Organizational Learning and Corporate Diversification Performance

Panayiotis C. Andreou, Cyprus University of Technology

& Durham University Business School

Christodoulos Louca, Cyprus University of Technology

& Durham University Business School

Andreas P. Petrou, Cyprus University of Technology

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Abstract

This study investigates the role of organizational learning on the valuation effects of corporate diversification. The empirical findings suggest that corporate diversification reduces shareholders' wealth. However, consistent with the absorptive capacity viewpoint of organizational learning, diversification performance depends on repetitive and accumulative experiences that relate to a firm's prior diversification activity and/or a firm's experience in operating in multiple-business segments. Specifically, single-business firms that diversify once demonstrate significant value reduction. In contrast, multi-business firms that diversify once do not demonstrate value reduction, while single/multi-business firms that diversify multiple times demonstrate material value creation. Findings also reveal that performance is conditional on the mode of diversification since internal growth diversification show higher valuation effects than diversifications through acquisitions. These findings contribute to the literature by affirming the importance of organizational learning, a cognitive and behavioral perspective, in explaining the valuation effect of corporate diversification.

Keywords: organizational learning; absorptive capacity; diversification; repetitive experience; accumulative experience; diversification discount; firm performance

1. Introduction

A considerable body of academic literature that examines the performance of corporate diversification finds that, on average, diversification destroys shareholder value, a finding known as the diversification discount (Berger and Ofek, 1995; Lang and Stulz, 1994). However, scholars pay much less attention to the cross sectional variance of corporate diversification performance. Identifying factors that make diversification successful for some firms but not for other is of great importance for managers, because, this insight provides clues on how to best implement a diversification program to enhance performance. This study proposes that one such factor is organizational learning. The motivation comes from prior evidence that establishes a positive relation between organizational learning and operating performance pertaining to strategic decisions, such as mergers, acquisitions, alliances, sell-offs, and spin-offs (Amburgey and Miner, 1992; Barkema and Vermeulen, 1998; Bergh and Lim, 2008).

This study develops and tests a theoretical model that draws on the absorptive capacity viewpoint to relate organizational learning to the valuation effects of corporate diversification. Specifically, an organization's ability to learn from strategic decisions arises from the existence of absorptive capacity, which develops when a firm repeats a specific corporate action and/or accumulates experience by operating in a certain environment (Bergh and Lim, 2008; Zahra and George, 2002). Past relevant experience enables the firm to recognize and explicitly codify valuable new knowledge into systems, routines, and procedures that guide future actions (Lane and Lubatkin, 1998; Mayer, Stadler, and Hautz, 2014). The absorptive capacity viewpoint also assumes that learning performance is greatest when the object of learning relates to past knowledge (Bergh and Lim, 2008; Cohen and Levinthal, 1990; Zahra and George, 2002), which indicates the relevance of resource

relatedness. Overall, organizational learning improves subsequent strategic, financial and operational decision making (Haleblian, Kim, and Rajagopalan, 2006; Mayer et al., 2014; Shaver, Mitchell, and Yeung, 1997), resulting in competitive advantage and higher firm performance (Hitt, Dacin, Levitas, Arregle, and Borza, 2000). Figure 1 shows the abovementioned theoretical perspective and the testable relations.

Figure 1 here.

To empirically investigate the relation between organizational learning and valuation effects of corporate diversification, however, one needs to recognize that firms often engage in a program of actions as a means of implementing their corporate strategy (Schipper and Thompson, 1983). Scholars suggest that corporate actions in a program influence each other, and therefore individual diversification events may not explain adequately the performance of corporate programs (Laamanen and Keil, 2008; Barkema and Schijven, 2008b; Shi and Prescott, 2011). In this respect, the experience from individual diversifications, including failed ones, create valuable learning for firms which can enhance the overall performance of a diversification program (Haleblian and Finkelstein, 1999; Muehlfeld, Sahib, and Witteloostuijn, 2012). To address this issue, this study uses business segment-level data, to develop corporate diversification profiles that capture different capacities of repetitive and accumulative organizational experiences as an indication of absorptive capacity. This study uses information throughout the entire period of investigation rather than information from each individual diversification activity separately, and avoids mixing together the impact of organizational learning capacity during the periods before and after a decision to diversify. Specifically, the study defines diversification profiles by classifying diversified firms into three categories, depending on both a firm's prior diversification activity and the firm's experience in operating in a multiple-business structure: (i) single-business firms that

diversify once (Single-Business-Once), (ii) multi-business firms that diversify once (Multi-Business-Once), and (iii) single/multi-business firms that diversify multiple times (Single/Multi-Business-Many). Single-Business-Once firms should bear no repetitive and accumulative experience resulting to the lowest organizational learning with respect to corporate diversification relative to both Multi-Business-Once and Single/Multi-Business-Many firms, and thus should demonstrate the lowest diversification performance. Single/Multi-Business-Many firms should display both repetitive and accumulative experience, resulting to the highest organizational learning, and thus, should demonstrate the highest diversification performance relative to the other two diversification profiles. Multi-Business-Once firms should demonstrate only accumulative experience resulting to in-between organizational learning relative to the other two profiles, and thus, should demonstrate higher corporate diversification performance in comparison to Single-Business-Once firms and lower corporate diversification performance in comparison to Single/Multi-Business-Many. Further the study assesses learning performance using the mode of diversification as an indicator of resource relatedness; internal growth versus acquisition. Firms that rely on internal growth to diversify utilize their own organizational resources, and therefore, are likely to benefit more from learning since they employ more similar processes, systems and organizational culture (Chatterjee, 1990) relative to acquisitions that don't share such organizational resource commonalities (Tanriverdi and Venkatraman, 2005; Xie and O'Neil, 2014). As a result, diversifications should demonstrate higher performance when firms diversify through internal growth than acquisitions.

This study contributes to the literature by affirming the importance of organizational learning, a cognitive and behavioral perspective, in explaining the valuation effect of corporate diversification. Early studies provide evidence that corporate diversification, on

average, destroys value (Berger and Ofek, 1995; Lang and Stulz, 1994; Hitt, Tihanyi, Miller, and Connelly, 2006; Martin and Sayrak, 2003). Instead, this study focuses on the cross sectional variance of diversification performance and provides evidence that a firm's diversification profile, which captures different degrees of repetitive and accumulative experience, affects value. These findings are important since they contribute to the literature that identifies antecedents of corporate diversification performance (Hitt, Hoskisson, and Ireland, 1994; Hitt, Hoskisson, and Kim, 1997; Tallman and Li, 1996; Qian, 2002; Riahi-Belkaoui and Picur, 1998). This study is one of the few to adopt an empirical construct that considers the firm's diversification program rather than individual acts of diversification by using profiles to capture repetitive and accumulative experience through-out the diversification program (Barkema and Schijven, 2008b; Muehlfeld et al., 2012; Shi and Prescott, 2011). In addition, the findings have practical implications since they provide managers with insights on how to utilize organizational learning to be successful in their corporate diversification programs.

Following this introduction, the next section describes the relevant literature. The third section develops the hypotheses, followed by a section outlining the research design. The fifth section presents the empirical results. The final section concludes the discussion.

2. Literature Review

2.1. Corporate diversification and firm value

Corporate diversification destroys shareholder wealth, a phenomenon that leads to the diversification discount puzzle (Berger and Ofek, 1995; Lang and Stulz, 1994). Many researchers attribute the presence of the diversification discount to agency problems either between managers and shareholders (e.g., Amihud and Lev, 1981; Bergh, Johnson and

DeWitt, 2008; Hoechle, Schmid, Walter, and Yermack, 2012; Jensen, 1986; Shleifer and Vishny, 1989; Singh, Nejadmalayeri, and Mathur, 2007) or between corporate headquarters and divisional managers (e.g., George and Kabirb, 2008; Scharfstein and Stein, 2000). Even though agency problems may explain the impact of corporate diversification on firm value, the more fundamental economic question of why firms diversify is still difficult to rationalize.

A different strand of the literature, however, challenges the existence of a discount (Campa and Kedia, 2002) and thus rationalizes the fact that many firms remain diversified or even decide to diversify further. These studies support that the discount is due to measurement errors (e.g., Villalonga, 2004; Whited, 2001), due to differences in firm risk from the book value bias of corporate debt (e.g., Mansi and Reeb, 2002), and due to failure to control for the endogenous nature of the diversification decision (e.g., Campa and Kedia, 2002; Graham, Lemmon, and Wolf, 2002; Santalo and Becerra, 2008).

These two strands of literature offer a compelling case as to whether or not corporate diversification destroys firm value on *average*. However, the literature pays much less attention to determinants that explain the cross-sectional variation of the diversification performance. Evidence of firm factors that make diversification successful for some firms but not for others is of great importance for market participants. Along this line, prior literature suggests that factors such as product diversification (Hitt et al., 1994; Hitt et al., 1997; Tallman and Li, 1996), firm size (Qian, 2002), and investment opportunities (Riahi-Belkaoui and Picur, 1998) may be useful in explaining the variation of diversification performance.

2.2. Organizational learning and the absorptive capacity viewpoint

The strategic management literature defines organizational learning as a systematic change in corporate behavior due to new knowledge the organization generates by sharing prior experience (Levitt and March, 1988; Miner, Bassoff, and Moorman, 2001). Under the absorptive capacity learning viewpoint, learning develops when firms are able to recognize the value of new knowledge, assimilate and apply knowledge to commercial ends (Cohen and Levinthal, 1990). Absorptive capacity is a function of prior organizational experience, and develops dynamically when new knowledge enters the organization (Cohen and Levinthal, 1990; Lane, Salk, and Lyles, 2001; Zahra and George, 2002). When such knowledge relates to what the organization already knows, learning performance is highest (Bergh and Lim, 2008; Cohen and Levinthal, 1990; Zahra and George, 2002). A firm may develop absorptive capacity in the course of repetitive experience which the organization gains from certain corporate actions and of accumulative experience which the organization gains from day-to-day exposure to operations (Bergh et al., 2008).

Regarding repetitive experience, prior literature suggests that corporate actions enable a firm to develop absorptive capacity for understanding that type of action (Barkema and Vermeulen, 1998; Haleblian et al., 2006), thus improving a firm's ability to successfully implement similar types of actions in the future (i.e., Haleblian and Finkelstein, 1999). In that respect, Amburgey and Miner (1992) discuss the existence of a repetitive momentum that occurs when an organization repeats a specific action. In particular, a firm operating over time develops absorptive capacity, which the organization codifies into systems, routines, and competencies that deepen understanding, enhance proficiency, facilitate future learning, and therefore become independent engines for further actions (Haleblian et al., 2006; Hayward, 2002).

Regarding accumulative experience, day-to-day exposure to a firm's operations enables development of absorptive capacity by increasing flexibility and adaptation skills, which improves decision making and overcomes traps to knowledge development (Lane and Lubatkin, 1998). Accordingly, accumulative experience would translate into explicit knowledge about operating procedures, formal systems, and routines (Haleblian and Finkelstein, 1999), all of which would guide future actions (Haleblian, et al., 2006; Hitt, Harrison, Ireland, and Best, 1998).

2.3. Organizational learning and corporate diversification

The absorptive capacity viewpoint of organizational learning pertains to corporate diversification because diversification provides conditions necessary for the development of repetitive and accumulative experience benefits (Mayer et al., 2014). The process of corporate diversification, via either internal growth or acquisitions, involves interdependent milestone decisions and cooperation with other parties, creating more potential for realizing repetitive experience learning (Hoskisson and Hitt, 1990). More specifically, the diversification program involves the management of transaction costs that relate to the identification of diversifying investment opportunities, the collection of information necessary to evaluate diversification synergies, the appraisal of alternative financing means, the exchange of assets with external third-party sellers, and the integration of new operations. Each of these steps requires effective decision making, which, in conjunction with the complexity that characterize the diversification program, presents the necessity to capture learning into codified routines, systems, and standardized procedures (Haleblian and Finkelstein, 1999). As a result, a firm that pursues repetitive diversifications, gains learning from recognizing and assimilating new experiences that emerge from repeating such processes (Bergh et al., 2008).

Similarly, experience that the organization accumulates by operating in a diversified structure fosters the development of absorptive capacity with respect to corporate diversification. Specifically, diversified firms manage high complexity by being explicit about performance (Hoskisson and Hitt, 1990). They evaluate performance using profit center accounting techniques that focus on observable measures of performance, such as market share and/or return on assets (Hill, Hitt, and Hoskisson, 1992). Such observable measures of performance create more transparency with respect to the factors that influence diversification performance and enable managers to focus on key performance levers and use related experiences from operations to create a dynamic process of organizational learning (Bergh et al., 2008). For example, organizations receive a wide range of performance-related information daily, which they process and codify into systems and this helps them to spot problems they would have missed otherwise (Barkema and Vermeulen, 1998). High levels of absorptive capacity helps to improve, among other things the firm's ability to efficiently allocate capital between business units, the employment of compensation schemes that motivate performance in a diversified firm, the development of subtle processes to better monitor and coordinate input/output products across business units to improve performance, and finally, their ability to better cope with the competition that confronts different business units (Amburgey and Miner, 1992; Haleblian and Finkelstein, 1999; Haspeslagh and Jemison, 1991a, b; Pennings, Barkema, and Douma, 1994).

3. Hypotheses Development

3.1. Organizational learning and corporate diversification performance

Following the theoretical framework, learning effects on corporate diversification performance should capture both repetitive and accumulative diversification experiences. Thus, the study defines diversification profiles by classifying diversified firms into three categories, depending on both a firm's prior diversification activity and experience in operating in a multiple-business structure: (i) single-business firms that diversify once (Single-Business-Once), (ii) multi-business firms that diversify once (Multi-Business-Once), and (iii) single/multi-business firms that diversify multiple times (Single/Multi-Business-Many). Section 4.1.3 discusses in more detail the development of diversification profiles.

Single-Business-Once firms lack both repetitive and accumulative diversification experience. Specifically, such firms have no experience with diversification activity, and therefore, they are more prone to procedural errors, because, the firm's overall organizational capabilities lack the specialist knowledge about how to select (Haspeslagh and Jemison, 1991a,b) or integrate with the existing structure newly established diversified operations (Hayward, 2002). Furthermore, these firms expose themselves to financial projection inaccuracies since their knowledge on how to assess properly benefits/costs arising from a corporate diversification strategy is deficient (Lichtenstein, Fischhoff, and Philips, 1982). In this respect, Hitt et al. (1998) propose that without such (organizational) learning, chaotic conditions limit control over the implementation processes, leading to poor financial performance and a reduction in innovative activity. In addition, Single-Business-Once firms have no experience in sharing resources in a diverse business setting to benefit from synergies (Hitt et al., 1997). Therefore, these firms are at the lowest level on the learning curve when they diversify, since, most likely, do not have adequate coordination and communication mechanisms for sharing knowledge between business units. Such mechanisms are important because they enhance organizational learning by facilitating

transfer of proprietary knowledge and assimilation of this knowledge at different businesses so as to increase the firm's innovation capacity and their ability to extract rents from innovation (Szulanski, 1996). Finally, these firms may lack the capacity to develop economically valuable routines and standardized procedures, because, the scope for synergies and economies of scale are more scarce for firms operating in a single business. In turn, this situation constrains the creation and advancement of knowledge about mechanisms and procedures that achieve such economic benefits (Tanriverdi and Venkatraman, 2005). For example, the firm may fail to develop appropriate services functions or to disseminate best practice, and as a result, they may miss opportunities for reducing operating costs and advance more valuable innovations (Mascarenhas, 2012). Therefore, lack of organizational learning that relates to repetitive and accumulative diversification experience should have a negative effect on the performance of Single-Business-Once firms.

A positive valuation effect, however, should be true for Single/Multi-Business-Many firms since both repetitive and accumulative experience would facilitate the development of learning that in turn increases the net benefits of diversification, resulting in a positive effect on their diversification performance.

Finally, Multi-Business-Once firms possess accumulative experience from operating in a diversified setting, but, are more likely to be deficient of repetitive experience, therefore, their learning, and consequently, their diversification performance should be higher than Single-business-once, but, lower than Single/Multi-business-many. The above arguments suggest that:

H1a. Single-Business-Once firms demonstrate the lowest corporate diversification performance in comparison to firms belonging to the other two diversification profiles.

H1b. Single/Multi-Business-Many firms demonstrate the highest corporate diversification performance in comparison to firms belonging to the other two diversification profiles.

H1c. Multi-Business-Once firms demonstrate higher corporate diversification performance in comparison to Single-Business-Once firms and lower corporate diversification performance in comparison to Single/Multi-Business-Many.

3.2. Relatedness of diversification and corporate diversification performance

The absorptive capacity viewpoint depicts that learning benefits more corporate actions that relate to the firm's stock of knowledge than actions that are distant from the firm (Cohen and Levinthal, 1990; Zahra and George, 2002). For example, scholars suggest that non-core acquisitions increase administrative costs since firms cannot apply their knowledge to efficiently integrate these organizations (Aktas, Bodt, and Roll, 2013; Barkema and Schijven, 2008b; Finkelstein and Haleblian, 2002; Hayward, 2002). Consequently, relatedness between the existing corporate structure and diversifications should make a corporate diversification program more valuable (Tanriverdi and Venkatraman, 2005).

Previous studies suggest that relatedness associates with the mode of diversification, namely internal growth or acquisitions. Early research suggests that lower barriers of entry and greater relatedness associate with internal growth expansions rather than acquisitions (Yip, 1982). The link between relatedness and mode of expansion, however, depends on whether the firm seeks to deepen or extend resources (Lee and Lieberman, 2010). Usually, a firm's management utilizes acquisitions within the firm's primary business domain to deepen resources, while management utilizes those outside the primary business domain to extent resources (Karim and Mitchell, 2000). As a result, whenever acquisitions concentrate in close proximity to the firm's resources, the relation between relatedness and mode of expansion

need not hold. In contrast, when acquisitions concentrate away from the firm's resources the relation between relatedness and mode of expansion holds (Lee and Lieberman, 2010).

Accordingly, the absorptive capacity viewpoint suggests that the mode of diversification affects firm value. More specifically, internal growth diversification follows an incremental process utilizing firm resources which warrants proximity of operations (Pennings et al., 1994). As a result, the knowledge the firm requires to implement internal growth, which among other involves new product launch, staffing and partner agreements, should reside within the firm, whether they pursue their first diversification or one of many, due to the relatedness to the organization's resources. In addition, with internal growth diversification a firm may apply learning to proximate activities and resources from existing knowledge and operational structures residing in the firm's intimate environment. As such, the firm could benefit among other things from, economies of scale and scope, relations between product units and geographic areas, and sharing core competences across functions (Kogut, 1985; Markides and Williamson, 1994).

In contrast, applying learning to diversification through acquisitions is more difficult. For instance, the resource commonality with the firm is lower than to internal growth, since acquisitions have different systems that make integration more difficult (Lane and Lubatkin, 1998). In addition, each acquisition is quite different from other acquisitions due to different processes, systems and cultures, which may constrain the firm's ability to efficiently codify implementation knowledge into standard routine procedures for pursuing future acquisitions (Laamanen and Keil, 2008). Therefore, acquisitions may limit the learning benefits of repetitive experience and the subsequent positive impact on performance from standardization, synergies and risk reduction in subsequent decisions and implementations (Barkema and Schijven, 2008b). Along this line, Hayward (2002) finds evidence that

dissimilarity of prior acquisitions has negative effect on firm performance and concludes that acquiring dissimilar businesses prevents specialized learning about any new business, and adds to administrative costs. Similarly, Laamanen and Keil (2008) argue that differences in processes, systems and organizational cultures constrain the application of past experiences to extract synergies from resource extending acquisitions. To benefit from learning, the firm may need to understand how the target firm operates and find common resources to build sufficient organizational fit (Pablo, 1994). This however is an arduous task because of inefficient communication and different practices and systems (Szulanski, 1996). As a result, this complexity may compromise the benefits from synergies and economies of scale and hamper this way firm performance. In corroboration, Porter (1987) also finds that firms divest the majority of their acquisitions in non-core industries, and attribute this result to the difficulty to integrate specialized resources and gain synergies since the acquirers' knowledge diverge from that of the acquired firm. The above discussion suggests that:

H2. Firms demonstrate higher performance when they diversify through internal growth than acquisitions.

4. Research Design

4.1 Definitions and measurement of variables

This section provides information about definitions, variables measurement and databases that the study utilizes. Table 1 displays essential information relating to discussions that follow in the subsequent sections.

Table 1 here.

4.1.1 Measuring the performance of corporate diversification

To investigate whether diversification destroys corporate value or not, this study relies on the excess value (EXC_VAL) measure of Berger and Ofek (1995). Excess value compares a firm's market value to the firm's imputed value, assuming that each of the business segments operate as a single-business firm. Market value is the sum of the market value of equity (equal to the stock price at the fiscal year-end multiplied by the number of shares outstanding) and the book value of debt. The imputed value is the sum of the firm's segments imputed values, obtained by multiplying each segment's sales with the median of the market value-to-sales ratio computed using only single-business firms in the same industry. The industry definition follows the narrowest Standard Industrial Classification (SIC) grouping that includes at least five single-business firms and sufficient data for computing the ratios. Excess value is the natural logarithm of the ratio of the firm's market value to the imputed value and measures the gain or loss from corporate diversification.

4.1.2 Defining corporate diversification

The study defines corporate diversification at the cross-sectional level using a dummy variable that equals one for each year the firm operates in multiple business segments and zero otherwise (DCY). Further, to alleviate potential endogeneity or measurement error problems (a detailed discussion of these issues exist in section 5.3), the study identifies diversified corporations using a dummy variable that equals one during the sample period if a firm diversified at least once during the sample period and zero otherwise (DC). The study also distinguishes the time periods before and after the first instance of diversification. Specifically, a "Before" diversification dummy equals one for the years before a firm diversifies for the first time and zero otherwise; an "After" diversification dummy equals one for all years following the first instance of diversification and zero otherwise. The econometric approach then interacts the "Before" and "After" dummies with DC to form two

new dummy variables, namely "Before DC" and "After DC". For illustration purposes, if, for example, a firm diversifies several times, "After DC" would then equal one for the year the first diversification occurs and thereafter and zero otherwise. Similarly, "Before DC" would equal one for the years prior to the first diversification and zero otherwise.

4.1.3 Defining diversification profiles

This study defines diversification profiles by classifying diversified firms into three categories, depending on both a firm's prior diversification activity and the firm's experience in operating in a multiple-business structure: (i) single-business firms that diversify once (Single-Business-Once, SBO), (ii) multi-business firms that diversify once (Multi-Business-Once, MBO), and (iii) single/multi-business firms that diversify multiple times (Single/Multi-Business-Many, SMBM). This definition, avoids intermingling the impact of learning on diversification performance during the periods before and after the decision to diversify. For instance, assume for demonstration purposes that a firm diversifies three times into new business units. In that case, for the period between the second and third diversification events, the firm's excess value should reflect, among other things, repetitive learning arising from the first and second diversification events and accumulative learning arising from the day-to-day exposure to multi-business operations following the first diversification event. As a result, a cross-sectional handling procedure that analyzes individual diversification events would only compare firm value before and after the third diversification event. Yet, such handling is not sufficient to make a meaningful assessment of the impact of organizational learning on diversification performance. In contrast, to guard against such erroneous inferences, the approach in this study utilizes a time-series analysis of each firm's diversification profile which involves the full history of the firm's diversification activity.

Finally, in a similar fashion, the econometric approach also interacts the "Before" and "After" diversification dummies with the profile variables, namely SBO, MBO and SMBM, to distinguish the periods before and after the first incidence of diversification per profile.

4.1.4 Measuring corporate diversification relatedness

This study measures relatedness of diversification with the mode of diversification, namely internal growth or acquisition. Internal growth diversification utilizes firm resources, which warrants proximity of operations (Pennings et al., 1994). In contrast, acquisitions which are the means of extending resources to pursue diversification have less resource commonality. A diversification is the outcome of an acquisition (ACQ) when the firm engages into an acquisition which coincides with an increase in the number of the firm's business segments and sales increase by at least 5%. In all other cases, this study defines an increase in the firm's business segments as a diversification that is the outcome of internal growth (No ACQ).

4.2. Sample selection

The sample covers all firms in both the Compustat Industrial Segment and Compustat Industrial Annual databases during the period 1998–2008. In 1998, the Statement of Financial Accounting Standards (SFAS) 131 superseded SFAS 14, which had been criticized for inconsistent segment definitions and segment underreporting (Villalonga, 2004). SFAS 131 addresses these caveats and, generally, business segment data are more precise from 1998 and onwards (Berger and Hann, 2003). Therefore, the sample period of this study is homogeneous with respect to the accounting standard that governs the reporting of business segment data.

In the same spirit as in the work of Berger and Ofek (1995), Campa and Kedia (2002), Graham et al. (2002), and Santalo and Becerra (2008), the analysis excludes the following firm–year observations: firms which report segments in the financial sector (SIC 6000–6999), sales which are less than $20 million, observations for which the firm's market value are missing; and finally, sum of segment sales is not within 1% of the firm's total sales. Furthermore, following Andreou, Doukas, Koursaros and Louca (2014), the study eliminates firm–year observations for those firms that do not report 4-digit SIC codes for their entire business segment when associate with a non-zero sales figure, while the study retains firm–year observations when associate with a zero sales figure (because these cases do not affect the computation of the imputed value and allow more firm–year observations to enter into the estimation of the models). Such zero sale figures may arise from managerial discretion in reporting segment sales and the subsequent restatement of firm financial results. Finally, the study also excludes firm–year observations with extreme excess values (i.e., following Berger and Ofek, 1995) or missing values for any of the main control variables.

The sample includes 8,028 firms and 39,134 observations, of which 4,222 (19,398) are single-business and 3,806 (19,736) multi-business firms (observations). Using this sample, a subsequent section of the study replicates the analysis of Berger and Ofek (1995) and Campa and Kedia (2002) to preclude the possibility that differences in sample periods or methodology affect the findings (e.g., regarding the existence of a diversification discount in the cross-section of the sample data).

Then, to investigate the hypotheses the study utilizes a sample, which excludes all firms that refocus at any time in the period of investigation, particularly those that refocus once from multiple to a single business segment, those that refocus once from multiple to multiple segments, and those that refocus multiple times. This restriction is imperative to

avoid confounding effects arising from the increases in valuation that firms usually experience upon refocusing (Berger and Ofek, 1996; John and Ofek, 1995). In this case, the final sample includes 5,680 firms and 25,996 observations, of which 4,222 (19,398) are single-business and 1,458 (6,598) multi-business firms (observations). All previous figures refer to sample sizes after eliminating missing values for the control variables.

4.3. Descriptive statistics

4.3.1. Distribution of firms by diversification profile

Table 2 reports the distribution of firms by diversification profile during the period 1998-2008. Out of the 5,680 firms (25,996 firm-year observations), a total of 1,168 firms diversify (5,803 firm-year observations), of which, 565 firms (2,637 firm–years) do so once from single to multiple business segments (Single-Business-Once), 313 firms (1,535 firm–years) do so once from multiple to multiple segments (Multi-Business-Once), and 290 firms (1,631 firm–years) diversify multiple times (Single/Multi-Business-Many). The remaining 4,512 firms (20,193 firm–year observations) are either single-business firms or multi-business firms that do not diversify during the sample period.

Table 2 here.

4.3.2. Summary statistics by diversification profile

Table 3 compares the characteristics of diversified firms before the first incidence of diversification with single-business segment firms. Campa and Kedia (2002), argue that firm-specific characteristics may relate to the decision to diversify and particularly to the benefits/costs that arise from diversification activity. Thus, potential differences in firm characteristics across diversification profiles may indicate that some firms calibrate the

benefits/costs at a diversification profile level rather than at the level of each individual diversification event. This reasoning is consistent with the view that each individual diversification contains an option to expand in due time, should prior experience/knowledge (i.e., capacity for organizational learning) and/or environmental conditions be favorable sometime in the future (Trigeorgis, 1996). Therefore, a proper evaluation of the impact of corporate diversification on firm value should account for firm characteristics (Campa and Kedia, 2002), as well as the firm's diversification profile, bridging this way a gap in the literature.

Following prior literature (e.g., Berger and Ofek, 1995; Campa and Kedia, 2002), Table 3 reports information on firm total assets (TA), sales turnover (SALES), investments (CAPX/SALES), profitability (EBIT/SALES), and leverage (LEV) before diversification. In comparison to single-business segment firms, diversified firms are generally bigger, with higher sales and profitability. With regard to investments, firms that diversify once from one to multiple business segments (Single-Business-Once) and firms that diversify once from multiple to multiple business segments (Multi-Business-Once) invest less than single-business segment firms. In contrast, judging by median values, firms that diversify multiple times (Single/Multi-Business-Many) invest more than single-business segment firms, consistent with a strategy to expand business scope through diversification. In addition, diversified firms' reliance on leverage varies per profile relative to single-business segment firms.

In summary, prior to the first incidence of diversification, firms' characteristics across the diversification profiles differ relative to the characteristics of single-business firms and motivate the use of diversification profiles when evaluating the valuation effects of corporate diversification.

Table 3 here.

5. Empirical Results

In this section the study provides evidence: (i) that diversification profiles capture different capacity of organizational learning, (ii) of the existence of a diversification discount in the sample period, (iii) that corporate diversification profiles are important to understand the cross-sectional variance of corporate diversification performance, and (iv) that results are robust to alternative model specifications following the inclusion of additional control variables.

5.1. Diversification profiles and organizational learning

This section examines whether corporate diversification profiles capture different capacities of organizational learning by focusing on the characteristics of acquisitions made by firms in each diversification profile. Specifically, prior literature suggests that the transfer of an organization's acquisition experience to subsequent acquisitions is critical for the success of the acquisition (Barkema and Schijven, 2008b; Dikova, Sahib, and van Witteloostuijn, 2010; Lei, Hitt, and Bettis, 1996). This literature supports the notion that the presence of greater organizational learning relates in a positive fashion to more acquisitions completed, fewer acquisitions withdrawn, shorter acquisition duration (i.e., fewer days to completion), and, more successful acquisitions. Accordingly, if the diversification profiles reflect the presence of different capacities for organizational learning, then the characteristics of acquisitions should vary across diversification profiles.

To investigate this claim, the study uses all the firm–year observations after the first diversification decision, which the study claims to reflect absorptive capacity, and thus

organizational learning coming from repetitive and accumulative experience. For these firm–year observations, the study uses the Securities Data Corporation database to gather information about completed and withdrawn acquisitions. Completed acquisitions are those with a specific date in the database to show when each acquisition became effective (i.e., target firm becomes part of the business structure of the focal firm), whereas withdrawn acquisitions are those with a specific date to show when the acquiring firm had withdrawn the offer to acquire the target firm.

Then, the study separates this sample into the two sub-samples of completed and withdrawn acquisitions, respectively. For the sub-sample of completed acquisitions, the study further focuses on acquisitions that have the following characteristics: (i) acquirer firm sales increase by at least 5% during the completion year, that is, the acquisition is essential in altering the firm's diversification structure, and (ii) the year of completion of the acquisition coincides with an increase in the number of acquirer business segments, that is, the year of completion affects the structure of each diversification profile and thus shows organizational learning with respect to the corporate diversification program. The study, using these acquisitions reports information across each diversification profile about the average number of completed acquisitions, the average acquisition duration till completion, and, market reactions to acquisition announcements. Furthermore, the study uses the sub-sample of withdrawn acquisitions to report information across each profile about the average number of withdrawn acquisitions. Overall, 34% of Single-Business-Once, 36% of Multi-Business-Once and 42% of Single/Multi-Business-Many firm-year observations involve acquisitions.

Table 4 reports the results. On average, each firm that diversifies multiple times (Singe/Multi-Business-Many) conducts 1.63 acquisitions. In contrast, each firm that diversifies once from multiple to multiple segments (Multi-Business-Once) and each firm

that diversifies once from single to multiple segments (Single-Business-Once) conduct only 0.76 and 0.24 deals, respectively. In addition, 62.30% of the Single-Business-Once firms withdraw the acquisition they initiate, while Multi-Business-Once and Singe/Multi-Business-Many firms withdraw only 52.50% and 9.90%, respectively. These findings are consistent with the view that firms that show greater organizational learning, such as firms that diversify multiple times (Singe/Multi-Business-Many), complete more acquisitions and withdraw their offers less often.

The results also show that the average acquisition duration till completion for Single-Business-Once firms is 90.75 days, 54.16 days for Multi-Business-Once firms and only 40.53 days for Singe/Multi-Business-Many firms. These results are consistent with the view that organizational learning shortens the completion duration of acquisitions.

Finally, market reaction to the announcements of acquisitions as measured by cumulative abnormal returns (CARs) during the three-day period surrounding the deal for Single-Business-Once firms is -0.04%, -0.07% for Multi-Business-Once firms and 1.65% for Singe/Multi-Business-Many firms. These findings support the view that organizational learning that relates to each diversification profile, affects the way the market perceives acquisitions.

In essence, the empirical evidence from this analysis lends credence to the construct and quantification of corporate diversification profiles and suggests that diversification profiles capture different capacities of organizational learning.

Table 4 here.

5.2. Documenting the diversification discount

This section replicates the analysis of Berger and Ofek (1995) and Campa and Kedia (2002), using cross-sectional data to check for the presence of a diversification discount in the segment-level data. This approach ensures that the findings of the current study regarding the relation between organizational learning and corporate diversification performance are not due to differences in sample periods or methodology.

Table 5, Panel A tabulates Pearson (Spearman) correlation coefficients below (above) the diagonal between the excess value (EXC_VAL) and the main variables, namely, a dummy variable that equals one for each year the firm operates in multiple business segments and zero otherwise (DCY), firm size (log of total assets, SIZE), profitability (earnings before interest and taxes over sales, EBIT/SALES), and investments (capital expenditures over sales, CAPX/SALES). The main observation is the strong negative correlation between the excess value and the diversification dummy which indicates the presence of a diversification discount in the segment-level data. Table 5, Panel B reports the coefficient estimates of pooled ordinary least squares regressions to investigate the presence of the diversification discount using multivariate analysis. The control variable coefficient estimates in regression model (1) are consistent with prior literature (e.g., Berger and Ofek, 1995; Campa and Kedia, 2002). Firm size and profitability relate in a positive fashion to excess value, while investment is not statistically indistinguishable different from zero. Turning to the coefficient of interest, consistent with prior literature's findings, the diversification dummy (DCY) shows a discount equal to -8.5% (p-value < 0.01), indicating that diversification is on average a value-destructive corporate strategy.

Next, the study examines the robustness of the discount's presence to the inclusion of additional control variables as in Campa and Kedia (2002). Regression model (2) reports estimates of the discount after controlling for lagged measures of firm profitability (lag1 and lag2 of EBIT/SALES), investments (lag1 and lag2 of CAPX/SALES), and firm size (lag1 and lag2 of Log TA). The model also includes the ratio of long-term debt to total assets (LEV) and a squared term of firm size (SIZE-SQ) to control for the potential non-linear effects of firm size.

The findings demonstrate that in comparison to single-business companies, firms with high past investments experience higher valuations, though the coefficients are only marginally significant (p-value < 0.10). In addition, past profitability does not lead to higher market valuations. Similarly, the coefficient of long-term debt to total assets is statistically indistinguishable from zero. Finally, the coefficient of the squared firm size is negative (p-value < 0.01), consistent with a diminishing effect of firm size on excess value as firm size increases. Turning to the coefficient of interest, the estimated value for the diversification discount dummy (DCY) is -8.0% (p-value < 0.01) still indicative for the presence of a diversification discount.

Regression models (3) and (4) report similar regression estimates but after excluding all firm–year observations of the firms that refocus during the period of investigation. Prior studies document that refocusing affects corporate value and therefore including these firms in the sample may introduce bias into the parameter estimates. Using this sample, the results show that the discount remains highly significant and ranges between -7.7% (p-value < 0.01) and -6.8% (p-value < 0.01), depending on the control variables included in the regression.

Summarizing, as in Berger and Ofek (1995) and Campa and Kedia (2002), the diversification discount is prevalent in this study's sample period and is robust to the inclusion of additional control variables, as well as to the exclusion of refocusing firms.

Table 5 here.

5.3. Diversification profiles and corporate diversification performance

This study aims to investigate the impact of organizational learning on corporate diversification performance. A proper evaluation, however, should first consider the endogenous nature of the diversification decision (Campa and Kedia, 2002; Kuppuswamy and Villalonga, 2012). Specifically, observing in the cross-section that diversified firm–years show lower excess value in comparison to single-business firm–years does not necessarily imply that diversification destroys value since, at the same time, firms with lower excess value are more likely to diversify relative to firms with higher excess value; this finding may instead reflect the pre-diversification lower excess value of diversified firms. In addition, a proper evaluation approach should mitigate any methodological problems that could arise during the estimation of the excess value measure (e.g., Mansi and Reeb, 2002; Santalo and Becerra, 2008; Whited, 2001).

To address such concerns, this study follows Andreou et al. (2014) to adopt a time-series approach that allows comparisons of excess value before and after the first incidence of diversification (i.e., the decision to diversify for the first time), reducing, in this respect, endogeneity concerns. In addition, a time-series approach decreases the likelihood of biased findings due to methodological problems that can arise during the estimation of the excess value, since any methodological issues should affect excess value measures similarly both before and after the decision to diversify.

Table 6 reports regression estimates of the relation between diversification profiles and performance. All regressions include year dummies and standard errors adjusted for clustering at the firm level. Petersen (2009) suggests that this estimation procedure controls for potential bias in the estimates of standard errors when residuals are correlated across time and/or across firm–year observations. The dependent variable in all model specifications is always the firm's excess value (EXC_VAL). Regression models (1), (2), (4) and (5) relate to testing the first set of hypotheses (H1a, H1b and H1c), while models (3) and (6) relate to testing the second hypothesis (H2).

In regression model (1) the main independent variable is a dummy variable that equals one if the firms diversifies, and zero otherwise (DC). Control variables are similar to the ones included in Table 5 following prior literature (Campa and Kedia, 2002) with the addition of a dummy variable to capture the group of diversified firms that maintain a constant number of business segments throughout the period of investigation. Note that some of the control variables, such as firm size, may diminish the effect of organizational learning on diversification performance. Pennings et al. (1994), for instance, suggest that size is a time-variant effect that captures a considerable chunk of organizational learning. Thus, finding no differences in performance across diversification profiles does not necessarily represent evidence against the effect of organizational learning on diversification performance. Consequently, this type of analysis is rather conservative.

Regression model (1) in Table 6 shows that firms that decide to diversify any time during the sample period trade at a discount of -4.0% (p-value < 0.05). The latter finding, however, does not necessarily imply that diversification destroys firm value. Firms that diversify their operations may have lower firm value in comparison to single-business firms

before diversification. Thus, this type of analysis is not informative enough when examining the valuation effects pertaining to the diversification decision.

To address the former issue, regression model (2) examines whether firm value decreases after diversification. Specifically, the model interacts DC with a Before diversification dummy that equals one for the years before a firm diversifies for the first time and zero otherwise (Before DC). The model also interacts DC with an After diversification dummy that equals one for all years following the first instance of diversification and zero otherwise (After DC). For all firms that diversify, the diversification year is set to be the first incidence of diversification. For example, in this setting, if a firm diversifies several times, After DC equals one for the year the first diversification occurs and thereafter and zero otherwise. Similarly, Before DC equals one for the years prior to the first diversification and zero otherwise.

Both the Before diversification and After diversification dummies are equal to zero for single-business segment firms (i.e., the benchmark firm–years). If diversification destroys firm value, then the coefficient of After DC should be significantly lower than that of Before DC. Note that endogeneity issues do not hamper this type of setting; yet, as in previous studies, such an approach still ignores the impact of different diversification profiles on firm performance which this study theorize to be important on the valuation effect relating to corporate diversification.

Table 6 here.

The results from regression model (2) in Table 6 show that diversification indeed destroys firm value. Diversified firms trade at a statistically insignificant premium of 1.4% before diversification but at a discount of -7.7% (p-value < 0.01) after the first diversification

year. The lower part of Table 6 tabulates a robust t-statistic that compares the performance of diversification before and after the first diversification event (i.e., row (I): "Before DC – After DC"). The results show that the difference between the after and before diversification excess values is -9.2% (p-value < 0.01).

Next, this study examines the impact of diversification profiles on performance. Regression model (4) decomposes the impact of diversification on firm value across firms with different diversification profiles. Likewise, the model specification interacts each diversification profile with a series of Before and After diversification dummy variables. Regression model (5) performs a similar analysis but the model includes two lags of firm excess value (lag1 and lag2 excess value) to control for unobserved firm characteristics that may affect the diversification decision. Ahn (2009) finds that the excess value has predictive power on the survival of the diversification profile (i.e., the lower the excess value, the higher the likelihood of refocusing). Thus, if lagged excess value is an instrument that encapsulates information on unobserved characteristics, then including lagged excess value in the model specification should control for any residual endogeneity bias that resides in the diversification decision.

Regression models (4) and (5) show that diversification destroys value when firms diversify once from one to multiple business segments (Singe-Business-Once, SBO). In contrast, no such value destruction happens for firms that diversify once from multiple to multiple business segments (Multi-Business-Once, MBO) or, for firms that diversify multiple times (Single/Multi-Business-Many, SMBM). Assessing the overall evidence of regression model (5) from the lower part of Table 6 provides collective support to hypotheses. Specifically, row (IV): "Before SBO – After SBO" tabulates that Single-Business-Once firms demonstrate the lowest corporate diversification performance with a statistically significant

excess value of -6.9% (p-value < 0.01); hence, providing support for H1a. Row (X): "Before SMBM – After SMBM" tabulates that Single/Multi-Business-Many firms demonstrate the highest corporate diversification performance with a statistically significant excess value of 5.2% (p-value < 0.05); hence, providing support for H1b. Row (VII): "Before MBO – After MBO" documents that Multi-Business-Once firms have zero excess value; therefore they demonstrate higher corporate diversification performance from Single-Business-Once (SBO) firms and lower corporate diversification performance from Single/Multi-Business-Many (SMBM) firms; hence, supporting H1c.

Finally, regression model (3) in Table 6 investigates the second hypothesis (H2) according to which firms' show higher valuation when they diversify through internal growth than acquisition. Specifically, the model employs dummy variables to segregate the effects of After Diversification between internal growth (After DC * No ACQ) and acquisitions (After DC * ACQ), where "ACQ" takes the value of one if diversification is through acquisition and zero otherwise, and "No ACQ" takes the value of one if diversification is through internal growth and zero otherwise. The empirical evidence supports H2 since diversifications through internal growth demonstrate an excess value of -7.2% which is significantly higher than the excess value of diversification through acquisitions which is -22.3%.

Regression model (6) elaborates further on the results of model (3) and segregates the valuation effect of diversification depending of the mode of diversification across the three diversification profiles. Assessing the overall evidence of regression model (6) from the lower part of Table 6, diversification through internal growth always bears higher valuations than diversification through acquisitions. For instance, row (V): "Before SBO – After SBO * No ACQ" demonstrates that Single-Business-Once firms that diversify through internal

growth demonstrate an excess value of -6.4% which is much higher than the excess value of

-16.9% when these firms diversify through acquisitions as shown in row (VI): "Before SBO –

After SBO * ACQ". Similar conclusions prevail for the Multi-Business-Once (rows (VIII)

and (IX)) and Single/Multi-Business-Many (rows (XI) and (XII)) firms. In addition, the

analysis expands model (6) to capture valuation effects by segregating between related and

unrelated acquisitions (see results in Section A in the online Appendix). Findings show that

Single-Business-Once firms that diversify by choosing to expand through unrelated

acquisitions create excess value relative to firms in the same profile that choose to expand

through related acquisitions, which is the same line with previous findings (Haleblian and

Finkelstein, 1999).

5.4. Additional analysis

This study investigates the sensitivity of the findings to alternative model

specifications. First, prior literature conjectures that the diversification discount arises from,

among other things, agency problems, such as empire building (Houston, James, and

Ryngaert, 2001), managerial overconfidence (Andreou et al., 2014), and risk reduction

(Amihud and Lev, 1981). Focusing on corporate governance to measure potential agency

problems, Hoechle et al. (2012) find that 25–30% of the diversification discount relates to

poor corporate governance structure. In addition, imperfections in the external market and

product/labor markets would make a diversification strategy more attractive. Yet, the

attractiveness of such strategy should dissipate over time as market-oriented institutional

transitions unfold (Lee, Peng, and Lee, 2008). If either the quality of corporate governance or

institutional transitions relates to organizational learning in strategic settings such as

corporate diversification, then the relation between diversification profiles and firm value

could be an artifact of the quality of corporate governance and/or institutional transitions and

not necessarily of organizational learning. While the inclusion of lagged excess values in the

regression analysis of Table 6 should mitigate such omitted variable bias problems, this study

assesses the robustness of the results using: (i) the Gompers–Ishii–Metrick (2003), or GIM

index, as a proxy of the quality of corporate governance, and (ii) the ratio of market

capitalization to the gross domestic product (CAP/GDP) as a proxy for institutional

transitions (Lee et al., 2008; Levine, 1997). The results from regression models (1) and (2) of

Table 7 show that the GIM index is not statistically significant while CAP/GDP is negative

and significant. However, the relation between diversification profiles and firm value still

persists as in Table 6. Additional analysis, in Section B of the online Appendix, reveals that,

without including lagged excess values, poor corporate governance relates in a negative

fashion to excess value, consistent with the finding of Hoechle et al. (2012). By including

both lagged excess values and corporate governance index simultaneously into the regression

analysis, the governance index becomes statistically insignificant, thus supporting the

argument that lagged excess values mitigate omitted variable bias concerns.

Second, the study also investigates the sensitivity of the findings to the inclusion of

non-US firms in the sample. Different levels of globalization and competition are significant

factors that influence the degree, scope, and performance of corporate diversification

(Wiersema and Bowen, 2008). Along this line, Lins and Servaes (1999) find significant

differences in the diversification discount between countries with different institutional

frameworks. Even though discount/premium varies across different institutional contexts and

thus across countries of incorporation, whether or not different institutional contexts relate to

diversification profiles is unclear. Nevertheless, the study presents results after excluding

1,486 non-US firms with 6,722 firm–year observations from the analysis. Regression model

(3) in Table 7 presents the results. Overall, the results across diversification profiles remain

similar to those of Table 6. Nevertheless, results from the same analysis for non-US firms only are not significant (see results in Section C in the online Appendix). This evidence may indicate that non-US firms are a special group of companies that as part of the US stock exchanges mainly as American Depository Receipts (ADRs) preserve certain characteristics such as larger size.

Finally, the study also investigates whether organizational learning relates to the diversity of a firm's business and affects firm value within each diversification profile. The firm's business diversity may be value detrimental from some point and onwards by impeding the learning ability of a firm to effectively codify valuable new knowledge into systems, routines, and procedures due to the increasing complexity of the business structure. To this end, the study uses a sales SIC-based entropy index to measure the firm's business diversity. The analysis expands regression model (1) in Table 6 to include the interaction term of After DC with the entropy index and the model also includes the entropy index as control variable. Further, to estimate a nonlinear entropy specification that captures diminishing effects of organizational learning due to increasing business diversity, another model also includes the interaction of After DC with the squared term of entropy and also includes this term as control variable. Finally, the study estimates both of these model specifications per diversification profile. Regression results that are available in Section D in the online Appendix show no statistical power to support the case that diversity of a firm's businesses affects diversification performance. These findings are not surprising because if diversification profiles reflect different capacities of repetitive and/or accumulative organizational learning, as the study claims, and given that organizational learning depends on the diversity of a firm's businesses, then the variation of entropy index within each profile

should be smaller, something that explains the absence of a significant impact of entropy on diversification performance.

Table 7 here.

6. Discussion and Conclusions

This study seeks to further investigate the proposition that corporate diversification destroys shareholder value. The study draws on the absorptive capacity viewpoint of organizational learning to suggest that some firms may perform better in their diversification programs than other due to their higher level of repetitive and accumulative diversification experience (Haleblian, Devers, McNamara, Carpenter, and Davison, 2009; Laamanen and Keil, 2008). The study investigates the performance of three diversification profiles that capture different levels of diversification-related experience using information throughout the entire period of investigation rather than information from each diversification event separately. This approach helps to avoid mixing together the impact of organizational learning during the periods before and after a decision to diversify. The results show a value discount only in single-business firms that diversify once. In contrast, firms with two or more diversifications achieve value premiums instead. These firms develop competence in the process of carrying out such corporate actions. Naturally, the repetitive pursue of diversifying decisions refines these competences to further enhance economies of scope, which translates into greater firm value. In that respect, firms that engage in multiple diversification actions should possess greater experience at integrating the different resources, such as manufacturing, transportation, distribution, and, capabilities in communication, coordination and cost management of their different business units (Haspeslagh and Jemison, 1991a). In addition, these firms operate in multiple-business segment structures, and as such, they

develop specialist skills to exploit commonalities among businesses which they may successfully apply to new diversifications (Hayward, 2002). This may balance out the additional administration costs from adding a new business (Aktas et al., 2013). Finally, multi-business firms that diversify once do not experience any adverse value effects indicating that they perform better than single-business firms that diversify once. This finding is in line with the practitioner's view suggesting that prior experience in managing a multi-business firm eliminates the adverse effect of corporate diversification (e.g., Heuskel, Fechtel, and Beckmann, 2006; Shulman, 1999). Overall, findings are in the same spirit with previous studies of corporate learning supporting that firms with higher levels of experience use their resources more effectively when pursue corporate actions to enhance synergies and innovation than firms having less experience (Bergh and Lim, 2008; Cohen and Levinthal, 1990; Lane et al., 2001).

In addition, findings show that firms using internal growth to diversify demonstrate higher valuations rather firms that pursue (resource extending) acquisitions, which supports the perspective that the relatedness of a new business facilitates the application of learning to reduce costs and raise innovation. These findings are in the same line of reasoning with studies suggesting that every additional non-core business adds to administrative costs and complexity since the firm cannot apply their knowledge efficiently to integrate the new business to their organization (Barkema and Schijven, 2008b; Finkelstein and Haleblian, 2002; Hayward, 2002). Haleblian and Finkelstein (1999) are the first to suggest and find a U-shape relationship as they argue that acquiring firms with rather low experience apply in an inappropriate fashion the experience coming from the first acquisitions to subsequent dissimilar acquisitions. In addition, the authors find that the more similar the acquisition targets to prior targets, the better they perform. Despite the recognition in the literature that

related experiences help the firm apply their stock of knowledge more effectively most acquisition studies do not distinguish among resource related/unrelated acquisitions. This omission may contribute to the ambivalent empirical results in this stream of research (Barkema and Schijven, 2008a). This study investigates a setting of resource extending acquisitions, that display low resource commonality, and distinguishes the negative influence of acquisitions on firm diversification performance.

This study makes a number of contributions. This study applies the absorptive capacity viewpoint of organizational learning to explain valuation effects of corporate diversification strategies that capture different degrees of accumulative and repetitive experience. Previous studies investigate the diversification performance by identifying the effects of economic factors, such as information asymmetries and operational complexity, however these studies do not distinguish between different diversification postures (Berger and Ofek, 1995; Lang and Stulz, 1994). Findings suggest that only single-business firms that diversify once destroy shareholder value indicating in this way that a firm's ability to develop absorptive capacity is an important determinant of diversification performance. Specifically, this study accentuates the idea that the cognition and experience that result from organizations engaging in repetitive diversification decisions and/or having experience with multiple business operations within a diversified structure facilitate execution effectiveness, which helps firms reduce any subsequent diversification mistakes that could otherwise harm firm value. Overall, the empirical findings add to the corporate diversification literature (Hitt et al., 1994; Hitt et al., 1997; Tallman and Li, 1996; Qian, 2002; Riahi-Belkaoui and Picur, 1998) as the study suggests that organizational learning, a cognitive and behavioral perspective is an important antecedent of corporate diversification performance.

The empirical findings also add to the literature of organizational learning in the context of corporate strategy as the study finds varying performance across diversification profiles and acknowledges that researchers should consider the firm's complete diversification program rather than individual acts of diversification. Only recently scholars recognize that acquisitions are elements of a broader program which encompasses a sequence of events with certain frequency, and that, the characteristics of an acquisition program influence acquisition performance (Barkema and Schijven, 2008b; Laamanen and Keil, 2008). The use of diversification profiles to capture the different levels of experience is an additional contribution to the literature since the study directly associates the firm's diversification program with their repetitive and accumulative experience.

The findings of the study have implications for managers as well, since they provide insights on how firms should design a corporate diversification strategy that creates value. Firms achieve value by gaining experience from repetitive diversifications and from operating in a diversified structure. Theoretical developments suggest that firms develop absorptive capacity by codifying knowledge into processes and systems and use this capability to raise synergies and innovation (Cohen and Levinthal, 1990). Therefore, creating systems that actively identify, transfer, store and use new knowledge to improve practices and take better decisions may increase the benefits from experience accumulation. In addition, this study confirms the findings of previous studies that internal growth diversifications result in better performance than acquisitions, and re-iterates that new diversification experience is more productive when relates to the firm's knowledge stock (Hayward, 2002; Tanriverdi and Venkatraman, 2005).

This study is not without weaknesses. First, the sample consists entirely of US listed firms with more than 70% of observation referring to firms with headquarters in the US; this

may limit the generalizability of the findings outside the US. Learning is context specific, and therefore, firms assimilate diversification experience at different degrees depending on different factors, such as national culture. For example, firms operating in individualistic societies (Hofstede, 1980) may face difficulty to share internally new knowledge, which may hamper their ability to assimilate knowledge to enhance organizational learning. Second, administrative heritage and culture may facilitate how firms learn and apply the value of new knowledge to commercial ends. Although the study controls for the firms' organizational structure using a sales entropy index and for the quality of corporate governance using the GIM index, such variables may not be the best choice to control for the firms' administrative heritage and culture. Yet, lack of data does not allow the study to control explicitly for such firm environmental factors. Finally, the study uses archive data that do not reveal insights about the exact learning mechanisms, such as storage and retrieval of knowledge, and how firms apply them to create value through diversification. Given that most studies use a similar methodology to examine the relationship of experience with corporate strategies and firm performance (Haleblian, et al., 2009), future research may seek to develop a deeper understanding of diversification decisions and the underpinning learning processes by pursuing in-depth longitudinal studies in different geographic regions.

Future studies of diversification performance may consider characteristics of the process of implementing a diversification program, such as the rate and sequence of corporate actions, since previous studies on acquisitions find that these attributes could influence the firm's organizational learning in both directions; organizations can build relevant experiences or organizations can create situations where they cannot digest experiences (Barkema and Schijven, 2008b; Laamanen and Keil, 2008; Nadolska and Barkema, 2014; Shi and Prescott, 2011). For example, Haleblian and Finkelstein (1999) argue that to benefit from acquisitions

a firm may need to pursue several acquisitions so that they develop adequate experience to determine dissimilarities between them.

In conclusion, this study provides further insight into the diversification discount debate by finding evidence that the diversification discount is not universal but rather affects single-business firms that diversify once. In addition, firms that pursue internal growth diversifications perform better than firms that pursue acquisitions. Finally, the absorptive capacity viewpoint of organizational learning depicts that repetitive and accumulative experience helps the firm to recognize, assimilate and use new knowledge to improve future decision-making support these findings.

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Table 1

Definitions, measurement of variables and databases

Variables	Definitions
Dependent variable	
EXC_VAL	Excess value is the natural logarithm of the ratio of the firm's market value to the imputed value. Market value is the sum of the market value of equity and the book value of debt (Compustat Industrial Annual). The imputed value is the sum of the segments' imputed values, obtained by multiplying each segment's sales with the median of the market value-to-sales ratio computed using only single-business firms in the same industry (Compustat Industrial Segment).
Diversification and profiles related variables (from Compustat Industrial Segment)	
DCY	A dummy that equals one for each year the firm operates in multiple business segments and zero otherwise.
DC	A dummy that equals one if the firm diversifies and zero otherwise.
Before DC	A dummy that equals one for the years before a firm diversifies for the first time and zero otherwise.
After DC	A dummy that equals one for all years following the first instance of diversification and zero otherwise.
SBO	Single-Business-Once firms that diversify once from one-business to multiple-business segments.
Before SBO	A dummy that equals one for the years before a SBO firm diversifies for the first time and zero otherwise.
After SBO	A dummy that equals one for all years following the first instance of diversification for a SBO firm and zero otherwise.
MBO	Multi-Business-Once firms that diversify once from multiple-business segments to multiple-business segments.
Before MBO	A dummy that equals one for the years before a MBO firm diversifies for the first time and zero otherwise.
After MBO	A dummy that equals one for all years following the first instance of diversification for a MBO firm and zero otherwise.
SMBM	Single/Multi-Business-Many (SMBM) firms that diversify multiple-times.
Before SMBM	A dummy that equals one for the years before a SMBM firm diversifies for the first time and zero otherwise.
After SMBM	A dummy that equals one for all years following the first instance of diversification for a SMBM firm and zero otherwise.

Other variables

ACQ	A dummy that equals one if diversification profile contains at least one acquisition that coincides with an increase in the (i) number of business segments and (ii) firm sales of 5%, and zero otherwise. (Combination of Securities Data Corporation database and Compustat Industrial Segment)
No ACQ	A dummy that equals one if diversification profile does not contain any acquisition that creates an increase in the number of business segments, and zero otherwise. (Combination of Securities Data Corporation database and Compustat Industrial Segment)
GIM	The Gompers–Ishii–Metrick (2003) proxy of the quality of corporate governance. From Andrew Metric website.
CAP/GDP	Ratio of market capitalization to the gross domestic product. (hand collected data)

Control variables (from Compustat Industrial Annual)

TA	Total assets in USD millions.
SALES	Sales in USD millions.
SIZE	Log of total assets to measure firm size.
SIZE-SQ	Squared term of SIZE.
EBIT/SALES	Earnings before interest and taxes over sales to measure profitability.
CAPX/SALES	Capital expenditures over sales to measure investments.
LEV	Ratio of long-term debt to total assets to measure leverage.

Table 2

Distribution of single-business and diversified firms

	Firm-years	Number of Firms
Firms that diversify	5,803	1,168
Single-business firms that diversify once (Single-Business-Once)	2,637	565
Multi-business firms that diversify once (Multi-Business-Once)	1,535	313
Single/multi-business firms that diversify multiple times (Single/Multi-Business-Many)	1,631	290
Multiple-business firms that do not change the number of segments (all-time diversified firms with constant number of business segments throughout the period)	795	290
Single-business firms	19,398	4,222
Total	25,996	5,680

Table 3

Summary statistics by diversification profile

This table presents summary statistics for single-business firms and for the three diversification profiles *before* the first incidence of diversification. Total assets (TA) and sales (SALES) are measured in USD millions, investments (CAPX/SALES) is the ratio of capital expenditures to total sales, profitability (EBIT/SALES) is the ratio of earnings before interest and taxes to total sales and leverage (LEV) is the ratio of total debt to total assets. *, ** and *** indicates 10%, 5%, and 1% level of significance, respectively (in each case, the mean value comparisons are with respect to mean values of single-business firms).

	TA	SALES	CAPX/SALES	EBIT/SALES	LEV (Debt/Assets)
	Mean Median N	Mean Median N	Mean Median N	Mean Median N	Mean Median N
Firms that diversify	1,573 298*** 2,403	1,463 283*** 2,403	0.11*** 0.04 2,403	0.05*** 0.07*** 2,403	0.24 0.20 2,403
Single-business firms that diversify once (Single-Business-Once)	1,093*** 262* 1,491	1,049*** 250*** 1,491	0.12** 0.04 1,491	0.04** 0.07*** 1,491	0.23** 0.17* 1,491
Multi-business firms that diversify once (Multi-Business-Once)	2,786* 289*** 465	2,751 337*** 465	0.08*** 0.04** 465	0.06*** 0.07 465	0.26 0.26*** 465
Single/multi-business firms that diversify multiple times (Single/Multi-Business-Many)	1,911 454*** 447	1,502 396*** 447	0.10*** 0.05** 447	0.09*** 0.09*** 447	0.24 0.23 447
Single-business firms	1,445 223 19,398	1,247 192 19,398	0.14 0.04 19,398	0.02 0.06 19,398	0.25 0.19 19,398

Table 4

Diversification profiles and acquisition characteristics

This table presents information on the characteristics of acquisitions by diversification profile.

	No. of completed acquisitions	Withdrawn acquisitions	Acquisitions duration (days)	Cumulative Abnormal Returns (CARs) (%)
	Mean	%	Mean	Mean
Single-business firms that diversify once (Single-Business-Once)	0.242	62.30	90.75	-0.042
Multi-business firms that diversify once (Multi-Business-Once)	0.759	52.50	54.16	-0.075
Single/multi-business firms that diversify multiple times (Single/Multi-Business-Many)	1.628	9.90	40.53	1.647

Table 5

Panel A: Correlations

Pearson (Spearman) correlations below (above) the diagonal. *, ** and *** indicates 10%, 5%, and 1% level of significance, respectively.

	EXC_VAL	DCY	SIZE	CAPX/SALES	EBIT/SALES	LEV
EXC_VAL		-0.037***	0.243***	0.209***	0.284***	-0.056***
DCY	-0.036***		0.093***	-0.065***	0.029***	0.038***
SIZE	0.232***	0.093***		0.271***	0.351***	0.231***
CAPX/SALES	0.127***	-0.075***	0.120***		0.222***	0.126***
EBIT/SALES	0.036***	0.034***	0.186***	0.042***		0.019***
LEV	-0.011*	0.057	0.108***	0.092***	-0.033***	

Panel B: Estimation of the diversification discount

This table reports regression coefficient estimates of the corporate diversification discount for the period 1998-2008. The dependent variable is Excess Value (EXC_VAL). *t*-statistics are reported in parenthesis below each coefficient. *, ** and *** indicates 10%, 5%, and 1% level of significance, respectively.

	(1)	(2)	(3)	(4)
	Full Sample		Excluding Refocusing Firms	
Const.	-0.446*** (-43.95)	-0.969*** (-37.31)	-0.489*** (-37.81)	-1.001*** (-29.63)
DCY	-0.085*** (-12.98)	-0.080*** (-12.61)	-0.077*** (-8.17)	-0.068*** (-7.42)
SIZE	0.069*** (41.88)	0.546*** (46.08)	0.080*** (36.33)	0.580*** (38.35)
CAPX/SALES	0.234*** (20.63)	0.124*** (10.98)	0.192*** (15.84)	0.089*** (7.38)
EBIT/SALES	-0.012 (1.27)	-0.040*** (-3.91)	-0.000 (-0.02)	-0.051*** (-4.38)
SIZE lag1		-0.176*** (-13.94)		-0.196*** (-12.94)
CAPX/SALES lag1		0.002* (1.78)		0.001 (1.55)
EBIT/SALES lag1		0.000 (0.76)		0.000 (0.58)
SIZE lag2		-0.129*** (-17.32)		-0.128*** (-14.57)
CAPX/SALES lag2		0.000* (1.87)		0.000* (1.91)
EBIT/SALES lag2		-0.000 (-0.34)		-0.000 (-0.15)
LEV		-0.002 (-0.19)		-0.016 (-1.39)
SIZE-SQ		-0.013*** (-20.80)		-0.014*** (-15.84)
No of observations	39,134	39,134	25,996	25,996
Adjusted R^2	0.062	0.116	0.065	0.123

Table 6

Time-series analysis of the impact of corporate diversification on firm value

This table reports regression coefficient estimates of the corporate diversification discount for the period 1998-2008. The dependent variable is Excess Value (EXC_VAL). *t*-statistics are reported in parenthesis below each coefficient. *, ** and *** indicates 10%, 5%, and 1% level of significance, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.971*** (-15.31)	-0.965*** (-15.24)	-0.965*** (-15.22)	-0.964*** (-15.22)	-0.190*** (-5.26)	-0.191*** (-5.27)
DC	-0.040** (-2.23)					
Before DC		0.014 (0.64)	0.000 (0.07)			
After DC		-0.077*** (-3.62)				
After DC * No ACQ			-0.072*** (-2.71)			
After DC * ACQ			-0.223*** (-2.84)			
Before SBO				0.034 (1.22)	0.022* (1.78)	0.023* (1.78)
After SBO				-0.097*** (-2.97)	-0.047** (-2.73)	
After SBO * No ACQ						-0.041** (-2.32)
After SBO * ACQ						-0.146* (-1.87)
Before MBO				-0.018 (-0.42)	-0.013 (-0.60)	-0.014 (-0.61)
After MBO				-0.083** (-2.28)	-0.021 (-1.38)	
After MBO * No ACQ						-0.019 (-1.27)
After MBO * ACQ						-0.135 (-1.25)
Before SMBM				-0.022 (-0.55)	-0.046** (-2.58)	-0.047*** (-2.60)
After SMBM				-0.052 (-1.47)	0.006 (0.37)	
After SMBM * No ACQ						0.007 (0.44)
After SMBM * ACQ						-0.033 (-0.38)
ACQ			0.067 (1.28)			0.006 (0.13)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Lag1 EXC_VAL	No	No	No	No	Yes	Yes
Lag2 EXC_VAL	No	No	No	No	Yes	Yes
	t-statistics to check the difference between "Before" and "After" diversification events					
(I) Before DC – After DC		-0.092*** (-3.61)				
(II) Before DC – After DC * No ACQ			-0.072*** (-2.71)			
(III) Before DC – After DC *ACQ			-0.223*** (-2.84)			
(IV) Before SBO – After SBO				-0.131*** (-3.61)	-0.069*** (-3.36)	
(V) Before SBO –						-0.064*** (-3.01)

After SBO * No ACQ						
(VI) Before SBO – After SBO * ACQ						-0.169** (-2.14)
(VII) Before MBO – After MBO				-0.065 (-1.38)	-0.007 (-0.31)	
(VIII) Before MBO – After MBO * No ACQ						-0.005 (-0.22)
(IX) Before MBO – After MBO * ACQ						-0.121 (-1.14)
(X) Before SMBM – After SMBM				-0.031 (-0.69)	0.052** (2.27)	
(XI) Before SMBM – After SMBM * No ACQ						0.054** (2.32)
(XII) Before SMBM – After SMBM * ACQ						0.014 (0.16)
No of observations	25,996	25,996	25,996	25,996	21,544	21,544
R^2	0.127	0.128	0.128	0.128	0.584	0.584

Table 7

Time-series analysis of the impact of corporate diversification on firm value: Additional control variables

This table reports regression coefficient estimates of the corporate diversification discount for the period 1998-2008. The dependent variable is Excess Value (EXC_VAL). *t*-statistics are reported in parenthesis below each coefficient. *, ** and *** indicates 10%, 5%, and 1% level of significance, respectively.

	(1)	(2)	(3)
Constant	-0.001	-0.099**	-0.172
	(-0.01)	(-2.32)	(-3.93)
Before SBO	0.005	0.022*	0.017
	(0.24)	(1.78)	(1.22)
After SBO	-0.071**	-0.047***	-0.073***
	(-2.20)	(-2.73)	(-3.96)
Before MBO	0.002	-0.013	-0.028
	(0.07)	(-0.60)	(-1.15)
After MBO	-0.029	-0.021	-0.039**
	(-1.21)	(-1.38)	(-2.33)
Before SMBM	-0.015	-0.046***	-0.046**
	(-0.53)	(-2.58)	(-2.37)
After SMBM	-0.026	0.006	-0.005
	(-1.39)	(0.37)	(-0.30)
GIM	-0.001		
	(-0.44)		
MCAP/GDP		-0.111***	
		(-5.20)	
Control variables	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Lag1 EXC_VAL	Yes	Yes	Yes
Lag2 EXC_VAL	Yes	Yes	Yes
Difference Before SBO – After SBO	-0.077**	-0.069***	-0.091***
	(-2.07)	(-3.36)	(-4.05)
Difference Before MBO – After MBO	-0.031	-0.008	-0.011
	(-0.86)	(-0.31)	(-0.41)
Difference Before SMBM – After SMBM	-0.011	0.053**	0.042*
	(-0.35)	(2.27)	(1.64)
No of observations	4,752	21,544	15,976
R^2	0.616	0.584	0.577

Figure 1

The theoretical and empirical setting of the study

Development of absorptive capacity

Performance

Theoretical perspective

Repetitive and accumulative diversification experience

Market performance

Relatedness of diversification

Resource commonality

Diversification profiles

Performance

Testable relations

Single-Business-Once (SBO)
- No repetitive
- No accumulative

Multi-Business- Once (MBO)
- No repetitive
- Accumulative

Single/Multi-Business-Many (SMBM)
- Repetitive
- Accumulative

H1a,b,c

Excess value

H2

Mode of diversification
- Internal growth
- Acquisition