Shareholder Value Gains from European Spinoffs:

The Effect of Internal and External Control Mechanisms

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Abstract

We argue that shareholder value gains from corporate spinoffs reflect the mitigation of agency conflicts in the spinoff firms. We examine the internal and external control mechanisms for a sample of European firms involved spinoffs during the period from 1987 to 2005 and document supporting evidence for our argument. Specifically, we find that spinoff parents have weak corporate governance structure than non-spinoff control firms, and that an improvement in corporate governance of post-spinoff firms is positively and significantly associated with the long-run spinoff performance.

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1 Introduction

Corporate spinoff is a special type of corporate restructuring. Through a spinoff, a publicly traded firm offers shares of a subsidiary to its existing shareholders on a pro rata distribution basis. Following this spinoff transaction, the newly floated company has an independent existence and is separately valued in the stock market. The divestor continues to exist, albeit downsized. In this paper, the divestor is called the parent, and the newly floated company is called the offspring.

Although there is no cash flow generated from a spinoff transaction, spinoff announcements are often associated with positive market reaction. On average, the abnormal returns to firms undertaking spinoffs are in the range of 2.4–4.3% as shown in different time periods and in different countries (Daley et al., 1997; Hite and Owers, 1983; Krishnaswami and Subramaniam, 1999; Slovin et al., 1995; Veld and Veld-Merkoulova, 2004). Furthermore, some US studies document evidence that post-spinoff firms earn significant and positive long-run stock returns. For example, Desai and Jain (1999) find that, for a sample of 155 US spinoffs between the years 1975 and 1991, the abnormal returns for pro-forma combined firms (both post-spinoff parent and offspring) are significant at 19.82% over 36 months.

These shareholder gains from corporate spinoffs are often attributable to an increase in corporate focus and a correction of value-destroying diversification. The corporate focus literature argues that a divestiture of unrelated businesses can reduce an organisation's complexity and eliminate the negative synergy stemming from the interference between distinct divisions (e.g. see Berger and Ofek, 1995; Comment and Jarrell, 1995; Lang and Stulz, 1994). Although spinoff value gains may be related to a change in corporate diversification around a spinoff, the underlying source of spinoff value effects could be strengthening corporate control mechanisms that prevent managers from pursuing their

own objectives. In other words, managers in firms with weak corporate governance mechanisms tend to make value-destroying diversification decisions and large value losses will accumulate, thus resulting in the possibility of significant value recovery when the refocusing strategy is implemented and agency problems are controlled.

In this study, we investigate a governance enhancement hypothesis of spinoff value effects, which contends that shareholder gains from spinoffs reflect the mitigation of agency conflicts that lead to costly diversification or other suboptimal decisions prior to spinoffs. Specifically, we examine the ownership structure, board structure, capital structure, analyst coverage, product market competition, market for corporate control and the legal system, and relate these measures of internal and external controls to the shareholder gains from spinoffs.

Furthermore, we examine whether family control is an effective corporate governance mechanism and how family control affects spinoff value effects. Family control in listed firms is prevalent in Europe. Faccio and Lang (2002) document evidence that about 44% of listed European firms are controlled by family shareholders. Our consideration of family status of spinoff firms is motivated by the recent debate on the costs and benefits of family control. On the one hand, Claessens et al. (2002) present evidence that family ownership negatively affects firm performance. The entrenchment explanation they offer is that family shareholders are likely to appoint incompetent but related members, e.g. successors to the founder, to manage family-controlled firms and keep the control. On the other hand, Anderson and Reeb (2003), and Villalonga and Amit (2006) observe a positive association between family control and firm value. These authors suggest the alignment explanation that family shareholders have strong incentives to monitor the management and tend to have a long-term long investment horizon in decision making.

Although these two arguments are equally convincing, we argue that spinoff value effects reflect the reduction of agency costs of entrenched family shareholders since the family shareholders with strong incentives to enhance firm performance would not allow the value-destroying diversification strategy in the first place.

Our results are generally consistent with our governance enhancement hypothesis. First, we find that spinoff parents tend to have weaker corporate governance structure than non-spinoff industry- and size-control firms. For instance, the board independence and institutional ownership of spinoff parents are significantly lower than those of non-spinoff control firms. Second, the strength of different corporate governance mechanisms in spinoff parents is generally negatively correlated with the spinoff announcement effects although the correlation is insignificant at conventional levels. Third, we observe that family-controlled parents earn higher spinoff announcement returns than non-family-controlled parents. Fourth, we document evidence that an improvement in corporate governance in post-spinoff firms such as increased board independence and an occurrence of takeover bids positively affects the long-run spinoff performance. Taken together, our findings are consistent with the argument that spinoff value creation arises from the mitigation of agency problems in spinoff parents.

The rest of this paper proceeds as follows. The literature review and hypothesis development are stated in Section 2. The variable construction and empirical test models are discussed in Section 3. The association between the magnitude of agency problems of spinoff parents and the spinoff decision is investigated in Section 4. Section 5 analyses the relationship between the short-run market reaction to spinoff announcements and the strength of governance structure of spinoff parents. Section 6 explores whether the changes of corporate governance structure following spinoffs determine the long-run spinoff performance. Section 7 offers conclusions.

2 Theory Development

Allen et al. (1995) and Berger and Ofek (1999) have proposed that refocusing corporate transactions create shareholder value by reducing the diversification costs which are associated with agency problems. For instance, Berger and Ofek (1999) find that self-interested managers are reluctant to make value-enhancing divestiture since the refocusing programme are often preceded by managerial discipline events such as shareholder activism and changes in managerial compensation package. In addition,

Allen et al. (1995) find that spinoff announcement effects are negatively associated with the earlier takeover announcement effects when the business segment acquired previously is spun off. They contend that spinoffs create shareholder value by recovering value loss from earlier mistaken diversification strategy. Therefore, spinoff announcement effects actually reflect the value recovery resulting from agency problems.

However, corporate spinoffs are large-scale restructurings with substantial re-organisation costs.[1] Hence the decision to spin off will only be made when firms can create significant value by reducing agency costs. Similarly, firms may not conduct spinoffs if the benefits of agency costs are less than the spinoff costs. Thus, the first governance-based hypothesis is given below:

H1: Spinoff parents have weaker corporate governance than non-spinoff control firms prior to the spinoff announcements.

Under the governance enhancement hypothesis, when the firm announces that it will spin off assets, its weak corporate governance signals the potential for large gains from removing negative synergies that arise from the prior mistaken strategy. Managers of firms with weak corporate governance would allow negative synergies to accumulate, thus creating the potential for large gains when changes are finally made. For example, Allen et al. (1995) show a positive association between the spinoff announcement period abnormal returns and value losses from prior mistaken acquisitions of the subsequently spun-off assets. Therefore, we offer the second governance-based hypothesis below:

H2: Spinoff parents with weak corporate governance earn higher abnormal stock returns during the spinoff announcement period than those with strong corporate governance.

Spinoffs also provide a special opportunity for firms to design effective corporate

[1] There are several sources of spinoff costs, including duplication of administrative functions in post-spinoff firms, maintaining separate accounting and finance staffs for post-spinoff parent and offspring, and re-establishing product market and shareholder relationship for offspring. The spinoff costs are non-trivial. For instance, Parrino (1997) demonstrates that these transaction costs and operating inefficiency of the 1993 Marriott spinoff result in a decline of the total value of the firm by at least US$40.7 million.

governance mechanisms in post-spinoff firms since post-spinoff firms are separately listed in stock markets and operate in different businesses under distinct management teams.When post-spinoff firms improve internal corporate governance structure voluntarily or due to the discipline imposed by external control mechanism, the agency problems of post-spinoff firms will be mitigated more significantly and hence the performance of post-spinoff firms will be enhanced. Thus, the third prediction of the governance-based view is offered below:

H3: Post-spinoff firms with an improvement in corporate governance have better long-run performance than those without an enhancement in corporate governance.

3 Variable Construction and Test Methodology

This section sets out the variable construction and the empirical models to test the above-mentioned governance-based hypotheses.

3.1 Sample Characteristics

This study analyses a sample of European spinoffs. A European spinoff is defined as a spinoff where a European parent firm spins off a subsidiary. This subsidiary can be either from the same or from a different country. All European countries are taken into account initially, with the exception of the Eastern European countries because we have limited financial data for these countries. Both parent and offspring must be independently managed and separately valued at the stock market after the completion of the spinoff. We also require that the spinoff parent should distribute a majority of its interests in the subsidiary to its existing shareholders since the offspring would not be independently managed if the offspring were still subject to the control of its parent.

The sample of European spinoffs covers the period from January 1987 to December 2005. The spinoff sample is gathered from SDC M&A Database. The sample countries searched include Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Norway, the Netherlands, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. The

initial sample consists of 367 spinoffs, where the transactions were announced during the sample period.

The data selection process in this study uses the following screening criteria and the reduction of observations following the application of a criterion is reported in parentheses:

1) parents or offspring have no stock price information in *Datastream* (67);
2) other types of restructuring transaction are mistakenly recorded as spinoffs in SDC, such as divestiture of a joint-venture with multi-parents, privatisation deals and asset redistribution as part of a merger deal (19)[2];
3) less than 50% of interests of offspring are distributed to existing shareholders (9)[3];
4) the same spinoff announcements are double counted in SDC (9)[4];
5) offspring are already listed before the spinoff (6);
6) parents are not publicly traded in the Europe (6);
7) the shares of offspring are sold to either existing shareholders or the market (3); and
8) the announced spinoffs are not completed by the end of year 2005 (78).

We identify the spinoff announcement dates by cross-checking the spinoff transactions

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[2] The SDC often includes other types of restructurings in the spinoff sample. For example, SDC records the spinoff of the Adam and Harvey unit of Stocklake Holdings to its shareholders in July 1991. However, the deal was actually part of the liquidation plan of Stocklake Holdings. Stocklake Holdings' shares were delisted in September 1991. Another example is the spinoff of their non-automotive business to shareholders by Sommer Allibert SA in 2001 as recorded in SDC. The spinoff was actually undertaken to facilitate the acquisition of Sommer Allibert SA by Peugeot Citroen. We remove non-spinoff transactions from the spinoff sample when they are either part of a complex restructuring plan or part of a predefined merger plan since those transactions are not spinoff and such transaction announcement news often contains confounding information.

[3] This sample selection criterion is chosen for two reasons. First, we hope that our results are comparable with earlier US studies on corporate spinoffs. Prior US studies typically define a spinoff as a divestiture where the majority of shares of the subsidiary are distributed to the parent's existing shareholders. Second, we want to avoid the cases where parent firms retain the control over offspring firms in the post-spinoff period, where the performance of either parent of offspring firm might be substantially affected by the related transactions. A more than 50% interest of the subsidiary held by the parent in the post-spinoff period could allow parent managers to make such transactions. Thus it is difficult to assess the real long-term value creation from a spinoff under such circumstances.

[4] When a parent firm is split into two or three independent firms via a spinoff, SDC sometimes records the number of spinoffs as the number of independent post-spinoff firms rather than the number of offspring. We remove the spinoff announcement about the post-spinoff parent from the sample in such cases.

with the details in the press reports via the Factiva newspaper database. Specifically, we search the Factiva database at least one year before the SDC-identified spinoff announcement date for the earliest press announcement of the spinoff. When an announcement is reported in the news, we search back another year from that date to confirm that there are no earlier announcements.

The cross-checking of announcement dates is undertaken because we are primarily interested in the initial market reaction to the spinoff announcement. We find that, for our sample, 157 out of 170 completed spinoffs have earlier announcement dates in the news reports than the SDC-identified announcement dates. In addition, the calculation of cumulative abnormal returns (CARs) based on SDC-identified announcement dates will be quite different from that based on the earliest announcement dates in the news reports. For example, SDC reports that Culver Holdings announced the spinoff of World Travel Holdings on May 22nd, 2000. The two-day announcement period (-1, 0) CARs based on an estimated market model is -0.66%. However, the actual earliest announcement date is December 23rd, 1999 (see 'Culver Holdings PLC Prop. Offer for Shr Subscriptn', Regulatory News Service, December 23rd, 1999). The two-day announcement period (-1, 0) CARs based on the earliest announcement date using the same method is 10.54%.

A further check of the SDC-identified spinoff completion dates is conducted with the details of a spinoff transaction in the news reports via Factiva and the stock price data in *Datastream*. This cross-checking is undertaken to confirm the completion status of a spinoff and to obtain an accurate completion date. We find that SDC sometimes mistakenly classifies one spinoff as uncompleted when the spinoff was actually completed.[5] When there are mistakes in the SDC-reported completion details identified by crosschecking, we amend the sample data based on the verified information.

The final sample includes 170 completed European spinoff deals during the sample

[5] For example, SDC reports that the spinoff of three units (EQ Holdings, Evox Rifa Holdings, and Vestcap) by Finvest Oy in March 2000 is pending (at the data collection date, February 2006). Actually, the spinoff was completed on November 1st, 2000 (See 'Finvest Details Demerger Listing Plan', Reuters News, October 26th, 2000).

period, including 144 spinoff parent and 170 offspring firms, where 10 parents spin off two subsidiaries at the same time, 3 parents spin off three subsidiaries concurrently, and a further 13 parents conducted spinoffs at different times during the sample period. The number of European spinoffs will be 157 if we consider the firms announcing spinoffs at different times as different observations. For the completed spinoff sample, parents operate in 46 different industries and offspring operate in 50 different industries (defined at the two-digit SIC level). In total, both parent and offspring operate in 59 different industries.

The final spinoff sample covers 13 European countries. The earliest year with spinoff data available in the sample is the year 1987. Table 1 shows the distribution of 170 completed spinoff deals by the parent's listing country and announcement year.

[Insert Table 1 about here]

Table 2 reports the descriptive statistics of operating characteristics of sample firms involved in spinoffs. The sample firms' characteristics considered include market capitalisation (MV), market-to-book value of assets (MTBV), return on assets (ROA), leverage ratio (LEV), segment number (SEGNO), and the proportion of assets divested (DIVSIZ).

[Insert Table 2 about here]

The definitions of these characteristics are given as follows. MV is the market value of equity at the month end prior to the spinoff announcement for the pre-spinoff parent or at the spinoff completion date for both post-spinoff parent and offspring. MV is denoted in millions of 2005 US dollars. MTBV is measured as the market value of equity plus book value of preferred stocks and book value of debt divided by the sum of book values of equity, preferred stocks and debt following Faccio et al. (2006). ROA is the earnings before interest, tax, depreciation, and amortisation divided by the book value of total assets in the beginning of the year. LEV is total debt divided by total assets, where the

total debt is the sum of the long term debt and short term debt. SEGNO is the number of business segments. DIVSIZ is the total assets of offspring divided by the sum of total assets of post-spinoff parent and offspring. The accounting data are taken from the latest available annual reports prior to the spinoff announcement for the pre-spinoff parent and from the first available annual reports following the spinoff completion for both the post-spinoff parent and offspring.

The descriptive statistics of characteristics are reported in Table 2 as follows. Panel A gives the data of all sample firms. Panel B reports the data for UK sample firms. The data for non-UK sample firms are presented in Panel C. UK spinoffs are those spinoffs completed in the UK and non-UK spinoffs are those transactions undertaken outside the UK. The sample split is used because nearly half of spinoff transactions in our sample are taking place in the UK. There are 72 parents (76 subsidiaries) involved with UK spinoffs and 85 parents (94 subsidiaries) involved with non-UK spinoff. Although a study at the national level should give more interesting results, we do not have a large enough sample for individual countries. Thus, we only examine the difference between UK and non-UK sub-sample in the subsequent analyses.

Table 3 reports the difference in characteristics between sub-samples of firms involved in spinoffs. First, we test the difference in characteristics between pre-spinoff parents and post-spinoff parents and the difference in characteristics between post-spinoff parents and offspring. The test results are reported in Panel A and Panel B. Then we do such tests for the UK sub-sample and the results are presented in Panel C and Panel D. Similarly, we conduct tests for the non-UK sub-sample and give the results in Panel E and Panel F. Lastly we examine the difference in characteristics between UK pre-spinoff parents and non-UK pre-spinoff parents, the difference in characteristics between UK post-spinoff parents and non-UK post-spinoff parents, and the difference in characteristics between UK offspring and non-UK offspring. The tests results are shown in Panel G, Panel H, and Panel I. Since the sample firms' market capitalisations are not symmetrically distributed, we use the natural logarithm of market capitalisation to test the difference in market capitalisations between sub-samples.

[Insert Table 3 about here]

Since our sample is not large, we mainly discuss the test results for the median difference between sub-samples in order to avoid biased statistical inferences. Data in Table 2 indicate that European spinoff firms are large firms in terms of market capitalisation. The average market value for European spinoff parents is US$ 5,326 million while the median market value is only US$ 1,117 million. The substantial difference between the mean market capitalisation and the median market capitalisation suggests that our sample includes a few very large spinoff parents. Similarly, there is a significant difference in MTBV between pre-spinoff parents and post-spinoff parents. The standard deviation of MTBV for the pre-spinoff parent sample is also quite big. A further examination shows that this is due to some technology firms with very high MTBV in the sample.[6] The proportion of assets divested by parents through spinoffs is nontrivial. On average, about 32% of the total assets of pre-spinoff parents are spun off. This finding confirms that European spinoffs are very large-scale corporate restructurings.

There is some evidence that post-spinoff parents are valued more highly than pre-spinoff parents, as indicated in Panel A of Table 3. The median MTBV for the post-spinoff parents is 1.75 while the median MTBV for the pre-spinoff parents is 1.40, where the median difference of 0.11 is significant at the 5% level (z-statistic = 2.03). The MTBV for post-spinoff parents is generally higher than that for offspring. The median MTBV for post-spinoff parents is 1.75 while the median MTBV for offspring is 1.36. Panel B of Table 3 shows that the median difference of MTBV between post-spinoff parents and offspring is statistically significant at the 10% level (z statistic = 1.86). However, the accounting performance measured by ROA for post-spinoff parents is similar to that for offspring. The mean (median) ROA for the post-spinoff parents is 0.11 (0.12) while the mean (median) ROA for the offspring is 0.11 (0.10). The difference in ROA between post-spinoff parents and offspring is statistically insignificant.

[6] For instance, IMS Group Plc, an integrated telephony service provider, announced the spinoff of Teamtalk in January 2000. The MTBV ratio of IMS Group PLC was 8.09 at the month end before the announcement.

As shown in Panels B and C of Table 2, the mean (median) leverage ratio of post-spinoff parents is 0.27 (0.24) and the mean leverage ratio of offspring is 0.30 (0.24). Both the mean and median differences in leverage ratios between post-spinoff parents and offspring are insignificant, as indicated in Panel B of Table 3. Panel B of Table 3 further demonstrates that usually one business segment is divested through a spinoff. The median difference in segment number between pre-spinoff parents and post-spinoff parents is 1, which is significant at the 1% level (z-statistic = 3.22). Post-spinoff parents generally have a more complex organisational structure than offspring since the median difference in segment number between post-spinoff parents and offspring is 1 and statistically significant at the 1% level (z-statistic = 2.63).

Based on the above analysis, parents in our sample seem to divest subsidiaries with poor growth prospectus rather than divest underperforming subsidiaries. There is an insignificant change in the leverage ratio between pre-spinoff parents and post-spinoff parents. In addition, the leverage ratios for post-spinoff parents and offspring are comparable. Therefore, parents in our sample do not appear to transfer wealth from debtholders to shareholders since there is no asymmetric re-allocation of debts across post-spinoff firms. A final impression is that European spinoffs are refocusing transactions since the mean (median) number of business segments for spinoff parents drops from 3.77 (4.00) to 3.13 (3.00) following spinoffs.

Panels D- F of Table 2 and Panels C - D of Table 3 indicate that the data pattern of UK sub-sample is consistent with that of the whole sample. Again, results in Panels G - I of Table 2 and Panels E - F of Table 3 show that the conclusions in the preceding paragraph based on the whole sample are generally applicable to the non-UK sub-sample.

In Panels G-I of Table 3, we examine the difference in characteristics between firms in the UK sub-sample and those in the non-UK sub-sample. Several conclusions can be drawn based on the results in Table 3. First, non-UK parents are generally larger and have a more complex organisational structure than UK parents. The median difference in

market capitalisation between UK and non-UK pre-spinoff parents is statistically significant (z-statistic = -1.78). The median difference in segment number between UK and non-UK pre-spinoff parents is significant at the 10% level (z-statistic = -2.97). Second, UK pre-spinoff parents have slightly better operating performance than non-UK pre-spinoff parents as the difference in ROA is 0.02 and significant at the 10% level (z-statistic = 1.77). The proportion of divested assets of UK spinoffs is significant larger than that of non-UK spinoffs since the median difference in DIVSIZ is highly significant (z-statistic = 2.97).

The results also show that UK post-spinoff parents have higher market valuation and are more focused than non-UK post-spinoff parents. The median difference in MTBV between UK post-spinoff parents and non-UK post-spinoff parents is 1.01, which is significant at the 1% level (z-statistic = 4.62). The median difference in SEGNO between UK post-spinoff parents and non-UK post-spinoff parents is -1, which is also significant at the 1% level (z-statistic = -3.70). In other words, UK post-spinoff parents are more focused than non-UK post-spinoff parents since the former generally have fewer business segments than the latter. Similar conclusions can be drawn for UK offspring and non-UK offspring.

3.2 Empirical Design

Hypothesis H1 states that the agency problems of spinoff parents are more severe than non-spinoff control firms. In order to test this hypothesis, we need a sample of non-spinoff control firms. To select a control firm for a spinoff parent, we first identify a sample of firms that operate in the same 2-digit SIC industry as the spinoff parent and are not involved in a spinoff in the three-year period prior to the parent's spinoff announcement. From these non-spinoff industry peers, we identify the control firm as the firm whose market capitalisation is closest to that of the spinoff parent prior to the spinoff announcement.

We measure the magnitude of agency conflicts based on the strength of a firm's corporate

governance system. Extant literature has argued that corporate governance can mitigate the agency costs and improve firm values (Denis and McConnell, 2003; Fama and Jensen, 1983; Jensen, 1993; Jensen and Meckling, 1976; Shleifer and Vishny, 1997). Following this argument, there should be a negative association between the extent of agency conflicts for a firm and the strength of the firm's corporate governance system. Hence we define firms with high agency costs as those with a weak corporate governance structure.

There are different types of corporate governance mechanisms available for owners to monitor controllers, including board directors, executive share ownership, executive compensation, large shareholders, lenders, financial analysts, takeover markets, product market competition, and the legal system (for general review articles, see Becht, Bolton and Roell, 2002; Denis and McConnell, 2003; Gillan, 2006; Shleifer and Vishny, 1997). For testing H7, the corporate governance mechanisms considered include corporate board, director ownership, institutional blockholders, lenders, and financial analysts. We do not consider executive compensation because we do not have quality data for sample firms' executive compensation[7] and the inference based on the poor data might be biased. We do not consider takeover markets, product markets and the legal system for testing H1 because these control mechanisms are identical for both pre-spinoff parents and non-spinoff control firms. Table 4 gives the definitions of corporate governance variables used in this paper.

[Insert Table 4 about here]

The strength of board monitoring is measured with the board independence. Fama and Jensen (1983) argue that independent directors can monitor the management more effectively. We measure the board independence, BODIND, as the ratio of independent directors on the board. The assumption is that the monitoring strength increases with the ratio of independent directors on the board. There are two different board systems for our

[7] During the sample period, detailed disclosure of managerial compensation for listed firms was not required in many European countries. For example, the information of managerial compensation in German firms was very limited prior to the enforcement of Transparency and Disclosure Law in July 2002.

sample firms, a single-tier or unitary board system and a two-tier or binary board system. We focus on the board when a sample firm is of a unitary board system and the supervisory board when a sample firm is of a binary board system. We examine the independence of the supervisory board only because by definition the management board in a two-tier board system consists of exclusively executives and the supervisory board exercises the monitoring function.

The board member data are from annual reports, supplemented by the data from press news searched through Factiva. For both spinoff parent and non-spinoff control firms, their board member data are taken from the last annual report prior to the spinoff announcement date. Following Anderson and Reeb (2003), we use a three-tier categorization of board members: independent directors, affiliate directors and insider directors. Directors employed by the firm, retired from the firm, or who are immediate family members of the controlling family shareholders are insider directors. Immediate family board members are identified when a board director has the same last name as the controlling family shareholder. Affiliate directors are directors with potential or existing business relationships with the firm but are not full-time employees. Consultants, lawyers, financiers, and investment bankers are examples of affiliate directors. Independent directors are individuals whose only business relationship to the firm is their directorship. Personal profiles of directors are extracted from annual reports supplemented by the news search in Factiva. A cautionary note should be made. Because this board classification is based on our own assessment and the limited information sources which we have access to, the classification results inevitably contain personal biases. Therefore, BODIND for a firm with a unitary board system is measured as the number of independent directors divided by the number of directors in the board while BODIND for a firm with a binary board system is measured as the number of independent directors divided by the number of directors in the supervisory board.

Board ownership, BODOWN, is an important mechanism to align the incentives of directors and shareholders (Morck et al., 1988; McConnell and Servaes, 1990). We collect the board equity ownership data from annual reports and Worldscope. Similarly,

we focus on the board when a sample firm is of a unitary board system and the supervisory board when a sample firm is of a binary board system. BODIND is measured as the percentage of equity stake held by board directors for a firm with a unitary board system and it is measured as the percentage of equity stake held by supervisory board directors for a firm with a binary board system. The rationale of this variable is the incentive of a firm's board members to monitor the manager increases with their equity ownership in the firm.

Large shareholders have interests and expertise in monitoring self-interested managers (Shleifer and Vishny, 1986; Sudarsanam et al., 1996). McConnell and Servaes (1990) find a positive association between firm performance and the level of institutional ownership. Therefore, we use the percentage of equity ownership of a firm's institutional blockholders, INSTOWN, to measure the monitoring strength of institutional blockholders. An institutional blockholder is defined as an organisation holding more than 3% of the total number of outstanding shares of the sample firm and having no affiliation with the controlling family shareholders.[8] The rationale for this variable is that the incentive of institutional blockholders to monitor managers is higher when their equity ownership is larger. The institutional equity ownership data are taken from annual reports. When the annual report does not disclose substantial ownership data above the 3% level, we search press news in Factiva about ownership data of the sample firm during the spinoff announcement period to obtain the desired data.

Debt has an agency monitoring role (Jensen, 1986). Lasfer et al. (1996) document evidence on the positive impact of lender monitoring on the market reaction to asset sales. We measure the monitoring strength of lenders, LEV, as the total debt divided by the total assets, where the total debt is the sum of the long term debt and short term debt. The rationale for this variable is the incentive of debtholders to monitor a firm increases with the stake of debtholders on the firm.

[8] The UK sample firms report the substantial equity interests at the 3% level. Continental European firms report the equity ownership at different levels. In general, the disclosure for most continental European sample firms is somewhat better than that for UK sample firms. For example, Swedish firms disclose the equity holding for the largest ten shareholders and the disclosure is often at a level lower than 1%.

Security analysts are an important information intermediary between investors and firms. Chung and Jo (1996) find that analyst following exerts a significant and positive impact on a firms' market value. We measure the strength of analyst monitoring for a firm, ANACOV, as the number of analysts following the firm. The assumption is that the monitoring strength of analysts increases with the number of analysts. The analyst coverage data is supplied by the Institutional Brokers Estimate System (*IBES*).

Hypothesis H8 proposes a cross-sectional negative relationship between the strength of corporate governance of pre-spinoff parents and spinoff announcement returns. The spinoff announcement effects are measured as the cumulative abnormal returns (CARs) during the three-day announcement period. We employ a standard event-study methodology, a market model, as described in Campbell, Lo and MacKinlay (1997: Chapter 4) and Kothari and Warner (2006)[9]. In this study, the estimation period for the parameters of the market model comprise trading days [-220, -20] relative to the spinoff announcement day, which is day 0. The market return is estimated based on the total market return index for each country given in *Datastream*. The total market return index is calculated by *Datastream* with value-weighted average returns to representative companies comprised in the index for each country it covers. The calculation of total market return index by *Datastream* includes both the capital gains and the dividend yields. The selection of total market return index for each country is to ensure the consistency of stock return results across different countries. We then calculate the three-day CARs in the window (-1, +1) for each spinoff announcement. We also compute CARs during different event windows, (-10, +1), (-1, 0), 0, and (+1, +10).

There are alternative methodologies to estimate the announcement period abnormal returns to corporate events, such as market adjusted returns, abnormal returns based on Fama and French (1993) three-factor model, and abnormal returns relative to reference

[9] The same event methodology is initially proposed in Dodd and Warner (1983) and has been used in prior empirical studies on corporate spinoffs, such as Krishnaswami and Subramaniam (1999) and Veld and Veld-Merkoulova (2004).

portfolios. Kothari and Warner (2006) argue that different methodologies will yield qualitatively similar results for estimating short-run abnormal returns to events because the statistical problems are trivial for a short event window.

To test H2, we examine the following corporate governance mechanisms of pre-spinoff parents: director ownership, institutional blockholders, lenders, financial analysts, takeover markets, product markets, and the legal system. BODIND is not considered here because there are two different types of board systems in the sample and the BODIND ratios between different board systems are not directly comparable.

The monitoring strength of takeover markets, INDACQ, is measured as the number of industry peers acquired in the spinoff parent's two-digit SIC industry over the three-year period prior to the spinoff announcement. We use this proxy to capture the intensity of mergers and acquisitions in the parent's industry in the recent period. The rationale for this variable is that a firm's managers face higher takeover pressure and will work harder to avoid potential takeovers when the industry takeover activity is more intensive. Industry acquisition activities more than three years before the spinoff announcement may be irrelevant to the spinoff decision. Another reason for us to use the three-year window is due to the data limitation. The SDC M&A database have the detailed continental European acquisition data from 1984. Since our sample period starts from 1987, a selection of a longer window will result in a removal of some sample observations. As our sample is not large, the loss of sample observations will result in a lower explanatory power of our empirical tests.

Managers have to work hard to enhance firm performance when the industry competition is intensive (Hermalin, 1992). A recent theoretical paper by De Bettignies and Baggs (2006) demonstrates that product market competition directly lowers the shareholders' marginal cost of inducing managerial efforts. We use the industry Herfindahl index, INDCOMP, to measure the monitoring strength of product markets. The Herfindahl Index is obtained by squaring the market-share of all firms in the two-digit SIC industry of the pre-spinoff parent, and then summing those squares. The rationale of this variable is that

the managerial efforts to maximise shareholder wealth will increase with the intensity of product market competition. Since INDCOMP measures the extent of industry ownership concentration, there should be a negative association between the product market monitoring and INDCOMP.

We use the anti-director index, ANTIDIR, to measure the effectiveness of a country's legal system to protect shareholder rights and control potential managerial opportunism, which is proposed in La Porta et al. (1998). This anti-director index ranges from zero to six, where the lower score refers to a weak protection of shareholder rights. There is a growing literature arguing that the country-level corporate governance system is an important corporate governance mechanism to mitigate agency costs (e.g. see Denis and McConnell 2003; La Porta, Lopez-de-Silanes, Shleifer and Vishny 2000). The assumption is that managers in a country with strong shareholder protection are more likely to make decisions to benefit shareholders than those in a country with weak shareholder protection.

So far we consider seven corporate governance variables for testing H2, i.e. BODOWN, INSTOWN, LEV, ANACOV, INDACQ, INDCOMP, and ANTIDIR. Because the analyst coverage varies substantially across sample firms, we use the natural logarithm of analyst coverage to normalise this variable. Specifically, the analyst coverage is measured as Log(1+ANACOV).[10] These variables are positively associated with the strength of a firm's corresponding governance mechanism. According to H2, the spinoff announcement returns should be negatively associated with the corporate governance strength variables except for INDCOMP. For INDCOMP, the relationship should be positive since INDCOMP measures the degree of industry concentration.

In addition, we consider the family ownership variable, FAMILY, to indicate the monitoring impact of controlling family shareholders on the spinoff value effects. We define a firm as a family firm when the firm's largest shareholder is a family shareholder

[10] We use Log (1+ANACOV) rather than Log (ANACOV) because some sample firms have no analyst following.

and the family equity holding is more than 10% of the firm's equity. The variable, FAMILY, is a dummy variable that equals one when a firm is a family firm, and equals zero otherwise. Owning 10% of a firm's equity is usually sufficient for a large shareholder to effectively control the firm's operation. The same definition has been used in Faccio and Lang (2002). The family shareholder and its equity stake are identified from a firm's latest annual report prior to the spinoff announcement date. When the annual report does not disclose the exact ownership of a controlling family shareholder, we search press news in Factiva for ownership data about the sample firm to obtain the desired data.

There are conflicting views on the value impact of family shareholders (Burkart et al., 2003). On the one hand, family control implies the costs of a concentrated ownership. We call this argument the family entrenchment hypothesis. First, family shareholders may use their control to extract private benefits at the expense of other shareholders. Second, families may be excessively interested in maintaining control over the company event in the presence of potentially value-enhancing acquirers. Third, family shareholders may appoint their children or relatives as key employees (e.g. CEO) even though they may not qualify. On the other hand, families have incentives to monitor the management and the presence of family shareholders is argued to positively affect the firm performance (Anderson and Reed, 2003; Villalonga and Amit, 2006). We refer to this argument as the incentive alignment hypothesis. The family entrenchment hypothesis predicts a positive impact of controlling family shareholders on the spinoff performance while the incentive alignment hypothesis conjectures a negative relationship between the presence of controlling family shareholders and the spinoff value creation. Thus, there is no clear cut prediction with regard to the impact of family shareholders on the spinoff value effects.

Therefore, we present the following empirical model to test H2:

$$\begin{aligned} &Spinoff\ \ Announcement\ Effects = f(BODOWN, INSTOWN, LEV, \\ &Log(1+ANACOV), INDACQ, INDCOMP, ANTIDIR, FAMILY, Control\ Variables) \end{aligned} \quad (1)$$

where the control variables are FOCUS, INFASYM, GROWTH, ROA, RELSIZ and HOTTIME. The variable construction for control variables is described below.

There are six control variables considered in the regression model (1) to explain the spinoff announcement effects. The first control variable (FOCUS) is corporate focus, which is a dummy variable that equals one when the post-spinoff parent and subsidiary firms do not share the same two-digit SIC code, and equals zero for otherwise. The SIC codes for sample firms are from Worldscope. The corporate focus literature has argued that the refocus-increasing transactions including spinoffs can create shareholder values by eliminating negative synergies and allowing managers to concentrate on core businesses. Prior studies have found that the corporate focus variable is positively and significantly associated with spinoff announcement period returns and long-run returns to post-spinoff firms (e.g. see Daley et al., 1997; Desai and Jain, 1999; Veld and Veld-Merkoulova, 2004).

The second control variable (INFASYM) is an information asymmetry variable, proxied by the residual volatility in daily stock returns for parent firms in the year prior to the spinoff announcement date. Specifically, the residual standard deviation variable captures the firm-specific uncertainty that remains after removing the total market-wide uncertainty. Krishnaswami and Subramaniam (1999) argue that this variable captures the information asymmetry between the investors and managers as regards the firm-specific information about the pre-spinoff parent. They further contend that a firm conducts spinoff because there is information asymmetry about the firm's different segments between management and external capital markets and the firm is likely to be undervalued. The information asymmetry will be reduced following a spinoff since the post-spinoff firms will provide separately audited financial reports, resulting in an improvement in market values of post-spinoff firms.

The third control variable (GROWTH) is a parent's growth options in its investment opportunity set, measured as its MTBV of assets ratio at the end of month prior to spinoff announcement date. Following Faccio et al. (2006), the MTBV of assets ratio is computed as the market capitalisation plus book value of preferred stocks and book value

of debt divided by the sum of book values of equity, preferred stocks and debt[11]. The third variable is also motivated by the information asymmetry argument. Krishnaswami and Subramaniam (1999) document evidence that high-growth firms have a high likelihood of engaging in a spinoff to increase their information transparency because high-growth firms with information asymmetry problems cannot obtain sufficient external capital to finance their positive NPV projects. A conjecture following this information-based argument is that high-growth firms will create more shareholder values from undertaking spinoffs than low-growth firms. The reason is that a spinoff can partially resolve underinvestment problems for the former as argued in Myers and Majluf (1984) by improving the information environment of post-spinoff firms. Thus we predict a positive association between GROWTH and spinoff value effects.

The fourth control variable (ROA) is a parent's return on assets in the year prior to the spinoff announcement date, which is measured as the earnings before interest, tax, depreciation and amortisation (EBITDA) divided by the total assets of the firm. This variable is also related to the information asymmetry argument. Nanda and Narayanan (1999) put forward that liquidity-constrained firms have strong incentives to undertake spinoffs in order to mitigate the information asymmetry problem, thus facilitating post-spinoff firms' future access to external finance. Therefore, firms with higher internal cash flows are less likely to undertake spinoffs (Krishnaswami and Subramaniam (1999) because they benefit less from spinoffs. Hence we expect a negative relationship between ROA and spinoff value effects.

The fifth control variable (RELSIZ) is the relative size of a spinoff. Prior studies find that the spinoff announcement returns are higher when the proportion of spun-off assets is larger (see, e.g. Hite and Owers, 1983; Miles and Rosenfeld, 1983; Krishnaswami and Subramaniam, 1999; Veld and Veld-Merkoulova, 2004). Chemmanur and Yan (2004) propose a corporate control model to explain the transaction effect. According to their

[11] For the measurement of GROWTH variable, we also require a more than four-month gap between the most recent financial-year end on which accounting data are used and the spinoff announcement date to avoid the looking-ahead bias.

model, a spinoff creates shareholder value because post-spinoff firms are smaller than the pre-spinoff parent and thus post-spinoff firms are more likely to be acquired following the spinoff transaction. To control the transaction size effect, we use the market value of an offspring relative to the sum of the market capitalisations of parent and offspring on the spinoff completion date[12]. When a parent spins off more than one offspring at the same time, we calculate the relative size as the sum of all offspring's market values divided by the sum of parent and all offspring's market values on the spinoff completion date. It is predicted that the larger the relative size of a spinoff, the higher the shareholder value created from the spinoff.

Finally, we use a dummy variable (HOTTIME) to indicate whether a spinoff is announced in hot periods or in cold periods. As illustrated in Table 1, the number of spinoff transactions is noticeably higher during the period 1996-2001 than that of other periods[13]. Therefore, the HOTTIME variable equals one when a spinoff is announced between 1996 and 2001, and equals zero otherwise. We use this dummy variable to control for potential effects of spinoff decisions that may be purely time-driven. Sudarsanam (2003, Chapter 11) has shown that European divestitures tend to cluster in time. The definitions for the above-mentioned control variables are also given in Table 5.

Hypothesis H3 predicts a positive relationship between the improvement in corporate governance in post-spinoff firms and the long-run spinoff performance. The long-run spinoff performance is measured as the long-run abnormal stock returns for post-spinoff firms. Specifically, we use the three-year size- and book-to-market-adjusted buy-and-hold returns (size/BEME BHARs) and the three-year industry- and size-adjusted buy-and-hold returns (ind/size BHARs).

The size/BEME control portfolio approach aims to capture the power of size and book-to-

[12] We measure the relative size variable on the spinoff completion date because it is the first date on which the market capitalisation data for an offspring is available.
[13] This hot period of spinoffs is largely overlapping with the European merger wave in the period 1995-2001 as identified in Sudarsanam (2003, Chapter 2). This time-varying pattern of spinoff activity implies that, like mergers and acquisitions, spinoffs may cluster in time.

market ratio in explaining cross-sectional returns (Fama and French, 1992 and 1995). To implement the size and book-to-market matching portfolio procedure, all stocks in each sample country are grouped into five portfolios based on their market capitalisation at the end of June for each sample year[14]. Each portfolio contains an equal number of stocks. Stocks with the smallest market values are placed into portfolio 1, and those with the largest market values are placed into portfolio 5. For each stock, we also calculate the book-to-market ratio using the most recently reported book value of equity prior to the portfolio construction date. We then divide stocks within each size quintile into five equal-sized subgroups based on their book-to-market ratio. Stocks with the smallest book-to-market ratios are placed into sub-group 1, and those with the largest book-to-market ratios are placed into sub-group 5.

After constructing 25 size/BEME control portfolios, post-spinoff parent and subsidiary stocks are matched with a portfolio based on the post-spinoff firm's market value and the book-to-market ratio at the spinoff completion date for the sample country.[15] Then we calculate market-value-weighted average stock returns to the control portfolio. If stock returns for a firm in the control portfolio are missing in the computation period, we assume that the investment proceeds are reinvested in the remaining stocks of the control portfolio on a pro-rata basis. Specifically, the investment proceeds will be reallocated to the remaining stocks of the control portfolio proportionally, where the reallocation weight is the stocks' market values. When no matched firm is available in the size- and book-to-market control portfolio for the sample country[16], returns on the total market return index for each country given in *Datastream* are then used[17].

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[14] Similar to Fama and French (1992), we use a firm's market capitalisation at June end to construct control portfolios. Our results remain qualitatively similar when portfolio construction relies on a firm's market capitalisation in other calendar months.

[15] In some cases, *Datastream* does not have the data of the book value of equity for the sample firms. We then calculate the ratio based on the book value of equity given in the annual reports of sample firms, which are downloaded from Thomson Research.

[16] Such cases sometimes occur for some European countries which have a small stock market. For example, Ireland has an average of only 73 stocks during the 1990s as indicated by the stock data in *Datastream*.

[17] Results for long-run post-spinoff performance do not materially change when we use the value-weighted stock returns for all listed firms in the sample country as the benchmark returns rather than the total market return index for the sample country given in *Datastream*.

We compute these abnormal stock return measures during the post-spinoff period for each parent/offspring portfolio. Combining performance data from post-spinoff parent and offspring into a single portfolio is to gauge the overall performance gains from a spinoff. Specifically, we create a pro-forma combined firm following the spinoff by calculating value-weighted abnormal returns of parent and offspring. The value weight is based on market values of spinoff parent and offspring on the spinoff completion date.

For the ind/size matched firm approach, matching stocks are selected as of the last day of the completion month of the spinoff according to market value and two-digit SIC code classification. For each parent and subsidiary, we identify all equities within the same two-digit SIC code industry classification in the sample country. Further, we remove firms that conduct a spinoff in the five-year period centring on the spinoff completion date of the sample firm. Finally, we require that the market capitalisation of control firms should be within the scope of (50%, 150%) for the market capitalisation of the sample firm. We then select five stocks with the closest market value to that of the sample firm. Among those five stocks, the first matching firm is defined as one with the closest market value and the fifth matching firm has the largest difference from the sample firm in the market values. The stock returns of the first matching firm are used as the benchmark returns for the sample firm. If the first matching firm is delisted within the three-year post-spinoff period for whatever reason, we use the second matching firm from thereon.[18] If the second matching firm disappears as well, we continue with the third one and so on. If no matched firm within the two-digit SIC code level is available or five matching firms have been exhausted during the computation period, we replace the matching firm returns with the returns on the total market return index for each country given in *Datastream*.

To test H3, we need to measure the changes of corporate governance around spinoffs. We measure the change in board independence, ΔBODIND, as the difference in BODIND

[18] An alternative approach is to use the return to industry control firms which survive in the three-year post-spinoff period as the benchmark returns. However, this approach contains the look-ahead bias since it is unknown which control firm will be delisted in the post-spinoff period at the spinoff completion date. The approach we use in the study mimics the real investment experience of some investors i.e. that they rebalance their investment portfolio in case of the delisting of invested firms but keep the same investment preference in choosing stocks with similar operating characteristics.

between post-spinoff parent (offspring) and pre-spinoff parent. We measure the change in board ownership, ΔBODOWN, as the difference in BODIND between post-spinoff parent (offspring) and pre-spinoff parent. The change in institutional blockholder ownership, ΔINSTOWN, is defined as the difference in INSTOWN between post-spinoff parent(offspring) and pre-spinoff parent. The change in the analyst coverage, ΔLog(1+ANACOV), is calculated as the difference in Log(1+ANACOV) between post-spinoff parent(offspring) and pre-spinoff parent. We do not consider changes in the leverage ratio because the debt distribution across post-spinoff firms is often influenced by debtholders and the reallocation decision is more related to the asset structure of post-spinoff firms than to the governance-based consideration (Dittmar, 2004; Mehrotra et al., 2003).

We do not consider changes in INDACQ, INDCOMP, and ANTIDIR because there is no reason to expect these external corporate governance mechanisms to change following spinoffs. Therefore, we use the INDCOMP measured at the spinoff completion date and ANTIDIR for post-spinoff firms to indicate the strength of external governance mechanisms for post-spinoff firms. These two variables should be positively related to the long-run performance of post-spinoff firms.

We consider two additional variables for testing H3. The first variable is the takeover bid for post-spinoff firms, ACQBID, which equals one when the post-spinoff firm receives a takeover bid in the three-year post-spinoff period, and equals zero otherwise. The presence of takeover bid indicates the presence of an effective market control and is positively related to the long-run spinoff performance (Chemmanur and Yan, 2004). The second variable is the family ownership variable, FAMILY. Since the short-run positive market reaction to spinoffs of family firms can be explained by both the incentive alignment hypothesis and the family entrenchment hypothesis, the long-run spinoff performance of family firms thus provides more unambiguous evidence for the value impact of controlling family shareholders. If the long-run spinoff performance of family firms is significantly lower than that of non-family firms, it will suggest that family firms make suboptimal spinoff decisions, which will be consistent with the prediction of the

family entrenchment hypothesis. Conversely, if the long-run spinoff performance of family firms is significantly higher than that of non-family firms, it will suggest that family firms make better spinoff decisions, which will be consistent with the prediction of the incentive alignment hypothesis.

To test H3, we use the following empirical model:

$$\begin{aligned} Long-run\ Spinoff\ \ Performance = f(&\Delta BODIND, \Delta BODOWN, \Delta INSTOWN, \\ &\Delta Log(1+ANACOV), ACQBID, INDCOMP, ANTIDIR, FAMILY, Control\ Variables) \end{aligned} \quad (2)$$

where the control variables are FOCUS, INFASYM, GROWTH, ROA, RELSIZ and HOTTIME for post-spinoff parents and the control variables are FOCUS, INFASYM, RELSIZ and HOTTIME for offspring. We do not use GROWTH and ROA for offspring because these two variables are operating characteristics of pre-spinoff parents and are irrelevant to the performance of offspring.

Table 5 reports the summary statistics of explanatory variables used in subsequent empirical tests. Panel A of Table 5 reports the corporate governance data for pre-spinoff parents. The mean and median of BODIND for pre-spinoff parents are 0.40. There is a substantial difference in BODOWN across pre-spinoff firms since the mean of BODOWN is 10.81 while the median of BODOWN is just 1.26. This implies that many pre-spinoff parents do not have significant board ownership. The mean INSTOWN for our pre-spinoff parent sample is 16.40 and the median is 10.01. It seems that INSTOWN does not differ substantially across sample firms. Since the spinoff parents are often large firms, the values of INSTOWN indicate that many institutional blockholders have equity holdings in spinoff parents. The leverage ratios of pre-spinoff parents have a mean of 0.26 and a median of 0.24. Further, pre-spinoff parents have quite a few following analysts. The mean ANACOV is 12.38 and the median is 9.00. Industry acquisition activity and product market competition seems to be reasonable. The median INDACQ is 0.10, indicating that about 10% of industry firms are acquired in the three-year period prior to the spinoff announcement. The median of INDCOMP is 0.24, implying that the pre-spinoff parent's industry is highly concentrated and the industry product market

competition is quite low.[19] The anti-director ration has a mean value of 4.00 and a median value of 3.66. A final note about the corporate governance of pre-spinoff parents is that 34% of pre-spinoff parents are family firms. The significant proportion of family firms in the sample indicates that we should consider the impact of the existence of family firms in subsequent analysis.

[Insert Table 5 about here]

Panels B - D of Table 5 suggest that the corporate governance structure of post-spinoff firms is generally similar as that of pre-spinoff firms. The differences in most corporate governance variables are insignificant at the 10% level. However, the difference in institutional ownership between post-spinoff firms and pre-spinoff firms is highly significant at the 1% level. This indicates that post-spinoff firms attract more institutional investors than pre-spinoff firms. Finally, the difference in the analyst coverage between offspring and pre-spinoff parents is negative and significant at the 1% level. This is not surprising since offspring are generally much smaller than pre-spinoff parents and will have less analyst following than pre-spinoff parents (Hong et al., 2000).

4 Corporate Governance and the Spinoff Decision

The corporate governance structure of spinoff parents and non-spinoff control firms are reported in Table 6. The ratio of independent directors on board is significantly lower for spinoff parents than for non-spinoff control firms. The mean (median) board independence ratio for spinoff firms is 0.40 (0.40) while the mean (median) board independence ratio for control firms is 0.51 (0.50). Both the mean difference and the median difference are significant at 1% level (t-statistic = -7.37 and z-statistic = -6.59). Fama and Jensen (1983) argue that corporate board should consist of a majority of independent directors. Therefore, the independent director on board ratio of 0.40 for pre-spinoff parents suggests that the board monitoring in pre-spinoff parents may be weak.

[19] The literature normally regards an industry as highly concentrated when its INDCOMP is over 0.18 (e.g. see Lang and Stulz, 1992).

[Insert Table 6 about here]

The board ownership of pre-spinoff parents is comparable with that of control firms. Both the mean difference and the median difference are insignificant at the 10% level. However, the mean (median) difference in institutional ownership between parents and control firms is -10.26 (-12.09), which is statistically significant at the 1% level (t-statistic = -4.80 and z-statistic = -4.50). The substantial difference in institutional ownership between parents and control firms indicates that the institutional monitoring in parents is generally weak.

The leverage ratio of parents is generally similar to that of control firms. The difference is statistically insignificant at the 10% level. Similarly, the number of analysts following parents is comparable with that for control firms. The data indicate that the analyst coverage for parents is slightly higher than that for control firms since the median difference in analyst coverage is positive and significant at the 10% level.

Collectively, the results in Table 6 show that pre-spinoff parents generally have weaker corporate governance than non-spinoff control firms. The mean board independence ratio for pre-spinoff parents is less than that for non-spinoff control firms by 11%. Similarly, the mean institutional ownership for pre-spinoff parents is less than that for non-spinoff control firms by 10%. Thus, our evidence supports H7 that the corporate governance structure of pre-spinoff parents is generally weaker than that of non-spinoff control firms. This evidence further implies that agency conflicts in pre-spinoff parents are likely to be more severe than those in non-spinoff control firms.

5 Corporate Governance and Spinoff Announcement Effects

Abnormal returns to all spinoff announcements between January 1987 and December 2005 are reported in Table 7. For the full sample, the average CARs over the three-day event window (-1, +1) are 4.82%, which are somewhat higher than the announcement returns documented in earlier US studies (3.84% in Desai and Jain, 1999; 3.28% in

Krishnaswami and Subramaniam, 1999). The announcement returns over one-day, two-day, and three-day event windows are all significant at the 1% level, indicating that the market strongly reacts to spinoff announcement news.

[Insert Table 7 about here]

The full sample of spinoff announcements is further split into two sub-groups, UK spinoffs and non-UK spinoffs). Examination of announcement returns for these two sub-samples yields the following conclusions. UK spinoffs are slightly better perceived in the market than non-UK spinoffs as the former have an average of 5.48% CARs over the three-day event window while non-UK spinoffs have an average of 4.27%. The median three-day cumulative abnormal return to UK spinoffs is 3.03%, which is similar to the median three-day *CARs* to non-UK spinoffs of 3.33%. The announcement abnormal return pattern remains unchanged if the comparison of announcement period returns is based on alternative announcement windows.

As indicated in Panel D of Table 7, the difference in CARs between UK and non-UK spinoffs is generally insignificant. The only significant difference is the mean difference of *CARs* between UK and non-UK spinoffs for the announcement date, which is significant at the 5% level (t-statistic = 2.20). The difference in CARs between UK and non-UK spinoffs is statistically insignificant for other event windows. For example, the mean (median) difference in CARs between UK and non-UK spinoffs during the 3-day announcement period is 1.21% (0.87%), which has a t-statistic of 0.75 (z-statistic of 0.52).

To test hypotheses H2, we regress the three-day (-1, +1) CARs to spinoff parents on the corporate governance variables of pre-spinoff parents. The empirical model used is equation (1). The regression results are given in Table 8. We report the regression results for the full sample, UK sub-sample and non-UK sub-sample in regression model 1, 2, and 3, respectively. For regression models for sub-sample firms, we do not include the variable ANTIDIR because UK sub-sample will have only value for ANTIDIR and we want to have the same regression model for both UK and non-UK sub-samples for

comparison purposes.

[Insert Table 8 about here]

Although the empirical models in Table 8 have a reasonable explanatory power to explain spinoff announcement effects, none of corporate governance variables is significant at the 10% level. The only variables that are significant are FOCUS and RELSIZ. Therefore, we have no strong evidence to support H2. However, almost all corporate governance variables have a predicted negative sign in the regression, which is consistent with the argument of H2 that stock markets expect more value creation from spinoffs of firms with weak corporate governance and severe agency problems.

6 Corporate Governance and Long-run Spinoff Performance

The long-term size/BEME-adjusted BHARs of the parent, offspring, and the pro-forma combined firms are reported in Panels A-C of Table 9. The abnormal returns are calculated as the difference between the sample firm returns and the returns on the control portfolio, as per the matching process introduced in section 2. We examine the long-run performance of post-spinoff firms over the three-year post-spinoff period. Therefore, we focus on the post-spinoff firms following spinoffs completed between January 1987 and December 2002 in order to have three-year post-spinoff data to calculate the long-run performance.

[Insert Table 9 about here]

Mitchell and Stafford (2000) argue that the traditional test statistic is inflated when using buy and hold abnormal returns. A buy and hold methodology often falsely assumes independence among event observations. A bootstrapping procedure that is commonly used to correct for known biases of the buy and hold methodology does not account for the cross-sectional return dependence among event study observations. Their evidence shows that using an adjusted test statistic for buy and hold abnormal returns accounting for the correlation between event study observations substantially reduces the

significance of test statistic. Lyon et al. (1999) and Jegadeesh and Karceski (2004) also propose different approaches to adjusting the traditional t-statistic and find that the significance of long-run abnormal returns reduces when an adjusted t-statistic is used. To obtain unbiased estimations of the significance of long-run BHARs to post-spinoff firms, we thus use these four adjusted t-statistics to account for the cross-sectional dependence, i.e. serial correlation-consistent- t-statistic (SC_t), heteroskedasticity and serial correlation-consistent t-statistic (HSC_t), adjusted t-statistic proposed in Lyon et al. (1999) (LBT_t), and adjusted t-statistic proposed in Mitchell and Stafford (2000) (MS_t) (for details of the computational procedure, please refer to the original papers). Conclusions based on different adjusted t-statistics do not materially change. Because an estimation of MS_t requires fewer parameters than that of other adjusted t-statistics, we focus on test results based on the MS_t when we discuss the results below.

Panel A in Table 9 demonstrates no significant stock returns to post-spinoff parent/offspring combined firms. For instance, the mean and median three-year size/BEME-adjusted BHARs to post-spinoff combined firms are 0.06 and -0.03, respectively. Both the mean and the median are insignificant at conventional significance levels (MS_t = 0.59 and z-statistic = -0.19). The results documented in this study differ from earlier US findings on corporate spinoff value effects. For example, Cusatis et al. (1993) and Desai and Jain (1999) observe that post-spinoff firms perform significantly better than matching firms in the three-year post-spinoff period. However, our evidence is consistent with Veld and Veld-Merkoulova (2004) who also observe insignificant long-run abnormal returns to European spinoffs.

Panel B presents the summary statistics of long-term size- and book-to-market-adjusted BHARs to post-spinoff parents. As shown in Table 9, abnormal returns to post-spinoff parent firms are not-statistically different from zero. Since the sample size is not large, we focus on the analysis of the median returns to post-spinoff parents to avoid biased statistical inferences. The median BHARs to parents are -0.06, -0.08 and -0.09 for one-year, two-year, and three-year holding periods, respectively. None of those returns is significant at conventional levels. This evidence is different from the US findings that

post-spinoff parents earn superior long-run stock returns (e.g. see Desai and Jain, 1999).

Panel C of Table 9 further demonstrates that long-run BHARs to post-spinoff offspring are insignificant across different holding periods. The mean two-year (and three-year) BHARs to post-spinoff offspring is 0.23 (0.26). Both returns would be significant at the 5% level if a traditional t-statistic were used. Adjusted t-statistics show that the mean BHARs to post-spinoff offspring are no longer significant. The median BHARs to post-spinoff offspring are also insignificantly different from zero for different holding periods. Therefore, our evidence indicates that European stock markets generally react efficiently to spinoff announcements and post-spinoff offspring do not earn superior long-run stock returns.

Panels D-F of Table 9 reports the long-run ind/size-adjusted BHARs to post-spinoff pro-forma combined firms. Panel D in Table 9 shows that there abnormal returns to post-spinoff parent/subsidiary combined firms are insignificant. The mean and median three-year ind/size-adjusted BHARs to post-spinoff combined firms are 0.02 and -0.07, respectively. Both the mean and the median are not significant at conventional levels (MS_t = 0.57 and z-statistic = -0.27). Returns in different holding periods such as one-year and two-year periods are also insignificant at the 10% level. The binomial tests also show that half of sample firms have positive abnormal returns while half experience negative abnormal returns.

[Insert Table 9 about here]

Panel E of Table 9 presents the results of long-term ind/size-adjusted BHARs to post-spinoff parents. The abnormal returns to post-spinoff parents are also not-statistically different from zero. The mean BHARs to post-spinoff parents are 0.01, 0.13 and 0.07 for one-year, two-year, and three-year holding periods, respectively. The median BHARs to post-spinoff parent firms are -0.01, 0.0003 and -0.01 for one-year, two-year, and three-year holding periods, respectively. None of those returns is significant at the 10% level.

Panel F of Table 9 demonstrates that the long-run ind/ size-adjusted abnormal returns to post-spinoff offspring firms are also insignificant across different holding periods. The mean two-year (and three-year) BHARs to post-spinoff offspring firms are 0.16 (0.22). Both returns would be significant at the 5% level if the traditional t-statistics were to be used. However, adjusted t-statistics to account for the event dependence problems show that the mean BHARs to post-spinoff offspring firms are no longer significant. As our sample size is small, the z-statistic for the median long-run abnormal returns has more reliable statistical inferences than the t-statistic for the mean long-run abnormal returns. As shown in the table, the median BHARs to post-spinoff offspring firms are also insignificantly different from zero over different holding periods.

Overall, our evidence suggests that initial stock market reaction to spinoff announcements is generally efficient and neither post-spinoff parents nor their offspring earn superior long-run stock returns. This evidence differs from earlier US findings on corporate spinoff value effects. For example, Cusatis et al. (1993) and Desai and Jain (1999) observe that post-spinoff firms outperform industry matching firms in the three-year post-spinoff period. However, our evidence is consistent with results from McConnell et al. (2001) and Veld and Veld-Merkoulova (2004), which show no long-run abnormal stock returns to American and European spinoffs.

Since about 34% of our sample firms are family firms and there are different views on the governance effectiveness of family control, we compare the spinoff performance between family firms and non-family firms. We also examine the changes in equity holding for the family shareholder around the spinoff. To facilitate the comparison, we select non-family firms with at least one blockholder and examine the changes in equity holding of these firms' largest shareholder around spinoffs. The comparison results are reported in Table 10.

[Insert Table 10 about here]

Panel A in Table 10 examines the difference in spinoff announcement returns between

family firms and non-family firms. The mean difference in the three-day CARs between family firms and non-family firms is 3.65%, which is significant at the 10% level (t-statistic = 1.93). The median difference in the three-day CARs between family firms and non-family firms is 1.27%, which is significant at the 5% level (z-statistic = 2.49). Thus, results indicate that family firms generally have better announcement effects than non-family firms. However, the overall outperformance of family firms during the announcement period may be temporary.

Panels B – C in Table 10 examine the long-run performance of family firms and non-family firms. In general, family firms underperform non-family firms. Post-spinoff parent firms controlled by family shareholders have significantly lower long-run abnormal returns than post-spinoff parent firms without a controlling family shareholder. The offspring controlled by family shareholders also underperform the offspring without a controlling family shareholder in the long run. Thus, the comparison results suggest that the initial positive market reaction to spinoffs of family firms may be unfounded. A tempting explanation is that family shareholders make suboptimal spinoff decisions to maximise their personal interests.

We further explore this issue by inspecting the equity holding changes around spinoffs. Results in Panel D show that family shareholders generally reduce their share holdings in post-spinoff firms although the reduction is statistically insignificant. However, the largest shareholders in non-family firms generally increase their equity holdings in post-spinoff firms. In particular, those non-family blockholders significantly increase their shareholding in post-spinoff parents (t-statistic = 2.37 and z-statistic = 2.69).

Allen (2001) argues that managers have private information about the prospect of post-spinoff firms and their stock trading behaviour predicts the long-run spinoff performance. Our evidence is consistent with his finding. It seems that family shareholders have private information of the long-run spinoff performance and they reduce the equity holdings in post-spinoff firms. It is worthwhile noting that those family shareholders still retain substantial control over the post-spinoff firms although they reduce the equity holdings.

Thus, we conclude that family shareholders may use the spinoff to reshuffle their wealth portfolios by selling shares of post-spinoff parents, where the sales proceeds may be used to invest in other firms (projects) under their control. Such portfolio-rebalance consideration for a spinoff may not aim to maximise shareholder value of post-spinoff firms and hence the long-run spinoff performance might be relatively poor.

To examine the relationship between the improvement in corporate governance following spinoffs and the long-run spinoff performance, we regress post-spinoff abnormal stock returns on these proxies for changes in corporate governance following spinoffs. The long-run BHARs to post-spinoff firms are measured at the three-year interval. The empirical model used is equation (2). The test results are provided in Table 11.

[Insert Table 11 about here]

Panel A of Table 11 presents the regression results for the whole sample. The first message conveyed from the regressions is that the increase of board independence in post-spinoff firms is significantly related to the long-run spinoff performance. The coefficient of ΔBODIND in model 1 is 3.18 in model 1, which is significant at the 5% level (t-statistic = 2.06). ΔBODIND is insignificant in model 2 but has a predicted positive sign in the regression. For both model 3 and model 4, ΔBODIND have a positive coefficient and is statistically significant at the 1% level.

The second impression from reading the regression results is that the market for corporate control is positively affecting the long-run spinoff performance. The coefficient for ACQBID is positive and significant across these four regression models. In addition, the magnitude of the impact of ACQBID is significant. Generally speaking, if a post-spinoff firm receives a takeover bid in the post-spinoff period, its long-run stock returns will increase by at least 56% (the lower bound of coefficients for ACQBID in these four models). Finally, the presence of a controlling family shareholder is negatively related to the long-run performance of post-spinoff parents. The coefficient for FAMILY is -0.44 in model 1, which is significant at the 5% level (t-statistic = -2.48). The coefficient for

FAMILY is -0.67 in model 2, which is significant at the 1% level (t-statistic = -3.42). However, the presence of a controlling family shareholder is unrelated to the long-run performance of offspring.

Changes in other corporate governance mechanisms are generally positively related to the long-run spinoff performance although they are not significant at the conventional level. An interesting finding is that the long-run spinoff performance is negatively associated with the strength of legal system, which is contrary to the argument that managers in a country with strong shareholder protection are more likely to make shareholder-friendly decisions than those in a country with weak shareholder protection. However, a similar finding is documented in Veld and Veld-Merkoulova (2004), who also examine the long-run stock performance of European spinoffs. Thus, whether a legal system is effective in monitoring managerial behaviour is unclear from our evidence.

The explanatory powers of these four regression models are generally good except for model 4. The adjusted R-squared for models 1-3 range from 8% to 12% and these three models are significant at the 3% level. Taken together, we provide supporting evidence for H9 that an improvement in corporate governance is positively related to the long-run spinoff performance. In particular, the increased in board independence and the takeover threats have a positive and significant impact on the long-run performance of post-spinoff firms. However, we find that post-spinoff parent firms with a controlling family shareholder significantly underperform those without a controlling family shareholder in the long run. This evidence indicates that the family shareholders may conduct spinoffs for non-value-maximising reasons, which is consistent with the argument of the family entrenchment hypothesis.

Results in Panels B-C in Table 11 are broadly consistent with those in Panel A although the significance level of coefficients for variables ΔBODIND, ACQBID and Family is generally reduced. This may be due to the reduced sample size.

7 Summary

This study proposes and tests the governance-based model for spinoff value effects, which argues that spinoffs create shareholder value by enhancing corporate governance and mitigating agency costs in post-spinoff firms. From a sample of 170 European spinoffs completed during the period from 1987 to 2005, we present some evidence supporting the governance-based hypotheses. First, we find that spinoff parents are likely to have weaker corporate governance than non-spinoff control firms. Therefore, agency problems in spinoff parents seem to be more severe than those in non-spinoff control firms. Second, we find the strength of corporate governance for spinoff parents is generally negatively associated with the spinoff announcement period abnormal returns although the relationship is insignificant. Third, we find that post-spinoff firms with increased board independence or facing takeover threats earn significantly higher long-run abnormal returns than those without such activities. Finally, we document evidence that family-controlled parent firms have significantly lower performance than non-family-controlled parent firms. Therefore, our evidence indicates that the gains from spinoffs reflect the lessening of agency conflicts.

Our study is related to several studies on the impact of corporate governance on firm value. Ahn and Walker (2006) observe that, for the US, spinoff parents typically have stronger corporate governance structure than non-spinoff control firms. This is different from our results for H1. This may be due to the possibility that US restructurings are often preceded by managerial disciplinary events as documented in Berger and Ofek (1999). Therefore, the corporate governance structure may be enhanced prior to US spinoffs. In unreported analysis, we find that spinoff parents do not experience more disciplinary events than non-spinoff control firms in Europe. Seward and Walsh (1996) find that the strength of corporate governance structure of offspring is unrelated to the spinoff announcement effects. This evidence is consistent with our results for H2. Ben-Amar and Andre (2006) find that family firms have better market reaction than non-family firms during the acquisition announcement period. They argue that family firms make better investment decision than non-family firms. However, we find that family firms have lower long-run post-spinoff performance than non-family firms. A possible

explanation is that Ben-Amar and Andre do not examine the long-run post-acquisition performance and the initial market reaction to acquisition announcements in their study may be incomplete.

However, our conclusions may be limited to the sample of European firms involved in spinoffs. The conclusion that corporate refocusing gains stem from reduction of agency costs may not hold for a large sample of cross-sectional firms. Further, the board independence variable used in this study may be biased because it is based on our subjective assessment of director profiles. Future research examining this issue by using better data sources to measure the strength of corporate governance will be valuable.

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Table 1 Distribution of European spinoffs by announcement year and country of spinoff parent

Distribution of European companies that completed a spinoff in the period from January 1987 to December 2005 by announcement year and listing country of the spinoff parent firm. A total of 367 spinoff announcements are originally identified from the SDC Mergers and Acquisitions Database. Spinoffs are eliminated for the following reasons with data reduction number in parentheses: a) parents or offspring have no stock price information in *Datastream* (67); b) other types of restructuring transactions are mistakenly recorded as spinoffs in SDC, such as divestiture of a joint-venture with multi-parents and privatisation deals and asset redistribution as part of a merger deal (19); c) less than 50% of interests of offspring are distributed to existing shareholders (9); d) the same spinoff announcements are double counted in SDC (9); e) offspring are already listed before the spinoff (6); f) parents are not traded in Europe (6); g) the shares of offspring are sold to either existing shareholders or the market (3); and h) the announced spinoffs are not completed by the end of year 2005 (78). The final sample includes 144 parent firms (157 distinct announcements) and 170 offspring firms. Countries are coded as follows: BD for Germany, BG for Belgium, DK for Denmark, FN for Finland, FR for France, IR for Ireland, IT for Italy, NL for the Netherlands, NW for Norway, PT for Portugal, SD for Sweden, SW for Switzerland, and UK for the United Kingdom.

Year	BD	BG	DK	FN	FR	IR	IT	NL	NW	PT	SD	SW	UK	Total
1987													1	1
1988									1				3	4
1989									1				6	7
1990											1			1
1991									1				2	3
1992									1		1		1	3
1993													2	2
1994							1				1			2
1995							1		1		2		2	6
1996					1		1		1		5		8	16
1997						1	1	1			4	1	6	14
1998	2					1		1	2		5		8	19
1999	1	1	1	1			4	3	1		2	2	5	21
2000		1		4			1				3		13	22
2001	1				3				1		5		11	21
2002							1	1					1	3
2003	1	1		1			2		2				3	10
2004	1	1		1					1	1	5		3	13
2005											1		1	2
Total	6	4	1	7	4	2	12	6	13	1	35	3	76	170

Table 2 Descriptive statistics for characteristics of sample firms involved in spinoffs

This table reports descriptive statistics of characteristics of sample firms. Panel A reports the data for all pre-spinoff parents. Panel B reports the data for all post-spinoff parents. Panel C reports the data for all offspring. Panel D reports the data for UK pre-spinoff parents. Panel E reports the data for UK post-spinoff parents. Panel F reports the data for UK offspring. Panel G reports the data for non-UK pre-spinoff parents. Panel G reports the data for non-UK post-spinoff parents. Panel H reports the data for non-UK offspring. MV is the market value of equity at the month end prior to the spinoff announcement for the pre-spinoff parent or at the spinoff completion date for both post-spinoff parent and offspring. MV is denoted in millions of 2005 US dollars. MTBV is measured as the market value of equity plus book value of preferred stocks and book value of debt divided by the sum of book values of equity, preferred stocks and debt following Faccio et al. (2006). ROA is the earnings before interest, tax, depreciation, and amortisation divided by the book value of total assets in the beginning of the year. LEV is total debt divided by total assets. SEGNO is the number of business segments. DIVSIZ is the total assets of offspring divided by the sum of total assets of post-spinoff parent and offspring. The accounting data are taken from the latest available annual reports prior to the spinoff announcement for the pre-spinoff parent and from the first available annual reports following the spinoff completion for both the post-spinoff parent and offspring.

	Pre-spinoff parents		**Post-spinoff parents**		**Post-spinoff offspring**	
Variable	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
			Panel A: All sample firms			
MV	5326.00	1116.96	5267.21	873.82	1220.82	291.95
MTBV	2.84	1.40	2.63	1.75	2.26	1.36
ROA	0.10	0.11	0.11	0.12	0.11	0.10
LEV	0.26	0.24	0.27	0.24	0.30	0.24
SEGNO	3.77	4.00	3.13	3.00	2.35	2.00
DIVSIZ	0.32	0.28	-	-	-	-
			Panel B: UK sample firms			
MV	4708.21	759.28	4708.21	4104.34	1330.03	227.80
MTBV	4.11	1.67	4.11	3.61	2.69	1.82
ROA	0.11	0.13	0.11	0.11	0.13	0.11
LEV	0.24	0.22	0.24	0.25	0.29	0.22
SEGNO	3.31	3.00	3.31	2.61	1.99	1.00
DIVSIZ	0.36	0.33	-	-	-	-
			Panel C: Non-UK sample firms			
MV	5849.30	1294.56	6252.22	884.25	1132.52	298.27
MTBV	1.75	1.23	1.80	1.28	1.92	1.23
ROA	0.09	0.10	0.12	0.13	0.09	0.09
LEV	0.28	0.27	0.28	0.25	0.31	0.25
SEGNO	4.16	4.00	3.56	3.00	2.64	3.00
DIVSIZ	0.28	0.21	-	-	-	-

Table 3 Difference in characteristics between sub-samples of firms involved in spinoffs

This table reports the difference in characteristics between sub-samples of firms involved in spinoffs. Panel A reports the difference in characteristics between all pre-spinoff parents and all post-spinoff parents. Panel B reports the difference in characteristics between all post-spinoff parents and all offspring. Panel C (E) reports the difference in characteristics between (non-) UK pre-spinoff parents and (non-) UK post-spinoff parents. Panel D (F) reports the difference in characteristics between (non-) UK post-spinoff parents and (non-) UK offspring. Panel G reports the difference in characteristics between UK pre-spinoff parents and non-UK pre-spinoff parents. Panel H (I) reports the difference in characteristics between UK post-spinoff parents (UK offspring) and non-UK post-spinoff parents (non-UK offspring). LogMV = the natural logarithm of market value of equity at the month end prior to the spinoff announcement for the pre-spinoff parent or at the spinoff completion date for both post-spinoff parent and offspring. MV is denoted in millions of 2005 US dollars. MTBV = the market value of equity plus book value of preferred stocks and book value of debt divided by the sum of book values of equity, preferred stocks and debt following Faccio et al. (2006). ROA = the earnings before interest, tax, depreciation, and amortisation divided by the book value of total assets in the beginning of the year. LEV= total debt divided by total assets. SEGNO =the number of business segments. DIVSIZ = the total assets of offspring divided by the sum of total assets of post-spinoff parent and offspring. The accounting data are taken from the latest available annual reports prior to the spinoff announcement for the pre-spinoff parent and from the first available annual reports following the spinoff completion for post-spinoff firm. The mean difference is tested with t-statistic and the median difference is tested with Wilcoxon z statistic. [a], [b], [c] indicates the significance at the 1%, 5%, and 10% level, respectively.

Variable	Mean Diff.	t-statistic	Median Diff.	z-statistic
Panel A: All pre-spinoff parents vs. all post-spinoff parents				
LogMV	0.05	0.42	-0.00	-0.45
MTBV	0.20	0.36	-0.11[b]	-2.03
ROA	-0.01	-0.84	-0.01	-1.24
LEV	-0.00	-0.10	0.00	0.01
SEGNO	0.64[a]	3.26	1.00[a]	3.22
Panel B: All post-spinoff parents vs. all offspring				
LogMV	0.51[a]	4.87	0.48[a]	4.57
MTBV	0.37	1.14	0.38[c]	1.86
ROA	0.01	0.27	0.02	1.30
LEV	-0.03	-1.21	0.00	0.31
SEGNO	0.78[a]	4.52	1.00[a]	4.38
Panel C: UK pre-spinoff parents vs. UK post-spinoff parents				
MV	0.00	0.03	-0.02	0.00
MTBV	0.50	0.42	-0.61[b]	-2.58
ROA	0.00	-0.04	0.01	0.14
LEV	-0.01	-0.24	-0.01	-0.46
SEGNO	0.69[b]	2.59	1.00[a]	2.63
Panel D: UK post-spinoff parents vs. UK offspring				
LogMV	0.46[a]	2.67	0.54[a]	2.65
MTBV	0.92	1.49	0.47[c]	1.74
ROA	-0.02	-0.55	0.01	0.19
LEV	-0.04	-0.80	0.01	0.50
SEGNO	0.62[a]	2.67	1.00[a]	2.85

Table 3 (Continued)

Variable	Mean Diff.	t-statistic	Median Diff.	z-statistic
Panel E: Non-UK pre-spinoff parents vs. non-UK post-spinoff parents				
LogMV	0.08	0.62	0.17	0.63
MTBV	-0.05	-0.22	-0.05	-0.42
ROA	-0.02	-1.33	-0.02	-1.64
LEV	0.00	0.07	0.02	0.36
SEGNO	0.60[b]	2.22	1.00[b]	2.08
Panel F: Non-UK post-spinoff parents vs. non-UK offspring				
LogMV	0.56	4.36	0.47[a]	3.84
MTBV	-0.12	-0.47	0.05	0.64
ROA	0.03	1.53	0.03[c]	1.68
LEV	-0.03	-0.90	0.00	0.77
SEGNO	0.93[a]	3.91	0.00[a]	3.61
Panel G: UK pre-spinoff parents vs. non-UK pre-spinoff parents				
LogMV	-0.33[b]	-2.08	-0.23[c]	-1.78
MTBV	2.36[b]	2.20	0.44[a]	2.75
ROA	0.01	0.59	0.02[c]	1.77
LEV	-0.04	-1.33	-0.05	-1.46
SEGNO	-0.86[a]	-3.05	-1.00[a]	-2.97
DIVSIZ	0.08[b]	2.30	0.13[a]	2.97
Panel H: UK post-spinoff parents vs. non-UK post-spinoff parents				
LogMV	-0.26	-1.57	-0.05	-1.19
MTBV	1.81[a]	3.19	1.01[a]	4.62
ROA	-0.01	-0.40	-0.01	-0.22
LEV	-0.03	-0.97	-0.02	-0.67
SEGNO	-0.95[a]	-3.74	-1.00[a]	-3.70
Panel I: UK offspring vs. non-UK offspring				
LogMV	-0.15	-1.05	-0.12	-0.97
MTBV	0.77[a]	2.20	0.58[a]	2.44
ROA	0.04	1.13	0.01	1.17
LEV	-0.02	-0.52	-0.03[c]	-1.89
SEGNO	-0.65[a]	-3.05	-2.00[a]	-3.10

Table 4 Definitions for independent variables

Variables	Definition
	Panel A: Explanatory variables
BODIND	The number of independent directors divided by the total number of board directors, where independent directors are directors whose only business relationship with a firm is the directorship. The board is corporate board for a unitary board system (supervisory board for a binary board system). For pre-spinoff parents and non-spinoff control firms, BODIND is based on the latest financial report prior to the spinoff announcement. For post-spinoff parents and offspring, BODIND is based on the first financial report following the spinoff completion.
BODOWN	The percentage of equity ownership of board members in a firm. The board is corporate board for a unitary board system (supervisory board for a binary board system). For pre-spinoff parents and non-spinoff control firms, BODOWN is taken from the latest financial report prior to the spinoff announcement. For post-spinoff parents and offspring, BODOWN is taken from the first financial report following the spinoff completion.
INSTOWN	The percentage of equity ownership of institutional blockholders in a firm, where the blockholder is defined as a large shareholder holding more than 3% of equity in a firm. For pre-spinoff parents and non-spinoff control firms, INSTOWN is taken from the latest financial report prior to the spinoff announcement. For post-spinoff parents and offspring, INSTOWN is taken from the first financial report following the spinoff completion.
LEV	The total debt divided by the total assets, where the total debt is the sum of the long term debt and short term debt. For pre-spinoff parents and control firms, LEV is taken from the latest financial report preceding the announcement. For post-spinoff parents and offspring, LEV is taken from the first financial report following the spinoff completion.
ANACOV	The number of following analysts over the 1-year period prior to the announcement for pre-spinoff parents or control firms and over the 1-year period following the completion for post-spinoff firms.
INDACQ	The number of industry firms acquired in the two-digit SIC industry of a firm over the three-year period prior to the spinoff announcement.
INDCOMP	A firm's industry Herfindahl index, which is measured as the sum of squared market shares of all firms in the sample firm's two-digit SIC industry. For pre-spinoff parents and control firms, INDCOMP is calculated for the fiscal year preceding the announcement. For post-spinoff parents and offspring, INDCOMP is calculated for the year immediately following the completion.
ANTIDIR	An index to measure the strength of a country's legal system to protect minority shareholders developed by La Porta et al. (1998), which ranges from zero to six, where the lower score refers to a weak protection of shareholder rights.
FAMILY	A dummy variable that equals one when a firm's large shareholder is a family shareholder and the family shareholder's equity holding is more than 10%.
ΔBODIND	The difference in BODIND between a post-spinoff firm and its pre-spinoff parent.
ΔBODOWN	The difference in BODOWN between a post-spinoff firm and its pre-spinoff parent.
ΔINSTOWN	The difference in INSTOWN between a post-spinoff firm and its pre-spinoff parent.
ΔLog(1+ANACOV)	The difference in Log(1+ANACOV) between a post-spinoff firm and its pre-spinoff parent.
ACQBID	A dummy variable that equals one when a post-spinoff firm receives a takeover bid over the three-year post-spinoff period, and equals zero otherwise.

Table 4 (continued)

Panel B: Control variables	
FOCUS	A dummy variable that equals one when parent and offspring operate in different two-digit SIC industries, and equals zero otherwise.
INFASYM	The dispersion in the market-adjusted daily stock returns to a parent in the 250-day trading period prior to the spinoff announcement.
GROWTH	The parent's growth options in its investment opportunity set, measured as its MTBV of assets ratio at the end of month prior to spinoff announcement date.
ROA	The parent's return on assets in the year prior to the spinoff announcement date, measured as its earnings before interest, tax, depreciation and amortisation (EBITDA) divided by its total assets.
RELSIZ	Market value of an offspring divided by the sum of the market capitalisations of parent and offspring on the spinoff completion date. When a parent spins off multiple offspring firms on the same date, the relative size is total market values of all offspring firms divided by the sum of market capitalisations of parent and all offspring firms on the spinoff completion date.
HOTTIME	A dummy variable that equals one when a spinoff is announced between 1996 and 2001, and equals zero otherwise.

Table 5 Summary descriptive statistics for explanatory variables

This table reports the summary descriptive statistics for explanatory variables. BODIND = the number of independent directors divided by the total number of directors, where independent directors are directors whose only business relationship with a firm is the directorship. BODOWN = the percentage of equity ownership of board members in a firm. INSTOWN = the percentage of equity ownership of institutional blockholders in a firm, where the blockholder is defined as a large shareholder holding more than 3% of equity in a firm. LEV = the total debt divided by the total assets. ANACOV = the number of following analysts over the one-year period prior to the spinoff announcement for pre-spinoff parents and over the one-year period subsequent to the spinoff completion for post-spinoff firms. INDACQ = the number of industry firms acquired in the two-digit SIC industry of a firm over the three-year period prior to the spinoff announcement. INDCOMP = the sum of squared market shares of all firms in a firm's two-digit SIC industry. ANTIDIR = an index to measure the strength of a country's legal system to protect minority shareholders developed by La Porta et al. (1998). FAMILY = 1 when a firm's largest shareholder is a family shareholder and the family shareholder's equity holding is more than 10%, = 0 otherwise. ΔBODIND = the difference in BODIND between a post-spinoff firm and its pre-spinoff parent. ΔBODOWN = the difference in BODOWN between a post-spinoff firm and its pre-spinoff parent. ΔINSTOWN = the difference in INSTOWN between a post-spinoff firm and its pre-spinoff parent. ΔLog(1+ANACOV) = the difference in Log(1+ANACOV) between a post-spinoff firm and its pre-spinoff parent. ACQBID =1 when a post-spinoff firm receives a takeover bid over the three-year post-spinoff period, = 0 otherwise. In parentheses is the t-statistic (mean) or Wilcoxon test z-statistic (median). All tests are based on two-tailed tests. [a] indicates the 1% significance level.

Panel A: Pre-spinoff parents

Variable	Mean	Median	Std.dev.	No. of obs.
BODIND	0.40	0.40	0.18	157
BODOWN (%)	10.81	1.26	16.65	157
INSTOWN (%)	16.40	10.01	17.68	157
LEV	0.26	0.24	0.18	157
ANACOV	12.38	9.00	12.32	157
INDACQ	0.12	0.10	0.11	157
INDCOMP	0.33	0.24	0.28	157
ANTIDIR	3.66	4.00	1.51	157
FAMILY	0.34	0.00	0.48	157

Panel B: Post-spinoff parents

Variable	Mean	Median	Std.dev.	No. of obs.
BODIND	0.40	0.40	0.19	157
BODOWN (%)	11.10	1.24	17.11	157
INSTOWN (%)	19.40	15.60	18.60	157
LEV	0.27	0.24	0.19	157
ANACOV	11.83	7.00	12.22	157
INDACQ	0.12	0.12	0.11	157
INDCOMP	0.33	0.24	0.27	157
ANTIDIR	3.66	4.00	1.51	157
FAMILY	0.34	0.00	0.48	157

Table 5 (continued)

Panel C: Offspring				
Variable	**Mean**	**Median**	**Std.dev.**	**No. of obs.**
BODIND	0.42	0.40	0.20	170
BODOWN (%)	10.66	0.74	17.41	170
INSTOWN (%)	20.12	16.96	18.37	170
LEV	0.30	0.24	0.28	170
ANACOV	5.54	2.00	7.17	170
INDACQ	0.13	0.11	0.13	170
INDCOMP	0.36	0.24	0.30	170
ANTIDIR	3.65	4.00	1.49	170
FAMILY	0.34	0.00	0.48	170
Panel D: Post-spinoff parents vs. pre-spinoff parents				
Variable	**Mean Diff.**	**Median Diff.**	**t-statistic**	**z-statistic**
BODIND	0.00	0.00	0.35	0.00
BODOWN (%)	0.29	-0.02	0.30	-0.54
INSTOWN (%)	3.00[a]	5.59[a]	3.50	3.61
LEV	0.00	0.00	0.10	0.14
ANACOV	-0.55	-2.00	-1.15	-1.12
INDACQ	0.01	0.02	1.64	1.31
INDCOMP	0.00	0.00	-0.02	1.36
Panel E: Offspring vs. pre-spinoff parents				
Variable	**Mean Diff.**	**Median Diff.**	**t-statistic**	**z-statistic**
BODIND	0.01	0.00	0.80	-1.02
BODOWN (%)	-0.06	-0.52	-0.05	-0.79
INSTOWN (%)	3.43[a]	6.95[a]	2.80	3.40
LEV	0.04	0.00	1.80	-1.22
ANACOV	-6.79[a]	-7.00[a]	-9.50	-8.86
INDACQ	0.02	0.01	1.41	1.45
INDCOMP	0.02	0.00	0.96	1.09

Table 6 Corporate governance structure of spinoff parents and control firms

This table reports summary descriptive statistics of corporate governance structure for spinoff parents and non-spinoff control firms. BODIND = the number of independent directors divided by the total number of directors, where independent directors are directors whose only business relationship with a firm is the directorship. BODOWN = the percentage of equity ownership of board members in a firm. INSTOWN = the percentage of equity ownership of institutional blockholders in a firm, where the blockholder is defined as a large shareholder holding more than 3% of equity in a firm. LEV = the total debt divided by the total assets. ANACOV = the number of following analysts over the one-year period prior to the spinoff announcement for pre-spinoff parents and over the one-year period subsequent to the spinoff completion for post-spinoff firms. For the difference in corporate governance variables between spinoff firms and control firms, t-statistic (mean) or Wilcoxon test z-statistic (median) is reported in parentheses in the columns of Group Difference (1-2). [a] indicates the 1% significance level.

	Spinoff firms (1)		**Control firms (2)**		**Group difference (1 -2)**	
Variable	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
BODIND	0.40	0.40	0.51	0.50	-0.11[a]	-0.10[a]
					(-7.37)	(-6.59)
BODOWN (%)	10.81	1.26	9.95	0.47	0.86	0.79
					(0.58)	(-1.26)
INSTOWN (%)	16.40	10.01	26.65	22.10	-10.26[a]	-12.09[a]
					(-4.80)	(-4.50)
LEV	0.26	0.24	0.24	0.22	0.02	0.02
					(1.13)	(-1.00)
ANACOV	12.38	9.00	11.31	7.00	1.07	2.00[a]
					(1.37)	(1.79)

Table 7 Cumulative abnormal returns to parents over the announcement periods

This table reports the average cumulative abnormal returns (CARs) for the entire sample of 157 completed spinoffs from January 1987 to December 2005.The spinoff announcements are identified from SDC Merger & Acquisitions Database. Abnormal returns are calculated with the market model, estimated over a 200-day period for each sample firm (from day -220 to day -21 relative to spinoff announcement date). The significance of the mean is tested by t-statistic. The significance of the median is tested by the Wilcoxon signed rank test. The binomial test is used to test the significance of the percentage of sample firms with positive abnormal announcement returns. The null hypothesis is that the proportion of positive abnormal announcement-period returns is 50%. [a], [b], [c] indicates the significance level at the 1%, 5% and 10% level, respectively.

Interval	Mean%.	t-statistic	Median%	z-statistic	% (+)
Panel A: CARs based on the market model for All spinoffs (N=157)					
-10 to -1	1.75[b]	2.62	0.79[b]	2.36	56.05
-1 to 0	4.24[a]	6.64	2.64[a]	7.06	70.70[a]
0	3.45[a]	6.25	1.75[a]	6.57	68.15[a]
-1 to +1	4.82[a]	6.14	2.61[a]	6.80	73.25[a]
+1 to +10	-0.06	-0.08	-1.14	-1.55	40.76
Panel B: CARs based on the market model for UK spinoffs (N=72)					
-10 to -1	1.95	1.59	0.72	1.18	52.78
-1 to 0	5.26[a]	4.67	3.02[a]	4.98	75.00[a]
0	4.80[a]	4.70	2.19[a]	5.06	70.83[a]
-1 to +1	5.48[a]	4.12	3.03[a]	4.31	69.44[a]
+1 to +10	0.57	0.43	-1.21	-0.32	45.83
Panel C: CARs based on the market model for Non-UK spinoffs (N=85)					
-10 to -1	1.58[b]	2.38	0.99[b]	2.14	58.82
-1 to 0	3.39[a]	4.91	2.61[a]	4.99	67.06[a]
0	2.29[a]	4.50	1.32[a]	4.20	65.88[a]
-1 to +1	4.27[a]	4.65	3.33[a]	5.29	76.47[a]
+1 to +10	-0.59	-0.72	-1.03[b]	-2.03	36.47
Panel D: Difference in CARs between UK and Non-UK spinoffs					
-10 to -1	0.38	0.27	-0.27	-0.53	
-1 to 0	1.87	1.42	0.41	1.40	
0	2.51[b]	2.20	0.87	1.58	
-1 to +1	1.21	0.75	0.70	0.52	
+1 to +10	1.62	0.74	-0.18	-0.24	

Table 8 Regression of CARs on the corporate governance structure of spinoff parents

Regression coefficients for announcement period (-1, 1) cumulative abnormal returns for the 157 completed spinoffs by 144 European companies from January 1987 to December 2005. BODOWN = the percentage of equity ownership of board members in a firm. INSTOWN = the percentage of equity ownership of institutional blockholders in a firm, where the blockholder is defined as a large shareholder holding more than 3% of equity in a firm. LEV = the total debt divided by the total assets. ANACOV = the number of following analysts over the one-year period prior to the spinoff announcement for pre-spinoff parents and over the one-year period subsequent to the spinoff completion for post-spinoff firms. INDACQ = the number of industry firms acquired in the two-digit SIC industry of a firm over the three-year period prior to the spinoff announcement. INDCOMP= the sum of squared market shares of all firms in a firm's two-digit SIC industry. ANTIDIR = an index to measure the strength of a country's legal system to protect minority shareholders developed by La Porta et al. (1998). FAMILY =1 when a firm's largest shareholder is a family shareholder and the family shareholder's equity holding is more than 10%, = 0 otherwise. FOCUS = 1 when parent and offspring operate in different industries at the two-digit SIC level, = 0 otherwise. INFASYM = dispersion in market-adjusted daily stock returns to a parent in the 250-day trading period prior to the spinoff announcement. GROWTH = parent's MTBV of assets ratio at the end of month prior to spinoff announcement date. ROA = parent's EBITDA divided by its total assets. RELSIZ = market value of an offspring (market values of all offspring when multiple subsidiaries are spun off) relative to the sum of the market values of the parent and (all) offspring on the spinoff completion date. HOTTIME = 1 when a spinoff is announced between 1996 and 2001, = 0 otherwise. White heteroskedasticity-consistent t-statistic is reported in parentheses. [a], [b], [c] indicates the significance at the 1%, 5%, and 10% level, respectively.

Variable	**Model 1 (Full Sample)**		**Model 2 (UK Sample)**		**Model 3 (Non-UK Sample)**	
Intercept	-6.23	(-1.16)	-15.58[b]	(-2.50)	0.77	(0.19)
BODOWN	-0.03	(-0.46)	-0.06	(-0.43)	0.00	(0.02)
INSTOWN	-0.05	(-1.41)	-0.10	(-1.41)	-0.01	(-0.32)
LEV	0.43	(0.09)	9.57	(1.22)	-9.37	(-1.61)
Log(1+ANACOV)	-0.77	(-0.46)	0.85	(0.32)	-0.68	(-0.44)
INDACQ	4.88	(0.64)	27.11	(1.59)	-4.69	(-0.78)
INDCOMP	0.22	(0.07)	5.18	(0.81)	-3.51	(-1.10)
ANTIDIR	-0.18	(-0.30)				
FAMILY	1.35	(0.67)	2.62	(0.77)	1.49	(0.71)
FOCUS	4.23[a]	(3.15)	3.95	(1.53)	2.54[c]	(1.76)
INFASYM	124.18	(1.43)	91.26	(0.98)	168.06[c]	(1.88)
GROWTH	0.17	(1.03)	0.28	(1.16)	-1.15[b]	(-2.34)
ROA	6.92	(1.10)	7.93	(0.75)	8.94	(1.14)
RELSIZ	13.80[a]	(3.19)	24.98[a]	(2.80)	9.10[b]	(2.12)
HOTTIME	2.00	(1.58)	0.60	(0.31)	3.01[b]	(2.15)
No. of obs.	157		72		85	
Adjusted R^2	0.16		0.18		0.19	
F statistic	3.11		2.22		2.50	
Sig. level	<0.001		0.02		0.01	

Table 9 Long-run BHARs to post-spinoff parent/offspring combined firms, parents, and offspring

This table reports long-run buy-and-hold abnormal returns (BHARs) for 129 European post-spinoff parent/offspring combined firms, 129 parents and 142 offspring in the period between January 1987 and December 2002. Panel A reports size- and book-to-market-adjusted BHARs to post-spinoff parent/offspring combined firms. Panel B reports size- and book-to-market-adjusted BHARs to post-spinoff parents. Panel C reports size- and book-to-market-adjusted BHARs to offspring. Panel D reports industry- and size-adjusted BHARs to post-spinoff parent/offspring combined firms. Panel E reports industry- and size-adjusted BHARs to post-spinoff parents. Panel F reports industry- and size-adjusted BHARs to offspring. The reported t-statistic is adjusted for cross-sectional dependence (SC_t and HSC_t are based on Jegadeesh and Karceski, 2004; LBT_t is based on Lyon et al., 1999; MS_t is based on Mitchell and Stafford, 2000). The benchmark for size- and book-to-market-adjusted BHARs is the returns to a group of firms selected based on the closeness of market capitalizations and book-to-market ratios. The benchmark for industry- and size-adjusted BHARs is the returns to a 2-digit SIC industry peer selected based on the closeness of market capitalisation. The significance of the mean (median) is tested by the t-statistic (Wilcoxon test z-statistic). The binomial test is used to test the significance of the percentage of sample firms with positive abnormal announcement returns, with the null hypothesis that the proportion of positive abnormal announcement returns is 50%. [b] and [c] indicate the significance level at 5% and 10%, respectively.

Interval	Mean	SC_t	HSC_t	LBT_t	MS_t	Median	z-stat.	% (+)
Panel A: Size- and book-to-market adjusted BHARs for post-spinoff combined firms (N=99)								
(0, +1 year)	-0.01	-0.64	-0.75	-0.42	-0.47	-0.001	-0.58	48.84
(0, +2 year)	0.14	1.33	1.35	1.48	1.31	-0.04	0.76	49.61
(0, +3 year)	0.06	0.59	0.71	0.65	0.59	-0.03	-0.19	48.06
Panel B: Size- and book-to-market adjusted BHARs for post-spinoff parents (N=99)								
(0, +1 year)	-0.03	-0.48	-0.61	-0.30	-0.33	-0.06	-1.33	44.19
(0, +2 year)	0.14	0.99	0.78	0.97	0.36	-0.08	-0.44	44.19
(0, +3 year)	0.01	0.11	0.23	0.09	0.10	-0.09	-1.38	43.41
Panel C: Size- and book-to-market adjusted BHARs for offspring (N=107)								
(0, +1 year)	0.09	1.10	1.36	0.79	0.82	0.005	0.45	50.70
(0, +2 year)	0.25	1.79[c]	2.09[b]	1.49	0.96	0.06	1.57	56.34
(0, +3 year)	0.29	1.22	1.41	0.50	1.74[c]	0.04	1.46	52.11
Panel D: Industry- and size-adjusted BHARs for post-spinoff combined firms (N=99)								
(0, +1 year)	-0.02	-0.09	-0.11	-0.06	-0.08	-0.004	-0.48	48.84
(0, +2 year)	0.07	0.97	1.23	1.12	1.03	-0.06	-0.16	48.06
(0, +3 year)	0.02	0.48	0.57	0.49	0.57	-0.07	-0.27	45.74
Panel E: Industry- and size-adjusted BHARs for post-spinoff parents (N=99)								
(0, +1 year)	0.01	0.09	0.13	0.06	0.13	-0.01	-0.07	48.84
(0, +2 year)	0.13	0.89	1.06	0.92	0.65	0.003	-0.07	51.16
(0, +3 year)	0.07	0.41	0.45	0.41	0.50	-0.01	-0.10	48.84
Panel F: Industry- and size-adjusted BHARs for offspring (N=107)								
(0, +1 year)	0.05	0.62	0.86	0.48	0.79	0.04	0.40	52.11
(0, +2 year)	0.16	1.10	1.64[c]	0.97	0.96	0.05	0.99	54.23
(0, +3 year)	0.22	1.21	1.63	1.28	1.67[c]	0.11	1.39	54.93

Table 10 Comparisons of performance and ownership structure between family and non-family firms

This table compares the long-run spinoff performance and equity ownership between family and non-family firms. Panel A reports the comparison for spinoff announcement effects. Panel B reports the comparison for long-run stock performance of post-spinoff parents. Panel C reports the comparison for long-run stock performance of offspring. Panel D reports the comparison for changes of equity ownership of a firm's largest shareholders around the spinoff. For the difference in variables between sub-groups, t-statistic (mean) or Wilcoxon test z-statistic (median) is reported in parentheses in the columns of Group Difference (1-2). [a], [b], [c] indicates the significance level at 1%, 5% and 10% level, respectively.

	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Panel A: Spinoff announcement returns to pre-spinoff parents						
	Family firms (1)		**Non-family firms (2)**		**Group difference (1 -2)**	
3-day CARs	7.22	3.24	3.58	1.97	3.65[c]	1.27[b]
No. of obs.		54		103	(1.93)	(2.49)
Panel B: Long-run performance of post-spinoff parents						
	Family firms (1)		**Non-family firms (2)**		**Group difference (1 -2)**	
3-year size/BEME BHARs	-0.36	-0.27	0.20	0.02	-0.56[a]	-0.20[a]
No. of obs.		42		87	(-2.78)	(-2.61)
3-year ind/size BHARs	-0.33	-0.36	0.26	0.14	-0.59[a]	-0.50[a]
No. of obs.		42		87	(-2.62)	(-2.83)
Panel C: Long-run performance of offspring						
	Family firms (1)		**Non-family firms (2)**		**Group difference (1 -2)**	
3-year size/BEME BHARs	0.01	-0.12	0.38	0.32	-0.37	-0.44[b]
No. of obs.		46		96	(-1.26)	(-2.49)
3-year ind/size BHARs	0.05	0.00	0.27	0.24	-0.15	-0.23
No. of obs.		46		96	(-0.50)	(-1.25)
Panel D: Equity ownership of a firm's largest blockholder						
	Pre-spinoff (1)		**Post-spinoff (2)**		**Group difference (1 -2)**	
Family-controlled parents	28.46	25.05	27.53	21.82	0.93	3.23
No. of obs.		54		54	(0.78)	(0.23)
Non-family-controlled parents	19.63	13.30	22.31	18.30	-2.68[b]	-6.00[a]
No. of obs.		97		97	(-2.37)	(-2.69)
Family-controlled offspring	28.46	25.05	24.96	20.50	2.07	4.50
No. of obs.		54		54	(1.14)	(0.17)
Non-family controlled offspring	19.63	13.30	21.63	16.30	-1.53	-3.30
No. of obs.		109		109	(-1.27)	(-0.77)

Table 11 Regression of the long-run spinoff performance on changes of corporate governance

Regression coefficients for the long-run spinoff performance on changes of corporate governance around spinoffs. ΔBODIND = the difference in BODIND between a post-spinoff firm and its pre-spinoff parent. ΔBODOWN = the difference in BODOWN[2] between a post-spinoff firm and its pre-spinoff parent. ΔINSTOWN = the difference in INSTOWN[3] between a post-spinoff firm and its pre-spinoff parent. ΔLog(1+ANACOV) = the difference in Log(1+ANACOV[4]) between a post-spinoff firm and its pre-spinoff parent. ACQBID =1 when a post-spinoff firm receives a takeover bid over the three-year post-spinoff period, = 0 otherwise. INDCOMP = the sum of squared market shares of all firms in a firm's two-digit SIC industry. ANTIDIR = an index to measure the strength of a country's legal system to protect minority shareholders developed by La Porta et al. (1998). FAMILY = 1 when a firm's largest shareholder is a family shareholder and the family shareholder's equity holding is more than 10%, = 0 otherwise. FOCUS = 1 when parent and offspring operate in different industries at the two-digit SIC level, = 0 otherwise. INFASYM = dispersion in market-adjusted daily stock returns to a parent in the 250-day trading period prior to the spinoff announcement. GROWTH = parent's MTBV of assets ratio at the end of month prior to spinoff announcement date. ROA = parent's EBITDA divided by its total assets. RELSIZ = market value of an offspring (market values of all offspring when multiple subsidiaries are spun off) relative to the sum of the market values of the parent and (all) offspring on the spinoff completion date. HOTTIME = 1 when a spinoff is announced between 1996 and 2001, = 0 otherwise. White heteroskedasticity-consistent t-statistic is reported in parentheses. [a], [b], [c] indicates the significance at the 1%, 5%, and 10% level, respectively.

Variable	Size/BEME BHARs to parents (1)		Ind/siz BHARs to parents (2)		Size/BEME BHARs to offspring (3)		Ind/siz BHARs to offspring (4)	
Panel A: Full sample								
Intercept	0.33	(0.87)	0.33	(0.71)	1.08	(1.45)	1.09[c]	(1.97)
ΔBODIND	3.18[b]	(2.06)	2.26	(1.34)	2.09[a]	(3.84)	1.45[a]	(2.65)
ΔBODOWN	0.01	(0.83)	0.02	(1.28)	0.01	(1.27)	0.01	(1.35)
ΔINSTOWN	0.00	(0.56)	0.01	(0.83)	0.01	(1.44)	0.00	(0.52)
ΔLog(1+ANACOV)	0.40	(1.08)	0.59	(1.43)	-0.26	(-0.72)	0.08	(0.26)
ACQBID	0.77[b]	(2.52)	0.67[b]	(2.01)	0.56[c]	(1.81)	0.65[b]	(1.99)
INDCOMP	-0.32	(-0.97)	-0.95[b]	(-1.99)	-0.19	(-0.48)	-0.09	(-0.21)
ANTIDIR	-0.08	(-1.12)	-0.09	(-1.10)	-0.10	(-0.98)	-0.07	(-0.84)
FAMILY	-0.44[b]	(-2.48)	-0.67[a]	(-3.42)	-0.20	(-0.67)	0.05	(0.16)
FOCUS	0.04	(0.24)	0.38[c]	(1.83)	-0.69[b]	(-2.22)	-0.44	(-1.45)
INFASYM	-4.63	(-0.75)	0.13	(0.02)	4.78	(0.59)	4.13	(0.47)
GROWTH	0.04[c]	(1.75)	0.04[b]	(2.56)				
ROA	-0.56	(-0.71)	-1.79[a]	(-2.63)				
RELSIZ	0.48	(0.91)	1.12[c]	(1.96)	0.07	(0.15)	-0.50	(-1.07)
HOTTIME	-0.11	(0.55)	-0.20	(-0.86)	-0.31	(-0.65)	-0.48	(-1.08)
No. of obs.	127		127		138		138	
Adjusted R^2	0.12		0.12		0.08		0.03	
F statistic	2.27		2.22		2.00		1.37	
Sig. level	0.01		0.01		0.03		0.19	

Table 11 (Continued)

Variable	Size/BEME BHARs to parents (1)		Ind/siz BHARs to parents (2)		Size/BEME BHARs to offspring (3)		Ind/siz BHARs to offspring (4)	
Panel B: UK sample								
Intercept	-0.13	(-0.09)	-0.05	(0.71)	0.68	(1.84)	1.16[a]	(2.72)
ΔBODIND	2.57	(1.05)	1.63	(0.66)	1.75[a]	(2.00)	1.93[c]	(1.93)
ΔBODOWN	0.02	(0.73)	0.02	(0.93)	0.00	(0.47)	0.01	(0.59)
ΔINSTOWN	0.00	(-0.22)	-0.01	(-0.55)	0.01	(1.46)	0.00	(0.29)
ΔLog(1+ANACOV)	0.91	(1.04)	0.48	(0.53)	-0.01	(-0.04)	0.60	(1.54)
ACQBID	1.08[b]	(2.04)	0.93[c]	(1.66)	0.50[b]	(2.16)	0.53[c]	(1.81)
INDCOMP	0.17	(0.28)	-0.54	(-0.86)	-1.18[a]	(-4.62)	-1.27[a]	(-3.55)
FAMILY	-0.28	(-0.91)	-1.00[b]	(-2.51)	-0.35	(-1.46)	-0.29	(-0.84)
FOCUS	0.08	(0.25)	0.58	(1.54)	-0.31	(-0.87)	-0.16	(-0.46)
INFASYM	-8.65	(-1.15)	-12.20	(-1.62)	-3.72	(-0.90)	-9.69	(-1.30)
GROWTH	0.01	(0.42)	0.01	(0.39)				
ROA	-1.60	(-1.08)	-2.51[c]	(-1.73)				
RELSIZ	0.64	(0.42)	1.85	(1.08)	-0.35	(-0.49)	-1.09	(-1.17)
HOTTIME	0.21	(0.71)	-0.04	(-0.10)	0.12	(0.41)	-0.12	(-0.37)
No. of obs.	62		62		66		66	
Adjusted R^2	0.04		0.08		0.19		0.11	
F statistic	1.19		1.39		2.36		1.74	
Sig. level	0.31		0.20		0.02		0.09	
Panel C: Non-UK Sample								
Intercept	-0.69	(-1.17)	-0.13	(-0.29)	0.84	(0.77)	0.35	(0.54)
ΔBODIND	2.00	(1.42)	2.57	(1.05)	2.33[a]	(2.73)	1.37[c]	(1.68)
ΔBODOWN	0.00	(0.35)	0.02	(0.73)	0.02	(1.09)	0.02	(1.14)
ΔINSTOWN	0.01	(0.65)	0.00	(-0.22)	0.01	(0.33)	0.01	(0.54)
ΔLog(1+ANACOV)	0.13	(0.35)	0.91	(1.43)	-0.24	(-0.60)	-0.11	(-0.33)
ACQBID	0.24	(0.77)	1.08[b]	(2.04)	0.51	(0.99)	0.44	(0.94)
INDCOMP	-1.27[b]	(-2.16)	0.17	(0.28)	0.27	(0.51)	0.23	(0.55)
FAMILY	-0.47[c]	(-1.97)	-0.28	(-0.91)	-0.20	(-0.57)	0.19	(0.63)
FOCUS	0.024	(0.92)	0.08	(0.25)	-0.85[c]	(-1.92)	-0.46	(-1.16)
INFASYM	29.09[b]	(2.35)	-8.65	(-1.15)	10.54	(0.47)	30.40	(1.45)
GROWTH	0.23[a]	(2.90)	0.01	(0.42)				
ROA	-0.21	(-0.19)	-1.60	(-1.08)				
RELSIZ	0.79	(1.67)	0.64	(0.42)	0.19	(0.31)	-0.56	(-0.94)
HOTTIME	-0.18	(-0.58)	0.21	(0.71)	-0.65	(-0.70)	-0.70	(-0.91)
No. of obs.	65		65		74		74	
Adjusted R^2	0.11		0.04		0.01		-0.03	
F statistic	1.63		1.19		1.05		0.81	
Sig. level	0.11		0.31		0.42		0.63	