

Corporate divestiture and performance: an institutional view

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Abstract In this study, we investigate how the institutional environment affects shareholders' reaction to a firm's announcement of divestitures. Traditionally, divestiture research has adhered to a financial economics perspective, in which shareholders anticipate certain economic outcomes from corporate divestitures and react accordingly. However, this research has not delivered a distinct understanding of the performance effects of corporate divestitures. To structure and integrate previous work, we apply a neo-institutional perspective of the stock market. We argue that at certain times, the institutional support for corporate diversification is relatively low. During these periods, there is a high rate of divestitures. The high divestiture activity legitimizes this corporate action and leads to a positive reaction of the stock market to new divestiture announcements. This means that individual evaluations of the possible performance outcomes of divestments are not the only factor determining the stock market reaction to a corporate divestiture announcement. Rather, investors might consider the perceived institutionalization of this corporate action when making their purchasing decisions. Using a meta-analytical technique, we find support for our prediction that different performance effects of divestitures, as revealed by previous studies, can be attributed to different conditions of the macro-economic environment. We discuss the implications of this result for research and management practice.

Keywords Divestitures · Institutional theory · Performance · Meta-analysis

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1 Introduction

Restructuring and divestitures have become indispensable elements of corporate strategy for many firms (Kolev 2016). In its 2016 Global Corporate Divestment Study, Ernst and Young reports that nearly half the firms surveyed are planning a divestment in the next 2 years and that another 46% are considering the possibility (Ernst and Young 2016). The term *divestiture* (or divestment) stands for a number of unbundling operations by which firms adjust their ownership structures and reduce their business portfolio scope (Brauer and Wiersema 2012; Moschieri and Mair 2008), most prominently through sell-offs, spin-offs, and equity carve-outs (Brauer 2006; Mulherin and Boone 2000). Divestitures can increase a firm's strength by changing its asset structure and resource allocation patterns. It can be a major factor in firms' achievement of global competitiveness (Kavadiis and Castañer 2015; Zschoche 2016). The literature on divestments has delivered various insights into their antecedents (e.g., Berry 2013; Johnson 1996; Markides 1992) and processes (e.g., Bergh and Lim 2008; Gopinath and Becker 2000; Moschieri 2011).

Studies that focus on financial considerations, however, have produced inconclusive findings on the performance consequences of divestments (Lee and Madhavan 2010). A considerable number of divestiture studies have investigated the short-term stock market reaction to divestiture announcements by using event study methodology (e.g., Berger and Ofek 1999; Jain 1985; Lang et al. 1995; Miles and Rosenfeld 1983; Slovin et al. 1995; Wang 2010). The majority of these studies report positive stock market effects around the announcement date of the divestiture decision. Other studies, however, observe no or negative stock market reactions to divestment announcements (e.g., Schill and Zhou 2001; Wright and Ferris 1997). Hence, we know fairly little about the stock market performance of divestitures, because they could plausibly lead to any outcome (Denning 1988).

These inconsistencies in the findings on divestment outcomes stem from a financial economics perspective of the stock market based on the efficient market hypothesis. It suggests that the price of a financial asset represents the best estimate of its value because it incorporates all of the publicly available information about future returns from that asset (Fama 1976; Jensen 1978). In this view, shareholders anticipate the potential economic consequences of an announced corporate action such as divestiture and voice this anticipation through their buying and selling decisions (Bergh and Gibbons 2011). However, these approaches fail to account for the exposure of financial markets to macro-social, historical, and organizational influences (Abolafia 2010; Dorobantu et al. 2017b; Ozcan and Overby 2008). Specifically, processes of institutionalization, whereby corporate actions, structures, policies, and practices become legitimate, influence shareholders' stock market reactions. These processes can occur through forms of isomorphism (DiMaggio and Powell 1983) and lead to the establishment of prevailing institutional logics, defined as widely held but historically variant sets of assumptions about what constitutes appropriate organizational behavior (Friedland and Alford 1991; Scott 2001). Past studies have not considered the institutional perspective of the stock market when analyzing the market reaction to divestiture announcements (Flickinger 2009).

This study's goal is to shed light on the inconsistent evidence regarding the performance outcomes of divestitures by applying an institutional perspective to divestiture announcements. In doing so, we contribute to current knowledge and literature on divestitures. On the theoretical side, we integrate previous research by applying a novel perspective that explains why some divestitures perform better than others. We argue that divestitures are socially embedded events and that the stock market reaction to these events depends on the institutional logics that prevail in the business environment. This perspective underscores the importance of a firm's macro-economic environment to the financial outcomes of divestitures. On the empirical side, we use a meta-analytic approach that allows us to reinvestigate results from past studies and integrate existing evidence.

The remainder of the paper is organized as follows. First, we briefly review the extant findings on the performance consequences of divestitures. Second, we develop theoretical arguments leading up to our hypothesis about divestiture performance outcomes. This is followed by a description of our meta-analytic method and the sample of studies included in our meta-analysis. We then present our results. The paper closes with a discussion of the theoretical and practical implications of our findings and of the study's limitations.

2 Divestiture and performance

Divestitures have been identified by past research as important strategic actions (e.g., Kolev 2016). Recent studies focus on a number of topics surrounding divestitures, such as the antecedents of corporate divestitures (e.g., Kolev 2016), divestiture strategies (e.g., Bergh and Sharp 2015; Blake and Moschieri 2017; Brauer et al. 2017; Brauer and Wiersema 2012; Feldman 2016), and the relationship of divestitures to corporate entrepreneurship (e.g., Moschieri and Mair 2017) and firm ownership (Feldman et al. 2016). However, despite this growing literature on divestitures, no consensus has been reached on whether post-divestiture firm performance is positive or negative (Lee and Madhavan 2010).

Many studies that assess divestiture performance in terms of stock market reactions (cumulative abnormal returns) and that, assuming capital market efficiency, focus on the present value of future income streams (Fama 1976; Jensen 1978) find that divestment announcements have positive effects on performance (e.g., Gertner et al. 2002; Lang et al. 1995; Markides 1992). A number of theoretical explanations have been proposed for this result.

First, the refocusing hypothesis views the parent firm's increased focus as a central determinant of the stock market reaction to divestiture announcements (e.g., Berger and Ofek 1995; Comment and Jarrell 1995; Daley et al. 1997; Hoskisson and Turk 1990; John and Ofek 1995). Capital markets receive focus-increasing divestitures positively because they lead to improvements in investment efficiency by reducing the possibilities for distorted investment allocations within the firm (Ahn and Denis 2004; Gertner et al. 2002; McNeil and Moore 2005). Furthermore, divestiture scholars have suggested that the divestiture of unrelated units can lead to improved management quality (John and Ofek 1995; Schipper and Smith 1983).

While managers may be skilled at managing the core businesses, they may be less suited for the management of non-core assets (Daley et al. 1997). Divestitures of unrelated units redirect a firm towards its basic businesses (Johnson et al. 1996) and therefore alleviate diminishing returns to management when these diminishing returns are a consequence of the large number and diversity of businesses under one management (Schipper and Smith 1983).

Second, Lang et al. (1995) proposed what they call a financing hypothesis, arguing that divestitures can be a financing mechanism when access to the capital market is limited or when alternative sources of financing are too expensive. In line with previous findings (e.g., Asquith et al. 1994; Duhaime and Grant 1984; Shleifer and Vishny 1992), Lang et al. (1995) showed that sell-offs are often undertaken by firms experiencing financial distress. While sell-offs cannot completely remedy such distress, they do tend to improve the selling firm's situation (Montgomery and Thomas 1988), for example when the funds gained through selling assets are used to repay debt (Jain 1985).

Third, Krishnaswami and Subramaniam (1999) and Schipper and Smith (1986) have investigated how the increased market monitoring that results from divestitures reduces the information asymmetry between an asset's managers and shareholders. Krishnaswami and Subramaniam (1999) suggested in their information hypothesis that after a spin-off, bidders are better able to value the separate entities and that therefore the standard adverse selection problem that arises under information asymmetry is diminished.

Other studies, however, observe no or negative stock market reactions to divestment announcements (e.g., Schill and Zhou 2001; Wright and Ferris 1997). One theoretical explanation for these findings could be that divestiture signals that management perceives the firm as having poor liquidity or a weak outlook. In this view, divestiture is an effort to fend off financial distress and potential bankruptcy.

To shed light on this inconsistent evidence regarding the performance outcomes of divestitures, we apply an institutional perspective of the stock market to divestiture announcements. We develop this idea in the following section.

3 An institutional perspective on divestitures and performance

Institutional theory has gained increasing attention thanks to research that emphasizes the role of institutions in the development of organizations (DiMaggio and Powell 1983; Tolbert and Zucker 1983). Several researchers have supported the notion that strategies are legitimated by institutional forces (e.g., Blevins et al. 2016; Dacin 1997; Fligstein 1991; Haunschild 1993). From a (neo)institutional perspective, organizational practices gain legitimacy through their embeddedness within the institutional environment and—associated with this gain in legitimacy—through their prevalence in a population.

The embeddedness of an action within the socioeconomic environment of a firm is a decisive factor that determines whether a corporate action is perceived as legitimate (Cyert and March 1963; DiMaggio and Powell 1983). Changes in firms' institutional environments can have a strong influence on the legitimacy of

corporate actions (e.g., Blevins et al. 2016; Jung et al. 2015; Muscio et al. 2016). For example, a change of paradigm with regard to divestitures occurred during the 1980s, when the conglomerate firm—at the beginning of this decade perhaps the dominant corporate form in the United States (Prahalad and Bettis 1986) and in many other industrialized market economies (Daems 1978)—not only decreased immensely in prevalence, but in fact became deinstitutionalized (Davis et al. 1994). Nicolai and Thomas (2006) document a similar pattern for Germany, Sudarsanam (2003) for the European market, and Chi-Nien and Xiaowei (2008) for emerging markets. As firms often divest unrelated businesses when they want to abandon the conglomerate form (Brauer 2006; Kolev 2016), this change in paradigm also affected the frequency and legitimacy of divestitures: the more firms chose to leave the conglomerate form, the more common divestitures became. The following changes in the sources of legitimacy (Scott 2001) illustrate this paradigm change.

First, there is mixed evidence on whether high degrees of firm diversification lead to superior performance (Davis et al. 1994). On the one hand, diversification decreases the risk of failure; on the other hand, Rumelt (1982) suggested that of all diversification strategies, the unrelated conglomerate strategy is on average the lowest-performing. Studies considering the possible existence of a conglomerate discount suggest that the sum of the potential stock market value of the individual parts of a conglomerate is substantially more than the actual stock market value of the whole (LeBaron and Speidell 1987). These findings have negatively influenced the image of conglomerates and therefore challenged their pragmatic or exchange legitimacy in the eyes of shareholders, who support organizational practices based on their expected value (Suchman 1995).

Moreover, a considerable body of literature has questioned the normative legitimacy of conglomerates by viewing diversification in light of management incentives to over-diversify and to build empires (Tosi and Gomez-Mejia 1989; Villalonga and McGahan 2005). This view of diversification is especially accurate if governance mechanisms within a firm are too weak to restrain such behavior (Bethel and Liebeskind 1993; Jensen 1986). Hoskisson, Johnson, and Moesel (1994) suggested that managers may make significant mistakes in pursuing unrelated diversification. Similarly, they may follow too many related diversification avenues simultaneously, creating portfolios with too much diversification (Markides 1992; Shleifer and Vishny 1991; Williams et al. 1988). As diversification expands, firms emphasize financial control over strategic control because information becomes more difficult to process (Hill and Hoskisson 1987). This loss of strategic control may, in turn, lead to poor strategy formulation in other areas, causing performance difficulties (Hoskisson and Hitt 1988). Restructuring and increased divestiture activities then become necessary to solve the performance problems.

In summary, there are times when the benefits of diversification are valued more highly than the potential downsides. At other times, diversification as a corporate strategy is perceived as less legitimate in the business environment (Kirchmaier 2003). The different degrees of legitimacy of diversification during different periods are also associated with a different prevalence of divestiture. Like mergers and acquisitions (M&A), which often occur in waves (Brauer and Wiersema 2012; McNamara et al. 2008), divestments appear to cumulate in certain time intervals

(e.g., Mulherin and Boone 2000; Ravenscraft and Scherer 1987; Sudarsanam 2003). For example, the most recent divestiture waves in globalized markets occurred as responses to the preceding waves of mergers with high degrees of often unrelated diversification from the beginning to the second half of the 1970s, during the mid-1980s, and from the early 1990s to the mid-2000s. Although the theoretical reasoning behind the waves draws on all of the abovementioned arguments, their main institutional drivers differ slightly. For example, the divestiture wave of the 1970s was strongly related to economic slowdown in the post-oil crisis period and the associated lack of trust in the profitability of unrelated diversification (e.g., Sudarsanam 2003). The divestiture wave of the 1980s was highly contingent on legal and policy changes with regard to corporate diversification and the associated implications for the regulative legitimacy of divestitures (e.g., Davis et al. 1994). The divestiture wave of the 1990s, in contrast, drew strongly on the logics of core competencies as a source of competitive advantage (e.g., Sudarsanam 2003).

This change in the prevalence of divestitures has an additional effect on their legitimacy. As the literature has shown, a certain practice (such as divestitures) becomes progressively institutionalized or taken for granted as more firms adopt that practice (Chaves 1996; Davis and Greve 1997; Tolbert and Zucker 1983). Through an iterative isomorphic process, firms imitate other firms' successful strategies under conditions of uncertainty (Cyert and March 1963; DiMaggio and Powell 1983) until a cognitive consensus in an organizational field is reached about what strategies will lead to success (Porac et al. 1989; Reger and Huff 1993).

When examining the performance outcomes of certain corporate actions, Zajac and Westphal (2004) found that the stock market's reaction to the announcement of a practice is sensitive to the degree of its institutionalization or perceived legitimacy. This finding is in line with past results from behavioral finance research, showing that investors often depart from economic conceptions of rationality and instead are led by cognitive biases and other social dynamics (e.g., Dorobantu et al. 2017a; Hirshleifer et al. 2006). Stock market participants' evaluation of the announcement of a divestiture will therefore depend on the perceived legitimacy and thus the prevalence of such strategic actions in a firm's socioeconomic environment. Therefore, we conclude that in times when corporate diversification is perceived as less legitimate, more divestiture activities are executed. As a result, the announcement of corporate divestitures during these times will lead to positive reactions from the stock market.

Hypothesis During a period of high divestiture activity, the stock market reaction to the announcement of divestitures is higher than during low-activity periods.

4 Empirical analysis

To test our hypothesis, we use a meta-analytical approach. Meta-analysis is a form of survey research in which empirical research reports, rather than people, are surveyed (Lipsey and Wilson 2001). A sample of research reports is collected and each study is "interviewed" by a coder who transcribes the appropriate information

about its characteristics and quantitative findings via a coding form. The resulting data are then analyzed using special statistical techniques to investigate findings in the selected set of studies. Hence, the purpose of meta-analysis is to conduct a structured and quantified analysis of a theorized relationship in a body of empirical literature.

To identify studies for potential inclusion in our meta-analysis, we conducted a systematic search aiming to locate all relevant and usable studies containing information on the stock market's reaction to divestiture announcements. Our approach to locating and selecting studies for inclusion in our sample reflects the approach of other recent meta-analyses (e.g., Kolev 2016; Meier et al. 2016). To ensure thoroughness of coverage, four phases of data collection for the purpose of identifying studies were used, following the standard meta-analytic procedures described by Hedges and Olkin (1985) and Hunter and Schmidt (1990): (1) A search of relevant computerized databases for published studies (written in either English or German) using an extensive series of keyword string searches that broadly covered the relevant domain. The list of keywords was developed by both authors jointly based on experience in M&A research and a broad review of the literature in the field of divestitures. We allowed for variations in keyword endings by adding an asterisk. We list our search strings in Table 1. The digital databases searched were ABI/INFORM, EBSCO, EconLit, JSTOR, Science Direct, and ProQuest. (2) Manual searches in relevant journals that are not included in any of the databases but regularly publish papers on M&A and divestitures. The decision about which journals to search manually was made by both authors jointly based on the Journal 3 Listing of Journals by the German Academic Association for Business Research. Table 1 also shows the manually searched journals. (3) An examination of the reference sections of articles that had already been retrieved. (4) A search for unpublished work on the Social Science Research Network (SSRN). We also contacted prominent researchers in the field to ask for any unpublished data. Meta-analyses that do not include unpublished studies are often accused of harboring a "file-drawer" problem, thereby causing an upward bias in the results (Rosenthal 1979). Together, these four search phases resulted in an initially located sample of 123 studies.¹

Following Geyskens et al. (2009), who suggest that the choice of an effect size metric is one of the most important decisions in conducting a meta-analysis, we based our decision about what effect size to use on the information available in our sample of studies. Using this information and referring to Lipsey and Wilson (2001) as a guide, we chose a meta-analytic effect size that relies on proportions to calculate effect sizes. Event studies that analyze abnormal returns to the announcement of divestitures often provide the percentage of positive abnormal returns in the sample. This measure represents the proportion of firms whose announcement of a divestiture produced a positive stock market reaction. This decision did not allow us to use many of the procedures associated with the

¹ Although we searched for literature through the end of 2013, the samples located did not go beyond 2007. This also means that the years 2008 and 2009, during which the financial crisis reduced the M&A volume on a worldwide basis, are not included in the analysis.

Table 1 Keywords and manually searched journals

Keyword searches	Manually searched journals
Divestiture	Credit and Capital Markets
Spinoff, spin-off, spin off	European Accounting Review
Selloff, sell-off, sell off	European Finance Review
Asset sale	European Journal of Industrial Relations
Equity carveout, equity carve-out, equity carve Out	Financial Markets and Portfolio Management IIE Transactions
Refocusing	International Journal of Finance and Economics
Restructuring	Journal of Applied Corporate Finance
Market reaction	Journal of Behavioral Economics
Announcement	Journal of Corporate Accounting & Finance
Market valuation	Journal of Corporate Finance
Takeover	Journal of Financial Intermediation
Excess return	Journal of International Financial Management & Accounting
Abnormal return	
Prediction error	Public Finance Analysis
Performance	Quarterly Review of Economics and Business Review of Business and Economic Research Scandinavian Journal of Management

Variations on the ending of all keywords (i.e. following them with *) were permitted to include plural forms

correction of artifacts suggested by Hunter and Schmidt (1990). Because of a lack of data provided in the original studies, however, choosing another effect size, such as the more commonly used correlation coefficient r or Cohen's d (Geyskens et al. 2009), either was impossible or would have led to the exclusion of many studies.

To be included in the final sample, the collected studies had to fulfill three criteria. First, to allow us to calculate the chosen effect size, studies had to report the stock market reaction to divestiture announcements as a percentage of positive abnormal returns or any other statistic that could be converted into this format. For all studies where results could not be converted readily, the authors were contacted and asked for the missing data. As not all authors were able or willing to report this information, this criterion led to the exclusion of 54 studies from the initial sample because the meta-analytic effect size could not be calculated without the missing information. Excluding such a large number of studies is not uncommon in meta-analyses, due to the data requirements of meta-analytic procedures (Hunter and Schmidt 1990). Second, the percentage of positive abnormal returns had to be reported for a relatively narrow window around the announcement date of the divestiture. The literature has shown that a short event window usually captures the significant effect of an event (Dann et al. 1977). Therefore, we excluded studies reporting results for windows beyond day 10 after the announcement date (Datta et al. 1992). This criterion reduced the sample by nine studies. Third, to fulfill the

meta-analysis prerequisite of statistical independence, only one effect size per subject sample was included (Hunter and Schmidt 1990; Lipsey and Wilson 2001). This led to the exclusion of another four studies that were based on identical samples.

Altogether, these exclusions resulted in a sample of 56 studies representing 70 observation samples and a total of 10,783 divestiture announcements.² Seventy-nine percent of our observation samples were from the US, and the remaining 21% were non-US samples, including German, European, and worldwide data. Because we had to rely on authors' descriptions of their samples, it is not possible to identify all of the countries included in our meta-analysis. All of the studies included in this meta-analysis are designated by an asterisk in the reference section. After the systematic literature search, we coded each study based on the explanatory variables that correspond to our hypothesis.

According to the years that samples from the primary studies encompassed, studies were classified as analyzing periods of either *high divestiture activity* or *low divestiture activity*. Using data from MergerstatReview on the yearly number of divestitures, we identified three periods in which the worldwide divestiture activity was significantly higher than during the remaining years. These three intervals of *high divestiture activity* are the beginning to the second half of the 1970s (1970–1977), the mid-1980s (1985–1986), and the early 1990s to the mid-2000s (1992–2007) (MergerstatReview 1997, 2007). Studies that built on samples outside these intervals were coded as *low divestiture activity*.

As in the sample of King et al. (2004) meta-analysis, only a few studies did not span at least some years of a period of high divestiture activity and some years of a low divestiture activity period. For this reason, coding was done according to the percentage of study years that fell within periods of high divestiture activity. Studies were coded “high activity period” when 70% or more of their study years fell within periods of high divestiture activity. Studies in which 30% or less of study years fell within a high activity period were coded “low activity period.” Studies that spanned both periods outside these parameters could not be assigned to either group and were therefore coded for non-inclusion in the analysis.

As a robustness check to our primary coding into periods of high and low divestiture activity, we also used an alternative time frame. In this case, we coded the studies according to whether their samples were collected before or after the year 1992. This year marks the beginning of the largest divestiture wave in our sample, with a much higher number of divestitures than the waves in the 1970s and 1980s. Although only 20% of the studies included in the meta-analysis were published after 1992, 66% of divestiture activity in our study stems from samples that include the post-1992 period. Primary studies in which the years of the sample spanned the year 1992 were coded for non-inclusion in this analysis. We obtained as

² The difference between the number of studies and the number of observations in the sample resulted from studies reporting more than one useable result. For example, some studies reported the percentage of positive abnormal returns separately for foreign and domestic divestitures (Borde et al. 1998). Given that there is no violation of meta-analysis' prerequisite of sample independence, both observations can be included in the analysis (Geyskens et al. 2009; Lee and Madhavan 2010).

variables *pre-1992* and *post-1992*, which serve as alternative measures for *low divestiture activity* and *high divestiture activity*, respectively.

To check for a possible publication bias, studies were also coded according to their publication status (published or working paper) and, for the published studies, the journal’s ranking. Furthermore, we coded studies according to the origin of their samples into US and non-US samples.

Calculations were conducted using Comprehensive Meta-Analysis Version 2.0 (Borenstein et al. 2005). This meta-analysis relies on a fixed effects model but adds the assumption that the variance beyond subject-level sampling error is systematic (Lipsey and Wilson 2001). This added assumption acts as the basis for moderator analysis. It postulates that the excess variance in effect size is not random but rather is associated with moderator variables that systematically distinguish studies with larger effect sizes from those with smaller effect sizes. All of the independent and exploratory variables were therefore entered into a moderator analysis following Hedges’ (1982) model analog to the analysis of variance. This model groups effect sizes into mutually exclusive categories and then tests homogeneity among the effect sizes within the categories and between them. The total homogeneity statistic Q is therefore divided into the part explained by the categorical variable (Q_B) and the residual pooled within groups part (Q_w).

Table 2 Results of the full sample and moderator analysis

Group	k observations	Point estimate	95% confidence interval	z value	Q value	Q- within	Q- between
Full sample	70	0.382	0.343–0.421	19.251***	235.119***		
Low activity period	17	0.357	0.271–0.444	8.108***	27.827*	49.197*	17.076***
High activity period	14	0.636	0.536–0.736	12.453***	21.370		

Explanation of headings: “k observations” indicates the number of samples. “Point Estimate” indicates the weighted mean effect size or point estimate for these observations, “z value” indicates the results of a z test assessing the significance of the point estimate. Z is calculated as $z = \frac{|\overline{ES}|}{SE_{\overline{ES}}}$ where $|\overline{ES}|$ is the absolute value of the mean effect size and $SE_{\overline{ES}}$ is the standard error of the mean effect size. The result is distributed as a standard normal variate (Lipsey and Wilson 2001). “Q value” indicates the Q-statistic testing for heterogeneity of the effect size distribution. The formula for Q is $Q = \sum w_i (ES_i - \overline{ES})^2$ where ES_i is the individual effect size, w_i is the weight for each effect size, and $i = 1, 2, 3$, etc. up to the number of effect sizes. “Q-Within” indicates the residual pooled within groups part of the Q-statistic. Q_w is calculated as $Q_w = \sum w_i (ES_i - \overline{ES}_j)^2$ ES_j is the weighted mean effect size for each group and $j = 1, 2, 3$, etc. up to the number of groups. “Q-Between” indicates the Q between groups and is calculated as $Q_B = \sum w_j \overline{ES}_j^2 - \frac{(\sum w_j \overline{ES}_j)^2}{\sum w_j}$ where w_j is the sum of the weights within each group

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

5 Results

The second line in Table 2 provides the results of an overall meta-analysis for all 70 observations. The logit point estimate of 0.382 finds that a population proportion of 59.4% (converted back into proportions) of divestiture announcements has a positive stock market reaction.³ This result is highly significant ($p < 0.001$). Further, the highly significant Q value ($p < 0.001$) indicates a heterogeneous distribution, suggesting that differences among effect sizes have a source other than subject-level sampling error and that therefore the observed effect sizes do not estimate a common population mean. When effect size distributions are discovered to be heterogeneous, further investigation is warranted to locate possible sources of heterogeneity (Lipsey and Wilson 2001).

The hypothesized effect was calculated using moderator analysis. Table 2 also displays these results. The point estimates of the two groups, *low activity period* and *high activity period*, are 0.357 and 0.636, lending support to our hypothesis that the stock market reaction to the announcement of divestitures is higher during periods of high divestiture activity than during periods of low activity. There is no overlap in the 95% confidence intervals of the groups, and both point estimates are highly significant at $p < 0.001$. The results from the Q-statistic support this finding, as the total between Q value (Q_B) suggests a significant between-groups effect.

In addition to this main analysis, we ran a robustness check using the largest divestiture wave, beginning in 1992. As shown in Table 3, the results of this analysis underscore our main findings. There is a visible difference in the point estimates for the two groups, *pre-1992* and *post-1992* (0.419 vs. 0.684), with no overlap in the confidence intervals and a significant between-groups Q value.

Table 4 shows the results of the meta-analysis for the publication bias moderator variables. Both the moderator “publication status” and “journal ranking” result in a significant between-groups effect, implying that the results reported in the primary studies differ systematically depending on whether they are published and on the ranking of the journal in which they are published. To further investigate this potential source of bias, a funnel-plot analysis following Duval and Tweedie (2000) was conducted. For this meta-analysis, the method confirms the presence of a slight publication bias by suggesting that 27 studies are missing. However, the imputed (corrected) point estimate of 0.56882 with a 95% confidence interval ranging from 0.560 to 0.578 shows only a small difference from our original estimate of 59.4%. Furthermore, a Fail-safe N (Rosenthal 1979) of 8287 suggests that 8287 studies with a null result would be necessary to make the findings of this study insignificant. Both outcomes validate the results of our meta-analysis and allow confidence that the effect, while possibly inflated by the exclusion of some studies that were not located, is nevertheless supported. We further confirmed this result by rerunning all our analyses for published studies only. We saw no significant changes in our results

³ The use of proportions as an effect size underestimates the size of the confidence interval around the mean effect size and overestimates the degree of heterogeneity across effect sizes (Lipsey and Wilson 2001). Therefore, a conversion of proportions to logits is recommended if variations around the mean proportion or between-study differences are important.

Table 3 Results of robustness test

Group	k observations	Point estimate	95% confidence interval	z value	Q value	Q-within	Q-between
Pre-1992	36	0.419	0.364–0.475	14.840***	80.937***	91.375***	10.305***
Post-1992	9	0.684	0.532–0.836	8.830***	10.438		

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 4 Results for publication Bias moderator analysis

Variable	Categories (k observations)	Point estimate	Q value	Q-between
Publication status	Published (62)	0.587***	199.848***	20.685***
	Working paper (8)	0.657***	14.588*	
Journal ranking	A (39)	0.482***	88.045***	49.276***
	B (8)	0.135***	33.388***	
	C (5)	0.248***	17.069**	
	Not ranked (10)	0.350***	12.069	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

and can therefore be confident that the results of our hypothesis testing are not biased by the presence of a publication bias.

As a robustness check concerning a possible influence of the nationality of the sample data, we reran all our analyses separately for US and non-US samples. Our results showed no changes, and therefore we can rule out any influence of the national origin of samples on our results. Furthermore, to ensure that our results are not driven purely by the large divestiture wave occurring after 1992, we reran our analysis on divestiture activity periods while excluding all studies whose samples fell into the post-1992 divestiture wave. Again our results remain the same, and we can therefore be confident that our results are not driven by the post-1992 samples. Finally, we modified the pre- and post-1992 robustness check by additionally splitting our sample at the years 1991 and 1993 to consider any possible lagged effects. This too led to no changes in our findings.

6 Discussion

This study analyzed the stock market reaction to divestiture announcements from an institutional perspective. In the spirit of organizational theory as exemplified by the work of Zajac and Westphal (2004) and Zuckerman (1999, 2000), this perspective introduces the concept of legitimacy to capital markets and analyzes how

organizational practices and policies are perceived by a capital market in which socio-organizational factors play a role. Using meta-analytic procedures, we were able to extend the present financially dominated understanding of divestiture-performance implications and offer a new rationale for investors' reactions to divestiture announcements. The study therefore contributes to knowledge of divestiture in various ways.

First, the results suggest in general that legitimacy reasons play an important role in influencing the market performance effects of divestitures. While a large number of studies investigate the event-based market reaction to divestiture announcements from a financial perspective (e.g., Berger and Ofek 1999; Jain 1985; Lang et al. 1995; Miles and Rosenfeld 1983; Slovin et al. 1995), they do not use an institutional perspective of the stock market to analyze this reaction. This study is therefore the first to focus on the performance outcomes of divestments from an institutional perspective. Our results suggest that legitimacy reasons have an effect on the stock market reaction to divestiture announcements.

Second, the study integrates via its theoretical and empirical approach previous studies that delivered mixed results on the performance outcomes of divestitures (Lee and Madhavan 2010). Both positive and negative outcomes of divestiture announcements can be explained theoretically and have been observed empirically (e.g., Schill and Zhou 2001; Wright and Ferris 1997). Therefore, it has been difficult to draw a definite conclusion on the performance outcomes of divestitures. We overcome this discrepancy by applying a perspective that acknowledges the legitimacy of a strategy announcement. We find that firms can indeed expect certain (positive or negative) outcomes of divestitures depending on the conditions of the macro-economic environment. That means that the financial outcomes of divestiture announcements differ across time periods.

Third, we add to past research on divestiture waves (e.g., Mulherin and Boone 2000; Ravenscraft and Scherer 1987; Sudarsanam 2003) by showing how institutional effects relate to the reoccurrence of wave patterns. Although in our multiple-wave approach it is difficult to pinpoint exactly what institutional drivers are at work in individual waves, we provide insights into the relationship between the increasing legitimacy of divestitures and their performance outcomes.

The results of this study have certain limitations. First, we cannot draw conclusions about the relationship between legitimacy-related and efficiency-driven investor reasoning. While our findings confirm the presence of institutional forces at work in the stock market, our results cannot rule out the presence of market learning, which could also lead to an improvement in the stock market reaction to divestiture announcements when firms grow more experienced in implementing this practice. Furthermore, markets could also learn when shareholders become more adept at evaluating the efficiency of firms' actions, especially when economic or regulatory conditions surrounding that action change. From our data and results, it is not possible to make a distinction between these two types of behavior, as they would require data on the private information of traders. Furthermore, it is generally difficult to make a clear distinction between market learning and legitimacy-related market reactions because the two concepts are not mutually exclusive. Even in the institutional perspective, early adopters, for example, can inject a learning impulse

into the capital market based on the observed success of a practice. This pattern reflects findings by Tolbert and Zucker (1983), who suggest that early adopters base their decisions on efficiency reasons while later adopters mostly see themselves as pressured by the legitimacy of practices, policies, and structures. In the context of our study, however, market learning does not offer a better explanation for an improvement in the stock market reaction to divestiture announcements because such reactions reoccur with each divestiture wave. Although previous studies have explained theoretically why M&A activities occur in waves (e.g., Stearns and Allan (1996) suggest both learning effects and mimicking in the institutional sense), previous research has not analyzed institutional effects across more than one wave.

Second, weaknesses associated with event-study methodology (McWilliams and Siegel 1997) are carried into the study. For example, event studies are often not capable of truly isolating the effect of an event from the confounding effects of other events. The present study, however, has attempted to eliminate this problem by including only studies with relatively short event windows. Additionally, an event could be anticipated or become publicly known through information leakages before the actual announcement takes place.

A third limitation arises from methodological issues related to meta-analysis. Like many other meta-analyses, this study could not include all available studies on the short-term market performance effects of divestitures because in a number of studies, the statistical information necessary for inclusion was missing. Further, problems of publication bias, which are inherent to meta-analytic research, also apply to this study. Our results confirmed the presence of a small publication bias and therefore a slight overestimation of the results. Finally, meta-analysis does not allow researchers to dig more deeply than the information provided by the authors of the original studies. For our study, this means that we often cannot clearly identify the country origin of divestiture samples, especially when the authors described them as “European” or “global” divestitures. In consequence, we do not distinguish between the dynamics affecting the legitimacy of divestitures in different countries, but rather view them in a global context. Although we acknowledge that this may introduce a bias towards US dynamics in our results, Nicolai and Thomas (2006), Sudarsanam (2003), and Chi-Nien and Xiaowei (2008) find similar dynamics for the German, European, and emerging markets, respectively. Furthermore, due to global financial markets, the activities of multinational corporations, the worldwide influence of strategy consulting firms, and the dominance of institutional shareholders, we believe it is reasonable to analyze the institutionalization of divestitures in a sample of studies that covers more than one country. The areas of future research that emerge from this limitation are not only a more detailed study of country-specific effects with regard to the legitimacy of divestitures but also a deeper analysis of the global effects of institutionalization that occur alongside the globalization of markets.

The managerial implications of this study derive from the introduction of the institutional perspective of the stock market. Regarding the performance implications of divestitures, managers should keep in mind that investors’ reactions do not represent efficiency rationales alone, but also include legitimacy considerations. The legitimacy effect on the stock market reaction is especially pronounced during times

of high divestiture activity. Where possible, managers should make use of this frequency effect as a method to increase the market performance of announced divestitures. Further, managers should be conscious of prevailing legitimacy perceptions when they assess the consistency of a practice or action with investors' views of appropriate organizational behavior. The results of this study suggest that the announcement of practices that are perceived to be legitimate leads to stock market appreciation. Therefore, managers need to be attentive to what investors currently perceive to be legitimate actions and formulate their announcements of corporate practices such as divestitures in a way that clearly embeds them within this institutional context.

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