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**CREATING VALUE THROUGH SPIN-OFFS:
EVIDENCE FROM EUROPE**

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Abstract

This thesis investigates the long-term wealth effects from a sample of 134 spin-off transactions that were closed between January 2000 and September 2019. We document positive and significant average buy-and-hold abnormal returns for firms that have been spun-off in the 6, 18 and 24-month periods following the spin-off transaction. Furthermore, we find that both industry-focusing and non-industry-focusing spin-offs generate positive buy-and-hold abnormal returns. Our findings appear in line with the notion that spin-off transactions create significant value for firms' equity investors.

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1 Introduction

In this study we investigate whether a buy-and-hold portfolio of European parent and subsidiary firms that conduct spin-off transactions generates excess returns. While European spin-off studies on short-term returns are scarce, those that study long-run returns are scarcer. Considering that the latest papers on long-run returns following spin-offs are over a decade old, we aim to complement the existing literature on both long-run returns and European spin-off transactions. While there is extensive literature on M&A transactions, the opposite of M&A activity - a spin-off or a demerger - is more uncommon and unexplored. We contribute by studying a sample that spans nearly 20 years and is more recent than other published papers. In short, we find that the subsidiaries listed separately as a result of a spin-off yield abnormal returns when adjusted for matching firms.

Cusatis, Miles and Woolridge (1993) pioneered the studies on the long-run stock performance of firms that have engaged in spin-off transactions. Based on evidence from a number of studies, the announcement of a spin-off by a U.S. firm is related to a significant positive long-run abnormal stock return (Cusatis *et al.* 1993; Desai and Jain 1999). While most of the emerging literature focuses on U.S. transactions, only a few focus on the European counterparts. Furthermore, studies conducted on the European markets have not been able to establish a similar significant relationship as in the U.S. In the backdrop of these divergent findings, we seek to examine whether the results of Veld and Veld-Merkoulova (2004) still hold for European spin-offs.

The first study to find significant long-run abnormal returns in the U.S. was conducted by Cusatis *et al.* (1993), with results for parents, subsidiaries and pro-forma combined firms. They found significant abnormal return in the period of two years after the close date of the spin-off. This paper had a large impact for the following research on the topic, and after its publication the popular press picked up the idea of a having a strategy of buying firms involved in spin-off transactions to make superior returns

(Veld & Veld-Merkoulova, 2009). However, some of the techniques used in this pioneering study have been criticised, such as by Fama (1998) for the calculation of stock price performance. Following the criticism, later studies used improved methodologies such as adjusting t-statistics for overlapping samples, derived by Lyon *et al.* (1999). In a following paper by Desai and Jain (1999), significant positive abnormal returns were found in the U.S. for the three-year period following the spin-off transaction. In addition, they found that returns are better for transactions that are focus-increasing, meaning that the parent and subsidiary are operating in different industries after the spin-off.

Regarding research covering Europe, neither Veld and Veld-Merkoulova (2004) nor Sudarsanam and Qian (2007) found significant long-run abnormal returns. Despite the fact that the early research on the subject has been able to establish significant long-run abnormal returns, others argue that the results are ambiguous. McConnel, Ozbilgin and Wahal (2001) show non-significant returns for U.S. firms, and they also conclude that even though their returns are positive they are driven mainly by a large outlier. In addition, they state (p. 278) that "post-spin off stock returns do not provide robust evidence against the semi-strong form of the efficient market hypothesis".

We examine the long-run returns associated with spin-off transactions up to two years after the close date for 134 European firms between 2000 and 2019. The most recurring countries during the sample period are United Kingdom, followed by Sweden and Norway. To study the sample returns we have employed a buy-and-hold abnormal return model. To calculate the long-run excess returns the matching firms approach has been used.

The main results from this study can be summarised as follows. The average buy-and-hold abnormal returns for the spun-off subsidiary are positive in all time periods examined, namely 6, 12, 18 and 24 months after the transaction took place. For the parent firm and pro-forma combined firms the results vary between the time periods. However, these findings are

mostly insignificant except from the spun-off subsidiaries. We find that for the 12-month parent buy-and-hold regression, relative size has a negative impact on buy-and-hold returns at a 5% level significance. Industry focus, total assets and market capitalisation do not appear to have a significant association with buy-and-hold abnormal returns. Our findings are in line with previous research covering European spin-offs. We find evidence that spin-offs, on average, generate long-run excess returns but are cautious about drawing any general conclusions.

The paper is organised as follows. Section 2 presents the theoretical framework and empirical findings covering long-run wealth effects from spin-offs and the testable hypotheses. The data description and the methodology are presented in section 3. The results and analysis are included in section 4, and the conclusions are found in section 5.

2 Theoretical Framework and Empirical Evidence

2.1 Definitions and types of divestitures

There are a number of variations in how corporates divest their assets. Since this research is limited to spin-offs on the European market this Section provides the necessary definitions.

Tübke (2005) provides definitions of different types of divestitures. A sell-off is the sale of assets to another firm. A split-off is similar to a spin-off in the sense that a stock dividend is paid in order to separate the subsidiary from the parent. A split-up transaction is effectively a stock distribution of all subsidiaries, after which the parent no longer exists. The difference in a split-off is that shareholders have to relinquish their shares in the parent firm to receive the shares in the subsidiary (Tübke, 2005).

Finally, a spin-off is defined as a pro-rata distribution of shares in an existing or newly created subsidiary through a stock dividend (Veld & Veld-Merkoulova, 2004). This way, the ownership structure of the spun-off firm is proportional to that of the parent after the transaction.

2.2 Corporate Restructuring

There are a number of ways in which a firm can restructure its business. Activities such as dividend payouts, share repurchases, mergers, acquisitions and divestments could be used to implement a new business structure. A spin-off is a type of divestment that can be used by a parent firm to remove itself from the ownership and management of a subsidiary (Cusatis *et al.*, 1993). Other reasons to use the spin-off as a way to restructure the business could be a lack of synergies or strategic fit between the parent and subsidiary, regulatory pressures, presumed undervaluation of the combined firms or excessive operating volatility of the subsidiary (Cusatis *et al.*, 1993). The organisational changes arising from the spin-off transaction may increase the operating performance of the parent and subsidiary as a result of reduced overhead and agency costs and increased industrial focus. In addition, the spin-off may also facilitate reallocation

of assets that could be used in higher valued activities in the independent entities (Cusatis *et al.*, 1993).

Examining conglomerates serves as an example of why firms go through the process of corporate restructuring. One of the firm's subsidiaries may operate within an area far from the core of the business, hence yielding small synergies, or even dis-synergies, to the other subsidiaries (Cusatis *et al.*, 1993). The subsidiaries may also be in different stages of their business cycles. In that case, one argument is that raising and allocating capital can be completed with greater ease if the entities are independent. Cusatis *et al.* (1993) provide a case study of a spin-off. In 1986, the firm Dart Kraft made a strategic decision to increase its focus on food processing. To achieve this, the firm restructured its business by combining four consumer products divisions and distributed them to the shareholders in the shape of a newly formed firm.

2.3 Efficient Market Hypothesis

Depending on the form of the efficient market hypothesis, various types of information can be expected to be incorporated in the price of an asset. This information can be anything from public to non-public information. In the case of a spin-off, the market should incorporate the information on the day of the announcement into the price of the asset. Therefore, abnormal returns should not exist if the market perfectly incorporates information. To clarify, Fama (1970) categorises the market efficiency in three parts. Firstly, weak form efficiency means that all historical information is reflected in current stock prices. Secondly, semi-strong form efficiency means that prices quickly adjust to new information available to the public. and finally, strong form efficiency implies that stock prices not only reflect historical information and recently published information, but also information known by the firm's insiders.

2.4 Factors that can explain wealth effects from spin-offs

Berger and Ofek (1995) find that stocks of diversified firms are traded at a discount when compared to single business firms. To avoid this discount and to improve the industrial focus of a firm, a spin-off is a way to achieve that goal. A spin-off allows the firm to split unrelated businesses from each other, leading to a concentration on its core business. This motive has also been studied by *e.g.* Daley *et al.* (1997), Krishnaswami and Subramaniam (1999), Desai and Jain (1999) and Veld and Veld-Merkoulova (2004). These studies present evidence that conducting focus-increasing spin-offs results in larger abnormal returns than the non-focus-increasing spin-offs. In general, a focus increasing spin-off is defined as one in which the parent firm's SIC code begins with two digits that are different from that of the subsidiary.

Previous studies have also found a relationship between wealth effects and relative size of the spin-off. The wealth effect grows larger as the portion of divested assets increases (Hite and Owers, 1983; Krishnaswami and Subramaniam, 1999). However, these findings have mainly been related to short-term performance. In the study by Veld and Veld-Merkoulova (2004), they do not find significant long-run results, nor that these are associated with size. In our study, the size factor will be controlled for by comparing the market capitalisation of the subsidiary to the sum of the market capitalisations for the parent and the subsidiary, on the day of the transaction completion.

The following factors have also been found to explain wealth effects from spin-offs. However, due to the time frame of this study, these factors are not controlled for.

Global diversification can have both positive and negative effects on firm value. It enhances shareholder value by *e.g.* increasing operating flexibility, exploiting firm-specific assets and satisfying investor preferences in terms of holding geographically diversified portfolios (Denis *et*

al., 2002). The authors also mention reasons why global diversification reduces shareholder wealth. A globally diversified organisation is more complex compared to a domestic firm, leading to costs related to coordination of corporate policies. In addition, costs of information asymmetry between corporate headquarters and divisional managers and difficulties to monitor managerial decision making further exacerbate a global structure (Denis *et al.*, 2002). So, by spinning off a foreign division, a firm can increase its geographical focus and enjoy either the benefits or suffer from drawbacks of this decision. Veld and Veld-Merkoulova (2004) studied this factor and concluded that the long-run negative regression coefficient was due to negative earnings surprises. The reasons behind the negative surprises may have been due to the theories presented above, but was not elaborated further.

Firms may engage in spin-off transactions as part of their business model due to the information asymmetry between the firm's management and the capital market, which may result in undervaluation of the firm (Veld & Veld-Merkoulova, 2004). This is based on the arguments developed by Nadan and Narayanan (1999), assuming that markets only can observe aggregate cash flows of the firm but not for individual divisions, leading to a misvaluation of the firm's securities. They developed an equilibrium in which an undervalued firm wants to raise capital through or after a divestiture, and an overvalued firm wants to raise capital without separating its divisions. Since a spin-off does not generate any cash inflows, undervalued firms would therefore first engage in a spin-off to achieve a fair market value before raising capital (Nadan & Narayanan, 1999). After the spin-off the firms are traded separately and disclose financial information individually. These changes reduce the need of a rough estimation of division-specific information from the previously consolidated financial statements, enabling a more accurate valuation of the independent firms (Krishnaswami & Subramaniam, 1999).

Regulations may be a motive for U.S. firms to engage in spin-offs, mainly applied in two separate cases. Firstly, if a firm spins off a rate-regulated

utility, the spun-off utility cannot be subsidised from unregulated operations (Schipper & Smith, 1983). A loss in subsidy may lead to speed and/or magnitude of rate increases. Secondly, a multinational firm may spin off a foreign subsidiary to exempt it from domestic restrictions on firms operating abroad by the U.S. congress (Schipper & Smith, 1983). However, the findings made by Shipper and Smith (1983) and Krishnaswami and Subramaniam (1999) show that the abnormal returns are not affected by regulatory motives. In Europe, there are no such motives that make spin-offs particularly interesting in terms of regulatory purposes (Veld & Veld-Merkoulova, 2004).

In the U.S. some spin-offs are taxable and Krishnaswami and Subramaniam (1999) find that taxable spin-offs generate lower positive abnormal returns compared to non-taxable spin-offs. In Europe, the tax situation is largely derived from the 'Merger Directive', adopted by the European Union in 1990 (Veld & Veld-Merkoulova, 2009). This directive states that capital gains taxation on a spin-off is deferred, meaning that tax authorities consider a spin-off as a rearrangement of investments already owned by the investor, and hence not subject to taxation (Veld & Veld-Merkoulova, 2009).

2.5 Previous research on long-run spin-offs

The majority of previous research covering long-run spin-offs have been conducted in the U.S. or in Europe, with the first influential papers published in the 1990's. When evaluating long-run performance, returns are calculated separately for the parent and the spin-off. For the parent firm, returns are calculated starting from the first trading day without having ownership rights to the spin-off. The returns related to the spin-off are calculated from the initial trading day.

Most papers have focused on the performance of this spin-off in the context of trying to evaluate an investment strategy of buying the newly listed spin-off. Periods up to 36 months after the date of separation with intervals

of 6, 12 and 24 months have been investigated by Cusatis *et al.* (1993), Desai and Jain (1999), McConnel *et al.* (2001), Veld Veld-Merkoulova (2004) and Sudarsanam and Qian (2007). All studies use a matching-firm approach to calculate the benchmark return. This is done by identifying similar firms based on their market value of equity, price-to-book ratio and industry classification. Table 1 provides a summary of the main findings from previous research covering long-run spin-off performance.

Table 1: Findings from previous research covering long-run spin-off performance

Study	Period	Market	Type	Sample Size	6m(%)	12m(%)	24m(%)	36m(%)
Sudarsanam & Qian (2007)	1987-2002	Europe	Combined	129	-	-2.3	8.3	8.4
			Parent	129	-	-3.9	6.2	7.1
			Spin-off	142	-	7.2	17.5	23.0*
Veld and Veld-Merkoulova (2004)	1987-2000	Europe	Combined	45-61	-2.2	-2.3	4.2	2.0
			Parent	68-106	3.9	-0.7	6.5	-0.4
			Spin-off	53-70	12.0	12.6	13.7	15.2
McConnel et al. (2001)	1989-1995	U.S.	Combined	-	-	-	-	-
			Parent	80	8.6	13.5	19.2	5.1
			Spin-off	96	8.9	7.2	5.8	-20.9
Desai and Jain (1999)	1975-1991	U.S.	Combined	155	-	7.7	12.7	19.8***
			Parent	155	-	16.5	10.6	15.2
			Spin-off	162	-	5.7***	36.2***	32.3***
Cusatis et al. (1993)	1965-1988	U.S.	Combined	141	-	4.7	18.9***	13.9
			Parent	131	6.8*	12.5***	26.7***	18.1
			Spin-off	146	-1.0	4.5	25.5***	33.6***

Note: *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

The effects from corporate spin-offs have been studied since the 1980s with the starting point in the U.S. The main focus of these studies has been on the short-term value creation from the spin-off decision, *i.e* the stock market performance around the event (Hite and Owers, 1983; Miles and Rosenfeld, 1983; Schipper and Smith, 1983). A joint conclusion from these studies is that conducting a spin-off is rewarded by the market with a significant stock price appreciation on the date of announcement (Veld and Veld-Merkoulova, 2004). The long-run wealth effects are more diverse, and some authors have found evidence of spin-off firms, parent firms and spin-off-parent combinations outperforming their respective benchmarks.

Cusatis *et al.* (1993) studied 146 spin-offs in the U.S. between 1965-1988 focusing on the stock market return of the spin-offs, the parent companies and a value weighted spinoff-parent combination up to three years after the transaction. The findings showed positive abnormal returns for all three,

for which takeover activity was the single most important factor explaining these returns. When controlling for takeovers, no abnormal returns could be found. Desai and Jain (1999) examined a sample of 155 firms between 1975-1991 with significant results. They also found that abnormal returns for the industry-focus increasing spin-off are significantly larger compared to the non industry-focus increasing spin-off. McConnel *et al.* (2001) investigate the strategy of earning excess returns by buying parents and subsidiaries over a 7 year period following the spin-off decision. Due to the ambiguity of the results, they conclude that long-run returns from spin-off transactions provide an unstable basis for rejecting the semi-strong form of the efficient market hypothesis (McConnel *et al.*, 2001).

Veld and Veld-Merkoulova (2004) study the wealth effects for a sample of 156 spin-offs from 15 different European countries between 1987-2000. They found that the mean annualised returns are positive for periods of six months and two years after the spin-off, but negative for the periods of one and three years after the spin-off. These results differ from the results presented by Cusatis *et al.* (1999). Sudarsanam and Qian (2007) made a study with a similar sample period as Veld and Veld-Merkoulova (2004). Both studies present the conclusion that spin-offs are associated with significant abnormal returns. However, their results are mostly insignificant for parents, spin-offs and the pro-forma combined firms.

Compared to the U.S. the topic has not been as extensively studied in Europe. This could at least partly be explained by the relatively young tradition of conducting spin-offs in many of the European markets has been present in the U.S. for a longer period of time (Boreiko & Murgia, 2010). In 1982, the European Union issued a directive with the goal to harmonise EU countries' national laws, and to make spin-offs an efficient restructuring transaction. Since then, tax-free spin-offs have become more common in the European Union (Boreiko & Murgia, 2010).

2.6 Sources of abnormal returns

The sources behind previous findings have also been investigated, with the conclusion that the long-run empirical evidence is more ambiguous than that of the announcement reaction returns. Two of the most frequently studied sources of long-run abnormal returns are industry focus and relative size. Hite and Owers (1983) and Miles and Rosenfeld (1983) started to investigate the relative size of the spin-off, followed by Krishnaswami and Subramaniam (1999). The studies found that wealth effects are larger when the portion of assets divested are larger. Veld & Veld-Merkoulova (2004) further investigated the relationship between the spin-off's relative size and the parent firm's long-run abnormal return. In this case the results were insignificant and also contrary, as size had a negative impact on the first year's performance (Veld & Veld-Merkoulova, 2009). Throughout all of the studies, the proxy for relative size of the spin-off was the change in the parent's market value of equity.

The industry focus factor captures subsequent gains from firms increasingly focus on their core business. The findings of Desai and Jain (1999), Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004) suggest that abnormal returns for focus-increasing spin-off are larger than for non-focus increasing spin-offs. Their breakdown of abnormal returns showed that the sub-sample of firms increasing their industrial focus had an average abnormal return of 3.57%, compared to 0.76% for non-focus increasing firms (Veld & Veld-Merkoulova, 2009). The difference, which is statistically significant, suggest that the motive behind the spin-off has an impact on the price reaction. Desai and Jain (1999) also studied long-run performance in the U.S. and found that firms increasing their industrial focus had a positive determinant.

2.7 Hypothesis development

With respect to earlier empirical findings and the positive effects that corporate restructuring aims to generate, a result of significant abnormal returns in the long term is expected in this study. To investigate the

long-run wealth effect, we test whether the parent, the spin-off and the combination of two firms outperform a matching firm. The returns are calculated from the transaction date.

This means that the information about the spin-off should already be reflected in the price. The semi-strong degree of efficiency presented in the Efficient Market Hypothesis suggests that any expected improvement from the spin-off would be immediately incorporated in the price at the public announcement, hence the long-run abnormal return is not expected to deviate from zero significantly. The corresponding null hypothesis states that the return compared to the benchmark return for periods of 6, 12, 18 and 24 months equals zero. We test the alternative hypothesis that *Spin-off transactions in European markets yield positive buy-and hold abnormal returns.*

The second hypothesis investigates factors that could explain the potential abnormal returns. Aligned with previous research, the impact from focus-increasing transactions and the relative size of the spun-off firm are evaluated as determinants of abnormal returns. The corresponding null hypothesis states that focus-increasing spin-offs and the relative size of the spin-off cannot explain the abnormal returns. We test the alternative hypothesis: i) *A focus-increasing spin-off is associated with positive buy-and-hold abnormal returns,* ii) *The relative size of the spin-off is associated with positive buy-and-hold abnormal returns* and iii) *The reallocation of assets are associated positive buy-and-hold abnormal return.*

To clarify, we believe there is a positive relation between the relative size of the spun-off firm and the buy-and-hold abnormal return. As described by Veld and Veld-Merkoulova (2009), this is aligned with intuition that divesting a larger division should have a larger impact compared to divesting a smaller division. Previous research has not focused on how the reallocation of assets is affecting firm value. However, based on the reasoning presented by Cusatis *et al.* (1999), we aim to investigate this relationship.

3 Data and Methodology

This Section presents the data along with the methodologies used to derive the results. Besides the general event study methodology, the specific methodology to determine long-run returns are included.

3.1 Data Description

This data set consists of a sample of spin-offs from European markets. A European spin-off is defined as a spin-off in which both the parent and subsidiary are European. The spun-off subsidiary may be listed in the same or a different country compared to the parent. The countries included in this study are the following: Austria, Belgium, Denmark, Finland, France, Georgia, Germany, Greece, Ireland, Italy, Malta, Netherlands, Norway, Spain, Sweden, Switzerland and United Kingdom.

The sample period ranges from January 2000 to September 2019. The gross list of spin-off transactions is obtained using the S&P Capital IQ screening function. This database collects and consolidates information from regulatory agencies, firm websites, advisor's websites, stock exchanges, news aggregates and advisor's updates. The transaction close dates are also obtained using the S&P database, complemented by Thomson Reuters Eikon and Wharton Research Data Services (WRDS). In the case of databases providing conflicting information, firm press releases are used to verify the correct date. Data on market capitalisation, SIC codes and currencies are mainly derived using S&P Capital IQ and complemented with data from WRDS. Data on total assets and matching firms are collected from Compustat Capital IQ via WRDS. Missing official data points for currencies, total assets or market capitalisation are replaced with an average of the previous and next data points available.

The close date is defined as the spun-off subsidiary's first trading day, which is also the date on which the first data points are collected. The consecutive data points are collected in intervals of 6, 12, 18 and 24 months from the close date. Only spin-offs and parent firms that remain listed in

each respective period are included in the analysis. This means that a firm that has been listed for less than six months following a spin-off transaction will not be included at all. If a firm has been listed for less than 12 months but more than 6 months, it will only be included in the 6-month interval, but not the 12-month interval. The same applies for the longer 18 and 24 month periods. This data sampling methodology is followed by Cusatis *et al.* (1993) and Veld and Veld-Merkoulova (2004).

Table 2 displays the distribution of the full sample, consisting of 134 parents and subsidiaries. A total of 77 (57.5% of the sample) transactions were defined as industry focus increasing and 57 (42.5% of the sample) were non industry focus increasing. The countries with the highest number of transactions completed during the sample period are United Kingdom (27% of the sample), followed by Sweden (18% of the sample) and Norway (9% of the sample).

Table 2: Sample details by year and country

By year				By country			
Year	Number of transactions	Industry focusing	Non industry focusing	Country	Number of transactions	Industry focusing	Non-industry focusing
2000	1	0	1	Austria	3	1	2
2001	4	3	1	Belgium	4	2	2
2002	5	5	0	Denmark	2	1	1
2003	5	3	2	Finland	9	3	6
2004	10	7	3	France	8	6	2
2005	12	6	6	Georgia	1	1	0
2006	9	7	2	Germany	8	7	1
2007	8	4	4	Greece	2	0	2
2008	6	3	3	Ireland	2	1	1
2009	3	2	1	Italy	9	6	3
2010	13	7	6	Malta	1	0	1
2011	7	1	6	Netherlands	1	1	0
2012	7	5	2	Norway	12	5	7
2013	9	8	1	Spain	3	1	2
2014	7	2	5	Sweden	24	12	12
2015	1	1	0	Switzerland	9	5	4
2016	5	3	2	United Kingdom	36	25	11
2017	6	3	3	Total	134	77	57
2018	8	3	5				
2019	8	4	4				
Total	134	77	57				

Table 3 displays a distribution of the sample according to industry divisions. We provide an overview in accordance with the classification made by the United States Department of Labor. Agriculture, Forestry and Fishing is excluded as none of the spin-off transactions involved such firms. Most of the transactions occurred within Manufacturing, especially within Chemicals and Industrial Equipment divisions. Cusatis *et al.* (1993) in-

cluded a similar overview, but it was not structured in the same fashion as Table 3. Instead, they grouped together some industry divisions and split up other industry divisions. However, the distribution of the spin-offs is similar across industry divisions when reclassifying the overview provided by Cusatis *et al.* (1993).

Table 3: Sample description by industry division

SIC Code	Division	Parent firms	Spin-off firms
1000-1499	Mining	10	6
1500-1799	Construction	3	1
2000-3999	Manufacturing	49	51
4000-4999	Transportation, Communication, Electric, Gas, and Sanitary Services	19	19
5000-5199	Wholesale Trade	5	6
5200-5999	Retail Trade	10	8
6000-6799	Finance, Insurance, and Real Estate	17	22
7000-8999	Services	18	20
9100-9999	Public Administration ^{a)}	3	1

Note: a) Includes conglomerates and one investment firm

In Table 4 we specify the missing data. Most missing data points are not included since the spin-offs are less than two years old as of the date of collection. However, some firms have been subject to M&A activity. Two parent firms and six spin-off firms have been subject to M&A activity in the respective two-year periods that we study for each spin-off transaction. Parent firms that have been acquired or merged make up barely 2% of the sample whereas spin-off firms make up roughly 4%. As such, this sample is likely not particularly contaminated by M&A events.

Table 4: Specification of missing data

	Total missing data points	Data not available	M&A
Panel A: Parent firms			
6 months	0	0	0
12 months	4	3	1
18 months	12	10	2
24 months	18	16	2
Panel B: Spin-off firms			
	Total missing data points	Data not available	M&A
6 months	0	0	0
12 months	5	3	2
18 months	15	10	5
24 months	22	16	6

Table 5 displays the market capitalisation at the close date of the spin-off transactions of both parent and spun-off firms. The total assets statistics represent the first quarterly report following the spin-off transaction. While the mean parent firm has a market capitalisation of 8479.6 million Euros following the spin-off transaction, the mean market capitalisation of the spin-off firm is 20% of that of the parent's.

Table 5: Size characteristics of firms undergoing spin-off transactions

	No. of obs.	Mean	Median	Std. dev.
Panel A: Parent firms				
Market capitalisation	134	8479.6	1244.0	22638.5
Total assets	134	15281.5	1847.9	49276.5
Panel B: Spin-off firms				
Market capitalisation	134	1691.3	400.1	3377.6
Total assets	134	4438.7	764.7	15164.5

To derive the long-run excess returns, we employ the matching firms approach. As a starting point, we considered every country included in this study when choosing where to look for the matching firms, in order to match the origin of the parents and spin-offs. Based on that restriction, the matching firm is chosen by first getting a match with respect to the first two digits of the SIC code on the close date of the spin-off transaction, as described by Cusatis *et al.* (1993). The firms found are then sorted into deciles based on market capitalisation in order to control for size. Finally, the firms in the same size decile as the parent or spin-off firm are then sorted based on their price-to-book ratios, as by Barber and Lyon (1997). The firm with a price-to-book ratio closest to the sample firm becomes the first matching firm, followed by the second, the third and the fourth. We collect four firms in conjunction with the methodology of both Cusatis *et al.* (1993) and Veld and Veld-Merkoulova (2004). If the first matching firm is delisted during the event period, the firm with the second-closest price-to-book will become the main matching firm throughout the rest of the period. The same principle applies if the second and third matching firm are delisted. The process is visualised in Table 6.

Table 6: Matching firm approach overview

Step 1
i) Identify target firm SIC code
ii) Identify target firm transaction close date
iii) Identify target firm market capitalisation
iv) Identify target firm price-to-book ratio
v) Define markets included in screening
Step 2
i) Screen for potential matching firms based on criteria i), ii) and v) in step 1
ii) Sort potential matching firms based on market capitalisation and split into deciles
iii) Choose the decile in which the target firm is placed in
iv) Rank matching firms based on price-to-book ratio. The matching firm with the price-to-book ratio closest to the target firm is defined as the main matching firm
Step 3
i) Calculate returns in each of the pre-defined time periods
ii) If the main matching firm is delisted or missing data in on of the time periods, replace it with a new matching firm with the second closest price-to-book ratio

A total of 1072 matching firms are assigned to the parent and spin-off companies. Some of the matching firms are reoccurring, although at different dates and with different market capitalisation. A large portion of the matching firms that are selected to the benchmark portfolio remain listed throughout each time interval, meaning that replaced matching firms constitute a small part. Table 7 visualises the sample of matching firms collected. As stated, the matching firms are prioritised based on its price-to-book ratio. This means that in terms of market capitalization, the main matching firm can be either larger or smaller than the parent or spin-off.

Table 7: Matching firms summary

	No. of obs.		No. of obs.
Panel A: Parent firms		Panel B: Spin-off firms	
Matching firm 1	134	Matching firm 1	134
Matching firm 2	134	Matching firm 2	134
<i>Parent firm</i>		<i>Spin-off firm</i>	
Matching firm 3	134	Matching firm 3	134
Matching firm 4	134	Matching firm 4	134
Total	536	Total	563

Both the mean and median of the chosen matching firm at the close date are smaller than that of the firms undergoing a spin-off transaction, as seen in Table 8. Considering that the sample of matching firms is collected by creating decile portfolios based on market capitalisation, this is not necessarily surprising. As the second selection is made by finding matching firms within a selected size decile with the closest price-to-book ratio to the target firm, smaller firms may populate a greater proportion of the matching firms sample.

Table 8: Size characteristics of matching firms

	No. of obs.	Mean	Median	Std. dev.
Panel A: Matching firms to parent firms				
Market capitalisation	134	6268.7	1024.3	21037.7
Panel B: Matching firms to spin-off firms				
Market capitalisation	134	2272.3	443.5	5564.5

3.2 Event study methodology

We employ a buy-and-hold abnormal return model to study the sample returns. While there are alternatives such as cumulative matching firms adjusted returns, used by McConnell *et al.* (2001), buy-and-hold returns offer a more realistic outcome as argued by Barber and Lyon (1997). This outcome mainly pertains to achievability, meaning that the outcomes yielded by the buy-and-hold returns model can actually be achieved by investors.

To calculate the long-run excess returns one of the commonly accepted methodologies is used, *i.e.* the matching firms approach derived by Barber and Lyon (1997). In this approach, a sample firm is matched to a control firm based on specified firm characteristics. This approach is favourable compared to using a single reference portfolio to calculate buy-and-hold abnormal returns, since it eliminates the biases linked to that method (Barber and Lyon, 1997). The biases related to using a reference portfolio are the *Skewness bias*, the *New listing bias* and the *Rebalancing bias*, which are elaborated in detail by Barber and Lyon (1997).

There are three methods of identifying a control firm: (i) matching firms based on most similar size, measured by the market value of equity, (ii) matching firms with most similar price-to-book ratio, and (iii) matching farms based on size and price-to-book ratio. Using the third method when identifying control firms results in a well specified test statistics (Barber & Lyon, 1997). The third method is used in this report.

By applying a buy-and-hold strategy up to two years following the spin-off transaction, this study aims to examine how shareholder wealth is affected. Previous studies have evaluated both value-weighted and equally-weighted returns, and there has been a discussion regarding which method is the most accurate (Veld & Veld-Merkoulova, 2004). For an investor who wants to predict abnormal returns associated with a random event, Loughran and Ritter (2000) argue that equally weighted returns are more relevant.

Fama (1998) suggests that if the percentage of misvaluation among small firms is larger than that of large firms, then tests using equally-weighted returns should find greater abnormal returns compared to tests using value-weighted returns. Value-weighted portfolios can also have periods in which a single or a few firms make up a large portion of the portfolio. This results in a high variance of returns since the firm specific risk is not diversified away. The implications from this are large standard errors and low t-statistics (Loughan & Ritter, 2000). However, Fama (1998) states that one can argue that value-weighted returns more realistically represent the total wealth effects experienced by investors. In this paper, we employ equally-weighted returns since we want to test if a spin-off, that is considered a random event, is associated with long-run abnormal returns. This is in line with arguments presented by Veld and Veld-Merkoulova (2004). Despite the fact that value-weighted returns capture value effects for the market as a whole, those results will not be presented in this paper.

We calculate the equal-weighted returns for the spin-off, parent and pro-forma combined firms for 6, 12, 18 and 24 months after the close date. By comparing the buy-and-hold abnormal returns for each of these entities to the benchmark of a matching firm, this serves as the basis to answer the hypothesis if the spin-off transaction generate abnormal returns. To investigate the factors that could explain the potential abnormal returns, control variables for industrial focus, relative size, and total assets have been included in the regression model.

3.3 Model specification

To calculate the buy-and-hold simple returns for a firm i we use the following model. The T -month buy-and-hold return is as if an investor bought the security at time t and held it throughout the period. The T -month buy-and hold return for a security is the product of its daily gross returns.

This method is applied in all time intervals studied.

$$BHR_i(t, T) = \prod_{t=1}^T [1 + R_{it}] \quad (1)$$

To detect long-run abnormal returns, we use the buy-and-hold method suggested by Barber and Lyon (1997). We start by defining R_{it} as the month t simple return on a firm i , that has engaged in a spin-off transaction. We let r_{it} denote the month t simple return on a matching firm i . The T-period returns are calculated from the close date for until the 6, 12, 18 and 24-month marks, respectively. The T-period return on a buy-and-hold investment in a spin-off-engaged firm minus the return on a buy-and-hold investment in a matching firm is denoted as follows:

$$BHAR_i(t, T) = \prod_{t=1}^T [1 + R_{it}] - \prod_{t=1}^T [1 + r_{it}] \quad (2)$$

In the case of a pro-forma combined firm, the buy-and-hold abnormal return is altered by including relative size, ρ , of the spin-off based on market capitalisation at the close date. R_p and R_s denote the parent and spin-off firm returns, respectively. This model represent the wealth development if an investor decided to keep the shares in both the companies following the spin-off transaction.

$$BHAR_i(t, T) = \prod_{t=1}^T (1 - \rho_i)[1 + R_{pt}] + \prod_{t=1}^T \rho_i[1 + R_{st}] - \prod_{t=1}^T [1 + r_{jt}] \quad (3)$$

The subsequent model describes a regression of buy-and-hold abnormal returns on a number of explanatory variables. This regression is applied on the buy-and-hold abnormal return for the parent, spin-off and the proforma combined entity.

$$BHAR_i = \beta_0 + \beta_1 Ind.focus + \beta_2 Rel.size + \beta_3 Tot.assets + \beta_4 Mkt.cap \quad (4)$$

The *Ind.focus* variable is a dummy variable that is informative of whether the spun-off firm operates in a different industry than the parent firm.

Rel.size denotes how large a portion was spun off with respect to market capitalisation, and *Tot.assets* denotes total assets in millions of Euro.

3.4 Statistical testing

Under the null hypothesis, the abnormal returns generated from the spin-off, parent and spin-off parent combination are expected to be zero. To test the null hypothesis that the mean buy-and-hold abnormal returns are zero for a sample of N firms, we employ a t -test as suggested by Barber and Lyon (1997). The average buy-and-hold abnormal return for the T -period is denoted $ABHAR(t, T)$. The cross sectional standard deviation of the abnormal returns for the sample is denoted $\sigma_{BHAR_i(t, T)}$, and sample size is denoted n .

$$ABHAR_i(t, T) = \frac{1}{N} \sum_{i=1}^N BHAR_i(t, T) \quad (5)$$

$$t_{ABHAR_i(t, T)} = \frac{ABHAR_i(t, T)}{\sigma_{BHAR_i(t, T)}/\sqrt{n}} \quad (6)$$

If the statistical test as shown in equation 6 is significant different from zero, the null hypothesis that spin-off transactions does not generate long-run abnormal returns can be rejected. If the sample is drawn randomly from a normal distribution, under the null hypothesis these test statistics follow a t -distribution (Barber & Lyon, 1997).

4 Results

We initially present the main result of the study, the abnormal returns following a spin-off transaction. Both raw returns and buy-and-hold returns are shown for parent firms, spin-off firms and pro-forma combined firms, respectively. The raw returns denote the returns generated by the parent, spin-off or combined pro-forma firm during each period. To clarify, the raw returns is not compared to any benchmark, it is just the returns generated in the different periods studied. Parent firms display significantly positive raw returns (at varying levels of confidence) following a spin-off transaction for most periods, as seen in Panel A in Table 9. Spin-off firms show significant raw returns at a 1% level of confidence in all periods, as shown in Panel B. Proforma combined firms showcase a similar result.

For parent firms, the buy-and-hold abnormal returns are somewhat contradicting, yielding negative, but not significant, returns in the majority of the periods studied, in Panel D in Table 9. The implication from this result is that the parent firms may underperform their respective benchmarks following the spin-off transaction. Similar results were also found by Veld and Veld-Merkoulova (2004), and Sudarsanam and Qian (2007) for certain time periods. However, neither our nor previous findings are significant. This differs from research covering the U.S. Cusatis *et al.* (1993) and Desai and Jain (1999) find that parent firms exhibit positive significant buy-and-hold abnormal return in the period of up to three years following the spin-off.

Panel E in Table 9 shows the buy-and-hold abnormal returns of spin-off firms. We find significance at a 5% level for the 6 month and 18 month periods, while the 24 month period carries a significance at a 1% level. Our results show that abnormal returns vary between 13.2% and 25.4% depending on the time period. Desai and Jain (1999) and Cusatis *et al.* (1993) presented similar findings in the U.S. market. Comparing our results to those of Veld and Veld-Merkoulova (2004), they were not able to establish any significant buy-and-hold abnormal returns for the subsidiaries.

Table 9: Long-run returns

<i>Raw returns</i>	No. of obs.	Return (%)	t-statistic	Share positive (%)
Panel A: Parent firms				
6 months	134	3.2%	0.90	50.7%
12 months	130	10.8%*	1.96	56.9%
18 months	122	11.9%**	2.28	56.6%
24 months	116	23.1%***	3.55	54.3%
Panel B: Spin-off firms				
6 months	133	17.6%***	2.84	58.6%
12 months	129	21.6%***	2.77	55.0%
18 months	119	30.6%***	3.46	61.3%
24 months	112	41.4%***	3.94	63.4%
Panel C: Combined firms				
6 months	133	5.8%**	1.98	56.4%
12 months	128	9.8%**	2.30	57.0%
18 months	118	14.8%***	2.89	60.2%
24 months	111	23.7%***	3.68	61.3%
<i>Buy-and-hold abnormal returns</i>	No. of obs.	Return (%)	t-statistic	Share positive (%)
Panel D: Parent firms				
6 months	134	-5.1%	-1.44	36.6%
12 months	130	1.8%	0.31	41.5%
18 months	122	-1.8%	-0.33	47.5%
24 months	116	2.0%	0.27	48.5%
Panel E: Spin-off firms				
6 months	133	13.4%**	2.11	52.6%
12 months	129	13.4%	1.67	46.5%
18 months	119	25.4%**	2.50	53.8%
24 months	112	24.8%***	2.69	59.8%
Panel F: Combined firms				
6 months	133	-2.1%	-0.76	42.1%
12 months	128	0.1%	0.02	40.3%
18 months	118	2.2%	0.40	48.7%
24 months	111	-10.3%	-0.63	50.9%

Note: *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

Following the method by Desai and Jain (1999), we create a pro-forma combined firm that yields the abnormal return as if an investor would have kept the shares of both the parent and the subsidiary after the transaction took place. In Panel F, we present the results from this method. In the 6 and 12 months periods we found a negative buy-and-hold abnormal return, and in the 12 and 18 months periods we found positive returns. All of these returns are insignificant, similar to the findings presented by

Veld and Veld-Merkoulova (2004).

The only case in which we were able to find significant buy-and-hold abnormal returns are for the subsidiaries, as seen in Table 9. In the panels, the number of observations are fairly similar but we notice a large difference in terms of t-statistics. Panels B and E show higher t-statistics for the subsidiaries buy-and-hold abnormal returns (1.67-2.69), as opposed to other panels. Despite the fact that our findings for the subsidiaries are significant with high t-statistics, Veld and Veld-Merkoulova (2004) highlights arguments put forth by Brav *et al.* (2000) and Loughan and (2000) regarding what conclusions that can be drawn. They argue that one should be careful with drawing conclusions related to market efficiency. For example, using equal-weighted as opposed to value-weighted returns can lead to different conclusions.

The equal-weighted buy-and-hold abnormal returns suggest that spin-offs generate anomalous returns. Fama (1998) argues that long-term anomalies can be attributed to chance when observed one-by-one and that when model techniques change, these anomalies may disappear. Hence, the anomalies are sensitive to the choice of technique. As indicated by Panels C and F, pro-forma combined firms show positively significant raw returns but no significant buy-and-hold abnormal returns.

In Table 10 we regress 12 and 24 month buy-and-hold abnormal returns of both parent firms and spin-off firms on the relative size of the spin-off, a dummy variable indicating industry focus while controlling for total assets and market capitalisation. We find that for the 12-month spin-off buy-and-hold abnormal return regression, relative size has a coefficient of -0.589 and is significant at a 5% level of confidence. However, the relative size variable is not significant for the 24-month spin-off buy-and-hold abnormal return regression. For the buy-and-hold abnormal return regressions of the parent firm, we find no significant explanatory variables.

Table 10: Regression of long-run excess returns

	12 month buy-and-hold abnormal return	24 month buy-and-hold abnormal return
Panel A: Parent firm		
Intercept	-0.105 (-0.79)	-0.175 (-0.94)
Relative size	0.049 (0.15)	0.543 (1.49)
Industry focus	0.189 (1.53)	-0.012 (-0.08)
Total assets	0 (-0.44)	0 (0.08)
Market capitalisation	0 (0.49)	0 (1.54)
No. of obs.	123	113
R ²	0.02	0.03
	12 month buy-and-hold abnormal return	24 month buy-and-hold abnormal return
Panel B: Spin-off firm		
Intercept	0.307 (1.52)	0.485* (1.85)
Relative size	-0.589** (-2.53)	-0.767 (-1.41)
Industry focus	-0.119 (-0.59)	-0.141 (-0.52)
Total assets	0 (1.33)	0 (-0.27)
Market capitalisation	0 (1.39)	0 (1.23)
No. of obs.	117	100
R ²	0.03	0.05

Note: *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

As a point of reference, Veld and Veld-Merkoulova (2004) did not document any significant association between buy-and-hold abnormal returns and the share of the parent firm that is spun off, for neither the 12-month

nor the 24-month mark. Industry focus, total assets and market capitalisation do not appear to have a significant impact on buy-and-hold abnormal returns for any time period or entity in Table 10. We note that Veld and Veld-Merkoulova (2004) did not perform a regression on the buy-and-hold abnormal returns of the spin-off firms as they were interested in measuring the level of information asymmetry prior to the spin-off transaction. Unlike Veld and Veld-Merkoulova (2004), we also control for the market capitalisation and total assets, as opposed to only taking into account the relative size of a spin-off.

Table 11: Buy-and-hold abnormal returns of non-focus-increasing firms

<i>Non-focus-increasing</i>	No. of obs.	Return	t-statistic	Share positive
Panel A: Parent firms				
6 months	57	-9.4%**	-2.02	36.8%
12 months	55	-8.4%	-0.98	36.4%
18 months	51	-6.1%	-0.61	39.2%
24 months	48	0.8%	0.07	52.1%
Panel B: Spin-off firms				
6 months	56	23.2%*	1.87	58.9%
12 months	54	21.2%	1.35	50.0%
18 months	48	29.3%*	1.79	56.3%
24 months	45	35.6%*	1.82	68.9%

Note: *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

Table 11 summarises the non-focus-increasing buy-and-hold abnormal returns for parent firms and spin-off firms. Considering panel A, we find negative results for the non focus-increasing parents in all periods following the spin-off transaction, with only the 6-month period showing significance at a 5% level. For the focus-increasing parents in Table 12, positive buy-and-hold abnormal returns are found in all periods except for 6 months. However, these are all insignificant. The single significant result in Panel A suggests that parent firms engaging in non-focus-increasing spin-offs are penalised by the market rather early on. For the non-focus increasing subsidiaries, found in panel B, we see positive buy-and-hold abnormal returns in each of the periods. The majority of these results are also significant.

Table 12: Buy-and-hold abnormal returns of focus-increasing firms

<i>Focus-increasing</i>	No. of obs.	Return	t-statistic	Share positive
Panel A: Parent firms				
6 months	77	-1.9%	-0.37	36.4%
12 months	75	9.3%	1.17	45.3%
18 months	71	1.2%	0.18	53.5%
24 months	68	2.8%	0.31	45.6%
Panel B: Spin-off firms				
6 months	77	6.1%	0.95	48.1%
12 months	75	7.7%	0.99	44.0%
18 months	71	20.6%*	1.74	52.1%
24 months	67	26.5%*	1.96	53.7%

Note: *** Significance at 1% level; ** Significance at 5% level; * Significance at 10% level.

Table 12 shows the buy-and-hold abnormal returns of focus-increasing spin-offs. While the abnormal returns of the parent firms are positive, they are not significant, as seen in Panel A. On the other hand, the spin-off firms show positive and significant returns at a 10% level of confidence in the 18 and 24-month periods, as presented in Panel B. The focus-increasing buy-and-hold abnormal returns for the subsidiaries are also positive with significant results in the 18-months and 24-months periods. Taking into consideration the results by Daley *et al.* (1997) and Desai and Jain (1999), they found that spin-offs in which are industry-focus-increasing are associated with higher abnormal return than those who are not. Cusatis *et al.* (1993) states that a reason for business to restructure through a spin-off could be due to a lack of synergies or strategic fit between the parent and subsidiary. Our results, on the other hand, suggest that spin-off firms exhibit positive returns regardless of industry focus.

5 Conclusions

The results of this study are consistent with the research done on long-run returns of spin-offs in the U.S. We find significant long-run abnormal returns for spin-off firms in all studied periods apart from the 12-month interval. Given that literature on European spin-offs presents no significant long-run returns of neither parent nor spin-off firm, this study contradicts previous findings. However, our findings are aligned with previous research in the U.S., and also confirm the general idea that spin-offs are value creating for firms and its investors. It is not a surprise that, even though the majority of our results are insignificant, we find positive abnormal returns for parent, spin-offs and pro-forma combined firms in the majority of the periods studied. If spin-off transactions were not expected to create any value to the firm and its investors, then there would be no value-driven rationale.

We caution that these findings don't equate a rejection of the efficient market hypothesis, but rather that the buy-and-hold strategy provides significant abnormal returns for the 20-year period that is studied. Furthermore, we find it puzzling that buy-and-hold abnormal returns of non-industry focusing spin-offs have been greater than for the industry focusing spin-offs. As theory suggests that industry-focusing spin-offs may experience bolstered returns due to better allocation of assets by a better fitting management, we welcome further inquiry on this inconsistent result. On the topic of the explanatory factors returns, we recognise that these models carry low explanatory power, as they do for short-term abnormal returns in previous papers. Nevertheless, our results indicate that as a greater portion of a firm is spun off, the buy-and-hold abnormal returns will decrease for the 12-month return sample. This may suggest that large restructurings through spin-offs are associated with a lower performance.

Research on spin-offs has thus far entailed short-term studies for the most part, while studies on long-run returns remain rare. We encourage more current research on both U.S. and European spin-off transactions in order

to better understand this rare type of transaction. Further exploration of regression models that aim to explain the sources of abnormal returns, and it is imperative to gain knowledge of the role that industry-focusing spin-off transactions play in that regard.

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A Appendix

Table 13: Sample of 134 spin-off transactions (1)

Parent firm	Spin-off firm	Date
Cramo Oyj	Adapteo Oyj	2019-07-01
TruFin plc	Distribution Finance Capital Holdings plc	2019-05-09
Atos SE	Worldline S.A.	2019-05-07
Schibsted ASA	Adevinta ASA	2019-04-10
Novartis AG	Alcon Inc.	2019-04-09
A.P. Møller - Mærsk A/S	The Drilling Company of 1972 A/S	2019-04-04
Daily Mail and General Trust plc	Euromoney Institutional Investor PLC	2019-04-01
Modern Times Group Mtg AB	Nordic Entertainment Group AB (publ)	2019-03-28
Hemfosa Fastigheter AB (publ)	Nyfosa AB (publ)	2018-11-23
Ice Group ASA	Net1 International Holdings AS	2018-10-31
Autoliv, Inc.	Veoneer, Inc.	2018-07-02
Atlas Copco AB	Epiroc AB (publ)	2018-06-18
Euroseas Ltd.	EuroDry Ltd.	2018-06-01
Bank of Georgia Group PLC	Georgia Capital PLC	2018-05-29
Kering SA	PUMA SE	2018-05-16
Pentair plc	nVent Electric plc	2018-05-01
Getinge AB	Arjo AB (publ)	2017-12-12
Aptiv PLC	Delphi Technologies PLC	2017-12-06
NKT A/S	Nilfisk Holding A/S	2017-10-12
Ceconomy AG	Metro AG	2017-07-13
Fiat Chrysler Automobiles N.V.	GEDI Gruppo Editoriale S.p.A.	2017-07-03
Svenska Cellulosa Aktiebolaget SCA (publ)	Essity AB (publ)	2017-06-15
Snam S.p.A.	Italgas S.p.A.	2016-11-07
esure Group plc	GoCo Group plc	2016-11-03
E.ON SE	Uniper SE	2016-09-12
Digia Oyj	Qt Group Oyj	2016-05-02
Addtech AB (publ)	AddLife AB (publ)	2016-03-16
Conzzeta AG	Plazza AG	2015-06-26
PORR AG	PORR AG, Real Estate Business	2014-12-10
Akastor ASA	Aker Solutions ASA	2014-09-29
Weifa ASA	AqualisBraemar ASA	2014-08-13
REC Silicon ASA	REC Solar ASA	2014-06-23
Kindred Group plc	Kambi Group PLC	2014-06-02
IMMOFINANZ AG	BUWOG Group GmbH	2014-04-28
Metso Corporation	Valmet Oyj	2014-01-02
Trane Technologies plc	Allegion plc	2013-12-02
Autogrill S.p.A.	World Duty Free S.p.A.	2013-10-01
Fiat Chrysler Automobiles N.V.	CNH Industrial N.V.	2013-09-30
Provexis plc	Science in Sport plc	2013-08-09
Siemens Aktiengesellschaft	OSRAM Licht AG	2013-07-08
YIT Oyj	Caverion Oyj	2013-07-01
Covidien plc	MALLINCKRODT PLC	2013-06-28
Kering SA	Fnac Darty SA	2013-06-20

Table 14: Sample of 134 spin-off transactions (2)

Parent firm	Spin-off firm	Date
Castleton Technology plc	Redcentric plc	2013-04-24
Vesuvius plc	Alent plc	2012-12-27
Vitrolife AB (publ)	Xvivo Perfusion AB (publ)	2012-10-08
ZEAL Network SE	Lotto24 AG	2012-07-03
Metall Zug AG	Zug Estates Holding AG	2012-07-02
PostNL N.V.	TNT Express B.V.	2012-03-15
Investment AB Öresund (publ)	Creades AB	2012-02-22
Kering SA	Fnac Darty SA	2013-06-20
Castleton Technology plc	Redcentric plc	2013-04-24
Vesuvius plc	Alent plc	2012-12-27
Vitrolife AB (publ)	Xvivo Perfusion AB (publ)	2012-10-08
ZEAL Network SE	Lotto24 AG	2012-07-03
Metall Zug AG	Zug Estates Holding AG	2012-07-02
PostNL N.V.	TNT Express B.V.	2012-03-15
Investment AB Öresund (publ)	Creades AB	2012-02-22
Sievi Capital Oyj	Scanfil Oyj	2012-01-02
Punch Taverns Limited	Spirit Pub Company plc	2011-08-01
Weatherly International plc	Pembridge Resources plc	2011-08-01
Akastor ASA	Kværner ASA	2011-07-08
Carrefour SA	Distribuidora Internacional de Alimentación, S.A.	2011-07-05
Haldex AB (publ)	Concentric AB (publ)	2011-06-16
Rieter Holding AG	Autoneum Holding AG	2011-05-13
Diana Shipping Inc.	Performance Shipping Inc.	2011-01-10
Modern Times Group Mtg AB	Qliro Group AB (publ)	2010-12-15
Lundin Petroleum AB (publ)	Etrion Corporation	2010-11-12
PIRELLI & C. Società per Azioni	Prelios S.p.A.	2010-10-21
Norse Energy Corp. ASA	Panoro Energy ASA	2010-07-22
Mowi ASA	The Scottish Salmon Company PLC	2010-07-08
Accor SA	Edenred SA	2010-07-02
Photocure ASA	PCI Biotech AS	2010-05-25
intu properties pl	Capital & Counties Properties PLC	2010-05-17
Dixons Carphone plc	TalkTalk Telecom Group PLC	2010-03-29
Cable & Wireless Communications Limited	Cable & Wireless Worldwide plc	2010-03-29
Kemira Oyj	Tikkurila Oyj	2010-03-26
Netgem SA	Video Futur Entertainment Group S.A.	2010-01-27
GAM Holding AG	Julius Bär Gruppe AG	2009-10-01
Jelmoli Holding Ltd.	Athris Holding AG	2009-03-31
Betsson AB	NetEnt AB (publ)	2009-02-25
Securitas AB	Loomis AB (publ)	2008-12-09
ENGIE SA	Suez SA	2008-07-22
Hexagon AB (publ)	HEXPOL AB (publ)	2008-06-09
Bastogi S.p.A.	Brioschi Sviluppo Immobiliare S.p.A.	2008-06-02
Egdon Resources p	InfraStrata plc	2008-01-17
Grupo Ezentis, S.A.	Vértice Trescientos Sesenta Grados, S.A.	2007-12-19
Consilium AB (publ)	Precomp Solutions AB (publ)	2007-11-22
Kverneland ASA	GREGORIE ASA	2007-10-12
Fyffes plc	Total Produce plc	2007-10-11
Provident Financial plc	International Personal Finance plc	2007-07-16
Anglo American plc	Mondi plc	2007-07-03

Table 15: Sample of 134 spin-off transactions (3)

Parent firm	Spin-off firm	Date
Morse plc	Monitise plc	2007-06-28
Rheinmetall Nordic AS	Simtronics AS	2007-01-05
Signature Aviation plc	Fiberweb plc	2006-11-17
Catella AB (publ)	Carl Lamm Holding AB	2006-10-11
Betsson AB	Cherry AB (publ)	2006-09-13
Nestor Healthcare Group plc	Pinnacle Staffing Group PLC	2006-09-05
WH Smith PLC	Connect Group PLC	2006-09-01
PGS ASA	Teekay Petrojarl AS	2006-06-30
Covivio	Beni Stabili SpA SHIQ	2006-06-19
DeA Capital S.p.A.	M&C S.p.A.	2006-06-19
AB Electrolux (publ)	Husqvarna AB (publ)	2006-06-13
London Merchant Securities PLC	LMS Capital plc	2006-06-12
TOTAL S.A.	Arkema S.A.	2006-05-18
Poolia AB (publ)	Uniflex AB (publ)	2005-11-30
BWT Aktiengesellschaft	CHRIST Water Technology AG	2005-11-08
Umicore SA	Cumerio SA	2005-08-24
Gunnebo AB (publ)	Gunnebo Industries AB	2005-06-14
Bunzl plc	Essentra plc	2005-06-06
KONE Oyj	Cargotec Corporation	2005-06-01
Bourbon Corporation SA	CBo Territoria Société Anonyme	2005-05-20
Fortum Oyj	Neste Oyj	2005-04-21
Etn. Fr. Colruyt NV	Dolmen Computer Applications NV	2005-04-07
EMS-CHEMIE HOLDING AG	Dottikon Es Holding AG	2005-03-31
Bayer Aktiengesellschaft	LANXESS Aktiengesellschaft	2005-01-31
Kemira Oyj	Kemira GrowHow OYJ	2005-01-31
Hays plc	DX Services Limited	2004-12-20
CMB NV	Euronav NV	2004-12-01
InterContinental Hotels Group PLC	Mitchells & Butlers plc	2004-09-30
Fabege AB	Bostads AB Drott	2004-06-04
XANO Industri AB (publ)	ITAB Shop Concept AB (publ)	2004-05-28
Countrywide plc	Chesnara plc	2004-05-25
Celtic Resources Holdings Ltd	Eureka Mining plc	2004-04-01
Norsk Hydro ASA	Yara International ASA	2004-03-25
Touch Group PLC	Moneybox plc	2004-03-18
Snia S.p.A.	Sorin S.p.A.	2004-01-05
Telecom Italia Media S.p.A.	Seat Pagine Gialle S.p.A.	2003-12-07
Telefónica, S.A.	Atresmedia Corporación de Medios de Comunicación, S.A.	2003-10-31
UniCredit Bank AG	Hypo Real Estate Holding GmbH	2003-10-06
Kingfisher plc	Darty Limited	2003-07-07
CMB NV	Exmar NV	2003-06-23
Astaire Group Limited	Castleton Technology plc	2002-12-19
Brunel Holdings Plc	Dickinson Legg Group Limited	2002-12-16
Somfy SA	Damartex	2002-07-03
DEPFA BANK plc	Aareal Bank AG	2002-06-17
Kingfisher plc	Woolworths Group plc	2002-03-26
Sveaskog Förvaltnings AB	BillerudKorsnäs AB (publ)	2001-11-26
BT Group plc	Telefónica Europe plc	2001-11-19
Kinnevik AB	Transcom WorldWide AB (publ)	2001-09-06
Uniq plc	Wincanton plc	2001-05-18
AstraZeneca PLC	Syngenta AG	2000-11-13