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DO SPIN-OFFS REALLY CREATE VALUE? THE EUROPEAN CASE

Abstract:

We study wealth effects for a sample of 161 spin-offs from 15 different European countries that were announced between January 1987 and September 2000. The cumulative average abnormal return over the three-day event window is 2.35%. The mean abnormal return is 2.89% for companies that increase their industrial focus and only 1.20% for non-focus increasing companies. These results are in line with previous studies for the United States. The long-run returns in excess of the market return are significantly negative for both parent and pro-forma combined firms. However, if we control for the size and book-to-market effects by creating a matching portfolio, we find mostly insignificant long-run excess returns both for focus-increasing and non-focus increasing parents, subsidiaries and pro-forma combined firms. This result suggests that, unlike U.S. spin-offs, European spin-offs are not associated with long-run outperformance.

1. Introduction

There is a broad consensus in both the academic and the popular literature that spin-offs create value. This consensus is based on the fact that a number of U.S. studies have shown that the announcement of a spin-off is associated with positive abnormal returns. Moreover, spin-offs also seem to exhibit long-run excess returns over periods from 6 months to 3 years after the spin-off is completed. In the last decade the popularity of spin-offs has also spread to Europe. This may have been caused by the positive wealth effects that were found for U.S. spin-offs. The availability of a large sample of European spin-offs allows us to test the hypotheses whether spin-offs *really* create value on both the short and the long run.

A spin-off is a pro-rata distribution of the shares of a firm's subsidiary to the shareholders of the company. No cash transaction takes place. After the spin-off, the shareholders of the parent company hold shares in both the parent company and the subsidiary[3]. The wealth effects that are associated with spin-off announcements are investigated in a number of American studies. The main picture that emerges from these studies is clear. Announcements of spin-offs by American firms are associated with strongly significant abnormal returns that range from 1.32% to 5.56%[4]. Spin-offs of companies that increase their industrial focus by divesting a division in a different branch than the parent company, are associated with higher abnormal returns than spin-offs of companies that do not increase their industrial focus (see e.g. Daley et al. (1997), and Desai and Jain (1999)). Empirical studies also find that non-taxable spin-offs are associated with higher positive abnormal returns than taxable spin-offs (Copeland et al. (1987), and Krishnaswami and Subramaniam (1999)). In addition, Krishnaswami and Subramaniam (1999) also find that firms with higher levels of information asymmetry exhibit higher abnormal returns in the announcement period. These results show that the market efficiently responds to the spin-off announcements by incorporating expected future benefits into the current stock price.

[3] Other types of divestitures include split-ups and carve-outs. In a split-up the shares of all the subsidiaries that comprise the firm are distributed. In this form of divestiture the parent ceases to exist. In an equity carve-out, (some) of the shares of the subsidiary are sold to the public. This paper is restricted to spin-offs.

A number of U.S. studies also find long-run outperformance of spun-off firms and their parents. Cusatis et al. (1993), Desai and Jain (1999), and McConnell et al. (2001) find that parents and subsidiaries involved in a spin-off, outperform matching firms. According to press reports, this result is even used by portfolio managers to use a strategy of buying spun-off entities once they begin trading as independent stocks[5]. McConnell et al. (2001) notice that the long-run outperformance of spin-offs can mainly be attributed to a few outliers that perform extremely well. Desai and Jain (1999) conclude that the outperformance of spin-offs can entirely be attributed to focus-increasing spin-offs. Contrary to the results for the announcement period, the finding for the long-run excess returns is remarkable. According to the market efficiency hypothesis, the positive effects of the spin-off should be incorporated in the announcement date returns. An interesting question is then whether spin-offs really create value on the long run or whether the U.S. results were a consequence of chance. The latter explanation was recently put forward by Fama (1998). He argues that studies finding significant long-run returns receive more attention in the academic and the popular literature because they are more interesting. For this reason it is useful to study spin-offs outside the United States. This gives us some out-of-sample results on the long-run performance of companies involved in spin-offs.

In this paper we study European spin-offs[6]. Spin-offs have only become popular in Europe during the second half of the 1990s. In the period from 1987 to 1994 only 62 spin-offs took place. From 1995 the volume of spin-offs rapidly increased. The period from January 1995 to September 2000 witnessed no less than 170 European spin-offs. A possible reason for the late popularity in spin-offs lies in the fact that it took a relatively long time before individual countries set up regulatory frameworks for spin-offs. Besides that, in some countries, spin-offs are associated with potential fiscal problems.

Different results between the United States and Europe can a priori be explained by corporate governance differences. Moerland (1995) argues that managers in Anglo-Saxon

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[4] See e.g. Rosenfeld (1984), Copeland et al. (1987), Slovin et al. (1995), Johnson et al. (1996), Daley et al. (1997), Desai and Jain (1999), Krishnaswami and Subramaniam (1999), and Mulherin and Boone (2000).

[5] See McConnell et al. (2001).

[6] Other empirical research on announcements of non-US spin-offs was carried out by Janssens de Vroom and Van Frederikslust (2000), and Murray (2000). Janssens de Vroom and Van Frederikslust (2000) find positive abnormal returns for their "English Legal Origin sample" of 176 observations (that mostly includes the United States and the United Kingdom) and insignificant abnormal returns for their "Other

countries are more likely to focus on the interests of shareholders and managers in continental Europe are more likely to take the interests of all the firm's stakeholders into account. According to La Porta et al. (2000), their index of "anti-director rights", that stems from La Porta et al. (1998), is a suitable measure for corporate governance differences between countries. This index, that ranges from zero (very low shareholder protection) to seven (very high shareholder protection), shows interesting differences between European countries. For example, the United Kingdom has a value of 5 for the index, which is the same as the value for the United States. Ireland, Spain and Norway also have large scores (all have a score of 4). On the other hand, some European countries show very low values for the index. Noteworthy examples are Belgium (a score of 0), Germany and Italy (both a score of 1) and Switzerland and the Netherlands (both a score of 2).

The most important results from this study can be summarized as follows. In total 161 spin-offs that were announced by European companies over the period from January 1987 to September 2000 are analyzed. The cumulative average abnormal return is 2.35% over the event window from day –1 to day +1. This result is in line with previous studies for the United States. Announcements of spin-offs that do not increase industrial focus are associated with a cumulative average abnormal return of 1.20%. Spin-offs that do increase industrial focus are associated with a higher cumulative average abnormal return of 2.89%. We also find some evidence that firms that spin off foreign divisions exhibit higher abnormal returns than firms that spin off domestic divisions. The divestiture of relatively large subsidiaries is also associated with larger abnormal returns. Contrary to Krishnaswami and Subramaniam (1999) we do not find any relation between the level of information asymmetry and the size of the abnormal return. Results are not different between countries with different corporate governance systems. If we define the long-run excess return as the difference between the company return and the market return we mostly find significantly negative long-run excess returns for the parents and the pro-forma combined firms, and non-significant results for the subsidiaries. However, it is argued in the literature that long-run excess returns can better be calculated as the

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Legal Origin sample" of 34 observations. Murray (2000) finds positive abnormal returns for UK companies. Both studies only look at announcement date returns and not at long-run excess returns.

difference between the company return and the return on a matching firm[7]. If we use this methodology we find that long-run excess returns are mostly insignificant. This is the case for focus-increasing and non-focus increasing parents, subsidiaries and pro-forma combined firms. These results apply to relatively large samples. Moreover, they are found for both mean and median returns. This result is contrary to U.S. results on spin-offs. However, it is in line with the efficient market hypothesis. We conclude that spin-offs really create value on the short run, i.e. at the announcement date, but that they do not create value on the long-run.

The remainder of this paper is organized as follows. In Section 2 we discuss the factors that can explain the wealth effects from spin-offs. The data description and the methodology are included in Section 3. The empirical results are included in Section 4. The paper is concluded in Section 5 with a summary and some conclusions.

2. Factors that can explain the wealth effects from spin-offs

2.1. Improvement of industrial focus

The motive that is most frequently mentioned in the literature for conducting a spin-off is the possibility for the firm to concentrate on its core business. Daley et al. (1997) and Krishnaswami and Subramaniam (1999) examine whether the stock market gains associated with spin-offs can be explained by an increase in industrial focus. Focus-increasing spin-offs are defined as spin-offs in which the parent company has a different two-digit Standard Industry Classification (SIC) code than the subsidiary. Both studies find that focus-increasing spin-offs are associated with significantly higher abnormal returns than non-focus increasing spin-offs. Desai and Jain (1999) study the effect of industrial diversification in more detail. They use three different measures of focus: (1) the Herfindahl index; (2) the number of segments reported by the firm; (3) a dummy variable equal to one when the 2-digit SIC-code of the subsidiary is different from the 2-digit code of the parent, and to zero otherwise. In line with the results of Daley et al. (1997), and Krishnaswami and Subramaniam (1999) they find that the abnormal returns

[7] See e.g. Barber and Lyon (1997), and Fama (1998).

for the focus-increasing spin-offs are larger than for the non-focus increasing spin-offs. In addition, they study the long-run performance of spin-offs after the announcement date. This leads to the interesting result that the superior performance of the focus-increasing spin-offs persists in the post-spin-off period. The abnormal returns for the focus-increasing companies are significant 11.12%, 20.77% and 33.36% over respective holding periods of one, two or three years following the spin-offs. This contrasts to insignificant abnormal returns of -0.96%, -7.66% and -14.34% in the same respective periods for the non-focus increasing spin-offs. Desai and Jain (1999) find that the classification of a spin-off into focus-increasing or non-focus increasing is robust as about 90% of the classifications are insensitive to the definition of focus reported. We test the hypothesis that spin-offs of firms that increase their industrial focus will be associated with higher abnormal returns than spin-offs of firms that do not increase their industrial focus.

2.2. Geographical focus

Previous studies on U.S. spin-offs only look at the industrial focus of companies. Another possibility is that a spin-off increases the geographical focus of a firm. This can be accomplished by spinning off a foreign division. We hypothesize that an improvement of the geographical focus is associated with positive abnormal returns for the same reasons as an improvement in industrial focus.

2.3. Decrease of information asymmetry

Krishnaswami and Subramaniam (1999) argue that firms may engage in a spin-off because there is information asymmetry between the management of the firm and the external capital market. This information asymmetry may result in undervaluation of the firm. After the spin-off information asymmetry, and hence undervaluation, are likely to decrease. For this reason, Krishnaswami and Subramaniam (1999) hypothesize that the wealth effects of a spin-off are positively related to the level of information asymmetry of the firm. They find that firms with higher levels of information asymmetry exhibit higher

abnormal returns adjusted for the probability of a spin-off upon the announcements of spin-offs. They also find that none of their information asymmetry variables is significantly correlated with either of the two measures of negative synergies[8]. The information asymmetry variables therefore do not seem to be proxying for industrial focus.

Habib et al. (1997) also present an information-based explanation for spin-offs. They derive a model in which a firm can increase its value by spinning off a subsidiary. The spin-off will lead to an increase of the number of securities that is traded on the market. This makes the price system more informative and, hence, leads to a decrease of information asymmetry. This decrease of information asymmetry will lead to an increase of the total value of the firm and its spun off subsidiaries.

The Krishnaswami and Subramaniam (1999) paper suggests the testable hypothesis that spin-offs of firms with large information asymmetries will be associated with higher abnormal returns than spin-offs of firms with low information asymmetries. The Habib et al. (1997) paper leads to the hypothesis that firms, which show a decrease in information asymmetry after the spin-off, are associated with positive long-run excess returns.

2.4. Corporate governance

It is often argued that managers in Anglo-Saxon countries are more focussed on shareholder value creation and that managers in continental European countries are more likely to take the interests of all the firm's stakeholders into account (see e.g. Moerland, 1995). La Porta et al. (1998) have created an index for "antidirector rights". This index is a summary measure of shareholder protection. It ranges from zero to seven. A high value of the index means that shareholders are better protected against the adverse behavior of managers. Not surprisingly, the value of the index is lower for countries in continental Europe than for Anglo-Saxon countries. In order to test whether managers perform spin-offs for their own purposes or whether they perform them in order to benefit shareholders, we also analyze whether spin-offs in countries with lower shareholder

[8] The measures of negative synergies are (1) a dummy variable for the difference in the 2-digit SIC codes and (2) the unrelated entropy, this is the weighted average of the percentage sales of the various distinct two-digit SIC industry groups within that firm.

protection are associated with lower abnormal returns than spin-offs in countries with higher shareholder protection[9].

2.5. Other variables

In the U.S. some spin-offs are taxable[10]. Empirical research by Copeland et al. (1987), and Krishnaswami and Subramaniam (1999) shows that taxable spin-offs are associated with lower positive abnormal returns than non-taxable spin-offs. Spin-offs in European countries generally do not create tax problems, because it is possible to defer tax payments (see the appendix for details). Exceptions apply to Germany, France and the Netherlands (before 1998). In Germany spin-offs can be arranged in a tax-neutral way. However, if more than 20% of the shareholders transfer their shares within 5 years after the spin-off, the spin-off will still be taxed (Zaman, 1998). In France the problem is that it is not possible for the company to ask for approval from the tax authorities before the transaction is carried out. However, for both Germany and France it is not known at the announcement date whether the spin-off will be taxed. The decision on the taxation in France will only be taken after the spin-off date. In Germany it will depend on the transfer of shares in the period after the spin-off. For this reason we do not include a variable on taxation in our analysis.

Schipper and Smith (1983), and Krishnaswami and Subramaniam (1999) have studied whether regulatory motives play a role for American companies to engage in a spin-off. Both studies show that the abnormal returns are not affected by the regulatory status of the spin-off. In the appendix we discuss the regulatory consequences of European spin-offs. From this appendix it can be concluded that regulation does not cause an obstacle for spin-offs to be carried out in European countries. An analysis of the literature on the regulation of spin-offs in Europe also has not led to a motive that makes spin-offs particularly attractive for regulatory purposes.

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[9] The index has the following values for the countries in our study: United Kingdom (5), Germany (1), France (3), Italy (1), Sweden (3), Norway (4), Denmark (2), Finland (3), the Netherlands (2), Belgium (0), Switzerland (2), Spain (4), Austria (2), Ireland (4) and Greece (2).

[10] See Schipper and Smith (1983), Copeland et al. (1987, page 136), and Krishnaswami and Subramaniam (1999) for a discussion on the tax consequences of U.S. spin-offs.

Another potential explanation for the positive stock market reaction to spin-off announcements is the possibility to transfer wealth from bondholders to shareholders. The bondholder wealth expropriation hypothesis states that during a spin-off the assets and liabilities are structured in a manner that involves a transfer of wealth from the bondholders to the shareholders of the firm. However, such an effect is difficult to measure in an event study. The reason for this is that at the moment that the spin-off is announced it is generally not known whether such a wealth transfer will actually occur. Besides that, the consensus in the U.S. literature is that there is little evidence of wealth transfers between bond- and shareholders in American spin-offs[11].

A number of studies find that the wealth effects are larger when the portion of assets that is divested is larger (see e.g. Hite and Owers (1983), Miles and Rosenfeld (1983), and Krishnaswami and Subramaniam (1999)). In our study we control for this by using the market value of equity of the divested subsidiary relative to the sum of the equity capitalizations of the parent and the subsidiary. This is computed on the day of the completion of the spin-off.

3. Data description and methodology

3.1. Data description

We analyze a sample of European spin-offs. A European spin-off is defined as a spin-off in which a European parent spins off a subsidiary. This subsidiary can be either from the same or from a different country. All European countries are taken into account with the exception of the Eastern European, formerly Socialist, countries.

The sample covers the period from January 1987 to September 2000. The announcement dates are obtained from the Securities Data Company (SDC) Mergers and Acquisitions Database. Data on stock prices, market values of equity and market indices are derived

[11] Hite and Owers (1983), Schipper and Smith (1983), and Dittmar (2000) find that the announcement period *bond* returns are not significantly different from zero. Schipper and Smith (1983) and Dittmar (2000) find that only a small number of companies decline in bond ratings after the spin-off. The only study that finds a wealth transfer is Parrino (1997). In a case study of the Marriott spin-off he shows that the restructuring not only reduced the collateral on Marriott's existing debt, but also reduced the bondholder claims on cash flows from the business. However, his study is only based on one company.

from Datastream. Primary SIC codes are from the Compustat (where available) and SDC databases. The original sample consisted of 232 European spin-offs. Table 1 reports the annual distribution of the announcements to spin-off a part of the company.

[Please insert Table 1 here]

The row with the total number of observations shows that with 44% the United Kingdom is heavily represented in the total sample (102 out of 232 observations). Other countries that are relatively well represented include Sweden with 30 observations (13%), Germany with 19 observations (8%), Norway with 18 observations (8%) and Italy with 14 observations (6%). The other 10 countries take up 21% of the sample (49 observations).

The last column of Table 1 shows that the distribution in time is also disproportionate. Most announcements (73%) were made in the period from January 1995 to September 2000. The period from 1987 up to and including 1994 only counted for 62 (27%) observations.

A number of spin-offs had to be eliminated from the original sample. The first reason is that sometimes a parent company announced spin-offs of two or more subsidiaries simultaneously. We checked for these double records and eliminated 16 double counts. We also eliminated announcements where one subsidiary was spun off by multiple parents. The only case where this applied was with the English utility National Grid, which led to the elimination of 7 announcements. The third reason is that for a large number of companies no stock prices were available in Datastream. This led to the elimination of 48 observations. The final sample consists of 161 observations. The final sample still shows a large representation of the United Kingdom with 71 observations (44%), Sweden with 24 observations (15%), Germany with 14 observations (9%) and Italy with 12 observations (7%).

3.2. Proxies

The variables that are used in the analysis are related to the hypotheses described in section 2.

Industrial focus. An improvement in industrial focus is measured using a dummy variable. This variable is 1 if the two-digit SIC code of the subsidiary is different from

the two-digit SIC code of the parent (spin-off of an unrelated division) and 0 if the two-digit SIC codes are the same[12].

Geographical focus. Like industrial focus, an improvement in geographical focus is measured using a dummy variable. This variable is 1 if a foreign division is spun off and 0 if a domestic division is spun off.

Information asymmetry. We use three different measures for information asymmetry. These variables are all derived from the Institute of Brokerage for Investment Services (IBES). The first is the earnings forecast error measured before the announcement of the spin-off, from now on to be referred to as the forecast error. We define the average earnings forecast in the last month of the year preceding the spin-off announcement as the predicted earnings. The forecast error is defined as the ratio of the absolute difference between the predicted earnings and the actual earnings per share to the stock price in the middle of the forecast month. Firms with more information asymmetry are expected to have higher forecast errors. The second measure of asymmetric information is the normalized standard deviation of forecasts. This is measured as the standard deviation of all earnings forecasts made in the last month of the fiscal year preceding the spin-off announcement year. The idea behind this variable is that disagreement between analysts is an indication of information asymmetry. We normalize the standard deviation by dividing it by the stock price of the firm in the middle of the month in which the standard deviation of forecasts is measured. The third measure is the number of analyst estimates. A higher number of available analyst forecasts can be associated with better information about the firm, and consequently, lower information asymmetry. The first measure was also used by Krishnaswami and Subramaniam (1999). The second variable is almost the same as a variable used by these authors. They use the standard deviation of forecasts. We choose to normalize this standard deviation in order to produce a measure that is independent of the absolute level of the earnings per share.

[12] Ideally we would also like to use data on the number of segments and on the segment sales. However, the data for these variables are not available in Compustat for European companies. This is probably caused by the fact that in most European countries there is no legal obligation to report data on segment sales.

Antidirector rights. Antidirector rights are measured using the index put forward by La Porta et al. (1998). The index ranges from zero (very low shareholder protection) to seven (very high shareholder protection).

Relative size. Relative size is measured as the market value of equity of the divested subsidiary relative to the sum of the equity capitalizations of the parent and the subsidiary. This is computed on the day of the completion of the spin-off (see also Krishnaswami and Subramaniam (1999)). This measure can be calculated only for the sub-sample of completed spin-offs, while the other variables can be applied to the whole sample of spin-off announcements (including still pending and canceled transactions).

3.3. Methodology

Event-study methodology

The announcement effects of the spin-offs are measured using an event study methodology as described in, e.g., Mikkelson and Partch (1986) and Hite and Owers (1983). Daily abnormal returns are measured using the market model:

$$AR_{i,t} = R_{i,t} - \alpha_{0,i} - \alpha_{1,i} R_t^M ,$$

where $AR_{i,t}$ is the abnormal return for firm i at day t, $R_{i,t}$ denotes the return on security i at day t, defined as $ln(P_{i,t}) - ln(P_{i,t-1})$, and R_t^M is the return on the market index, that is measured in a similar way as $R_{i,t}$. The market index chosen is the Datastream total return index for the individual European countries. The parameters α_0 and α_1 are estimated over the estimation period by running an ordinary least squares regression of the stock returns on a constant and the return of the market index. Denoting the announcement date, reported by SDC, as day 0, this estimation period ranges from day –220 to day –21. The event window ranges from day –1 to day +1.

Average abnormal returns on event day t are calculated as

$$AAR_t = \frac{\sum_{i=1}^{N} AR_{i,t}}{N},$$

where N is the sample size.

Cumulative average abnormal returns for the whole event window are equal to

$$CAR(-1,+1) = \frac{\sum_{i=1}^{N}\sum_{t=-1}^{+1} AR_{i,t}}{N}.$$

The statistical significance of the average and cumulative average abnormal returns is based on the average of standardized abnormal returns $SAR_{i,t}$, calculated for each company.

Each individual standardized abnormal return is found as

$$SAR_{i,t} = \frac{AR_{i,t}}{\sqrt{s_i^2 * \left(1 + \frac{1}{200} + \frac{\left(R_{i,t}^M - AR^M\right)^2}{\sum_{j=-220}^{-21}\left(R_{i,j}^M - AR^M\right)^2}\right)}},$$

where s^2_i is the residual variance from the company i market model estimation, and AR^M is the mean market return during the estimation period.

The test statistic for the average abnormal returns is equal to

$$Z_t = \frac{\sum_{i=1}^{N} SAR_{i,t}}{\sqrt{N}}.$$

This test statistic is asymptotically unit normally distributed under the assumption that the average abnormal return is zero.

Consequently, the test statistic for the cumulative average abnormal returns over the 3-day event window can be calculated as

$$Z(-1,+1) = \frac{\sum_{i=1}^{N}\sum_{t=-1}^{+1} SAR_{i,t}}{\sqrt{N * 3}}.$$

This statistic has a unit normal distribution under the hypothesis that the cumulative average abnormal return over the event period is zero (assuming that returns are independent).

Methodology for the calculation of the long-run excess returns

The long-term excess returns for both parent and subsidiary companies are calculated in two different ways. First we simply compare the annualized buy-and-hold returns on a stock to the corresponding market index for the same period. If the sample firm disappears it is assumed that the proceeds are invested in the market index from that point on. Barber and Lyon (1997) criticize the use of this technique. It may e.g. be the case that the companies involved in the analysis have higher book-to-market ratios than the average company in the market. This would lead to a distortion of the long-run excess returns. Therefore, we also use a second approach that is similar to the one suggested by Barber and Lyon (1997). Within this matching firm approach we look in each country for a matching firm based on the size of a company and on its market-to-book ratio. More specifically, in the first month after the spin-off for which we have data in Compustat we divide all the companies in a certain market (country) into deciles based on the size of the company. Size is defined as the market value of equity. In the decile that includes the sample firm we look for the five companies that are closest to our sample firm in terms of the market-to-book ratio. The closest matching firm is designated as the first matching firm, the second closest matching firm is designated as the second matching firm and so

on to the fifth matching firm. The stock return on the sample firm is then compared to the return on the matching firm. If the first matching firm disappears for whatever reason, we use the second matching firm from there on. If this firm also disappears we continue with the third matching firm and so on. If the sample firm disappears it is assumed that the proceeds are invested in its matching firm from that moment on.

The test statistics for the mean excess return for the time period T is calculated as

$$t = \frac{AER_T}{SE_T},$$

where AER_T denotes average excess return for this period and SE_T is the cross-sectional standard error of the excess returns. In addition, we use the Wilcoxon signed ranks test for the median long-run excess returns.

The long-run returns on the combined firm reflect the total impact of a spin-off on the wealth of an investor holding the stock of the parent company prior to the reorganization. These returns are calculated as a weighted average of excess returns on the parent and subsidiary stock, where the relative market values of equity on the spin-off date (or on the first date after the spin-off that they are available) are used as weights.

4. Results

4.1. Announcement date results

The event study results are included in Table 2.

[Please put Table 2 here]

The results for all countries show a cumulative average abnormal return of 2.35% for the event window from day –1 to day +1. This abnormal return is significant at the 1%-level. The abnormal returns for smaller event windows, i.e. day 0 and day –1 to day 0, are also significantly positive at the 1%-level. These results are confirmed in the non-parametric sign test that tests for the number of positive observations. The results for Europe are in line with the American studies that were discussed in the introduction.

Separate results are presented for countries for which we have more than 10 observations. The cumulative average abnormal return for the United Kingdom is 2.56% for the event

window from day –1 to day +1. This return is also significant at the 1%-level. Similar results are found for the windows from day –1 to day 0 and for day 0. Our results for the event window day –1 to day 0 are in line with Murray (2000). However, he found an insignificant cumulative average abnormal return for the event window day –1 to day +1, where we find a strongly significant cumulative average abnormal return.

For Italy we find a significantly positive cumulative average abnormal return of 4.83% for the event window from day –1 to day +1. The result for Sweden is lower, 0.82% and is not significantly different from zero[13]. In the case of Germany we find a significantly positively cumulative average abnormal return of 3.23% for the day –1 to day +1 event window. This might indicate that German investors are not very afraid of being taxed in a later stage. They might have agreed with major shareholders of the company that they would hold on to their shares for the 5-year period mentioned in the fiscal law.

Not all spin-offs that were announced in our sample period were also completed. In some cases the spin-off was withdrawn. In other cases the spin-off was still pending. We have also calculated mean cumulative abnormal returns for the sub-sample of 93 completed spin-offs and for the sub-sample of 68 pending and withdrawn spin-offs. The means of the two sub-samples are respectively 2.19% and 2.58%. Both means are significantly different from zero on the 1%-significance level[14].

In Table 3 the event study results are compared for different sub-samples.

[Please put Table 3 here]

In Panel A the event study results are compared for companies that increase industrial focus and for firms that do not increase industrial focus. In total 110 companies increase their industrial focus by carrying out a spin-off. The mean abnormal return for these companies is 2.89%. The mean for the 51 companies in the no-industrial focus sub-sample is only 1.20%. The difference between the two samples is 1.69% with a t-statistic of 1.37. This is similar to the earlier reported results for the United States by e.g. Daley et al. (1997), Krishnaswami and Subramaniam (1999), and Desai and Jain (1999) who find

[13] The results for Sweden are partly driven by some announcements of Swedish banks that spun off big property divisions that they were forced to acquire during the loan crisis of the early 1990s. These announcements were generally associated with negative abnormal returns.

[14] Detailed results for the two sub-samples are available on request from the authors.

that the abnormal returns are larger for the focus-increasing spin-offs than for the non-focus increasing spin-offs.

In Panel B the results are compared for companies that spun off a foreign division and for companies that spun off a domestic division. Our hypothesis is that companies that spun off a foreign division will be associated with higher abnormal returns than companies that spun off a domestic division. The reason for this is that the spin-off of a foreign division will lead to an increase in geographical focus. The mean cumulative average abnormal return for the companies that spun off a foreign division is 2.63%. The mean for the companies that spun off a domestic division is 2.32%. The difference is a positive 0.31%. However, this difference is not statistically significant.

We also analyze the effects of asymmetric information. The number of observations for these variables varies from 135 for the normalized standard deviation to 143 for the number of analysts estimates. Although not presented in this paper, we have also calculated the correlations between the measures of information asymmetry[15]. The forecast error and the normalized standard deviation of forecasts are positively and significantly (at the 1%-level) correlated. This confirms our expectations, since both measures are hypothesized to be positively related to the level of information asymmetry. The third variable, number of analysts' forecasts, is significantly negatively correlated with the other two variables for information asymmetry. These results are also expected, since a firm that is followed by more analysts is supposed to have less information asymmetry between managers and stockholders.

In Table 4 the regression results are presented for the cumulative average abnormal returns over the three-day interval.

[Please put Table 4 here]

The first regression in Table 4 shows that industrial focus has a positive coefficient. This coefficient only has a t-value of 1.647 and is therefore not significantly different from zero. The second regression shows that geographical focus has a positive, but insignificant, coefficient. These two regression coefficients confirm the results in Table 3. In the third regression we include both industrial and geographical focus. This regression shows that the coefficient for industrial focus is significantly different from zero at the

[15] The results are on request available from the authors.

10%-level. In regressions (4) to (6) we include both industrial and geographical focus as well as a different measure for information asymmetry in each regression. We find that none of the coefficients are significantly different from zero. With regard to the asymmetric information variables, only the number of analyst estimates shows the expected sign. The other two variables, forecast error and normalized standard deviation of forecasts, show signs that are opposite to their hypothesized signs. All the coefficients have extremely small t-statistics. Therefore we conclude that, contrary to Krishnaswami and Subramaniam (1999), we do not find any relationship between the announcement return and the level of asymmetric information. In regressions (7) to (10) a measure for anti-director rights is added. In all these regressions the antidirector rights variable does not show the expected positive sign, but rather shows a negative sign. However, the coefficient is not significant in any of the regressions. This can be explained by the fact that spin-offs are considered to be value creating in countries with different levels of shareholder protection.

In Table 5 we separately analyze the abnormal returns for completed spin-offs.

[Please put Table 5 here]

In Table 5 we add a control variable that measures the size of the spun-off subsidiary relative to the size of the parent company. This variable is referred to as the relative size. Unfortunately this variable is only available for a limited number of companies (55). The number of observations is limited because this variable is, of course, only available for completed spin-offs. Besides that, this variable is only available if Datastream reports both the market value of equity of the parent and the market value of equity of the subsidiary. We repeat the regressions of Table 4. The coefficient for relative size is significantly different from zero in all regressions. This confirms earlier US results from e.g. Hite and Owers (1983), and Miles and Rosenfeld (1983). In the regressions in Table 5, the significance of industrial focus disappears. All regressions now show that geographical focus is positively and significantly different from zero. Adding size to the regression equations strongly increases the R^2. In the regressions in Table 4, the R^2 varies from 0.0% to 1.4%. In the regressions in panel B the R^2 varies from 17.5% to 33.7%.

4.2. Long-run excess returns

In Table 6 the annualized long-run excess returns of the parent companies, the subsidiaries and the pro-forma combined firms in the period after the spin-off are included.

[Please put Table 6 here]

In Table 6, the excess return is defined as the annualized company return minus the market return. In Panel A the results for the parent companies are presented. In the periods of 6 months and 12 months after the spin-off date, the mean annualized returns are respectively an insignificant –3.39% and a significant –10.35%. The median returns are significantly negative in both cases, i.e. –15.09% and –15.56%. After two years the mean annualized return is –1.51% with a median of –1.78%. Both are insignificant. The mean 3-year annualized excess return is an insignificant –4.69%. The median annualized 3-year return is significantly negative (-8.31%). We separately present the returns for the sub-samples of focus-increasing and non-focus increasing parents. Overall both pictures are negative. The mean and median returns for the industrial focus increasing firms are significantly negative after 1 year. This improves after 2 years to very small positive and insignificant abnormal returns. After 3 years the mean and median excess returns are negative again, but not significantly. The non-industrial focus increasing firms show insignificant mean excess returns up to and including 2 years after the spin-off date. The annualized excess return is significantly negative (-11.95%) 3 years after the spin-off date. The annual median excess returns are significantly negative at 1, 2 and 3 years after the spin-off date. Our results differ from previous results that were published for the United States. For example Cusatis et al. (1993), and Desai and Jain (1999) find that parents of spin-offs perform significantly better than similar firms in the 3-year period after the spin-off date. Desai and Jain (1999) find that this superior performance is caused by the companies that improve their industrial focus. In Panel B we present the results for the subsidiaries. The whole sample only shows insignificant mean and median excess returns. The sub-samples of focus-increasing and non-focus-increasing subsidiaries also mostly show insignificant long-run excess returns. These results also contradict earlier results for the United States. For example, Desai and Jain (1999) find significantly positive excess returns for their whole sample of subsidiaries. They find stronger results

for their sub-sample of subsidiaries of focus-increasing parents. In case of subsidiaries of non-focus increasing parents, they find insignificant excess returns.

A spin-off involves a pro-rata distribution of shares of the subsidiary. This enables us to create a pro-forma combined firm in the period following the spin-off. Following Desai and Jain (1999) we create this "firm" by weighting the return of the parent and that of the subsidiary by the market value of equity at the spin-off date[16]. This gives us the return that an investor would have earned if he had held on to the shares of both the parent and the subsidiary after the spin-off. In panel C of Table 6 we see that the pro-forma combined firms are associated with significantly negative mean and median abnormal returns in the 1-year period following the spin-offs. In the 2-year and 3-year periods following the spin-offs the returns are still negative, but no longer significant[17].

The results in Table 6 may be biased because the company return is simply compared to the market return. More precise results can be acquired if the company return is compared to the return of a similar firm. In Table 7 we present results for a comparison of the company returns to the returns of a matching portfolio. This matching procedure is described in section 3.3.

[Please put Table 7 here]

In Panel A the results for the parent companies are presented. The means and the medians for the whole sample are now mostly positive, but not significant. An analysis of the difference between these results and the results in Table 6 shows that the difference is caused by the fact that a large part of the parent companies are in the highest size decile[18]. Therefore the long-run returns of the parent companies are smaller than the long-run market returns[19]. The results for the non-focus increasing companies seem to be better than those of the industrial focus increasing companies for the period of 6-month to 1-year after the spin-off. For the 2-year and 3-year periods after the spin-off the opposite result seems to apply. We have also tested for the differences between the sub-samples of focus-increasing and non-focus increasing companies, but we do not find significant

[16] Desai and Jain (1999) use the market value of equity at the end of the month of the spin-off.
[17] Given the relatively small amount of observations we do not present results for sub-samples of focus-increasing and non-focus increasing companies.
[18] Results are available from the authors on request.
[19] This is simply caused by the size effect, which leads to larger returns for small companies. See e.g. Fama and French (1996).

differences between the samples[20]. In panel B we see that the subsidiaries have positive long-run excess returns for the whole sample. However, the excess returns are only significant for the period of 3 years after the spin-offs. The industrial focus-increasing sub-sample also shows significant 3-year excess returns after the spin-off. The non-industrial focus-increasing sub-sample shows insignificantly positive excess returns in the 6-month to 3-year periods following the spin-offs. We also tested for differences between the sub-samples of focus-increasing and non-focus increasing subsidiaries. We only find a significant difference for both the means and the medians in the 6-month period after the spin-off. In this period the non-focus-increasing subsidiaries outperform the focus-increasing subsidiaries. In panel C we see that the pro-forma combined firms only show insignificant long-run excess returns[21].

A close study of Table 7 reveals that there is definitely no significant long-run effect for spin-offs. Although, the number of observations in panel A is fairly high (between 41 and 66), all t-statistics are very small (between –0.05 and 1.24). The same applies to the Wilcoxon test for significance of differences in medians and to the test on the percentage of positive observations. Finally, for the pro-forma combined firms (panel C) we also find both small t-statistics and small Wilcoxon statistics. In other words, if we use the correct procedure, i.e. the matching firm approach, controlling for the size and the book-to-market effects, we find that there is no long-run effect after a spin-off. This confirms the idea of Fama (1998) that the long-run effects following U.S. spin-offs are rather a result of chance than of causality. It also confirms the notion that the European capital market is efficient.

Finally, we study whether the long-run excess returns are related to any of the variables discussed before. In Table 8 the relation between the long-run excess returns of the parent firms and their underlying variables is studied.

[Please insert Table 8 here]

We focus on the 1-year and the 2-year excess returns. The reason for this is that we want to study a relatively long period after the completion of the spin-off. Therefore we leave out the 6-month excess returns. As we only have a limited number of observations for the

[20] These results are not reported, but are available on request.

[21] Given the relatively small amount of observations, we do not present separate results for sub-samples of focus-increasing and non-focus increasing firms.

3-year period, we also leave out these results. In regressions (1) to (3) we present the results for the 1-year excess returns; regressions (4) to (6) show the results for the 2-year horizon. Not surprisingly, given the insignificant results for the long-run excess returns, we find that most variables are insignificant. Both the industrial focus and the geographical focus variables are insignificant in all regressions and have very low t-statistics. The insignificance of the industrial focus variable contradicts the result of Desai and Jain (1999) who find that US firms that increase their industrial focus with a spin-off exhibit higher long run excess returns than firms that do not increase their industrial focus. The coefficient for the relative size of spin-off is significantly positive, indicating that the performance of the parent is better on the long run if a relatively large part of the assets of the firm is spun off.

The pre-spin-off level of information asymmetry shows mixed impact on the long-term performance. From regressions (1) to (3) it appears that lower levels of information asymmetry are associated with higher excess returns for the one-year horizon. In particular, the coefficients for the normalized standard deviation of analyst forecasts and for the number of analyst forecasts are significant at the 5-percent level; the coefficient for the forecast error is negative as well, although it is not statistically significant. However, for the 2-year excess returns none of these three measures of information asymmetry has a significant effect on excess returns. Overall, we do not find any support for the hypothesis that firms with higher information asymmetry before the spin-off display better long-run performance.

We also test the model of Habib et al. (1997) by measuring the impact of the changes in the information asymmetry on the long-run performance of spin-off parents. We find that a decrease in information asymmetry is positively related to the long-run excess returns in three regressions out of six: for changes in the number of analyst estimates for both time horizons, and for changes in the forecast error for the 1-year horizon. In two regressions the coefficients for changes in information asymmetry are not statistically significant, and in one it has the opposite effect[22]. Thus, we find some confirmation of the

[22] An increase in the forecast error leads to higher 2-year excess returns. However, this result is caused by only one outlier for which the very large change in the forecast error is based on only one analyst forecast. After excluding this outlier this coefficient becomes insignificantly negative.

model of Habib et al. (1997) by showing that a decrease in information asymmetry following a spin-off can result in long-run overperformance.

The coefficient for the anti-director rights shows a negative sign in all regressions. Moreover, in five out of six regressions this coefficient is statistically significant. This is remarkable since it means that a higher level of shareholder protection is associated with lower long-run excess returns. It is unlikely that this finding can be explained by the more or less shareholder-friendly treatment of spin-offs in different countries, since we saw in Tables 4 and 5 that the announcement returns were very similar in countries with different shareholder protection. This result can possibly be explained by the fact that firms that undertake spin-offs also continue to maintain their shareholder-oriented policy in the long run. Our methodology controls for the financial characteristics of the matching firms in the sense that we look for firms with similar size and book-to-market value. However, it is possible that in countries with less shareholder protection, the "average firm" that is used as a match is more likely to undertake actions that benefit other stakeholders rather than the shareholders, while the firms that perform spin-offs are more focussed on shareholder value maximization. It is possible that this creates a long-run difference in the stock price performance between the sample and the matching firms. On the other hand, in countries with a good shareholder protection, such as the United Kingdom, other firms are more forced to act in the interests of shareholders than in a country like Belgium. This may explain the negative sign for the anti-director rights variable in Table 8.

5. Summary and conclusions.

We study the efficiency of the European capital market for the case of corporate spin-offs. According to the efficient market hypothesis, announcements of spin-offs may be associated with positive abnormal returns. This is the case if the spin-off is associated with a wealth increase for the shareholders. Such a wealth increase can be accomplished if the spin-off leads to an increase in industrial or geographical focus or if the spin-off leads to a decrease of the information asymmetry between the management of the firm and its shareholders. The efficient market hypothesis also implies that there is no long-

run effect. Possible wealth effects will be incorporated in the stock price at the moment that the spin-off is announced.

We study announcement effects and long-run performance for a sample of 161 European spin-offs announced from January 1987 to September 2000. We find that the announcement of a spin-off is associated with a positive abnormal return of 2.35% over a three-day window. We find some evidence that the abnormal returns are related to an increase in either industrial or geographical focus. There does not seem to be a relationship between the abnormal returns and the level of information asymmetry at the time of the spin-off. In line with the efficient market hypothesis we do not find any significant long-run excess return in the period after the spin-off. If the return on the parents, subsidiaries and the pro-forma combined firms is compared to the return on a matching portfolio, we find that the excess returns are both economically and statistically insignificant. Therefore we conclude that spin-offs *really* create value on the short run, but not on the long run.

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Table 1: Observations by announcement year

Distribution of European companies that announced a spin-off in the period from January 1987 to September 2000 by announcement year and country of the parent company. The spin-off announcements are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. Spin-offs are eliminated for the following reasons: (1) double records of companies that announce the spin-off of two or more subsidiaries on the same dates, (2) spin-offs by multiple parents and (3) spin-offs for which no Datastream price data are available. Countries are denoted as follows: UK for United Kingdom, GER for Germany, FRA for France, ITA for Italy, SWE for Sweden, NOR for Norway, DEN for Denmark, FIN for Finland, NL for the Netherlands, B for Belgium, CH for Switzerland, SP for Spain, AUS for Austria, IRE for Ireland and GRE for Greece.

Year	UK	GER	FRA	ITA	SWE	NOR	DEN	FIN	NL	B	CH	SP	AUS	IRE	GRE	Total
1987	2	1														3
1988	2		2			1										5
1989	7					1			1							9
1990	6		1				1									8
1991	6	1			1	5			2							15
1992	2	1			2	1		1								7
1993	4				1	1								2		8
1994	3			1	1			1					1			7
1995	11	1		1		1			1			1				16
1996	10		3	1	9	1					2					26
1997	11	1		1	3						1					17
1998	13	5		1	7	2			3							31
1999	10	4		5	4	3	2	1		1	3			1		34
2000	15	5	1	4	2	2		4		1	3	3	2		4	46
Total number of observations	102	19	7	14	30	18	3	7	7	2	9	4	3	3	4	232
-/- multiple announcements	8	1	2	0	0	1	1	2	0	0	0	0	0	0	1	16
-/- no stock prices in Datastream	16	4	0	2	6	7	1	2	3	0	3	2	1	0	1	48
-/- multiple parents	7															7
Total sample	71	14	5	12	24	10	1	3	4	2	6	2	2	3	2	161

Table 2: Abnormal returns on the announcement date

Cumulative average abnormal returns for the sample of 161 spin-off announcements by European companies from January 1987 to September 2000. The spin-off announcements are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. Abnormal returns are based on the market model, estimated over a 200 day-period for each company (from day -220 to day -21). The significance of the medians is tested by means of the Wilcoxon signed rank test. The sign test is used to test the significance of the percentage of firms with positive abnormal returns. The null-hypothesis for the sign test is that the proportion of positive cumulative average abnormal returns is equal to 50 percent. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level.

		Cumulative average abnormal returns		
Interval	**Mean %**	**z-statistic**	**Median**	**Percentage positive**
All Europe (N = 161)				
-10 to –1	0.58	3.22***	0.33	52.17
-1 to 0	1.64	8.67***	0.64***	59.01**
0	1.14	8.17***	0.30***	63.35***
-1 to +1	2.35	9.57***	0.90***	62.73***
+1 to +10	-0.63	-0.82	-0.08	48.45
Including:				
UK (N = 71)				
-10 to –1	1.02	2.52**	0.61	59.15
-1 to 0	2.21	7.82***	1.04***	61.97*
0	2.00	9.47***	0.71***	69.01***
-1 to +1	2.56	7.43***	0.60***	60.56*
+1 to +10	-1.92	-1.26	-0.37	45.07
Sweden (N = 24)				
-10 to –1	1.12	1.96**	1.64	54.17
-1 to 0	0.66	1.17	-0.00	50.00
0	0.57	0.88	0.04	58.33
-1 to +1	0.82	0.87	0.11	58.33
+1 to +10	2.24	0.22	-0.38	41.67

Table 2: Continued.

Interval	Mean %	Cumulative average abnormal returns z-statistic	Median	Percentage positive
Germany (N = 14)				
-10 to –1	3.88	1.81*	1.98	57.14
-1 to 0	2.53	2.91***	0.65	57.14
0	1.10	1.63	0.14	57.14
-1 to +1	3.23	2.43**	0.67	57.14
+1 to +10	2.15	0.94	2.37	71.43
Italy (N = 12)				
-10 to –1	-0.98	-0.35	-2.16	41.67
-1 to 0	1.84	4.29***	1.29	66.67
0	-0.34	1.66*	0.57	66.67
-1 to +1	4.83	6.26***	3.18*	75.00
+1 to +10	0.48	0.75	0.22	50.00

Table 3: Announcement period abnormal returns by sub-sample

Three-day cumulative average abnormal returns for sub-samples of 161 announcements of spin-offs by European companies from January 1987 to September 2000. The spin-off announcements are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. Abnormal returns are based on the market model, estimated over a 200 day-period for each company (from day -220 to day -21). Industrial focus-increasing spin-offs are defined as spin-offs of subsidiaries that have a two-digit SIC-code that is different from the parent company. Geographical focus-increasing spin-offs are defined as spin-offs of subsidiaries from a different country than the parent firm. The significance of the means is tested using a t-statistic. The significance of the medians is tested by means of the Wilcoxon signed rank test. The difference in means is tested using a t-statistic. The difference in medians is tested using the Mann-Whitney statistic. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level.

Panel A: Cumulative average abnormal returns (-1, +1) for sub-samples based on industrial focus

	Industrial focus			No industrial focus			Difference	
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**
CAR	2.89	1.16	110	1.20	0.60	51	1.69	0.51
Test statistics	3.69***	4.46***		1.81*	1.64		(1.37)	(1.46)

Panel B: Cumulative average abnormal returns (-1, +1) for sub-samples based on geographical focus

	Geographical focus			No geographical focus			Difference	
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**
CAR	2.63	1.12	19	2.32	0.89	142	0.31	0.23
Test statistics	2.15**	1.83*		3.65***	4.28***		(0.17)	(0.21)

Table 4: Regression of abnormal returns on focus and information asymmetry variables.

Regression coefficients for the three-day cumulative average abnormal returns for the announcements of 161 spin-offs by European companies from January 1987 to September 2000. The spin-off announcements are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. Industrial focus is a dummy variable equal to 1 if the first two digits of the primary SIC code of a subsidiary to be spun-off are different from the first two digits of the primary SIC code of the parent company, and 0 otherwise. Geographical focus is a dummy variable equal to 1 in the case of a spin-off of a foreign subsidiary, and equal to 0 if the spin-off is domestic. The forecast error is defined as the absolute difference between the mean analyst yearly earnings forecast in the last month of the fiscal year preceding the spin-off announcement and the actual earnings, divided by the stock price. The normalized standard deviation of forecasts is measured as the standard deviation of the analyst earnings forecasts in the last months of the fiscal year preceding the spin-off announcement, divided by the stock price. The number of analyst estimates is the number of earnings forecasts reported by IBES International in the last month of the fiscal year preceding the spin-off announcement. The "antidirector rights" index is a summary measure of shareholder protection. This index ranges from zero to seven. The source of these data is La Porta et al. (1998). Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level, based on White heteroscedasticity-adjusted standard errors. t-statistics are in parentheses.

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Intercept	1.200*	2.318***	1.120	1.239	1.322	1.409	1.547	1.271	2.792	2.976
	(1.819)	(3.640)	(1.545)	(1.371)	(1.477)	(1.121)	(0.849)	(0.731)	(1.402)	(0.842)
Industrial focus	1.689		1.718*	0.870	1.059	1.439	1.681*	0.867	0.891	1.323
	(1.647)		(1.669)	(0.771)	(0.888)	(1.267)	(1.666)	(0.769)	(0.772)	(1.224)
Geographical focus		0.309	0.512	1.228	1.117	0.971	0.515	1.229	1.173	1.015
		(0.228)	(0.390)	(0.846)	(0.762)	(0.675)	(0.394)	(0.842)	(0.814)	(0.715)
Forecast error				-0.196				-0.204		
				(-0.063)				(-0.066)		
Normalized standard					-7.074				-8.700	
deviation of forecasts					(-0.359)				(-0.462)	
Number of analyst						-0.016				-0.036
estimates						(-0.269)				(-0.432)
Antidirector rights							-0.114	-0.009	-0.392	-0.339
							(-0.264)	(-0.022)	(-0.835)	(-0.552)
Number of observations	161	161	161	138	135	143	161	138	135	143
R^2	0.012	0.000	0.012	0.007	0.008	0.010	0.013	0.007	0.014	0.014
Adjusted R^2	0.005	-0.006	-0.000	-0.016	-0.015	-0.012	-0.006	-0.023	-0.016	-0.015

Table 5: Regression of abnormal returns for completed spin-offs.

Regression coefficients for the three-day cumulative average abnormal returns for the completed announcements of 55 spin-offs by European companies from January 1987 to September 2000. Includes the results for only those completed spin-offs for which the relative size of the spin-off is known. The spin-off announcements are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. Industrial focus is a dummy variable equal to 1 if the first two digits of the primary SIC code of a subsidiary to be spun-off are different from the first two digits of the primary SIC code of the parent company, and 0 otherwise. Geographical focus is a dummy variable equal to 1 in the case of a spin-off of a foreign subsidiary, and equal to 0 if the spin-off is domestic. The forecast error is defined as the absolute difference between the mean analyst yearly earnings forecast in the last month of the fiscal year preceding the spin-off announcement and the actual earnings, divided by the stock price. The normalized standard deviation of forecasts is measured as the standard deviation of the analyst earnings forecasts in the last months of the fiscal year preceding the spin-off announcement, divided by the stock price. The number of analyst estimates is the number of earnings forecasts reported by IBES International in the last month of the fiscal year preceding the spin-off announcement. The "antidirector rights" index is a summary measure of shareholder protection. This index ranges from zero to seven. The source of these data is La Porta et al. (1998). The relative size is equal to the ratio of the market value of the spun-off subsidiary equity to the sum of the market values of the equity of the parent and the subsidiary on the day of the spin-off. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level, based on White heteroscedasticity-adjusted standard errors. t-statistics are in parentheses.

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Intercept	-3.536*	-2.908	-3.839*	-1.019	-2.230	-4.540*	-0.719	-0.050	2.488	1.568
	(-1.797)	(-1.592)	(-1.907)	(-0.989)	(-0.800)	(-1.902)	(-0.228)	(-0.019)	(1.056)	(0.248)
Industrial focus	1.629		1.261	0.046	-0.199	0.970	1.069	-0.041	-0.770	0.620
	(1.132)		(0.862)	(0.032)	(-0.102)	(0.601)	(0.868)	(-0.033)	(-0.434)	(0.459)
Geographical focus		7.567**	7.244**	6.368**	7.653**	7.889**	9.104**	7.165***	10.902***	11.192***
		(2.655)	(2.466)	(2.374)	(2.593)	(2.542)	(2.567)	(2.717)	(2.837)	(2.895)
Relative size	14.545**	15.771**	15.627**	8.830***	15.579*	17.356**	17.235**	9.972***	18.637**	20.193***
	(2.299)	(2.437)	(2.415)	(3.005)	(1.825)	(2.451)	(2.435)	(3.390)	(2.113)	(2.748)
Forecast error				-36.766*				-37.652*		
				(-1.775)				(-1.763)		
Normalized standard					-83.106				-85.663	
deviation of forecasts					(-1.184)				(-1.174)	
Number of analyst						0.014				-0.066
estimates						(0.134)				(-0.420)
Antidirector rights							-0.974	-0.346	-1.507	-1.550
							(-0.922)	(-0.438)	(-1.361)	(-1.132)
Number of observations	55	55	55	50	49	51	55	50	49	51
R^2	0.212	0.235	0.239	0.175	0.258	0.261	0.272	0.181	0.337	0.332
Adjusted R^2	0.182	0.205	0.194	0.102	0.190	0.197	0.213	0.088	0.259	0.258

Table 6: Long-run returns in excess of the market return

Annualized returns defined as the company return minus the corresponding market return for spin-offs by European companies from January 1987 to September 2000. The spin-offs are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. The pro-forma combined firm is created by weighting the return of the parent and that of the subsidiary by the market value of equity at the spin-off date. Industrial focus-increasing spin-offs are defined as spin-offs of subsidiaries that have a two-digit SIC-code that is different from the parent company. Geographical focus-increasing spin-offs are defined as spin-offs of subsidiaries from a different country as the parent firm. The significance of the means is tested using a t-statistic. The significance of the medians is tested by means of the Wilcoxon signed rank test. The sign test is used to test the significance of the percentage of firms with positive excess returns. The null-hypothesis for the sign test is that the proportion of positive cumulative average excess returns is equal to 50 percent. t_{sp} is the spin-off date. t_{sp} + 6 (12, 24, 36) is the period from the spin-off date to 6 (12, 24, 36) months after the spin-off date. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level.

	Number of observations	**Mean**	**t-stat**	**Median**	**Wilcoxon test**	**Percentage positive**
Panel A: All parent firms						
t_{sp} to t_{sp} + 6	89	-3.39	-0.24	-15.09**	2.28	38.20**
t_{sp} to t_{sp} + 12	86	-10.35*	-1.96	-15.56***	3.23	29.07***
t_{sp} to t_{sp} + 24	73	-1.51	-0.29	-1.78	1.43	43.84
t_{sp} to t_{sp} + 36	59	-4.69	-1.35	-8.31*	1.89	37.29*
Industrial focus-increasing parents						
t_{sp} to t_{sp} + 6	65	-15.67	-1.49	-15.09*	1.95	40.00
t_{sp} to t_{sp} + 12	62	-13.24***	-3.02	-15.46**	2.64	30.65***
t_{sp} to t_{sp} + 24	51	2.26	0.35	2.01	0.18	54.90
t_{sp} to t_{sp} + 36	38	-0.68	-0.16	-3.10	0.71	44.74
Non-industrial focus-increasing parents						
t_{sp} to t_{sp} + 6	24	29.86	0.70	-15.47	1.27	33.33
t_{sp} to t_{sp} + 12	24	-2.89	-0.19	-17.15*	1.84	25.00**
t_{sp} to t_{sp} + 24	22	-10.25	-1.36	-18.13**	2.01	18.18***
t_{sp} to t_{sp} + 36	21	-11.95**	-2.13	-13.07**	1.98	23.81**

Table 6: Continued.

	Number of observations	Mean	t-stat	Median	Wilcoxon test	Percentage positive
Panel B: All subsidiaries						
t_{sp} to t_{sp} + 6	68	15.19	1.13	-6.28	0.54	44.12
t_{sp} to t_{sp} + 12	68	-0.39	-0.06	-9.83	1.08	41.18
t_{sp} to t_{sp} + 24	55	2.34	0.41	-2.55	0.50	47.27
t_{sp} to t_{sp} + 36	46	0.24	0.06	-0.97	0.42	47.83
Industrial focus-increasing subsidiaries						
t_{sp} to t_{sp} + 6	52	4.75	0.39	-11.42	1.13	40.38
t_{sp} to t_{sp} + 12	52	-6.54	-1.04	-14.53*	1.77	32.69**
t_{sp} to t_{sp} + 24	40	-2.66	-0.46	-2.06	0.89	47.50
t_{sp} to t_{sp} + 36	32	-1.78	-0.51	0.81	0.61	50.00
Non-industrial focus-increasing subsidiaries						
t_{sp} to t_{sp} + 6	16	49.09	1.21	14.32	0.96	56.25
t_{sp} to t_{sp} + 12	16	19.59	1.28	11.66	1.16	68.75
t_{sp} to t_{sp} + 24	15	15.67	1.14	-2.55	0.31	46.67
t_{sp} to t_{sp} + 36	14	4.84	0.46	-5.43	0.19	42.86
Panel C: All pro-forma combined firms						
t_{sp} to t_{sp} + 6	55	-7.23	-1.13	-8.15*	1.82	38.18
t_{sp} to t_{sp} + 12	54	-12.45***	-3.24	-13.83***	3.14	31.48***
t_{sp} to t_{sp} + 24	44	-0.36	-0.07	-1.87	0.68	45.45
t_{sp} to t_{sp} + 36	38	-1.03	-0.29	-1.63	0.52	44.74

Table 7: Long-run returns in excess of the matching portfolio return

Annualized returns defined as company return minus matching firm return for spin-offs by European companies from January 1987 to September 2000. The spin-offs are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. The pro-forma combined firm is created by weighting the return of the parent and that of the subsidiary by the market value of equity at the spin-off date. Industrial focus-increasing spin-offs are defined as spin-offs of subsidiaries that have a two-digit SIC-code that is different from the parent company. Geographical focus-increasing spin-offs are defined as spin-offs of subsidiaries from a different country as the parent firm. The significance of the means is tested using a t-statistic. The significance of the medians is tested by means of the Wilcoxon signed rank test. The sign test is used to test the significance of the percentage of firms with positive excess returns. The null-hypothesis for the sign test is that the proportion of positive cumulative average excess returns is equal to 50 percent. t_{sp} is the spin-off date. t_{sp} + 6 (12, 24, 36) is the period from the spin-off date to 6 (12, 24, 36) months after the spin-off date. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level.

	Panel A: All parent firms					
	Number of observations	**Mean**	**t-stat**	**Median**	**Wilcoxon test**	**Percentage positive**
t_{sp} to t_{sp} + 6	66	8.04	0.35	-0.56	0.56	48.48
t_{sp} to t_{sp} + 12	65	-0.35	-0.05	3.93	0.54	52.31
t_{sp} to t_{sp} + 24	53	9.75	1.24	3.19	1.07	60.38
t_{sp} to t_{sp} + 36	41	1.77	0.31	-0.20	0.14	48.78
	Industrial focus-increasing parents					
t_{sp} to t_{sp} + 6	50	-9.08	-0.45	0.42	0.83	50.00
t_{sp} to t_{sp} + 12	49	-4.71	-0.82	2.97	0.55	51.02
t_{sp} to t_{sp} + 24	39	13.72	1.46	10.08	1.51	66.67*
t_{sp} to t_{sp} + 36	28	6.10	0.86	-2.37	0.38	46.43
	Non-industrial focus increasing parents					
t_{sp} to t_{sp} + 6	16	61.53	0.89	-16.34	0.08	43.75
t_{sp} to t_{sp} + 12	16	12.98	0.51	4.00	0.03	56.25
t_{sp} to t_{sp} + 24	14	-1.34	-0.09	-1.63	0.38	42.86
t_{sp} to t_{sp} + 36	13	-7.54	-0.78	1.32	0.49	53.85

Table 7: Continued.

	Number of observations	Mean	t-stat	Median	Wilcoxon test	Percentage positive
Panel B: All subsidiaries						
t_{sp} to t_{sp} + 6	45	10.03	0.49	-6.40	0.11	48.89
t_{sp} to t_{sp} + 12	45	9.98	1.00	0.30	0.54	51.11
t_{sp} to t_{sp} + 24	41	11.97	1.65	6.43*	1.67	65.85*
t_{sp} to t_{sp} + 36	37	13.41**	2.65	9.55**	2.11	67.57**
Industrial focus-increasing subsidiaries						
t_{sp} to t_{sp} + 6	31	-11.15	-0.58	-13.25	0.56	41.94
t_{sp} to t_{sp} + 12	31	5.62	0.45	-3.89	0.03	41.94
t_{sp} to t_{sp} + 24	28	9.74	1.11	6.13	1.38	67.86*
t_{sp} to t_{sp} + 36	24	12.79**	2.31	8.27*	1.93	70.83*
Non-industrial focus-increasing subsidiaries						
t_{sp} to t_{sp} + 6	14	56.95	1.17	9.36	0.88	64.29
t_{sp} to t_{sp} + 12	14	19.64	1.19	9.12	1.38	71.43
t_{sp} to t_{sp} + 24	13	16.77	1.27	11.78	0.98	61.54
t_{sp} to t_{sp} + 36	13	14.56	1.38	15.66	0.98	61.54
Panel C: All pro-forma combined firms						
t_{sp} to t_{sp} + 6	31	-5.04	-0.39	3.58	0.09	54.84
t_{sp} to t_{sp} + 12	31	-8.02	-1.17	1.63	0.89	51.61
t_{sp} to t_{sp} + 24	28	1.45	0.19	0.76	0.33	53.57
t_{sp} to t_{sp} + 36	25	2.24	0.47	-1.17	0.16	48.00

Table 8: Regression of long-run excess return: Parent firms

Regression coefficients for the one- and two-year returns in excess of the matching portfolio return for the 44 European companies that performed a spin-off. The spin-off dates are identified from the Securities Data Company (SDC) Mergers and Acquisitions Database. Industrial focus is a dummy variable equal to 1 if the first two digits of the primary SIC code of a subsidiary to be spun-off are different from the first two digits of the primary SIC code of the parent company, and 0 otherwise. Geographical focus is a dummy variable equal to 1 in the case of a spin-off of a foreign subsidiary, and equal to 0 if the spin-off is domestic. The forecast error is defined as the absolute difference between the mean analyst yearly earnings forecast in the last month of the fiscal year preceding the spin-off announcement and the actual earnings, divided by the stock price. The normalized standard deviation of forecasts is measured as the standard deviation of the analyst earnings forecasts in the last months of the fiscal year preceding the spin-off announcement, divided by the stock price. The number of analyst estimates is the number of earnings forecasts reported by IBES International in the last month of the fiscal year preceding the spin-off announcement. Changes in the last three variables are measured from the end of fiscal year preceding the spin-off announcement to the end of the fiscal year in which the spin-off is completed. The "antidirector rights" index is a summary measure of shareholder protection. This index ranges from zero to seven. The source of these data is La Porta et al. (1998). The relative size is equal to the ratio of the market value of the spun-off subsidiary equity to the sum of the market values of the equity of the parent and the subsidiary on the day of the spin-off. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) level, based on White heteroscedasticity-adjusted standard errors. t-statistics are in parentheses.

Table 8: Continued.

Variable	One-year excess return			Two-year excess return		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Intercept	20.493	28.712	-33.254	14.121	26.561	27.396
	(0.973)	(1.307)	(-1.190)	(0.659)	(1.323)	(0.694)
Industrial focus	8.269	-0.535	13.012	-2.515	-10.504	26.461
	(0.513)	(-0.034)	(0.900)	(-0.126)	(-0.576)	(1.041)
Geographical focus	13.081	3.266	3.048	-2.239	4.814	30.847
	(0.850)	(0.214)	(0.176)	(-0.135)	(0.352)	(1.520)
Relative size	67.648**	47.653*	57.124**	74.117**	65.040**	158.517**
	(2.564)	(1.879)	(2.168)	(2.344)	(2.275)	(2.132)
Forecast error	-328.673			361.643		
	(-1.157)			(1.051)		
Change in forecast error	-153.507***			665.198***		
	(-3.388)			(11.240)		
Normalized standard deviation of forecasts		-1321.684**			-260.931	
		(-2.278)			(-0.551)	
Change in normalized standard deviation of forecasts		-185.679			509.479	
		(-0.277)			(1.000)	
Number of analyst estimates			1.279**			-2.125
			(2.043)			(-1.370)
Change in number of analyst estimates			3.036***			2.926*
			(2.820)			(1.855)
Antidirector rights	-12.745***	-9.599**	-5.413	-7.901*	-7.585*	-12.044*
	(-3.412)	(-2.540)	(-1.251)	(-1.780)	(-1.745)	(-1.776)
Number of observations	41	42	44	35	35	36
R^2	0.313	0.372	0.317	0.691	0.242	0.340
Adjusted R^2	0.192	0.264	0.206	0.625	0.080	0.203

Appendix: The regulatory and fiscal environment for European spin-offs

Spin-offs are legally possible in all European countries. For members of the European union the 6th EC-directive on corporation law is important[23]. This directive, that defines the legal terms for split-ups, stems from December 17, 1982. Member states were advised to incorporate it in their laws by January 1, 1986[24]. However, in some countries it took longer to incorporate this directive in the national law. For example, in Belgium split-ups were not covered by corporate law until June 29, 1993 (Zaman, 1998). This does not mean that split-ups were illegal. They were permitted and they were generally legally arranged using the framework that was set in the fiscal law. In Europe, the legal frameworks for spin-offs are generally based on the laws for split-ups. However, in some cases it took some time before a special framework for spin-offs was set up. For example, until February 1998, Dutch companies that wanted to spin-off one or more divisions had to go through a large range of complicated procedures. This ended on February 1, 1998 with the adoption of a law in which matters were significantly simplified (see Van Olffen et al. 1998).

In principle, spin-offs may cause an income tax problem, because they can be seen as a distribution of income or capital and be taxed accordingly. On July 23, 1990 the European Union adopted the so-called "Merger Directive". According to this directive, the capital gains taxation on a spin-off is deferred. In other words, the tax authorities consider a spin-off as the re-arrangement of investments that the investor already owns, and as a result, levy no taxes. This directive applies to intra-community spin-offs. The ultimate intention for this directive is its application in all countries within the European Union[25]. According to Gibbs (1999), tax deferral does not cause major problems in most European countries. Like in the United States, it is important that the spin-offs are carried out for business reasons. In some countries, spin-offs are associated with potential fiscal problems. This is the case for the Netherlands (until June 1998), Germany and France. Before June 1998, spin-offs in the Netherlands were seen as a distribution of income or capital and they were taxed accordingly. Under the pressure of some large Dutch companies spin-offs were no longer taxed from June 1998. Instead the fiscal claims were passed on to the future[26]. This opened the way for one of the largest European spin-offs in which the Dutch company KPN spinned off its postal

[23] The following countries are member states of the European union. From 1951: Belgium, France, Germany, Italy, Luxembourg and the Netherlands. From 1973: Denmark, Ireland and the United Kingdom. From 1981: Greece. From 1986: Spain and Portugal. From 1995: Austria, Finland and Sweden.
[24] Note that countries are not obliged to incorporate the directive.
[25] See Raedler (1994).
[26] See Poetgens and Jakobsen (1999), and Van Olffen et al. (1998).

division TNT Post Groep[27]. Besides that, two other relatively large spin-offs could be realized. In Germany spin-offs can be arranged in a tax-neutral way. However, if more than 20% of the shareholders transfer their shares within 5 years after the spin-off, the spin-off will still be taxed (Zaman, 1998). In France a problem occurs in the sense that it is not possible for the company to ask for approval from the tax authorities before the transaction is carried out. This uncertainty is probably the cause of the low number of spin-offs that were announced in France. In the period from January 1987 to September 2000 a mere total of 7 spin-offs were announced in France.

[27] The market value of KPN and TNT Post Groep after the spin-off were respectively 17.9 billion US $ and 11.6 billion US $, making it one of the largest spin-offs in Europe.