose that the parent firm can favour existing shareholders with the offering of the shares of the ECO.

6. The definition of the ECO does not give information about the stake held by the parent firm.

   In an ECO the parent firm can retain a majority or minority of the equity of the subsidiary, but it is also possible to sell the complete stake of equity.

Frank and Harden (2001) distinghuish two specific forms of ECOs after selling the shares in a non-listed subsidiary to the market through an initial public offering, namely primary carve-outs and secondary carve-outs. In the case of a primary carve-out the subsidiary sells newly-issued shares, while in the case of a secondary carve-out the shares are existing shares owned by the parent company.

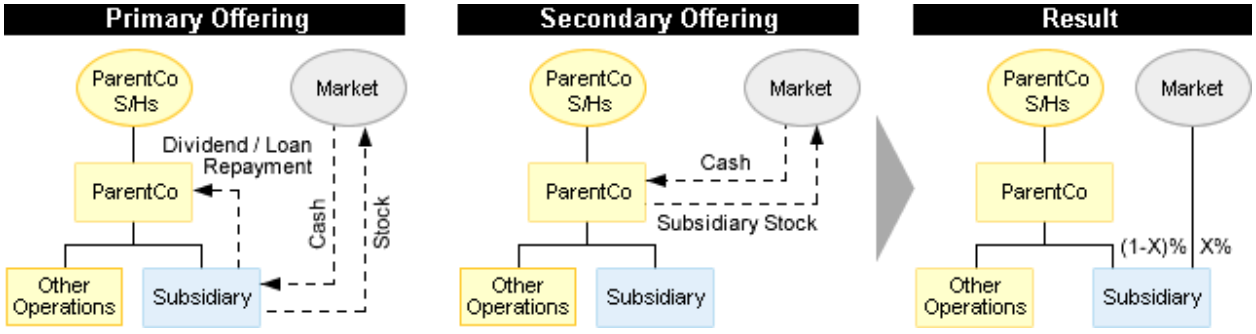


Figure 1: Illustration of a primary offering and a secondary offering.

It is mentioned by Elsas and Lösser (2001) that the new shareholders after offering shares at the public market are public shareholders and that the created subsidiary has dispersed ownership. This is in contrast with the situation before the public offering with concentrated ownership, mostly only the parent firm. Other characteristic of an equity carve out is that it always generates new funds for the parent firm or the subsidiary. This is also described by Schipper and Smith (1986), they mentioned an ECO as a unique restructuring method. It is unique because it is not only a restructuring method, but also a way to raise new funds. Often the parent still holds significant stakes in the created subsidiary after the IPO, but the management of the parent has lost significant control rights is pointed out by McConnel (1998).

Pojezny (2006) mentions that ECOs are special, because the combination of two clear corporate mechanisms. A carve-out is similar to financial restructuring methods like initial public offerings and seasoned equity offerings. The similarity with them is that an ECO goes public also and generates cash with going public. An ECO has similarities as well with spin-offs and divestitures, because the changes in the structure of the parent firm's assets and the transfer of control over the subsidiary from the parent firm to the new shareholders.

Partial divestitures through ECOs are more likely when the relationship-specific investments are higher in the industry of the subsidiary. The relation-specific investments are measured by the research and development intensity and if there are contractual agreements between the parent firm and the subsidiary after the initial public offering of the subsidiary according to Jain et al (2009). This is caused by the fact that higher intensity of research and development environments and the presence of product market agreements indicate potential problems by contractual agreements, to occur these problems parents maintain an ownership stake in the subsidiary through an ECO. The paper by Fee et al (2006) confirms these findings, because the papers report that ownership of supplier firms is beneficial when potential problems can occur into the future.

The motives for an ECO is the desire for value creation for the shareholders of the firm by increasing focus on the core business, eliminating divisions with bad performance, eliminating negative synergies between unrelated divisions, creating stand-alone firms (easier to evaluate) and reduce the debt burden.

ECOs have compared to other restructuring strategies like divestiture, spin-offs, split-ups and split-offs the advantages that they generally are more profitable, grow faster, operate in industries with high market to book values and outperform their compares on average in the year before the announcement date following Wilde (2010).

2.2 Factors that might explain the wealth effects from equity carve-outs

Corporate restructuring is a major change in the structure of firms' assets in combination with an important change in the corporate strategy of the firm regarding Pojezny (2006). The most important target of corporate restructuring is creating value for the shareholder. This is shown by many company announcement reports that report corporate restructuring as motive.

Bowman and Singh (1993) describe that corporate restructuring has three kind of forms. The following forms of restructuring can be distinguished:

1. Portfolio restructuring;

Portfolio restructuring can be defined as material changes in the asset holdings of the firm by all forms of corporate restructuring: acquisitions, divestitures, liquidations, spin-offs, split-offs, split-up and ECOs. ECOs are in the most cases linked with portfolio restructuring activities.

2. Financial restructuring;

Financial restructuring can be determined as material changes in the capital of the firm and the ownership structure by transactions from public to private equity, transactions from private to

public equity, leveraged recapitalizations and debt to equity swaps following Bowman and Singh (1993)

3. Organizational restructuring.

Organizational restructuring can be described as the material changes in the structure of the firm and the new created hierarchy. Heugens and Schenk (2004) mention organizational structure as the next step after portfolio or financial restructuring.

The research by Bowman, Singh, Useem and Bhadbury (1999) finds that financial restructuring has the highest measurable return. Portfolio restructuring leads to smaller, but still positive returns for the shareholder. The returns from organization restructuring are dependent on the specific situations and therefore the results are not consistent.

There are three main reasons for an equity carve out according to Schipper and Smith (1986):

(1) Restructuring;
(2) Financing;
(3) Unlocking the value.

2.2.1 Restructure asset management and incentives

Schipper and Smith (1986) distinguish in their research restructuring of asset management and incentives of the management as one of the four motives for carve-outs. Asset management restrucuting and incentives can be distinguished into two different motives, namely corporate focus and the incentives of managers.

2.2.1.1 Corporate focus

A change in corporate focus normally occurs by a restructuring program or a decreasing investment in the business segment of the subsidiary according to Schipper and Smith (1986).

They also mention that restructuring a firm helps the parent firm to improve their efficiency, focus on their core business and reduce the agency costs.

Firms with a corporate focus are focusing themselves on their core business. The motivation for this is to focus on their primary business and to reduce or even delete negative synergies between the parent and the subsidiary. This strategy is in contrast with diversified firms with their focus on economies of scope, spreading risks about the business units and a better access to the capital market. The corporate focus strategy is also well known under the term refocusing strategy in the academic literature.

John and Ofek (1995) found in their research that carving-out unrelated assets leads to an improved performance in the three years following the carve-out for the remaining assets of the parent firm. The improved performance primarily happened by the focus increasing companies. The change in operating performance is positively related to the returns for the parent around the announcement date of the equity carve out, the reason they found was that after the carve-out of the subsidiary the assets were better managed and thus increased the market value.

The positive relationship between an increasing focus and positive wealth effects is confirmed by the findings of Vijh (2002). The research suggests that an ECO decreases negative synergies between the subsidiary and the parent and the reduction of the negative synergies will increase the market value of the combined shares.

Pojezny (2006) mentions that a company can conclude on the basis of a strategic review of the business of the firm that a specific business unit does not match with the strategy of the whole firm or the need to sell a losing business unit. Other reason could be that the firm wants to develop its own core business or the business of the subsidiary, but that the capital to fund the investment is not available. In that case an ECO could raise money to invest in the business of the parent of the subsidiary. Pojezny also concludes that the abnormal returns in the

announcement period are higher when parent and subsidiary belong to different industry classes, because negative synergies between the firms will be declined. This conclusion is based on a regression analysis where the focus increase of the parent firm is classified by news lines in LexisNexis and Factiva.

According to Powers (2003) some parents create subsidiaries to create a more efficient organization, the increased efficiency can come from different channels. Vijh (2002) mentions that separating firms by an ECO can be followed by higher firm values, because the ECO eliminates most of the value decreasing activities and negative synergies between the parent firm and the subsidiary will be deleted as well. John and Ofek (1995) suggest that a firm can reach an increased focus and a more efficient process of the core business by selling unrelated assets in a carve-out. They suggest that value creation originates by better management of the assets that will be retained by the parent firm.

Comment and Jarrel (1995) mentioned that in the 1980s there was a period with diseconomies of scope with the trend toward focus or specialization and a positive link between the stock returns and the increasing focus. Firms that are largely focused have a lower chance to be a target in a hostile takeover compared to other firms. They concluded that there is a positive link between focus and positive shareholder returns and this suggests that increasing corporate focus is consistent with shareholder wealth maximization. Consistent with their research diversified firms do not have the advantages that firms with corporate focus have because of the diversification. The first reason is that diversification allows a bigger ratio of debt in the firm. Secondly, it permits a substitution of internal cash transfers for external transactions and the third reason is that diversification increases the chance on a takeover.

Vijh (2002) examined if the returns of the announcement period were higher when the parent and subsidiaries operate in different industries. In the research he used data of the Wall Street Journal and the two-digit SIC codes. The empirical test with the data from the Wall Street Journal

resulted in higher returns of the focus-increasing carve-outs, but these results were not statistically significant. The returns based on the SIC codes resulted in significant higher returns for carve-outs with an increased focus, the difference between the groups was significant at the 5 percent level with a different in returns of 1.54. The returns from the newspaper reports resulted in a significant difference of 0.34 percent for carve-outs with an increased focus. Research on the long-term wealth effects of carve-outs by Vijh (1999) indicates that there is a possible relationship between the subsidiary stock performance and the business segments of the parent before carve out. However, the result is not significant and there might be other possible explanations of the long-run wealth effects of the carve-outs.

Pojezny (2006) concludes in his paper that the abnormal returns in the announcement period are higher when parent and subsidiary belong to different industry classes, because negative synergies between the firms will be declined. This conclusion is based on a regression analysis where the focus increase of the parent firm is classified by news lines in LexisNexis and Factiva.

2.2.1.2 Incentives management

Following Schipper and Smith (1986) divisions are often carved-out as subsidiary. This change has as consequence a realignment of the responsibilities of the involved managers. The contractual incentives of the subsidiary managers are usually changed and connected to the share price and the (operational) performance of the subsidiary. This is proved by two facts; the first fact is that 59 firms from the used sample of 63 carve-outs used plans for managerial incentive compensation, most of these changes in the managerial incentives happened in the first year afterwards the carve-out event. Second, it proved by the motives of the parents that focus on the motivational benefits associated with the subsidiary shares. Schipper and Smith distinguish in their research the possibility to give the subsidiary managers more autonomy besides the change in contractual incentives.

Aron (1991) argues that improved managerial incentives created by stock-based compensation after spin-offs leads to higher firm value. The formulated hypothesis suggests that the manager of a subsdiary can be better monitored and evaluated by the market, because the share price of the separated entity will reflect the intrinsic value better. In contradiction to the opinion of Aron, Vijh (2002) argues that changing incentives are rarely mentioned in the Wall Street Journal as reason for an ECO. Allen and McConnel (1998) show that carve-out returns are higher when proceeds are used to repay debt and not longer be part of the managerial discretion. The result from their research is that due to agency costs the returns are higher if the cash is removed from the parent with a carve-out.

The research by Larraza-Kintana, Wiseman, Gomez-Mejia and Welbourne (2007) proves that stock-based compensation is largely used in the situation of an initial public offerings. They suggest that the reason for this would be to motivate the managers by doing their job and to invest in attractive financial projects.

2.2.2 Financial motives

Schipper and Smith (1986) distinguish in their research financial motives as one of the four motives for carve-outs. The financial motives can be separated into finance strategy motives and investment strategy motives. Regarding Powers (2003) it is unlikely that the corporate focus is the only reason for ECOs. Important element of carve-outs is the fact that they are generating cash, in most cases for the parent firms. It is assumable that ECO events are important for raising cash and that they will occur when they are the most effective financing method for the parent firm. McKenna (2000) mentions that it is difficult for conglomerates to fulfil their financing needs. This is even more difficult if the firm has various businesses with different risk-return trade-offs and different product lifecycles. Raising equity capital is one of the main motives or even the most important reason for an ECO. The research by Schipper and Smith (1986) shows that more than 42 percent of the carve-outs has a financial motive for the transaction. Carve-outs

are a source of liquidity for firms with financing needs following Rüdisüli (2005), the reason of a lack of liquidity can be financial distress or large investment opportunities.

The financial motives can be divided into two different hypotheses, namely the financing strategy hypotheses and the investment strategy hypotheses.

2.2.2.1 Financing strategy

The financing strategy hypothesis suggests than an ECO creates more shareholder value when the raised capital will be used for paying back the financial obligations, usually debt or other financial liabilities.

Lang, Poulsen and Stulz (1995) found that financially distressed firms use their raised capital for meeting their financial obligations and experience positive stock price reaction. Allen and McConnel (1998) tested the hypothesis by comparing two groups, a group that used the raised capital to repay debt and the other group used the capital to invest. Their empirical research shows that the alpha of the group that repays their financial obligations was significantly greater than the other group. Result of the research was that carve-outs where the raised capital was used for paying down debt, the average excess stock return was 6.63 percent. This was in contrast with the group where the raised capital was used for investment purposes with a negative average stock return of 0.01 percent.

The proceeds of the ECO may belong to the parent firm or the subsidiary (Vijh, 2002). This depends on the type of public offering, primary or secondary. Vijh tested in his paper the financing strategy hypothesis with the Wall Street Journal reports. He mentioned that the hypothesis cannot be rejected and thus holds if the alpha is higher when there is reported a financing strategy by the Wall Street Journal as motive for the ECO. The conclusion of his empirical research is that the financing strategy hypothesis holds, because there is a significant

and positive difference in alpha of 1.41 percent at a level of 10 percent between the groups with a reported financing strategy motive and the group without reported financing motives.

In contradiction to the earlier mentioned literature the empirical research by Pojezny (2006) does not confirm the financing strategy hypothesis. The result of his test is a significantly negative coefficient of 0.005 percent.

2.2.2.2 Investment strategy

The investment strategy hypothesis is suggesting that an ECO has a positive wealth effect when it is used for funding the investment opportunities of the subsidiary. The hypothesis is based on the research by McConnel and Muscarella (1985), they found a positive market reaction on the announcement of capital expenditures plans.

As reason for the investment strategy is mentioned by Pojezny (2006) that an ECO may allow a firm to decline the weighted average cost of capital. Schipper and Smith (1986) reported that ECOs have significantly higher price-to-earnings ratios than their formerly parents. With their higher ratios the subsidiaries are higher valuated compared to their parents and because of the higher valuation of the subsidiaries they could raise equity against a lower weighted average cost of capital. Vijh (2002) is also mentioning that the proceeds of the ECO may belong to the parent or subsidiary, which is depending on the form of offering.

According to Mikkelson and Partch (1986) the announcement of a seasoned equity offering has a negative market reaction, but that the reaction is less negative if proceeds are used to fund the capital expenditures. The research by Vijh (2002) confirms the investment strategy hypothesis, the empirical research with the help of the Wall Street Journal shows a positive, but not significant, difference in alpha of 2.33 percent between the group with reported investment reasons and the group without investment reasons.

2.2.3 Complexity, undervaluation and pure-play

The complexity, undervaluation and pure-play hypothesis is created by Vijh (2002) and is based on previous research by Schipper and Smith (1986), Krishnaswami and Subramaniam (1999) and Vijh (1994). A carve-out commits the subsidiary to report the financial statements and this will have as result a better understanding of the business of the subsidiary for the investors. The better understanding of the business helps the investors to better estimate the values of the subsidiary and the parent and the undervaluation will disappear. The separated entities will also attract new investors because the subsidiary creates a new specific investment opportunity for and gives investors the possibility to diversify and increase the risk-return trade-off. Vijh finds that these reasons for carve-outs are mentioned in the reports of the Wall Street Journal and associates them with higher returns on average around the announcement period.

The financial statements made by the subsidiary have as result that investors better understand the business of the subsidiary according to Schipper and Smith (1986). The plan for public trading of the subsidiary is a reason for positive expectations from the market and an important reason for carve-outs.

Vijh (1994) was suggesting that the existence of parent and subsidiary stocks attracts different investors and leads to positive excess returns. Using analytical forecasts Krishnaswami and Subramaniam (1999) show that the forecast of earnings improves after separation of the firm. They find evidence for the result that the positive wealth effect around spin-offs is positively related to the supply of information.

Other reason could be that the increased information by the ECO internal control mechanisms are replaced by more efficiently external control mechanisms. This could be done because the external market can control the subsidiary instead of the management that controlled the internal business unit.

2.2.4 Reduce information asymmetry

The definition of asymmetric information is that not all parties involved in the carve-out have the same information available. In most cases it is difficult for investors to estimate the value of the individual business units. The asymmetric information motive is created by Nanda (1991) with a theoretical model. The model explains that a firm fully finance with equity will take a project with a positive net present value. And a firm that will fund a positive net present value project does that with a ECO or a seasoned equity offering.

Nanda assumes with the asymmetric information hypothesis that a carve-out reveals negative information about the subsidiary assets and positive information about the assets of the parent. The reason for this assumption is that the assets of the subsidiary would be overvalued and therefore the parent will sell these assets with a carve-out. The second assumption is that the assets of the parent have a higher value than the assets of the subsidiary. Therefore the combined wealth effect of the parent and the subsidiary increases because the positive wealth effect of the parent is bigger than the negative wealth effect of the subsidiary.

This motive is confirmed by Powers (2003) with the suggestion that selling overvalued equity is an important reason for carve-outs, because of three findings. The findings he based this conclusion on is that the operating performance or carve-outs is better than the performance of comparable firms at the announcement period, but that it declines to the industry average in the years after the carve out. Second reason is that the relative size of the carved-out subsidiary has a negative link with the changes in the operating performance of the subsidiary and the long-run returns. The last reason is the relationship between the relative size of the carved-out subsidiary and the liquidity constraints of the parent.

According to Nanda and Narayanan (1999) a spin-off reduces the information asymmetry. The shares of the carved-out business unit give more specific information to the market about the

profits and costs of the new entity by the reporting standards. It is a reasonable assumption that an ECO has the same effect as the spin-offs.

Myers and Majuf (1984) assume that managers know more about the value of the firm than potential investors do. Firms have the choice to finance projects by selling equity of the parent, carve-out a subsidiary or not invest in the project with the Myers and Majluf model. With this choice the firm gives information about the subsidiary and the parent, because the managers know about the undervaluation of the parent firm and the overvaluation of the business unit. Carving out a division gives the information that the subsidiary is overvalued, and the parent undervalued. The combined wealth effect of the parent and subsidiary will be positive, because the assets of the parent have a higher value than the assets of the subsidiary.

The research by Slovin, Sushka and Ferraro (1995) shows some indirect empirical result for asymmetric information. The result of their research is that rival firms in the subsidiaries industry have a negative excess return of -1.1 percent. The negative excess return could be a consequence of overvalued subsidiaries. However, the result is based on a small sample size of 36 firms and the result does not apply to the parent firms.

More diversified firms will recognize that investors can calculate the cash flows of the whole firm, but not the cash flows of the individual business units (Habib, Johnson, Naik, 1997). More information asymmetry can have as result misevaluation of undervaluation of the firm's assets. Information asymmetry between the top management and the division managers leads to higher cost of coordination, according to Harris, Kriebel and Raviv (1982). Aron (1991) mentioned that it is difficult to motivate division managers by giving them stock-based compensation of the diversified firm.

Krishnaswami and Subramaniam (1999) give possible explanations of positive wealth effect of spin-offs in their study. They mention that a spin-off as restructuring method does not generate cash, but it could reduce the undervaluation of the shares. If the firm needs capital it would first

engage a spin-off to get a fair share price on the capital market and afterwards the firm would issue equity to raise capital. Second reason is that the business units with poor performance may reduce the value of the efficient and profitable business units and this can result in significant undervaluation of all business units of the company. An increase of the earnings forecast accuracy after a spin-off is documented in the paper, which makes the company more transparent and easier to value. Emmanuel and Mehfadi (1994) found evidence for manipulation in transfer pricing and management fees for companies without giving fully disclosed information for the individual business units. Result is that firms who not show fully disclosed information for their individual business units will be exposed to undervaluation.

In contrast to the previous results is the research by Rüdisüli (2005). Rüdisüli tested the influence of the relative size of the subsidiary on the announcement period return. The conclusion from the test was that firms with a relative high subsidiary size have a significant higher return, this finding is in contrast with the asymmetric information hypothesis.

Hulbert et al (2002) find that industry rivals of the parent have negative stock price reaction around the ECO announcement period. This is in contradiction with the value creation from reducing the asymmetric information, because that would imply positive stock price reactions from the competitors of the parent firm. The research by Sun and Chen (2009) shows a positive, but not significant, relationship between the excess return of the parent and the relative size of the subsidiary. This finding is in contradiction with the asymmetric information hypothesis, but cannot reject the hypothesis because the empirical result is not significant.

2.2.5 Wealth transfers from bondholders to equity holders

Pojezny (2006) mentions that the positive wealth effects on the announcement date could be caused by a value transfer from bondholders to equity holders. The variance of the subsidiary increases and this can lead to an increase in the value of equity. The increase in equity comes at

the cost of a decrease in debt, thus the value will be transferred from the debt holder to equity holders.

The study by Maxwell and Rao (2003) shows a positive return of 3.6 percent for the parent shareholders in combination with a negative return of 0.9 on the involved debt securities. The research is based on a sample of 80 spin-offs in the period from 1976 to 1997. The overall wealth increases, however a part of this increase in wealth is caused by a wealth transfer from debt holders to shareholders.

2.2.6 Tax implications

Tax law has implications on the decision to carve-out a subsidiary, as well as the choice of a primary or secondary carve-out matters. By choosing a primary carve-out, selling the shares is a non-taxable event to raise funds. By the choice for a secondary carve-out, the parent firm receives the cash it received for selling the shares minus the tax rate on the gain or loss from selling the shares. Regarding Maydew et al (1999) tax implications may differentiate for the parent firm, the carved-out division and the shareholders or the parent firm.

According to Achleitner and Wahl (2003) there are three key questions regarding tax implications. First, whether hidden reserves will be disclosed from the transaction. Second, if the transaction itself generates taxable capital gains and as third if the parent and subsidiary remain a tax group after the transaction. Research by Rüdisüli shows that primary ECOs are tax-neutral in the US, Germany and Switzerland. The secondary carve-outs are tax-neutral in Germany and Switzerland.

Because of tax reasons carve-outs usually not exceed more than twenty percent of the equity. The first reason is that if parents sell more than twenty percent of the voting rights in the subsidiary the parent would lose tax control of the subsidiary and any future spin-off would lose the possibility to qualify for the tax-free treatment. The second reason is that if the firm retains at

least eighty percent of the equity of the subsidiary the dividends from the subsidiary are tax-free under the rule dividends received deduction. The third reason is that a parent by selling more than twenty percent of the voting rights of the subsidiary cannot control the subsidiary for tax reasons.

2.2.7 Relative size of the equity carve-out

The relative size of the subsidiary compared to the pre carve-out firm can influence the wealth effects of an ECO. Previous academic literature shows a positive influence of the relative size of the subsidiary on the abnormal returns in the announcement period.

The research by Allen and McConnel (1998) divided the sample of carve-outs into relative large and relative small group for both the carve-outs who paid out there funds and who retained their funds. For the group who paid out their funds the relative large group had a cumulative excess return of 7.62 percent compared to 3.78 percent for the relative small group. For the group who retained their funds the relative large group had a cumulative excess return of 0.88 percent, while the relative small group had a negative cumulative excess return of 0.87 percent.

The findings of Vijh (2002) and Rüdisüli (2005) are consistent with the findings of Allen and McConnel. He finds that the excess returns are increasing with the size of the subsidiary assets relative to the parents' assets. He examined a mean market-adjusted excess return of 1.19 percent when the assets of the subsidiary are smaller than the assets of the parent. When the asset value of the subsidiary is larger than those of the parent there is an excess return of 4.92 percent. The difference on average between the two categories is 3.73 percent, which is significant at the 1 percent level. This result proves that the relative size has a positive relationship on the abnormal returns. Rüdisüli found a result of an excess return of 1.79 percent for the variable size. The variable size measures the value of the carve-out as a percentage of the value of the parent at the transaction date.

Vijh (1999) tested the wealth effect of relative small firms compared to relative large firms on the long-run for a sample of US carve-outs. The conclusion is that relative small firms perform better on the long-run, but that the result is insignificant. This result is the opposite of the short-run wealth effects, where relative large companies outperform the relative small companies.

Academic research about the relative size of spin-off subsidiaries compared to the size of the parent firms finds positive relationship between relative size and abnormal returns as well. Schipper and Smith (1986), Hite and Owers (1983), Miles and Rosenfeld (1983), Krishnaswami and Subramaniam (1999), Mulherin and Boone (2000), Veld and Veld-Merkoulova (2004) and Rüdisüli (2005) found a positive relationship between the relative size of the subsidiary and the short-run wealth effects. In the long-run the effect is reversed following the research by Anslinger, Klepper and Subramaniam (1999). The reported conclusion in the paper is that relative small US spin-offs perform better on the market in the long-run than relative large spin-offs. This finding is confirmed by Kirchmaier (2003) with a sample of European spin-offs.

An explanation for the findings that relative small firms perform better on the long-run could be the joint hypothesis problem. Fama and French (1998) found evidence that small firms perform better than large firms on the stock market. The relative size shows with a positive effect on the abnormal returns that the complexity hypothesis is true and with a negative effect that the information asymmetry hypothesis is true.

2.2.8 Timing of the equity carve-out

For a company it is most attractive to issue equity when the whole stock market and the equity of the firm specific are in an overvalued peak. Raising equity in an overvalued market is the economically cheapest way to raise capital.

Jung, Kim and Stulz (1996) mentioned that timing is an important determinant in the restructuring decision and the most achievable restructuring method. The timing effect is the

practice of issuing shares at high prices on the stock market. Current shareholder will benefit by issuing shares in an overvalued market at the cost of new shareholders.

There are two important conditions of the timing effect theory:

1. Skills from management to time the transaction;
2. Incentives from management to time the transaction.

Womack (1996) made in his research the conclusion that analysts have the ability to time the market. As reported by Holden (2005) managers have an incentive for timing the market when they have shares or options in the firm or that they care about the interests of current shareholders. Managers can be stimulated with incentive schemes to think about the importance of timing the market. Other factor into the timing process is the available information that the management has.

Powers (2003) found evidence that the operating performance of a carve-out is better than that of comparable firms at the date of the carve-out, but the operating performance decreases to the industry average in the five years after the carve-out.

Hand and Skantz (1999) found evidence that ECOs have an accurate correlation with the peak in an overvalued stock market. First, the mean return on the value weighed US indices of the year prior to the carve-out is substantially above the normally expected return on the market indices. Second, the pre carve-out mean market return is significantly higher than the mean market return in the year after the carve-out. Third, the maximum probability estimation predicts that the market return drops sixteen days prior to the issue date of the subsidiary. The fourth reason for the conclusion is that carve-outs are opposed predictors of the stock market returns one year later.

Faff and Siu (2013) found strong support that firms issue equity when the equity value is overvalued. Furthermore, overvalued firms are more likely to time the market using secondary carve-outs, while capital demanding firms focus themselves on primary carve-outs.

In contradiction to these findings Graham and Harvey (1996) found no evidence of investment newsletters that increase their equity weights before markets have an upward trend or decrease their equity weights before the market declines.

2.2.9 Stake retained

The retained stake can influence the returns of the ECO. The retained stake is the percentage of the shares that are kept in control by the parent firm after the transaction.

Powers (2003) found a negative relationship between the long-term excess returns and the percentage of sold shares, thus a positive relationship between the retained stake and the returns. The reason can be that poorly performing parents sell a larger percentage of their shares, so the retained stake will be higher if the ferm performs well.

According to Boone, Haushalter and Mikkelson (2003) a change in the operating performance of a firm is negatively related to the stake of the subsidiaries shares that are retained by the parent. Only a complete divestiture will increase the operating performance of the parent firm.

2.2.10 Geographical focus

A company cannot only increase its corporate focus, a firm can also increase its geographical focus by carving out a foreign division. Previous research on increasing geographical focus on the abnormal returns of a spin-off or ECO announcement have contradictory results.

Veld and Veld-Merkoulova (2004) did not find significant differences between firms with and without increasing geographical focus. On the long-run they found a negative relationship between an increasing geographical focus and the abnormal returns.

To examine geographical focus Rüdisüli (2005) tested the difference between the non-focus increasing and focus-increasing spin-offs and carve-outs. The focus-increasing spin-offs have higher abnormal returns than the non-focus increasing group measured over the following event windows: [-1, +1], [0] and [0; +3].

While the non-focus increasing group performs better on the event windows: [-10, +10] and [-3, +3]. This suggests that the period prior to the announcement date has a positive influence on the returns of the non-focus increasing group and/or negative influence on the returns of the focus increasing group. The long-term abnormal returns of spin-offs have a negative relationship with an increasing geographical focus. An increase in geographical focus has a negative relationship with the abnormal returns in all the four years after the announcement date for both the parent firms as well as the subsidiary firms. The returns of ECOs are even more diverged, without a relationship between geographical focus and the returns. The abnormal returns are in favour for the focus increasing group over the event windows [-3, +3] and [0, +3]. The other three, earlier mentioned event windows, are in favour for the non-focus increasing group.

Geographical focus has a positive relationship with the long-term abnormal returns of the parent, but not significant. In all the four, earlier mentioned event windows, the focus-increasing group has higher abnormal returns. For the subsidiary only the first year after the announcement date results in a positive difference for the focus increasing group, the other event-windows have negative abnormal returns as result.

2.2.11 Law Origin and shareholder rights

La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) examined in their research the legal rules for protecting the shareholders and creditors and the origin of these rules and the quality of the law to enforce these rules.

Veld and Veld-Merkoulova (2004) measured the difference in the law origin and the shareholder rights. Spin-offs in countries with high shareholder protection have as result a cumulative average abnormal return (CAAR) of 2.17 percent, while the spin-offs from countries with low shareholder protection have an result of 3.30 percent. Both results are significant at the 1%- level. Spin-offs occured in countries with low shareholder protection apparently have a abnormal return that is 1.13 percent higher than spin-offs occured in countries with high shareholder protection. The research on European spin-offs also compared the countries as a whole, the relatively big differences between the countries suggest that the law origin system has influence on the wealth-effects of spin-offs.

La Porta et al. (1998) classified the different countries from one to seven in the shareholder right index, from very weak shareholder protection up to very strong shareholder protection. Into the law system they distinguished four classes of law origin, common law, German civil law, Scandinavian law and French civil law, with the common low as strongest, the German and Scandinavian law in the middle located and the French civil law is classified as weakest.

3 Shareholder wealth effects of equity carve-outs

This chapter presents a literature study on the short-run shareholder wealth effects in subsection 3.1 and a literature study on the long-run shareholder wealth effects of the parent firms and the subsidiary firms in subsection 3.2.

3.1 Shareholder wealth effects on the short-run

This subsection presents a literature review about the wealth effects around the announcement date of ECOs. Previous economic research shows positive short-run wealth effects of ECOs with a focus on the US and European market. Also the empirical results from Japanese and Taiwanese carve-outs show positive results.

The research by Sun and Chen (2009) shows a cumulative average abnormal return of 2.1052 percent for Taiwanese carve-outs between 1994 and 2007 over the event window [-4, +1]. Sun and Chu (2011) and Otsubo (2011) show significantl positive results of ECOs in Asia as well. Sun and Chu found a cumulative average abnormal returns of 0.51 percent for Taiwanese carve-outs over an event window of [-1, +1] during the period 1994-2007. The research by Otsubo uses the same event window for Japanese carve-outs between 1985 and 2005 and shows a result of 1.5454 percent. All these three results of research on equity-carve outs in Asia are significant at the 1 percent level.

Previous research based on the US and European market shows positive, and in most cases significantly, returns from ECOs. One of the first researches on this subject from Schipper and Smith (1986) analysed a sample of 76 carve-outs from the US. The period they did research on was from 1963 up to 1983 and they found a positive cumulative average abnormal return of 1.83 percent over the event window, [-4, 0].

Recent literature shows significantly positive results, Jain et al (2009) found a significant result of 1.62 percent. The research analysed the results over a time horizon of 1986-2005 over the event window [-1, +1]. The studies by Vijh (2002), Hulburt et al (2002) and Rüdisüli (2005) confirm the positive announcement period returns for the United States. Vijh got a significant and positive result of 1.9 percent for the same event window as Jain et al [-1, +1], he used a sample of 336 ECOs during 1980-1997. Hulbert et al and Rüdisüli used also an event window of 3 days [-1, +1], Hulburt et al used an sample of 185 carve-outs in the period 1981 -1994 and showed a result of 1.92 percent excess return . Rüdisüli found a significant positive excess return of 1.3 percent with his sample of 277 carve-outs in the period between 1990 and 2003.

The empirical studies on Europe show the same results, Pojezny (2006) found a positive result of 0.99 percent over the event window [-1, +1] with a sample of 100 ECOs during 1984-2004. Fucks (2003) used the same event window and an almost equal sample size of 103 carve-outs, but used a time period from 1993 to 2004 and shows a result of 2.19 percent. Rüdisüli (2005) shows positive announcement returns of 2.5 and 2.1 percent for his European sample over the same event window as Pojezny. The time periods they used are almost equal with 1990-2003 and 1991-2007 and that will be probably the reason of the small difference in their returns.

Wagner (2005) found a return for the announcement period of 0.81 percent over the event window [0, +1]. The research was based on a sample of 71 German carve-outs between 1984 and 2002. Elsas and Loffler (2001) did their research on the excess return of the announcement day and got as result 1.08 percent. All the empirical results of the used academic literature were at least significant at the 5%-level. Table 1 presents economic research on the announcement period returns of ECOs from the United States, Europe, Germany, Taiwan and Japan.

Table 1

Existing research on equity carve-out wealth effects

Author	Year	Region	Period	N	Event Window	CAAR	Significance
Schipper and Smith	1986	US	1963 - 1983	76	[-4, 0]	1.80%	**
Elsas and Löffler	2001	GER	1984 - 2000	25	[0]	1.08%	***
Powers	2001	US	1981 - 1989	181	[-1, 0]	2,28%	***
Vijh	2002	US	1980 - 1997	336	[-1, +1]	1.90%	***
Hulburt, Miles and Woolridge	2002	US	1981 - 1994	185	[-1, +1]	1.92%	***
Stienemann	2003	GER	1989 - 2003	49	[-1, +1]	1,20%	**
Fucks	2005	EU	1994 - 2004	103	[-1, +1]	2.19%	***
Wagner	2005	GER	1984 - 2002	71	[0, 1]	0.81%	**
Rüdisüli	2005	EU	1990 - 2003	77	[-1, +1]	2.50%	***
Rüdisüli	2005	US	1990 - 2003	278	[-1, +1]	1.30%	***
Pojezny	2006	EU	1984 - 2004	100	[-1, +1]	0.99%	**
Sun and Chen	2009	TWN	1994 - 2007	129	[-4, +1]	2.11%	***
Jain, Kini and Shanoy	2009	US	1986 - 2005	65	[-1, +1]	1.62%	**
Otsubo	2011	JPN	1985 - 2005	305	[-1, +1]	1.55%	***
Sun and Shu	2011	TWN	1994 - 2007	136	[-1, +1]	0.51%	***

This table presents a summary of economic research on abnormal returns from equity carve-out. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *. Countries are abbreviated as follows: GER for Germany, TWN for Taiwan and JPN for Japan.

3.2 Shareholder wealth effects on the long-run

This subsection reviews the long-run wealth effects of ECOs. The quantity of literature reviews about long-run abnormal returns are limited compared to the quantity of literature reviews about the value creation around the announcement period.

The research by Otsubo (2011) presents that the sample of Japanese firms has a negative effect on the return on assets with 0.5021 percent in the period from one year prior to the carve-out to 3 years after the carve out. Adjusted to the industry average there still is a negative change in the return of assets of 0.3877 percent.

Vijh (1999) showed that parent firms earn long-term excess returns during 1981-1995, however these results are not statistically significant. He made the conclusion that subsidiaries create values with an annual raw return of 14.30 percent compared to 3.40 percent for initial public offerings and 4.7 percent for seasonal equity offerings.

Annema et al (2001) concluded from their analysis that most of the ECOs have negative wealth effects on the long-run. The empiricial analsysis reported a risk adjusted return of -21.5 percent for the shareholders of the parent firms over the event window from the announcement date to 2 years after the announcement event. In contrast to Vijh (1999) they found a negative risk-adjusted return for the subsidiaries of 10 percent. They used as benchmark for their sample the S&P 500 to compare against US firms and the European Market Index from DataStream to compare against the industry from Europe.

Research by Michaely and Shaw (1995) showed that the return on the long-run for both the publicly traded parents firms and the gas and oil carve-outs underperformed compared to the market in the two years after the initial public offering in the period between 1981 and 1988. The parent firms underperformed the benchmark with 3 percent in the two years after the IPO, while the gas & oil subsidiaries underperformed the market for almost 20 percent in the two years after the IPO. The results of one of the other class of divestitures, namely spin-offs show even bigger significant losses for both the subsidiary as the parent firm.

Powers (2003) reported a return on assets of the subsidiaries of 17.17 percent over the first year after the ECO. In the three years after the equity carve out it declined to 14.53 percent in year one, 13.26 percent in year two and in year three it is already declined to 11.21 percent.

Rüdisüli did research on Europe and the United States and proved that parent firms and subsidiaries underperform after the ECO event and destroy shareholder wealth. The presented raw return of parent firms is 20 percent lower one year after the ECO event and 25.8 percent two years after the event. Subsidiary firms underperformed 20.3 percent in the first year after the transaction of the ECO and 22.8 percent in the two years after the event.

Pojezny (2006) concluded the same, both parent firms and subsidiaries grow harder and are more profitable in the announcement year of the ECO event compared to the benchmark. In the years following the ECO event the parent firms and the subsidiaries stay behind the average growth percentage of the benchmark and they are less profitable than the benchmark as well.

Chapter 4: Hypotheses

This chapter presents several hypotheses based on the short-run wealth effects, the long-run wealth effects and the factors that might explain the wealth effects. The hypotheses will help to answer the main question of the thesis. The first hypothesis will answer the question of ECOs create shareholder wealth in the short-run. The second hypothesis focuses on the long-run shareholder wealth effects. The other hypotheses are based on the factors that might explain the shareholder wealth effects.

Do Asian equity carve-outs create wealth for the shareholder and through which factors is this shareholder wealth created?

H1: Asian equity carve-outs create positive wealth effects in the short-run

The first hypothesis tests the shareholder wealth effects in the short-run of the parent firms. The hypothesis is based on section 3.1. Previous empirical research showed positive short-run wealth effects for ECOs in US and European market.

H2: The long-run wealth effects of Asian equity carve-outs are not significantly different from zero

The second hypothesis tests the shareholder wealth effects in the long-run of parent firms and subsidiary firms. The hypothesis is based on section 3.2. Previous research presented negative long-run wealth effects for parent firms in mainly the US, Europe and Japan. The studies on the long-run wealth effects of subsidiaries show mixed results.

H3: Focus-increasing equity carve-outs have higher wealth effects than non-focus increasing equity carve-outs

The third hypothesis is based on the refocusing strategy hypothesis, which is discussed in section 2.2.1.1. The literature describes that changes in corporate focus create value by reducing

negative synergies between the parent firms and the subsidiaries. Previous research concluded that focussing on their core business creates value for the parent firm.

H4: Firms who use the proceeds of an equity carve-out to repay debt or other financial liabilities will not create more shareholder wealth.

The fourth hypothesis is based on the finance strategy hypothesis, discussed in section 2.2.2.1. The financing strategy hypotheses tests if an ECO creates more shareholder value when the raised capital of the public offering of the subsidiary is used for repay debt or meet other financial liabilities.

The financial obligations are usually debt or other financial liabilities of the subsidiary to the parent. The results of previous empirical research on this hypothesis are in contrast with each other, because previous research presented positive and negative results of value effects.

H5: Firms who fund the investment opportunities of subsidiaries with the proceeds of the equity carve-out will create more shareholder wealth.

The fifth hypothesis is based on the investment strategy hypothesis, discussed in section 2.2.2.2. The investment strategy hypothesis tests if an ECO creates more shareholder value when the raised capital is used by the subsidiaries to fund investment opportunities of the subsidiary. Research on the investment strategy found a significant and positive influence on the shareholder wealth.

H6: The information increase concerning the subsidiaries leads to an increase in shareholder value of the equity carve-outs.

The sixth hypothesis tests the complexity, undervaluation and pure-play hypothesis of section 2.2.3. The hypothesis focuses on information increase and is based on the theory that an ECO gives the subsidiary the obligation to report their financial statements and this obligation has a better understanding of the business of the subsidiary as result. The better understanding has as

result that investors can better estimate the values of the subsidiary and the parent company and that has as result that undervaluation disappears.

H7: Parent firms use equity carve-outs to reduce the asymmetric information of the company and this will increase the market value of the firm.

The seventh hypothesis tests the asymmetric information hypothesis and is based on section 2.2.4. The model of Nanda (1991) states that reducing asymmetric information creates shareholder wealth. This motive for value creation is confirmed by Powers (2003) and Nanda and Narayanan (1999) and many other. But in contrast to these positive findings are the negative findings of Hulbert et al (2002), Rüdisüli (2005) and Sun and Chen (2009).

H8: Equity carve-outs will create more shareholder wealth in countries with a common law system and/or in countries with higher shareholder protection.

The eighth hypothesis is based on the differences between countries, discussed in section 2.2.11. The hypothesis is tested on the differences in the origin of the law system and the shareholder right. The hypothesis is based on the fact that investors in common law countries are better off than investors in civil law countries because common law better protects investors and the shareholders have more rights.

H9: Equity carve-outs performed in an overvalued market will not result in higher wealth effects than equity carve-outs performed in an undervalued market.

The ninth hypothesis measures the timing effect of ECOs and is discussed in section 2.2.8.. The hypothesis tests if the results of ECOs in hot markets do not differ from carve-outs occurred in a cold market.

5 Data description and methodology

This chapter deals with the data and the methodology that will be used for the empirical research on ECOs in Asia. In subsection 5.1 the sample selection and the data sources will be discussed. Subsection 5.2 presents the descriptives and 5.3 the methodology for the empirical research. Subsection 5.4 presents the used variables to test the hypotheses based on the factors that might create value.

5.1 Sample selection and data sources

In the thesis is a sample used of 123 equity carve-outs from January 1, 2000 to December 31, 2012. The Asian equity carve-outs are defined as equity-carve outs in which the parent has to be located in Japan or Pacific Asia and the subsidiary has to be listed on a stock exchange in Japan or Pacific Asia. The countries included in the thesis are Hong Kong, South Korea, Indonesia, Malaysia, Thailand, Singapore, Sri Lanka, Taiwan and Japan.

The equity carve-outs are collected by using Securities Data Company (SDC). The database contains detailed information with respect to the listed ECOs such as the announcement date, issue date, deal value, total amount of shares, amount of shares offered and the exchange where the shares will be issued.

The following selection criteria are used to collect the ECOs of SDC. The ECOs meet the following selection criteria: time period between January 1, 2000 to December 31, 2012, initial public offering, privatization deals excluded, identical issuer and parent firm name, and business of the state, national government, leverage and investment firms, central government and city

and government, Venture Capital and Trust are excluded. The parent firm is a Japanese or Pacific Asian firm and has at least an equity stake of 50% in the subsidiary before the carve-out.

The stock price data of the firm has to be available in the Thomson DataStream database. The ZEPHYR database is used to verify the data from the SDC database and to collect the ECO announcement dates and the SIC codes from the parent firms and the carved-out subsidiaries. The database Factiva is used for collecting information about the initial public offering of the subsidiaries and the motives for these ECOs. The initial public offering profile reports are used for collecting the possible financing motives, investment motives and the motives for corporate focus. The Institutional Brokers Estimate System (IBES) is used for collecting the forecasted earnings per share, the actual earnings per share, the earnings volatility and the standard deviation of the forecasts. With Compustat Global the relative size ratio of the ECO is collected with the total assets of subsidiary firm and parent firm.

The collected sample that is used for the thesis consists of 123 ECOs. For calculating the short-term and long-term abnormal returns country specific benchmarks are collected using Thomson DataStream. As country specific benchmark the MSCI benchmarks of the countries are used. The official national benchmark was not sufficient for the empirical research, because Thomson DataStream did not offer all daily prices from every country.

Table 2 shows the annual and geographical distribution of the final sample of ECO events that are used for the empirical research. The final sample consists of 123 completed ECOs in the period from January 2000 to December 2012.

Table 2

Overview of equity carve-outs by announcement year and country

Year	JP	HK	TH	TW	MY	KR	ID	SG	Total
2000	9								9
2001	11								11
2002	3								3
2003	9								9
2004	13								13
2005	14								14
2006	17	1							18
2007	10								11
2008	4	1	1						5
2009			1						1
2010	2	2		1					5
2011	3					2	1		6
2012	5	1		2	3	4	1	2	18
Total	100	5	2	3	3	6	2	2	123

This table presents the distribution of Asian equity carve-outs in the period from January 2000 to December 2012 by announcement year and the origin country of the parent firm. The abbreviations for the countries are as followed: JP for Japan, HK for Hong Kong, TH for Thailand, TW for Taiwan, MY for Malaysia, KR for South Korea, ID for Indonesia and SG for Singapore.

Japan is over-represented with a shore of 81.3% in the sample. A plausible explanation for this fact could be that Japan has a more developed economy than the other included countries. The other included countries together have a stake of 18.7% in the sample, most important countries of the rest are Hong Kong and South Korea with 4.1% and 4.9% in the sample. The other countries have a stake of 2.4% or less.

The distribution of the ECO events over the years shows that in the years 2004, 2005, 2006 and 2012 relatively more equity-carve outs occurred. In this 4 years respectively 10.57, 11.38, 14.63 and 14.63 percent of the total sample of ECOs took place. In this 4 years together 51.22% of all equity-carve outs took place. Remarkable is that in the year 2009 only one ECO took place, while the market in this year was considered as overvalued.

5.2 Descriptives

Table 3 presents the descriptive statistics about the market value of the parent firms and the subsidiaries. The table presents the mean market value, the median market value, the standard deviation, minimum value and maximum value in the sample for both parents and subsidiaries. The average value of the parents in US dollars is 1,197,523.46 and the average value of the subsidiary firms is 37,202.05 in US Dollars. The median of the parent firms is 206,228.00$ and the median value of the subsidiary is 6,966.50$. These statistics show a large difference for both subsamples between the mean value and the median value. The standard deviation in both samples is large, with 2,046,327.90 for the sample of parent firms and 83,971.67 for the sample with subsidiaries. The standard deviation divided by the mean value has a ratio of 1.71 for the parent firm and 2.26 for the subsidiaries. This ratios indicate that the standard deviation in the sample is high.

Table 3

Descriptive statistics about firm value

Desriptives	Sub	Parent	Relative size
Mean	37202.05	1197523.46	3.11%
Median	6966.50	206228.00	3.38%
SD	83971.67	2046327.90	
Minimum	14.47	1140.00	
Maximum	438190.00	9737389.09	

The descriptives statistics are based on a sample of 123 equity carve-outs. The firm values are determined on the asset value in the last fiscal year before the equity carve-out announcement. These firm values are downloaded from Compustat Global and presented in US Dollars.

The relative size of the subsidiary firms based on the mean and median of the ECO transactions is 3.11% and 3.38%. The minimum and maximum value of the parent firms verify that not small firms prefer ECO transactions as well.

Table 4

Sample distribution by industry business

2-digit SIC codes	Business description	Firms	Percentage
01-09	Agriculture, Forestry and Fishing	0	0.00
10-14	Mining	1	0.81
15-17	Construction	0	0.00
20-39	Manufacturing	38	30.89
40-49	Transportation, Communication and Electric and Gas Services	8	6.50
50-51	Wholesale Trade	14	11.38
52-59	Retail trade	12	9.76
60-69	Finance, Insurance and Real Estate	23	18.70
70-89	Services	27	21.95
91-99	Public Administration	0	0.00
Total		123	100.00

This table presents the distribution of equity carve-outs by parent industry. All the events are classified by the 2-digit SIC codes.

Table 4 presents the distribution of the parents over the classified industry business categories. Manufacturing is the most important business with a share of 30.89 percent in the total sample. Other important business is Services with a share of 21.95 percent and the business Finance, Insurance and Real estate with a share of 18.70 percent. The other business with a notable share in the total sample are Wholesale trade with 11.38% share, Retail trade with 9.76% share and Transportation, Communication and Electric/Gas services with a share of 6.50%. The other four businesses have that is equal 0.81 or less.

The relatively high stake of the two business Services and Finance, Insurance and Real estate have a relatively high stake in the total sample is a logical explanation according to Johnston et al (2003). The explanation is because these two businesses offer more complex services to their stakeholders compared to other businesses.

5.3 Methodology

In this subsection the methodology for the short-run wealth effects will be discussed in subsection 5.3.1. The methodology for the long-run wealth effects will be discussed in subsection 5.3.2.

5.3.1 The event study methodology

In the empirical research the short-run wealth effects are measured with the abnormal returns of the parent firms. The abnormal returns are defined as the actual daily log return of the parent firm minus the normal return. The formula of the abnormal return:

$$AR_{it} = R_{it} - NR_{it}$$

R*it* is the return of security *i* on day *t* and NR*it* is the normal or benchmark return of security *i* on day *t*.

To calculate the abnormal returns three methods can be used, namely the market-adjusted returns, the market model adjusted returns and the mean-adjusted returns. In this empirical research we will use the market-adjusted abnormal returns and the market-model adjusted abnormal returns. The mean adjusted method is a too simplistic approach for calculating the abnormal returns, because it uses a very simplified estimation according to MacKinlay (1997).

Market-adjusted abnormal returns

The market-adjusted returns method compares the returns of the ECO with the normal returns to estimate the abnormal returns. The normal returns are estimated with the market index return.

To calculate the abnormal returns the normal return will be estimated by the following way.

$$NR_{it} = R_{mkt}$$

R_{mkt} is the return of the benchmark at time t. As market index return the MSCI indices are used.

Market-model adjusted abnormal returns

The market-model is based on the model created by Fama (1976). Based on the model of Fama the actual daily log returns are estimated by the following formula:

$$R_{it} = \alpha_i + \beta_i R_{mkt} + \varepsilon_{it}$$

α_i and β_i are the specific alpha and beta parameters of each carve-out. ε_{it} is the measured idiosyncratic risk of the carve-out and is based on the alpha and beta of the carve-out.

The following formula is used to estimate the normal returns in the market-model adjusted returns:

$$NR_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{mkt}$$

The coefficients $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimates of the ordinary least square method. To estimate the market model an estimation period of 201 days, [-250, -50]. Vijh (2002) used the event window [-230, -50] and Otsubo [-130. -31].

Cumulative average abnormal return

To analyse the short-term performance of ECOs the cumulative average abnormal return is used. The equally weighted cumulative average abnormal return of the equity-carve outs is calculated by taking the average of the sum of all cumulative abnormal returns.

$$CAAR = \frac{1}{N}\sum_{i=0}^{N} CAR_i$$

The cumulative abnormal returns are calculated with the abnormal returns. The sum of all the daily adjusted abnormal returns over the event window is the cumulative abnormal return. The following formula shows the calculation of the cumulative abnormal returns:

$$CARi = \sum_{t=1}^{t_N} AR_{it}$$

Significance test

De Jong (2007) presents the following t-test to use for testing the significance of the result of the cumulative average abnormal return:

$$T - stat = \sqrt{N}\ \frac{CAAR}{s} \approx N\ (0,1)$$

The standard deviation for the t-test is estimated with the following method:

$$s = \sqrt{\frac{1}{N-1}\sum_{i=1}^{n}(CAR_i - CAAR)^2}$$

Event window

The short-term value effects are measured over different event windows around the announcement date of the ECO. The value effects are measured over the announcement date, [T=0], and over the following event windows around the announcement:
[-10, -1], [-1, 0], [-1, +1], [-2, +2], [-5, +5], [+1, +10] [-10, +10]. The number present the days around the announcement date.

5.3.2 The methodology for long-run abnormal returns

To calculate the long-term wealth effects of equity-carve outs for the parent firm the market-adjusted method is used. The model uses the actual daily log returns of the security and the market index returns as benchmark return.

The abnormal returns of the market adjusted method for the long-term wealth effects are calculated by the buy-and-hold abnormal returns (BHAR). The following method of Barber and Lyon (1997) is used to calculate the buy-and-hold abnormal returns:

$$BHAR_i = \prod_{t=1}^{H}[1 + R_{it}] - \prod_{t=1}^{H}[1 + NR_{it}]$$

The significance of the BHARs is calculated with the following test statistic:

$$T - stat = \frac{\overline{BHAR_{it}}}{\sigma(BHAR_{it})/\sqrt{N}}$$

$\overline{BHAR}_{it}$ is the standard average of the abnormal returns and σ (BHARit) is the standard deviation of the abnormal returns and N is the number of firms in the sample. The CAARs are calculated as well in addition to the BHARs.

Event windows

The value creation on the long-run is measured over different event periods after the ECO period. This is based on the research by Rüdisüli (2005) that used the one, two, three and four-year holding period and Pojezny (2006) that used a one, two and three-year holding period. In addition to these holding periods in this thesis there is used a 6-months holding period. Therefore the used event windows in this thesis are a 6 month, 1-year, 2-year, 3-year and 4-year holding period.

5.4 Proxy variables

This subsection explains the used proxy variables in the empirical analysis. The variables are related to the testable hypotheses of chapter 4.

Refocussing strategy hypothesis

The refocussing strategy is tested with two variables, the 2-digit Standard Industry Classification (SIC) code and newspaper reports. The two-digit SIC code defines an ECO as focus increasing when the two-digit SIC code of the parent differences from the two-digit code of the subsidiary.

The variable based on newspaper reports defines an ECO as focus increasing if the newspaper reports motives of corporate corporate focus. Without reported motives in the newspaper ECOs are classified as non-focus increasing. The newspaper reports are acquired from the database of Factiva.

Financing strategy hypothesis

To test the financing strategy hypothesis a group with reported financing strategy motives and a group without reported financing strategy motives is used. Repay debt or fullfill other financial obligations are financing strategy motives. To select the subsample of ECOs with financing motives and the subsample without financing motives the newspaper reports of Factiva are used. If the IPO profile of the ECO presents reported financing strategy motives the ECO

belongs to the subsample with financing strategy motives.

Investment strategy hypothesis

The investment strategy hypothesis has been tested with an investment subsample and a non-investment subsample. Funding projects of the subsidiary with the proceeds of the ECO is the investment strategy motive. The motives are collected on the same way as the financing strategy motives with the IPO profiles of Factiva. The investment strategy subsample exists of ECOs with reported investment strategy motives.

Complexity, undervaluation and pure-play hypothesis and the asymmetric information hypothesis

The complexity, undervaluation and pure-play hypothesis suggests undervaluation of the subsidiary. Because of seperation of the parent firm and the subsidiary the undervaluation disappears. The reason of the disappearing undervaluation is the reporting obligation of the subsidiary of own financial statements. This will result in a better understanding of the business from the investors and a better estimation of the value of the subsidiary and the parent firm. The asymmetric information hypothesis is suggesting that an ECO reveals negative information about the subsidiaries assets and positive information about the parent assets. Because the size of the parents assets is bigger compared to the size of the assets of the subsidiary the combined value of the deal is positive.

To test this hypotheses four variables will be used, namely the absolute earnings forecast error, standard deviation of the forecasts, analyst forecasts number and relative size. The absolute earnings forecast error is calculated as the absolute difference between the actual earnings per share and the predicted earnings per share in the last month of the fiscal year prior to the ECO announcement divided to the share price at the beginning of the month.

The second variable is the standard deviation of the forecasts and the variable is calculated as the standard deviation of all the earnings forecasts. The forecasts that are used are the forecasts from the last month of the fiscal year prior to the ECO announcement.

The third variable is the number of analyst forecasts in the last month of the fiscal year prior to the ECO announcement. The fourth variable is the relative size of the subsidiary, to calculate the relative size ratio the total assets for all subsidiaries and parent firms are downloaded from the last fiscal year prior to the ECO announcement. The relative size ratio is calculated as the total assets of the subsidiary divided by the total assets of the combined assets of the subsidiary and the parent firm.

The relative size gives the signal which hypothesis is true, if the relative size increases the abnormal returns will increase if the complexity hypothesis is true. If the asymmetric information hypothesis is true a decrease of relative size will increase the abnormal returns.

Differences between countries

The differences between countries in value effects are tested with two variables, the two variables are created by La Porta et al (1998). In the paper of La Porta et all are two variables used, law origin and shareholder protection. First, law origin categorizes four categories with English common law and French, German and Scandinavian civil law. Second variable is shareholder rights with seven categories from zero to seven. The English common law and a high level of shareholder right protection should lead to higher abnormal returns.

Retained stake

The retained stake can have a positive or negative relationship on the abnormal returns. Previous academic literature gave contradicting results with positive and negative findings. Therefore the relationship of the retained stake of the parent firm in the subsidiary will be measured.

Timing of the equity carve-out

Previous research suggests that carving-out a subsidiary is more attractive in an overvalued market, than in an undervalued market. The timing effect is tested with two variables, a hot market dummy and a cold market dummy. The hot market dummy has the value 1 when the ECO took place during an overvalued market and 0 otherwise, while the cold market dummy takes the value 1 when the ECO took place during an undervalued market and 0 otherwise. The definition for a hot market is that as the MSCI Asia has a buy-and hold return in one year of twenty percent or more. The definition for a cold market is that the MSCI Asian has a buy-and-hold period return of minus 20 percent or less. The years 2003, 2005 and 2009 have the character of hot market and the years 2000, 2001 and 2008 have a cold market character.

6 Empirical results

In this chapter the short-run shareholder wealth effects will be presented and discussed in section 6.1. In section 6.2 the short-run shareholder wealth effects will be analysed, in section 6.3 the long-run shareholder wealth effects will be presented and discussed and in section 6.4 the long-run shareholder wealth effects will be analysed.

6.1 Short-run shareholder wealth effects

Table 5 presents the cumulative average abnormal returns for the shareholders of the parent firm estimated over eight different event windows: [-10, -1], [-1, 0], [0], [-1, +1], [-2, +2], [-5, +5], [1, +10] and [-10, +10].

Table 5
Short-run wealth effects

	Market-adjusted abnormal returns				Market-model adjusted abnormal returns			
Event period	Mean	T-stat	Median	Positive	Mean	T-stat	Median	Positive
[-10, -1]	-1.06	-1.29	-1.12	39.84	-1.13	-1.42	-1.07	42.28
[-1, 0]	1.34 ***	2.70	0.29	54.53	1.39 ***	2.82	0.59	58.54
[0]	1.38 ***	3.15	0.29	55.28	1.79 ***	3.89	0.26	56.91
[-1, +1]	1.91 ***	3.54	0.74	54.47	1,94 ***	3.68	0.82	60.98
[-2, +2]	1.53 **	2.60	0.15	51.22	1.39 **	2.11	0.56	53.66
[-5, +5]	1.39 *	1.79	0.03	52.03	1.28	1.59	0.37	51.22
[+1, +10]	0.2	0.30	-0.49	45.53	0.27	0.37	0.02	50.41
[-10, +10]	0.45	0.42	-0.74	45.53	0.88	0.75	0.48	52.03

The cumulative average abnormal returns are calculated using 123 equity carve-out announcements by Asian firms in the period from January 2000 to December 2012. The means and medians are in percentages. The t-statistics are calculated with independent t-tests. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

The cumulative average abnormal returns of table 5 are calculated over a sample of 123 ECOs. To calculate the abnormal returns there are two different benchmarks used, the market-adjusted abnormal returns and the market-model adjusted abnormal returns. The market-adjusted abnormal returns shows a result of 1.38% on the announcement day, which is significant at the 1%-level. Following the same benchmark the event period of one day prior to the announcement

period to one day after the announcement period shows a CAAR of 1.91%. This result is also significant at the 1%-level. The cumulative abnormal returns appear to be negative in the near period before the ECO announcement, this is shown by an CAAR of -1.06% in the event window [-10, -1]. However, this result is statistically insignificant. In table 5 is shown that the abnormal returns one day after the announcement of the ECO are substantially positive. This finding can support that the shareholders are not fully communicated or unclear at the announcement day.

The CAARs over a larger event window show lower abnormal results and the results are also less significant. The event window [-5, +5] shows an AR of 1.39%, which is significant at the 10%-level. The period of ten days prior to the announcement period to ten days after the announcement period shows an result of 0.45%, which is not significant at the 10%-level. These results suggest an overreaction on the announcement date and the day after the announcement day. These short-run wealth effects are quite similar to existing studies in the US and Europe.

However, table 5 presents substantial positive value effects around the ECO announcement day it is not guaranteed that every ECO has positive effects. Despite the substantial positive value effects for the shareholders around the announcement day ±45% of the ECO announcements destroys value for the shareholder.

Figure 2 presents the development of the cumulative abnormal returns for the total sample of ECOs. The figure shows a substantial positive abnormal return on the announcement day of 1.38% and also a substantial increase in the share prices the day after the announcement date. In the period of ten days before the announcement day up to the day prior to the announcement date the figure shows a substantial negative result of the cumulative abnormal returns. The figure shows a negative result for the period after the announcement date, the cumulative average abnormal return is decreasing since the second day after the announcement day.

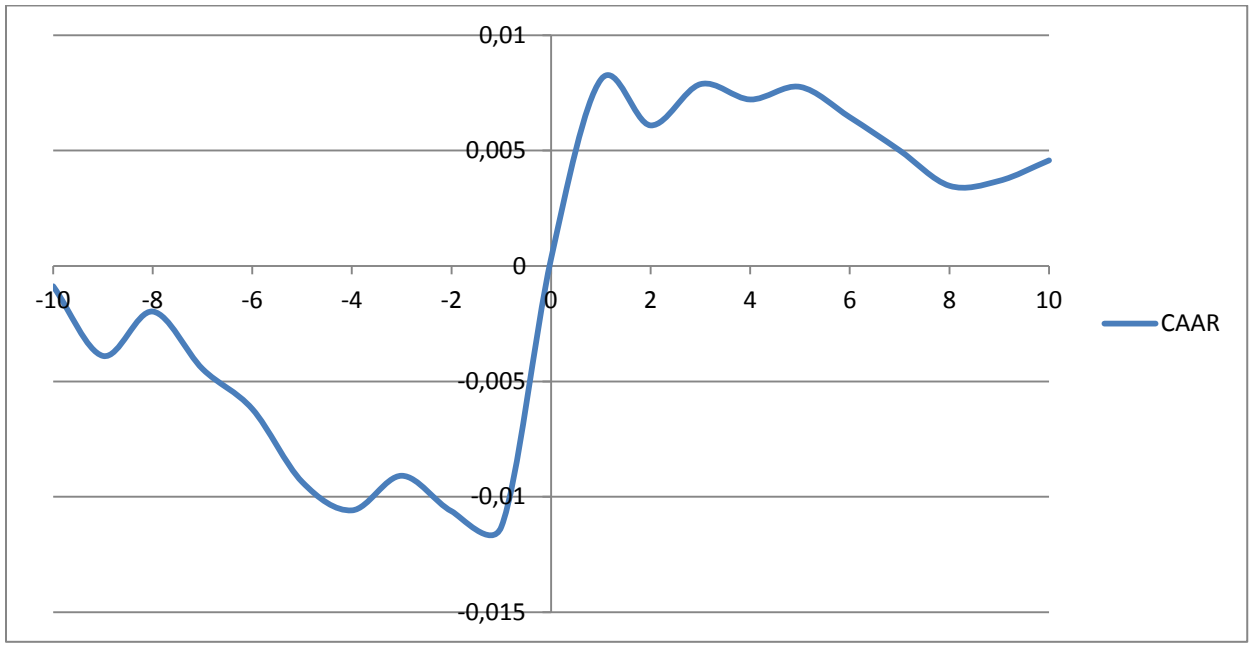


Figure 2: short-run cumulative average abnormal returns around the announcement period.

6.2 Analysis of the short-run shareholder wealth effects

In this subsection the empirical results of the factors that might create value will be tested using cross-sectional tests related to the hypotheses. Next to the cross-sectional tests the univariate and multivariate regression for the short-term period will be presented. For the cross-sectional tests and the univariate and multivariate regressions the cumulative average abnormal returns of the market adjusted method over the event window [-1, +1] will be used.

6.2.1 Univariate tests

The short-run abnormal returns are presented in table 6 for the refocussing strategy hypothesis for the two subsamples.

Table 6

Tests of the refocusing strategy hypothesis

		Market adjusted abnormal returns			
Description	N	Mean	T-stat	Median	% pos
A. Based on the two-digit SIC codes					
Different two-digit SIC code of parent and subsidiary	79	2.61 **	3.52	1.33	62.03
Same two-digit SIC code of parent and subsidiary	44	0.67	0.93	-0.45	38.64
Differences		1.93	1.73	1.78	
B. Based on newspaper reports					
Reports mentioned 'corporate refocusing' or related words	24	3.88 **	2.72	2.07	62.50
Not reported 'corporate refocusing' or related words	99	1.44 **	2.52	0.16	54.55
Differences		2.44 *	1.81	1.90	

The cumulative average abnormal returns over the event period [-1, +1] are used to test the subsamples. The cumulative average abnormal returns are calculated using 123 Asian equity carve-out announcements by Asian firms from January 2000 to December 2012. The means and medians are in percentages. The t-statistics are calculated with independent t-tests. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

In table 6 the short-run abnormal returns related to corporate focus over the event window [-1, 1] are presented. In panel A the abnormal returns are compared of the focus-increasing ECOs and the ECOs that not increase their focus based on the change in the two-digit SIC codes. The total sample of 123 ECOs exist of 79 firms that increased their focus with an ECO.

The result of the focus-increasing group shows a cumulative average abnormal return of 2.61%, which is significant at the 5%-level. The non-focus-increasing ECOs have a result of 0.67%. This result is not significant at the 10%-level. The difference in the abnormal returns between the focus-increasing group and the non-focus-increasing group is 1.73%, statistically significant at the 10%-level.

Panel B compares the cumulative average abnormal returns of the focus-increasing sample with the group that not increase their focus based on newspaper reports. The focus-increasing group is based on companies for which corporate focus related motives are mentioned in the newspapers, the other group consists of companies without focus related motives mentioned. The focus-increasing sample consists of 24 firms and has an abnormal return of 3, 88%. The non-focus-

increasing group consists of 99 firms and has an abnormal return of 1.44%, both the results are significant at the 5%-level. The difference between the means of the subsamples is 2.44%. This difference is significant at the 10%-level. The positive abnormal returns for the focus-increasing ECOs are confirming previous academic research, which also reports larger abnormal returns for focus increasing ECOs.

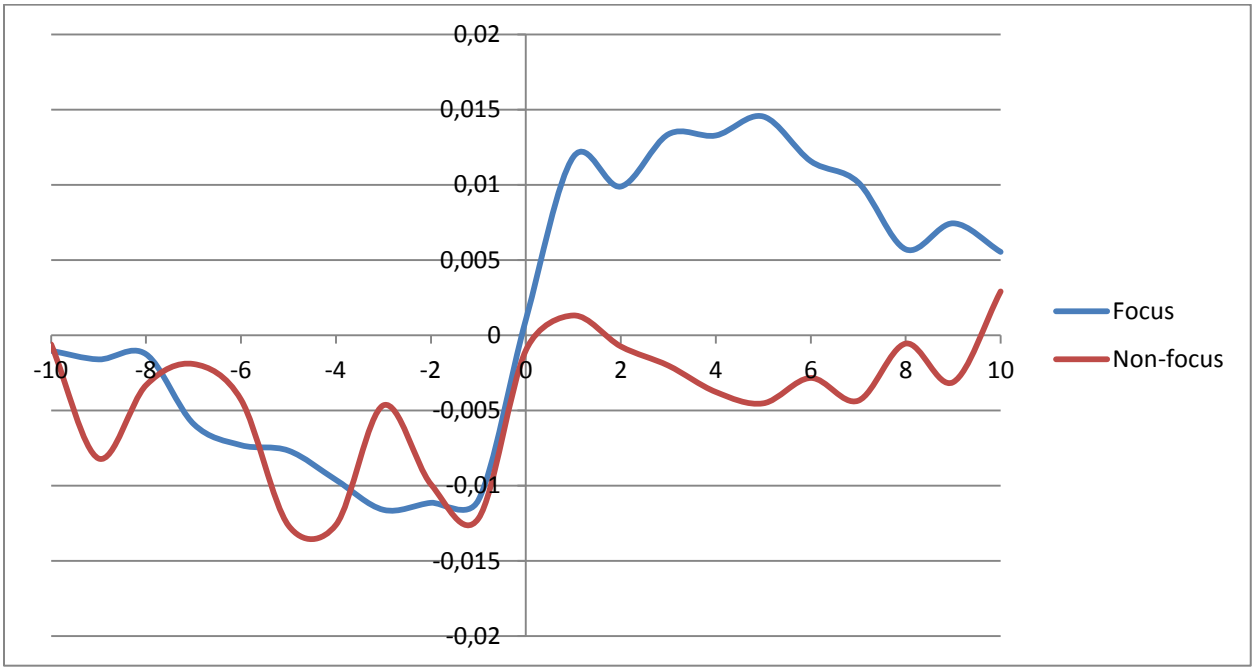


Figure 3: The short-run cumulative average abnormal returns for focus-increasing equity carve-outs and for non-focus increasing equity carve-outs.

Figure 3 presents the development of the cumulative abnormal returns for the firms with focussing motives and firms without focussing motives. The ten days prior to the announcement day are almost equal to each other and show no substantial difference between the two groups. On the announcement day and the day after the announcement day the focussing group shows a substantial higher increase in abnormal returns than the non-focussing group. In the period from 2 days after the announcement date to 10 days after the announcement day the cumulative average abnormal returns of the focussing group decreases while the abnormal returns of the non-focussing group remains almost equal in that period.

The results for the financing strategy hypothesis and the investment strategy hypothesis are shown in table 7.

Table 7

Tests of the financing strategy hypothesis and the investment strategy hypothesis

		Market adjusted abnormal returns			
Description	N	Mean	T-stat	Median	% pos
A. Financing Strategy Hypothesis					
Reports suggesting financing strategy motives	14	1.00	0.59	-1.06	42.86
Not any reported financing or investment motives	53	0.50	0.90	-0.01	49.06
Differences		0.49	0.36	-1.05	
B. Investment Strategy Hypothesis					
Reports suggesting Investment Strategy motives	43	3.44 ***	3.30	2.74	50.47
Not any reported financing or investment motives	53	0.50	0.90	0.01	49.06
Differences		2.94 **	2.61	2.75	
C. Both financing and investment strategy motives					
Reports suggesting both financing as investment strategy motives	13	3.61	1.61	2.13	69.23
Not any reported financing or investment motives	53	0.50	0.90	-0.01	49.06
Differences		3.11 *	1.98	2.14	

The cumulative average abnormal returns over the event period [-1, +1] are used to test the subsamples. The cumulative average abnormal returns are calculated using 123 Asian equity carve-out announcements by Asian firms in the period from January 2000 to December 2012. The means and medians are in percentages. The t-statistics are calculated with independent t-tests. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

There are four subsamples included in the table, the subsamples are based on reported motives in newspaper reports. the first subsample has only reported financing strategy motives, the second subsample has only reported investment strategy motives, the third group has both financing and investment strategy motives and the fourth group has no any reported financing or investment motives.

Panel A compares the firms that have financing strategy related reasons for an ECO and firms without reasons related to the financing strategy or investment strategy. The sample with

reported financing motives consists of 14 firms and has an abnormal return of 1.00% and the sample without reported financing or investment motives has an abnormal return of 0.5%. Both samples are not significant and the difference between the two subsamples is not significant as well.

In panel B the investment strategy hypothesis is tested with a subsample with reported investment strategy motives and the other subsample without reported financing or investment strategy motives. The subsample with reported investing motives includes 43 firms and has an abnormal return of 3.44% at a significance level of 1%. The earlier mentioned subsample without financing or investment motives has an abnormal return of 0.5% and the difference in abnormal returns between the two subsamples is 2,94 and significant at the 5%-level.

In panel C the subsample with both financing and investment strategy motives is compared with the group without reported motives. The subsample with both reported motives has an abnormal return of 3.61% and the earlier mentioned subsample without reported motives has a return of 0.50 percent. The difference in abnormal returns between the two subsamples is 3.11% and is significant at the 10%-level.

Figure 4 shows that the financing strategy motives have positive abnormal returns in the period before the announcement date, while the firms with investment strategy motives, both motives combined or without financing and investment strategy motives have negative abnormal returns in that period. All four subsamples show a positive abnormal return in the announcement period [-1, +1]. The group with both financing as well investment strategy motives shows the biggest increase in abnormal returns. When comparing the financing strategy and the investment strategy motives the investment strategy motives shows the biggest increase in the three-day announcement period. The group without reported motives shows the lowest increase in abnormal returns in the three-day announcement period.

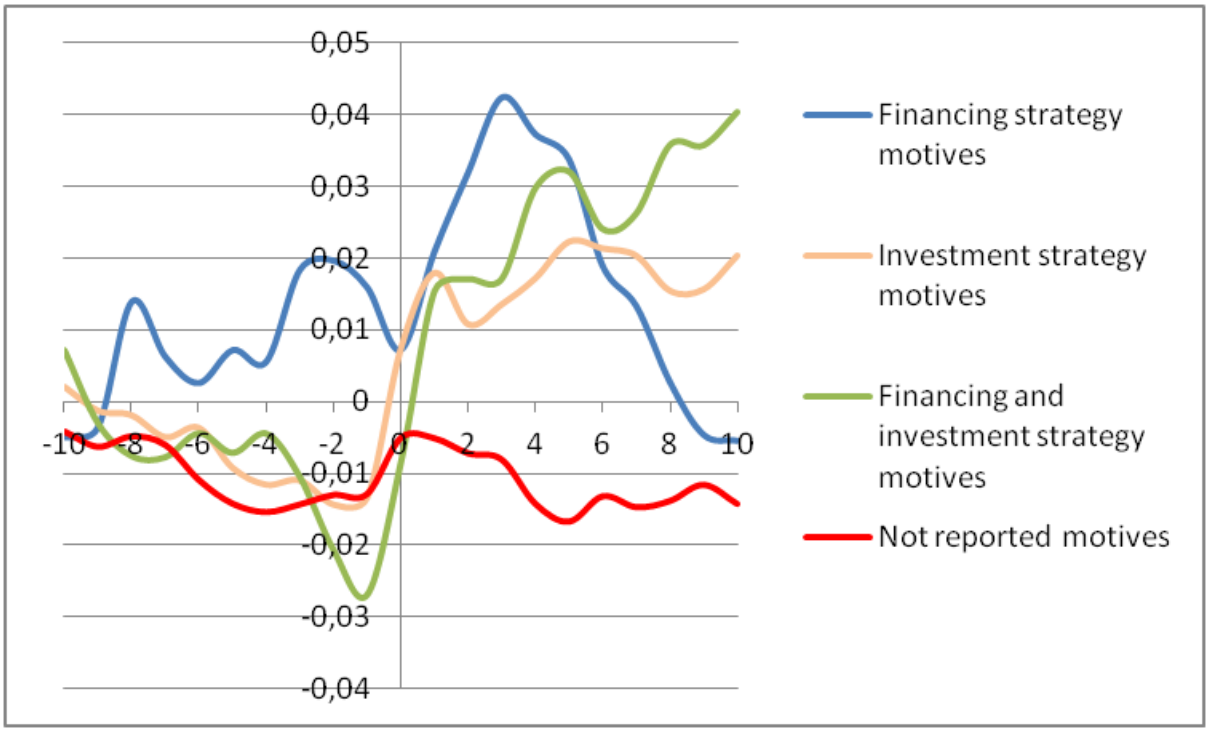


Figure 4: The short-run cumulative average abnormal returns for the equity carve-outs based on financing strategy motives and equity carve-outs based on investment strategy motives.

The results of the subsamples based on differences in law origin and shareholder protection are presented in Table 8. Panel A presents the returns of three law origins, because there was no firm included in the sample with Scandinavian law origin. The subsample of English law origin has the highest mean with a result of 3.49%, but this result is not statistically significant. The firms with French law origin have the lowest mean with a return of 1.26%, significant at the 1%-level.. The firms with German law origin have an significant return of 1.75% at the 1%-level.

Table 8

Test for differences between countries

A. Origin of Law

	Market adjusted abnormal returns				
	N	Mean	T-stat	Median	% pos
English origin	12	3.49	1.78	1.14	66.27
German origin	109	1.75 ***	3.07	0.36	52.29
French origin	2	1.26 ***	2.80	1.26	100.00

B. Shareholder Protection

	Market adjusted abnormal returns				
	N	Mean	T-stat	Median	% pos
2	9	2.97	1.15	1.34	66.67
3	5	0.93	0.68	0.81	60.00
4	104	1.79 ***	3.05	0.50	51.92
5	5	3.59	1.31	0.15	80.00

The cumulative average abnormal returns over the event period [-1, +1] are used to test the subsamples. The cumulative average abnormal returns are calculated using 123 Asian equity carve-out announcements by Asian firms from January 2000 to December 2012. The means and medians are in percentages. The t-statistics are calculated with independent t-tests. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

In panel B the results for the shareholder protection levels are compared with each other. The group with a high level shareholder protection, level 5, has the highest mean with 3.59%. This result is not significant and that applies also the subsamples with shareholder protection level 2 and 3, which have means of 2.97% and 0.93%. However,these results are based on small sized subsamples. The sample with shareholder protection level 4 has a mean of 1.79%, which is significant at the 1%-level.

The results are not consistent with the expectations of the literature study. Academic literature predicts higher abnormal returns for higher levels of shareholder protections. However, only the abnormal return of shareholder protection level 4 is significant.

The English law origin has the highest abnormal return and the French law origin the lowest abnormal return and that is in line with previous academic literature review. However these

results are not significant and do not explain the differences in abnormal returns between different law origins and shareholder protection.

Table 9

Impact timing on the short-run wealth effects

	market adjusted abnormal returns				
Year	N	Mean	T-stat	Median	% pos
2000 (cold)	9	2.83 *	2.06	4.08	66.67
2001 (cold)	11	1.16	0.61	1.02	54.55
2002	3	5.69	1.12	2.41	66.67
2003 (hot)	9	3.28	1.33	2.85	66.67
2004	13	2.09	1.11	-0.92	46.15
2005 (hot)	14	2.61	1.72	1.40	57.14
2006	18	0.73	0.50	0.03	50.00
2007	11	0.59	0.26	-0.47	36.36
2008 (cold)	5	1.63	1.03	3.87	60.00
2009 (hot)	1	-5.22		-5.22	100.00
2010	5	5.49 *	2.15	7.52	80.00
2011	6	4.15	1.28	0.75	66.67
2012	18	0.66	0.68	0.20	55.56
Total	123	1.91	3.54	0.74	54.57
ECOs during a hot market	24	2.53 *	1.96	2.15	58.33
ECOs during a cold market	25	1.86 *	1.87	1.06	60.00
Differences		0.67	0.42	1.09	

The cumulative average abnormal returns over the event period [-1, +1] are used to test the subsamples. The cumulative average abnormal returns are calculated using 123 Asian equity carve-out announcements by Asian firms from January 2000 to December 2012. The means and medians are in percentages. The t-statistics are calculated with independent t-tests. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

Table 9 shows the abnormal returns of all the years in the sample. Every year of the sample has a positive abnormal return with the exception of 2009. The year 2009 has a negative abnormal return but this result is negligible because the sample size was only one ECO. The results of 2000 and 2010 are the only significant results at the 10%-level. In the table also the hot years 2003, 2005 and 2009 are compared with the 'cold' years 2000 and 2001. The

abnormal return of the hot year is 2.33% and significant at the 10%-level. The result of the ECOs during a cold market are lower, but this result is not significant. This table indicates that ECOs during a hot market have higher returns, but the differences in results are not significant.

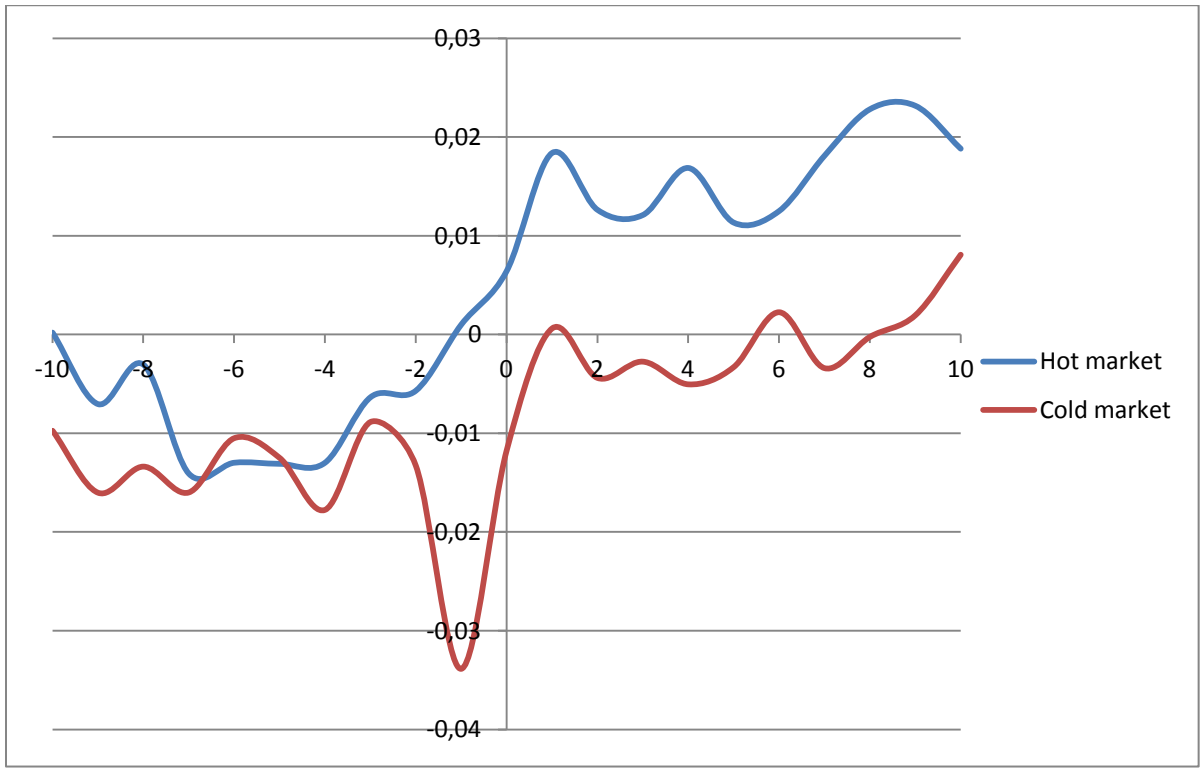


Figure 5: The short-run cumulative average abnormal returns of equity carve-outs performed in a 'hot' and 'cold' market.

Figure 5 presents the development of ECOs performed in hot markets and cold markets. The period before the three-day announcement period shows almost the same results for both groups. The three-day announcement period shows substantial higher positive abnormal returns for ECOs performed in a hot market. The difference caused by the negative abnormal return on the day prior to the announcement date for the cold market. The abnormal returns on the announcement date and the day after the following day are even higher for ECOs performed in a

cold market. The period after the three-day announcement period shows for both groups a small positive result.

6.2.2 Regressions

The univariate and multivariate regressions are presented for the CAARs of the ECOs. The univariate and multivariate regressions are all regressed over the event window [-1, +1]. The following cross-sectional determinants are used in the regressions:

FOC_SIC is a dummy variable that takes the value 1 if the parent firm and the carved-out firm have a different two-digit SIC code and is 0 by the same two-digit SIC code.

FOC_REPORT is a dummy variable with value 1 if there are focus related motives reported by the newspaper, 0 otherwise. FIN_REPORT is a dummy with 1 as value if the newspaper mention financing related motives, 0 otherwise. INV_REPORT is a dummy as well, with the value 1 if the newspaper reports investment related motives, 0 otherwise. FC_ERROR is the earnings forecast error, this is the ratio between the absolute difference of the actual and the predicted earnings per share divided by the share price at the beginning of the month. FC_STD is the standard deviation of all the forecasted earnings made in the last month of the fiscal year prior to the announcement year. FC_ANALYST is the number of earnings forecasts from analysts. REL_SIZE is the ratio of the subsidiary market value to the parent value in the last month of the fiscal year PRIOR prior to the announcement year. LAW_SYSTEM is a dummy with the value of 1 if the home country of the parent has an English law origin, 0 otherwise. SHR_RIGHT is the shareholder right index classified from zero to seven. STK_RET is the retained stake of the subsidiary by the parent company. HOT_MARKET is an dummy that is 1 if the ECO is announced in a hot year, 0 otherwise. COLD_MARKET is the same as hot market, besides the fact that the dummy takes 1 as value when the ECO is announced in a cold market, 0 otherwise. In table 10 panel A the univariate regressions are presented, in panel B the multivariate regressions are presented and in panel C the interaction terms are presented.

Table 10

A. Univariate regressions

Variable	Exp. sign	1	2	3	4	5	6	8	9	10	11	12	13	14
Intercept		0.67	1.44	2.03	1.09	2.10	1.76	2.31	1.50	1.91	2.42	0.51	1.76	1.93
		0.75	2.41**	3.53***	1.65	3.72***	3.15***	2.78***	2.01**	3.34***	0.68	0.34	2.92***	3.17***
FOC_SIC	+	1.93												
		(1.73) *												
FOC_REP	+		2.44											
			(1.81) *											
FIN_REP	+			-1.03										
				(-0.61)										
INV_REP	+				2.35									
					(2.10) **									
FC_ERROR	+					3.04								
						-1.07								
FC_STD	+						0.01							
							1.08							
FC_ANALYST	-							-0.06						
								-0.63						
REL_SIZE	+/-								5.38					
(sub/combined)									0.74					
LAW_SYSTEM	+									0.08				
										0.05				
SHR_RIGHT	+										-0.13			
											-0.14			
STK_RET	+/-											0.01		
												0.34		
HOT_MARKET	+												0.77	
													0.56	
COLD_MARKET	-													-0.07
														-0.05
Sample		123	123	123	123	117	90	123	110	123	123	101	123	123
R		0.155	0.162	0.055	0.187	0,000	0.114	0.057	0.071	0.004	0.013	0.034	0.051	0.005
R2		0.024	0.026	0.003	0.035	0,000	0.013	0.003	0.005	0.000	0.000	0.001	0.003	0.000
Adjusted R2		0.016	0.018	-0.005	0.027	0.001	0.002	-0.005	-0.004	-0.008	-0.008	-0.009	-0.006	-0.008

B. Multivariate regressions

Variable	Exp. sign	1	2	3	4	5	6	7	8	9	10	11
Intercept		-0.32	0.52	-0.76	-2.15	-2.04	2.42	-1.01	2.23	1.11	1.06	-3.25
		(-0.31)	(-0.66)	(-0.63)	(-0.92)	(-0.85)	(0.68)	(-0.18)	(2.19)	(0.86)	(0.29)	(-0.42)
FOC_SIC	+	2.19		2.17	2.30	2.12					2.21	1.72
		(1.97) *		(1.84) *	(2.14) **	(1.97) *					(1.97)*	(1.56)
FOC_REP	+		2.63									
			(1.96) *									
FIN_REP	+	-0.41	0.11	0.39	-0.63	-0.83					-0.56	-0.82
		(-0.24)	(0.06)	(0.21)	(-0.39)	(-0.50)					(-0.31)	(-0.43)
INV_REP	+	2.48	2.49	2.37	1.84	2.04					2.48	2.18
		(2.15) **	(2.16) **	(1.94) *	(1.61)	(1.75) *					(2.14) **	(1.86) *
FC_ERROR	+								2.90	-1.39		-9.38
									(0.11)	(-0.05)		(-0.53)
FC_STD	+								1.13	0.43		
									(1.06)	(0.41)		
FC_ANALYST	-								-0.07	0.01		
									(-0.59)	(0.05)		
REL_SIZE	+/-			4.99	12.38	10.62		4.81		5.45		9.49
(sub/combined)				(0.70)	(1.38)	(1.18)		(0.66)		(0.51)		(1.02)
LAW_SYSTEM	+						0.09	1.29			0.13	3.02
							(0.05)	(0.61)			(0.07)	(1.03)
SHR_RIGHT	+						-0.13	0.61			-0.36	0.13
							(-0.15)	(0.44)			(-0.39)	(0.07)
STK_RET	+/-				0.81	0.53						2.21
					(0.23)	(0.15)						(0.56)
HOT_MARKET	+					1.65						
						(1.27)						
COLD_MARKET	-					-0.81						
						(-0.55)						
Sample		123	123	110	91	91	123	110	89	82	123	88
R		0.256	0.255	0.251	0.330	0.366	0.014	0.107	0.131	0.068	0.259	0.377
R^2		0.066	0.065	0.063	0.109	0.134	0.000	0.011	0.017	0.005	0.067	0.142
Adjusted R^2		0.042	0.042	0.027	0.056	0.061	-0.016	-0.017	-0.017	-0.047	0.027	0.055

C. Multivariate regressions with interaction terms

Variable	Exp. sign	1	2	3	4	5	6
Intercept		-0.71	0.94	0.94	0.34	0.91	1.18
		(-0.47)	(1.08)	(0.96)	(0.32)	(1.2)	(1.59)
FOC_SIC	+	3.08		1.31	2.40		
		(1.76)		(1.06)	(1.88) *		
INV_REP	+		1.19			2.22	2.15
			(0.68)			(1.81) *	(1.70)
REL_SIZE	+/-	20.40	2.87				
(sub/combined)		(1.13)	(0.36)				
HOT_MARKET	+			-1.69		0.77	
				(-0.69)		(-0.49)	
COLD_MARKET	-				1.34		-0.44
					(0.65)		(-0.26)
FOC_SIC * REL_SIZE	+	-17.98					
		(-0.91)					
INV_REP * REL SIZE	+		12.19				
			(0.65)				
FOC_SIC * HOT_MARKET	+/-			3.33			
				(1.13)			
FOC_SIC * COLD_MARKET	+/-				-2.09		
					(-0.76)		
INV_REP * HOT_MARKET	+/-					1.88	
						(0.58)	
INV_REP * COLD_MARKET	+/-						0.93
							(0.33)
Sample		110	110	123	123	123	123
R		0.190	0.189	0.190	0.178	0.210	0.190
R2		0.036	0.036	0.036	0.029	0.044	0.036
Adjusted R2		0.009	0.008	0.012	0.004	0.020	0.012

The three-day cumulative market adjusted abnormal returns around the announcement day are used as dependent variable. The cumulative average abnormal returns are calculated using 123 equity carve-out announcements by Asian firms from January 2000 to December 2012. The independent variables and the interaction terms are defined in section 4.2.2. The T-statistics are presented in the brackets below the regression coefficients. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

6.2.2.1 Univariate regressions

The univariate regressions are presented in panel A of table 10. The table shows significant results for both focus variables and the investment strategy variable. The focus variable based on the SIC-codes has a coefficient of 1.93 and with a T-statistic of 1.73 significant at the 10%-level. The focus variable based on the focus related motives in newspapers has a coefficient of 2.44 and is also significant at the 10%-level with a T-statistic of 1.81.

The investment strategy variable has a coefficient of 2.35 and with a T-statistic of 2.10 significant at the 5%-level. In the univariate regressions only the two focus variables and the investment strategy variable have significant influence on the abnormal returns. The other determinants have no significant influence on the abnormal returns.

6.2.2.2 Multivariate regression

The multivariate regressions in panel B of table 10 test the interaction between variables and other variables and if the regression coefficients stay significant. Regression (1) includes the focus variable based on the SIC codes, the finance strategy variable and the investment strategy variable. The focus variable is significant at the 10% level with a coefficient of 2.19 and the investment variable has a coefficient of 2.48 and is significant at the 5%-level. This three variables have an R-square statistic of 0.2562. Thus 25.62 percent of the variance in the CAAR over the event window [-1, +1] can be explained by these variables.

Regression (2) uses the focus variable based on focus related motives instead of the focus variable based on SIC-codes. This focus variable has also a positive coefficient that is significant at the 10%-level. The investment strategy variable stays almost equal with 2.49 and a t-statistic of 2.16 and thus significant at the 5%-level. The finance strategy variable coefficient becomes slightly positives, although it stays insignificant.

The third regression uses the same three variables as the first regression and adds the variable relative size. The influence of this addition is that focus (FOC_SIC) losses his significance, however the t-statistic stays high. The investment strategy variable stays significant at the 5%-level and the coefficient slightly decreases to 2.37. The influence on the finance strategy variable is positive, however the variable has a small and insignificant coefficient of 0.39.

Regression (4) is the retained stake by the parent firm added in the regression by the four variables of regression 3. The influence of this variable is that the focus coefficient increases in value and becomes significant at the 5%-level. The coefficient of investment strategy variable decreases to 1.84 and losses significance. The addition of the retained stake has a negative influence on the finance strategy variable and positive on the relative size variable, but both variables stay insignificant. The coefficient of the retained stake itself is positive, but not significant.

Regression (5) tests the magnitude of the timing effect, both timing variables are added to the previous variables of regression 4. The magnitude of the time effect is that the variable investment strategy becomes significant at the 10%-level and that the significant level of the focus (FOC_SIC) coefficient decreases to the 10%-level. The influence on the variables FIN_REP, REL_SIZE and STK_RET is negative, but not significant. The 'hot' market variable shows the suspected positive signal and the 'cold' market variable the negative coefficient, but both timing variables are not significant.

Regression (6) tests the magnitude of the law origin and shareholder rights, the combined effect of these two variables shows the same view as the univariate regression. The coefficient of the LAW_SYSTEM variable shows a small positive coefficient and the SHR_RIGHT variable shows a small negative coefficient, bot with very low T-statistics.

Regression (7) investigates the influence of relative size on the law origin and shareholder rights. Both the law origin coefficient and the shareholder rights coefficient increases and the T-statics do the same, but the variables stay insignificant and have no important role in explaining the wealth effects.

Regression (8) measures the absolute earnings forecast error (FC_ERROR), the standard deviation of the earnings forecast (FC_STD) and the number of analysts forecasts (FC_ANALYST). The coefficient of FC_ERROR and FC_STD are positive and the variable FC_ANALYST is slightly negative. All the three coefficients have no statistical significance.

To test the complexity hypothesis and the asymmetric information hypothesis the relative size variable is added to the three variables in regression (9). The coefficient of FC_ERROR becomes negative and the coefficient of FC_STD decreases, but FC_ANALYST has a very small increase to a positive coefficient. The relative size variable itself has a large coefficient, just as in the other regressions. All the coefficients in this regression are not significant and have no important role in explaining wealth effects.

Regression (10) measures the explaining power of the law origin and shareholder rights in combination with the focus, finance strategy and investment strategy variable .The coefficients almost do not differ from the coefficients of the univariate regression. In this regression the focus variable is again significant at the 10%-level and the investment strategy variable is significant at the 5%-level.

Regression (11) takes the FOC_SIC, FIN_REP, INV_REP variables in addition with FC_ERROR, REL_SIZE, LAW_SYSTEM, SHR_RIGHT and STK_RET. FOC_SIC losses its significance and INV_REP drops to the 10%-level. The other variables are not significant, but it is notable that the FC_ERROR variable has a large negative coefficient, however it is not significant.

6.2.2.3 Interaction term regressions

To test the interactions between different variables interaction variables are created. The results of the interaction terms are presented in panel C of table 10. The first 2 interaction variables are the focus variable (FOC_SIC) and the investment strategy variable (INV_REP) with the relative size variables combined.

The interaction between relative size and the focus variable based on SIC codes tests the effect of a larger relative size on an increase in corporate focus. A positive effect is expected because a carved-out subsidiary with a larger relative size is expected to increase the corporate focus of the parent on the main business. In contradiction to the expectations the interaction variable shows a negative coefficient with -17.98, however this result is not significant.
The interaction term of relative size combined with the investment strategy variable shows also the expected positive coefficient with 12.19, but this coefficient is not significant and cannot conclude about the positive influence of relative size on investment motives.

Regression (3) and (4) test the wealth effect of corporate focus if the ECO takes place in a hot market or cold market. The regressions shows the expected interaction variable coefficients of 3.33 between corporate focus and hot market and -2.09 between corporate focus and cold market. However this results are not significant.

Regression (5) and (6) investigates the influence of the market effect on investment motives. Regression (5) shows the expected positive effect of investment motives on shareholder wealth in a hot market. Although regression (6) shows a smaller, but still positive effect of investment motives on value creation in a cold market. However, both interaction terms are not significant and cannot conclude a relationship between investment motives in a hot and/or cold market.

6.3 Long-run shareholder wealth effects

Table 11 presents the buy-and-hold abnormal returns and the cumulative average abnormal returns for the long-run of the market-adjusted model. The following event windows are used for calculating the BHARs and CAARs: 6-, 12-, 24-, 36- and 48-month holding period starting at the exercise day of the ECO for a sample of respectively 123, 120, 100, 91 and 86 firms.

Panel A presents the long-run abnormal returns of the market adjusted model. All the reported BHARs and CAARs over the event window periods are significant at the 1%-level. All the long-run abnormal returns show negative wealth effects. The table shows BHAR returns over the 6-, 12-, 24-, 36- and 48-month holding period of -10.21, -17.40, -29.26, -33.19 and -39.42 percent. The CAARs show the same signal with further decreasing abnormal returns over the holding period. The medians of both the BHARs and CAARs of the market adjusted method have negative results. Approximately 30% of the parent firms have positive long-run abnormal returns and the other 70% of the parent firms have negative long-run abnormal returns. The negative returns of the parent firms are consistent with the findings by Rüdisüli (2005), Pojezny (2006), Powers (2003) and others.

Table 11

Long-run abnormal returns of the parent firms

Market adjusted model									
	Buy-and-hold abnormal returns					Cumulative average abnormal returns			
Event period	N	Mean	T-stat	Median	% positive	Mean	T-stat	Median	% positive
6 months	123	-10.21 ***	-4.23	-9.35	33.33	-8.55 ***	-3.59	-8.23	30.89
12 months	120	-17.40 ***	-4.93	-12.06	28.33	-15.09 ***	-4.18	-10.80	28.33
24 months	100	-29.26 ***	-4.71	-20.97	30.00	-27.31 ***	-4.46	-19.27	30.00
36 months	91	-33.19 ***	-5.10	-27.42	26.37	-31.08 ***	-4.93	-26.51	26.37
48 months	86	-39.42 ***	-4.67	-34.47	33.72	-38.91 ***	-4.74	-34.15	33.72

The table presents the buy-and-hold abnormal returns and the cumulative average abnormal returns using 123 equity carve-out announcements by Asian firms from January 2000 to December 2012. The means and medians are in percentages. The t-statistics are calculated with the method described in chapter 5. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

Table 12 presents the long-run wealth effects of the subsidiarie firms. The same event windows as for the long-run wealth effects of the parents are used to calculate the BHARs and CAARs, namely the 6-, 12-, 24-, 36- and 48-month holding period. The period started at the offering date of the subsidiary and is measured over a sample of respectively 82, 79, 62, 50 and 44 subsidiary firms.

Table 12

Long-run abnormal returns of the subsidiary firms

Market adjusted abnormal returns									
	Buy-and-hold abnormal returns					Cumulative average abnormal returns			
Event period	N	Mean	T-stat	Median	% positive	Mean	T-stat	Median	% positive
6 months	82	0.11	-0.03	0	50.00	2.18	0,56	2.50	52.44
12 months	79	-8.94	-1.57	-15.00	40.51	-6.61	-1,15	-8.64	41.77
24 months	62	-16.29 *	-1.85	-11.50	46.77	-13.85	-1,55	-0.21	48.39
36 months	50	-17.94 *	-1.76	-22.50	38.00	-14.64	-1,45	-19.38	40.00
48 months	44	-23.05 **	-2.43	-21.50	38.64	-21.70 **	-2,24	-14.30	40.91

The table presents the buy-and-hold and the cumulative average abnormal returns for the Asian equity carve-outs in the period from January 2000 to December 2012 for a sample of 123 firms. The means and median figures are in percentages. The t-statistics are calculated with the method described in chapter 5. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

The table shows BHARs of 0.11%, -8.94%, -16.29%, -17.94% and -23.05% over the 6-, 12-, 24-, 36- and 48-month holding period. This means a small loss in the first 6 months and for the 12-, 24-, 36- and 48 month period considerable underperformance of the subsidiary. The results of the 24-, 36-month holding period are significant at the 10%-level and the 48-month holding period is significant at the 5%-level.

The results show negative effects for all the four years after the ECO announcements. Only the 36-month period shows a small negative effect compared with the 24-month period. The 36-month period has a return that is 1.65% lower than the return of the 24-month period. Other notable effect is the difference between the 6-months holding period and the 12-month holding period. These results show that the negative effect is large in the last 6 months of the first year with a negative effect of 9.05%.

The reported CAARs show the same pattern as the BHARs. The CAAR of the 6-month holding period is positive with 2.18%, this in contradiction with the 6-month period of the BHAR that shows a small loss. The results of the 12-, 24-, 36- and 48-month holding period show considerable negative result. The results of the 48-months holding period is significant at the 5%-level. The difference between the returns from the 24-month and 36-month holding period is small with 0.79%. Also the difference between the 6-month and 12-month holding period is large, in the last 6 months of the first year there is a negative result of 8.78 percent.

The outperformance is comparable with previous academic research. The studies by Rüdisüli (2005) and Pojezny (2006) report negative abnormal returns for the subsidiary in the first years after the IPO of the subsidiary.

6.4 Analysis of the long-run shareholder wealth effects

Table 13 shows the regressions results of the long-run returns of parent firms. The dependent variable in the long-run regression is the market adjusted BHAR over the one-year holding period. The regressions show the effects of the variables on the long-run abnormal returns.

Regression (1) shows the influence of the focus variable based on SIC-codes, the finance strategy variable and the investment strategy variable. The focus variable and the investment strategy variable have positive coefficients, however they are not significant. The finance strategy variable has a negative coefficient and is insignificant. In regression (2) uses the focus variable based on SIC-codes instead of the focus variable based on newspaper reports. The focus variable shows the same effects in this regression with a positive coefficient. The investment strategy variable is positive and the finance strategy is negative, however this coefficients are not significant as well. In regression (3) relative size is added to the focus, finance strategy and investment strategy variable. In regression (4) is the relative size variable and the retained stake variable added to the regression. The focus variable and the investment strategy variable remain

positive and the finance strategy variable remains negative in both regressions. However, they remain insignificant. The relative size variable has negative coefficients in both regressions, but these coefficients are not significant. The retained stake coefficient is also negative, but not significant. In regression (5) the 'hot' and 'cold' market variables are added compared to regression (4). The focus coefficient stays positive and the finance strategy, relative size, stake retained stays negative. The investment strategy variable changes in slightly negative. Surprisingly the 'hot' market variable has a larger negative influence on the regression than the 'cold' market coefficient. However, both market variables are negative.

Regression (6) and (7) presents a significant coefficient for shareholder right by testing corporate governance and corporate governance related to the relative size of the subsidiary. But in regression (10) and (11) is shown that the shareholder right variable losses its significance.

Regression (8) and (9) test the asymmetric information in long-run ECOs. The earnings forecast error is significant at the 5%-level. However, this variable losses its significance in regression (11) when the regression includes more variables. Thus, the multivariate regression on the long-run parent returns show that there is no clear determinant of the long-run shareholder wealth. The long-run abnormal return analysis of the subsidiary is not included because there are no significant results in the regression.

Table 13

Multivariate regressions on the long-run abnormal returns

Variable	Exp. sign	1	2	3	4	5	6	7	8	9	10	11
Intercept		-17.82	-17.50	-15.46	-8.22	-3.36	-63.42	-84.11	-11.63	-12.13	-63.65	-96.35
		-2,61 **	-3.35 ***	-1.88 *	-0.39	-0.16	-2.66 ***	-2.25 **	-1.69 *	-1.38	-2.51	-1.38
FOC_SIC	+	0.96		2.60	2.59	3.36					0.16	0.69
		0.13		0.32	0.27	0.35					0.02	0.07
FOC_REP	+		1.41									
			0.16									
FIN_REP	+	-5.90	-5.81	-9.25	-6.02	-7.88					-0.29	2.93
		-0.50	-0.49	-0.70	-0.39	-0.51					-0.02	0.17
INV_REP	+	1.27	1.27	1.31	3.06	-0.28					1.40	4.87
		0.17	0.17	0.16	0.30	-0.03					0.18	0.47
FC_ERROR	+								-393.04	-404.27		-209.66
									-2.27 **	-2.27 **		-1.33
FC_STD	+								0.29	0.48		
									0.04	0.06		
FC_ANALYST	-								0.34	0.24		
									0.47	0.31		
REL_SIZE	+/-			-29.98	-41.45	-33.67		-33.69		27.78		-50.91
(sub/combined)				-0.61	-0.51	-0.41		-0.70		0.38		-0.61
LAW_SYSTEM	+						-14.16	-12.61			-14.11	-29.73
							-1.22	-0.91			-1.20	-1.14
SHR_RIGHT	+						12.24	17.87			12.15	24.17
							2.01 **	1.90 *			1.92	1.48
STK_RET	+/-				-10.41	-8.77						-21.65
					-0.32	-0.27						-0.61
HOT_MARKET	+					-15.86						
						-1.33						
COLD_MARKET	-					-12.76						
						-0.96						
Sample		120	120	108	89	89	120	108	87	81	120	86
R		0.054	0.055	0.098	0.083	0.183	0.21	0.199	0.244	0.257	0.211	0.253
R^2		0.003	0.003	0.010	0.007	0.033	0.044	0.040	0.059	0.066	0.045	0.064
Adjusted R_2		-0.023	-0.023	-0.029	-0.053	-0.050	0.028	0.012	0.025	0.017	0.003	-0.033

The market-adjusted buy-and-hold abnormal returns over the one year holding period are used as dependent variable. The buy-and-hold abnormal returns are calculated using 120 equity carve-out announcements by Asian firms from January 2000 to December 2012. The independent variables are defined in section 4.2.2. The T-statistics are presented in the brackets below the regression coefficients. The significant values at the 1%-, 5%- and 10%-level are identified by ***, **, *.

7 Discussion and conclusions

7.1 Interpretation of the results

Hypothesis 1

The short-run shareholder wealth effects of Asian ECO announcements are measured based on the market-adjusted method and the market-model adjusted method. Table 5 shows positive cumulative average abnormal returns over the event windows from one day prior to the announcement to one day after the announcement. The event window [-1, 1] shows a positive return of 3.54% and the return on the announcement day shows a result of 3.15%. Both results are significant on the 1%-level. Hence, hypothesis (H1) is not rejected.

Hence: Asian equity carve-outs create positive wealth effects in the short-run

Hypothesis 2

The long-run shareholder wealth effects of the parent firm and the subsidiary firms are calculated with the buy-and-hold abnormal returns and the cumulative average abnormal returns based on the market-adjusted method. Table 11 presents the buy-and-hold abnormal returns of the parents .The 6-, 12-, 24-, 36- and 48-month holding periods respectively have BHARs of -10.21, -17.40, -29.26, -33.19 and -39.42 percent and all these results are significant at the 1%-level. The cumulative average abnormal returns of the market adjusted method show the same results as the buy-and-hold abnormal returns.

The buy-and-hold abnormal returns for the subsidiary show also negative returns in table 12. For the 6-, 12-, 24-, 36- and 48-month holding period the BHARs are respectively -0.11, -8.94, -16.29, -17.94, and -23.05 percent. The returns of 24 and 36 months are significant at the 10%-level and the return of 48 months is significant at the 5%-level.

The cumulative average abnormal returns of the market adjusted method show the same results as the buy-and-hold abnormal returns. The long-run wealth effects are significantly negative for both the parent firms and subsidiary firms. Thus, hypothesis (H2) is rejected.

Hence: The long-run abnormal returns are significantly negative for both the parent firm as the subsidiary and thus significantly differ from zero.

Hypothesis 3

The first factor which might create value in Asian ECOs is corporate focus, presented in section 2.2.1.1. Table 6 presents the results of the refocusing strategy hypothesis. The results show a positive effect of focus for both focus variables, the subsample based on two-digit SIC codes and on focus related motives reported in newspaper reports.

Table 6 shows for both subsamples a significant abnormal return for the focus-increasing group and a significant difference between the focus increasing and non-focus increasing group. The difference is 1.73% based on the two-digit SIC codes and 2.44% based on the newspaper reports, both these two differences are significant at the 10%-level.

The multivariate analysis in table 10 panel B shows significant results for the focus variable. Table 10 panel C shows that focus has a negative interaction with relative size, but not significant. The interaction between focus and 'hot' market is positive and with 'cold' market the interaction is negative, however both interactions are not significant.

Based on the univariate tests and the multivariate regressions the refocusing strategy is a significant determinant of shareholder wealth creation. Thus, hypothesis (H3) is not rejected

Hence: The focus-increasing equity carve-outs have higher wealth effects than non-focus increasing equity carve-outs.

Hypothesis 4

The second factor which might create wealth in Asian ECOs might be the finance strategy hypotheses, presented in section 2.2.2.1. Table 7 shows a positive difference in abnormal returns for firms with reported financing strategy motives compared to the group without reported financing or investment motives. However, this difference in abnormal return of 0.5 is not significant.

The multivariate regression analysis of table 10 panel B shows negative coefficients for the financing strategy variable, however this results are not significant. In the research there are no significant results for the financing strategy hypothesis. Therefore, hypothesis (H4) is rejected.

Hence: Firms that pay back their debt or settle other financial liabilities with the proceeds of an equity carve-out will not result in more shareholder wealth.

Hypothesis 5

The third factor which might create value in Asian ECOs is the investment strategy hypothesis. The investment strategy is discussed in section 2.2.2.2. Table 7 shows that the abnormal returns for the group with reported investment motives in the newspaper reports is 3.44% and significant at the 1%-level, while the subsample without reported investment strategy motives or reported investment strategy motives has a not significant abnormal return of 0.50%. The difference between the two subsamples is 2.94 percent and this difference is significant at the 5%-level.

The multivariate analysis in table 10 panel B shows positive and significant results for the investment strategy variable. Table 10 panel C shows that the investment strategy variable has a positive interaction with relative size, however this interaction is not significant. The interaction between the investment strategy and the ‘hot’ and ‘cold’ market are both positive, but not significant.

Based on the univariate tests and the multivariate regressions the investment strategy is a significant determinant of shareholder wealth creation. Therefore, the hypothesis (H5) is not rejected.

Hence: Firms who fund the investment opportunities of subsidiaries with the proceeds of the ECO will create more shareholder wealth.

Hypothesis 6 and 7

The three variables earnings forecast error, standard deviation of the forecasts and the number of analyst forecasts measure the asymmetric information and the relative size variable defines if the complexity, undervaluation and pure-play hypothesis is true with a significant positive coefficient or that the asymmetric information hypothesis would be true with significant negative value for the relative size variable. This two hypotheses are presented in section 2.2.3 and 2.2.4.

Based on the univariate and multivariate regression there is no significant result for asymmetric information of ECO events. The relative size variable is positive and this would suggest the complexity, undervaluation and pure-play hypothesis. However, the relative size variable is not significant and cannot conclude about the hypothesis. Therefore the hypotheses (H6 and H7) are rejected

Hence: The information increase concerning the subsidiaries will not results in an increase in shareholder wealth of the equity carve-outs.

Hence: Parent firms using equity carve-outs to reduce the asymmetric information of the firm will not increase the market value of their firm.

Hypothesis eight

The law origin and the shareholder rights are possible factors for wealth creation and presented in table 2.2.11. The univariate tests show a higher result for the firms with English law origin in table 8, however the result for the firms with common law is not significant. The results of firms with German law origin and French law origin are significant.

The results of the univariate tests for the shareholder rights are not statistically significant as well, only the firms of countries with level 4 shareholder protection have a significant return. The results of the other levels of shareholder protection are not significant.

The multivariate regressions in table 10 panel B show positive coefficients for the law origin, however these regressions show no significant results. The coefficients for the shareholder rights are almost equal to zero and insignificant as well. Therefore, hypothesis (H8) is rejected.

Hence: Equity carve-outs will not create more shareholder wealth in countries with a common law system and/or in countries with higher shareholder protection.

Hypothesis nine

The univariate tests show the returns for ECOs occurred in 'hot' years and 'cold' years. The abnormal returns for the hot years were higher with a result of 2.53% compared to the abnormal return of 1.86% for the 'cold' years. However, these results are not significant and the difference between the 'hot' and 'cold' years is not significant as well.

In the multivariate regressions in table 10 panel B the 'hot' market variable shows a positive coefficient and the 'cold' market variables a negative coefficient. However, both these results are not significant. The hot market variable shows a positive coefficient in the univariate and multivariate regression, while the cold market variable shows negative results.

There is no significant difference in the univariate test and no significant results of the multivariate regressions and therefore the hypothesis (H9) is rejected.

Hence: equity carve-outs performed in an overvalued market will not result in higher wealth effects than equity carve-outs performed in an undervalued market.

Main question

The main research question of this thesis that will be discussed, **Do Asian equity carve-outs create wealth for the shareholder and through which factors is this shareholder wealth created?**

The thesis presents positive and significant wealth effects on the short-run period. The thesis reports a cumulative average abnormal return of 1.91% over the time period of one day prior to the ECO announcement day until one day after. On the announcement day itself it presents a significant result of 1.38% and also the larger event periods [-2; 2] and [-5; 5] presents positive and significant abnormal returns. Thus, Asian ECOs create shareholder wealth in the short-run.

The tested hypotheses shows that these short-run shareholder wealth effects are significantly determined by corporate focus and the investment strategy. The financing strategy, complexity, undervaluation and pure play, asymmetric information, corporate governance and timing have no significant results that can explain the shareholder wealth effects in the short-run.

The main research question can be answered with yes for the short-run wealth effects, although the research on long-run wealth effects shows that ECOs destroy value for the shareholders of both parents firms and subsidiary firms. All the 6-, 12-, 24-, 36- and 48-months show significant negative abnormal returns for the parent firms.

The 24-, 36- and 48-month holding periods have significant negative buy-and-hold returns for the subsidiary. The 12-months holding period shows also a negative abnormal return, but is not significant and the 6-month holding period is almost equal to zero.

However, the multivariate regression analysis shows no significant determinants for the decreasing shareholder wealth in the long-run. In previous research about the long returns the results are contradictionary to each other.

The conclusion can be made that ECOs create shareholder wealth in the short-run and the significant factors that determine these wealth effects are the focus related motives and the investment strategy motives. In the long-run the shareholder wealth decreases significantly in this empirical research for both the parent firm and the subsidiary firm, but there are no significant determinants for the decrease. The finding that ECOs destroy value in the long-run however is not for sure accurate, because the long-term studies show different results and it is mentioned by Lyon, Barber and Tsai (1999) that it is risky to determine the long-term returns.

7.2 Limitations and further research

In this thesis the shareholder wealth effects are analysed using 123 ECO announcements by Asian firms from January 2000 to December 2012. The sample that is used for the empirical research is not optimal, because of the small sample size and the distribution of the ECO announcement. The ECO announcements are mainly from Japan with 100 of the 123 ECO announcements. And the ECO announcements from other countries only occurred in the period 2006 to 2012.

For analysing the wealth effects of Asian ECOs a larger sample size was preferred and a better distribution of the ECOs over the countries and years. It is logical to assume that there will be an increase in ECOs and a more distributed sample could be collected.

Because of the limited time period for writing the thesis there was no time for verifying all the data from databases as SDC, Zephyr, Thomson Financial DataStream, Factiva, IBES and Compustat Global. Other limitation of this thesis is the exclusion of four possible wealth factors. The excluded wealth factors are incentives management, wealth transfer from bondholders to shareholders, tax implications and geographical focus. Incentives management is excluded as research object in this thesis because there is no data available of managerial incentive compensation for most firms. For research on the wealth transfer from bondholders to shareholders the data of tradable corporate bonds is required and a majority of Asian firms use non-tradable bank debt instead of corporate bonds. Because of a lack of data about taxation the research about tax implications on ECOs was not possible. Geographical focus is excluded as research object because there was not enough data for this subject. For the research a small sample size is used and with selecting ECOs for this subject there was not enough information available.

Other limitation is the limited availability of literature about Asian equity-carve-outs. Research that is used for the literature review are the studies on Taiwan of Sun and Chen (2009) and Sun and Chu (2011) and the study on Japan by Otsubo (2011). Other studies on ECOs that are used in the paper were studies based on Europe or the United States.

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