

A Work Project presented as part of the requirements for the Award of a Master's degree in
Management from the Nova School of Business and Economics.

**BUY-AND-BUILD STRATEGIES IN PRIVATE EQUITY:
THE IMPACT OF DIVERSIFYING ACQUISITIONS ON PLATFORM
PERFORMANCE**

THOMAS NIKOLAUS BRADEL

Work project carried out under the supervision of

YOUTH A CUYPERS

07-09-2020

Abstract

Extending the literature on buy-and-build (B&B) strategies in the field of private equity (PE), this study examines the impact of product- and industry-diversifying acquisitions and cross-border transactions (CBT) on the platform's operational improvement. The sample consists of 165 platform companies from Western Europe and their 621 add-on acquisitions between 1997 and 2020. The results of this study indicate that the integration of industry-diversifying add-on acquisitions into the B&B strategy provides additional operational value for the platform compared to exclusively horizontal add-on acquisitions.

Keywords: Private Equity, Buy-and-Build, M&A, Diversification, Cross-Border Transaction

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

Table of Content

1. Introduction	1
2. Theoretical Framework and Hypotheses	4
2.1 Value Creation.....	5
2.2 Diversification Hypothesis	6
2.3 Cross-Border Hypothesis	8
3. Data and Variables	10
3.1 Descriptive Statistics	11
3.2 Dependent Variables	13
3.3 Main Independent Variables	13
3.4 Control Variables and Fixed Effects	14
3.5 Summary Statistics.....	15
4. Empirical Analyses and Results	17
5. Discussion	19
6. Conclusion.....	21
References	24
Appendix	31

1. Introduction

The enthusiasm of institutional and private investors (limited partners, or LP) towards the alternative asset class private equity remains high, leading to a record level of assets under management, reaching \$4.1tn as of January 2020 (Bain and Company 2020). However, meeting the LP's return expectations seems more challenging than ever for the fund managers (general partners, or GP). The full pockets of the GP, healthy mergers and acquisitions (M&A) markets, and aggressive corporate buyers have led to increasing competition and asset valuations for years (Braun, Jenkinson, and Stoff 2017; Hammer et al. 2017). The rising prices for potential targets combined with ongoing macro- and microeconomic changes lead the PE firms away from traditional sources of value creation, such as exploiting low price multiples, deleveraging highly indebted investments, and governance engineering, to more fundamental value creation through operational improvements (Hammer et al. 2017). In order to continue yielding excessive returns, general partners must continuously adapt, evolve, and find new creative strategies to generate value in response to high premium payments and low leverage effects (Braun, Jenkinson, and Stoff 2017).

One of these potential strategies, which has a clear path to value creation by focusing on operational improvements, is the buy-and-build strategy. According to Smit (2001), the strategy involves buying a larger company as a platform and then consolidating the industry by buying several smaller companies (add-ons) in order to create an efficient large-scale network. The exploitation of synergy effects creates added value through revenue growth and margin expansion. Although B&B has become an essential component of PE, it has received relatively little attention in academic literature so far. Studies focusing on the outperformance of B&B strategies compared to traditional buyouts show not only a higher return through the acquisition of add-ons but also indicate that this return is generated primarily through operational improvements during the holding period (e.g. Hammer, Hinrichs, and Schweizer 2016;

Nikoskelainen and Wright 2007; Valkama et al. 2013; Archarya et al. 2013). Although the add-on acquisitions have been shown to be the lever for operational improvements, and thus for the value creation of B&B strategies, the influence of add-ons' determinants on performance outcome is largely unexplored. Hammer et al. (2017) examined the determinants of 4,937 add-on acquisitions between 1997 and 2012. However, they do not address the value the determinants create for the platform. The collected data show a surprisingly high number of B&B strategies with at least one industry-diversifying (in 47% of the observed B&B strategies) and/or one cross-border (in 35% of the observed B&B strategies) add-on acquisition. These findings are surprising for two reasons: (I) since the rational of B&B is to increase market power by consolidating the industry and to benefit from economies of scale, industry-diversifying acquisitions do not meet the typical investment criteria, and (II) the complexity of industry-diversifying and cross-border deals can slow down the transaction and integration process, which can be critical considering the limited holding period of PE investments (Hammer et al. 2017; Cumming, Fleming Grant, and Schwienbacher 2005). In order to gain a deeper insight into the intention of the GP when selecting add-ons, this study examines how the integration of diversifying and cross-border targets into the portfolio of add-ons affects the platform's operational improvement throughout the PE's ownership.

The academic literature on diversifying and cross-border acquisitions has a broad coverage. Contrary to PE studies, academic researchers of traditional M&A literature deal with the value creation of diversifying and cross-border mergers or acquisitions of non-PE backed companies. These studies emphasize the increased complexity and information asymmetry while also demonstrating the significant value creation potential and its importance for corporate's inorganic growth (e.g. Geringer, Tallman, and Olsen 2000; Zhou 2011; Chakrabarti, Sigh, and Mahmood 2007). Especially relevant for the purpose of this study is the literature regarding serial acquirers and the acquisition programs they execute, as this concept has several

similarities to the B&B strategy (e.g. Laamanen and Keil 2008; Fuller, Netter, and Stegemoller 2002; Aktas, Bodt, and Roll 2009). However, the results of the traditional M&A literature are only of limited applicability in the context of B&B strategies. First, especially compared to inexperienced acquirers, the results may be different in the case of B&B, as the platform has a financial investor as a partner throughout the holding period. The PE firm can contribute not only its capital resources but also its deal-making skills and integration experience. Thus, in this joint acquisition, by bringing together capital, knowledge, and skills, a significant added value can be created in the transaction process as well as during the integration phase (Rousseau 2010; Humphery-Jenner, Sautner, and Suchard 2017). However, this added value is certainly less, or even negligible, when compared to companies with significant acquisition experience. Second, unlike most of the acquisitions of non-PE backed companies, PE investments are subject to a limited holding period. Consequently, operational improvements must be achieved within a few years, which makes it even more challenging (Cumming, Fleming Grant, and Schwienbacher 2005; Hammer et al. 2017). The question of whether it is beneficial for the platform at the operational level to integrate diversifying and cross-border acquisitions into the portfolio of add-ons remains to be clarified.

To address this question, the Bureau van Dijk's Zephyr and Orbis databases are used to extract a total of 165 platform companies from Western Europe and their 621 add-on acquisitions between 1997 and 2020. Diversification is measured using two levels: product-diversification and industry-diversification. Product-diversifying add-ons, unlike in the case of industry-diversification, have their core business in the same industry as the platform. However, they do not offer the same product or service and are, therefore, classified as product-diversifying. In CBT, the headquarters of the platform and its add-on are located in different countries. The empirical results of this study indicate that the consideration of industry-diversifying

acquisitions has a positive effect on the platform's operational improvement. In contrast, no significant effects of product-diversification and CBT are found.

This study contributes to both theory and practice. First, the findings extend the PE literature to gain further insights into the relevance and effectiveness of add-on determinants. Second, this study extends the traditional M&A literature on diversification and CBT to include the impact on a B&B strategy. Finally, the results also offer practical value to the GP by providing empirical evidence on the impact of diversification and CBT, which facilitates decision making.

2. Theoretical Framework and Hypotheses

Although the strategy behind B&B has been around as long as private equity itself, it has never been as present and relevant as it is today. This is because B&B offers a clear path to value creation in uncertain macroeconomic and political times (Bain and Company 2020). Smit (2001) as well as Smit and Moraitis (2010) interpret the add-ons of the platform as a real option, and with their developed framework, they offer a conceptual background that has a wide application in the literature about B&B. There is a consensus among academics when it comes to describing the components and the way B&B works:

In a buy-and-build strategy, the investor acts as an industry consolidator, with the aim of transforming several smaller companies into an efficient largescale network. The initial platform acquisition generates the option for further acquisitions. Additional value is created through the consolidation of synergistic acquisitions as operations become integrated, cost efficiencies are realized, and market share increases. (Smit, 2001; p. 82)

Usually, when implementing a B&B strategy, the PE firm starts by identifying the fragmented industry to be consolidated, which consists of a large number of small to medium-sized companies serving as potential add-ons. The second step is acquiring a target that will take on

the role of a platform company. This platform should be a well-established company with a considerable reputation, a scalable competitive advantage, and sufficient resources and capabilities to finance and integrate the add-on acquisitions. This is followed by the so-called “build-up” phase, in which the platform identifies and acquires add-on companies with the support of the PE firm. These add-ons are usually smaller market participants that offer opportunities to capture synergies. The aim of this network is to realize synergies and strengthen market power by increasing market share (Smit 2001).

Empirical studies on B&B in the literature have so far focused particularly on the return potential of the long-term sequential strategy. Nikoskelainen and Wright (2007) and Valkama et al. (2013) conducted analyses of 321 PE backed buyouts in the United Kingdom provide evidence that deals with add-on acquisitions during the holding period generate superior returns compared to those without, measured by the internal rate of return (IRR). Archarya et al. (2013) examined the operational development of 395 buyouts in Western Europe. Their empirical results indicate that PE backed buyouts with add-on acquisitions show operational outperformance, measured by earnings before interest, taxes, depreciation, and amortization (EBITDA) margin improvements.

2.1 Value Creation

Smit (2001) suggests two ways of creating value in B&B strategies: through the financial leverage effect and by realizing synergies between the platform and its add-on acquisitions. In leveraged buyouts (LBO), the acquisition is typically financed with a significant amount of debt, which is repaid as much as possible over the holding period. As with traditional PE backed buyouts, this creates valuable tax advantages and increases return on equity. Moreover, the pressure of high leverage has been shown to have a positive impact on management’s incentives to improve efficiency and ensure sufficient cash flow (Kaplan and Strömberg 2009). In the case of B&B strategies, both the platform and the add-on acquisitions are typically financed with a

certain amount of debt (Smit 2001). The second lever for value creation is operational improvements, both through revenue growth and cost reductions (Smit 2001; Archarya et al. 2013). By integrating the operations of the add-ons into the platform, economies of scale and scope can create significant cost advantages. In addition, the consolidated turnover increases the market share and the associated market power over suppliers and customers (Smit 2001). Besides the added value provided by the leverage effect and operational improvements, the PE firms profit from the possibility of multiple arbitrage, as the add-ons, which are usually purchased at a lower price multiple than the platform, benefit from the higher price multiple of the consolidated network (Brigl et al. 2012).

2.2 Diversification Hypothesis

Even though diversification is a critical engine for firm growth, it can lead to increased costs and inefficiencies due to information asymmetries and high coordination efforts during the transaction and integration phase (Grant, Jammine, and Thomas 1988; Chakrabarti, Sigh, and Mahmood 2007; Zhou 2011). In addition, interdependencies between business units need to be managed even after the integration phase, which may cause further coordination costs and inefficient management due to misallocation of resources (Zhou 2011). However, diversification can also lead to significant operational improvements by acquiring new competencies, gaining new knowledge, increasing market power, distributing and using resources more efficiently, diversifying risk, and exploiting economies of scale and scope (Zhou 2011; Chakrabarti, Sigh, and Mahmood 2007; Geringer, Tallman, and Olsen 2000; Smit and Moraitis 2010). In order to investigate in which cases the disadvantages outweigh the advantages of diversification, both the resource-based theory and the transaction cost theory are applied in the literature (Geringer, Tallman, and Olsen 2000). The combination of those suggests that performance and the degree of diversification have an inverted U-shaped, curvilinear relationship (Markides 1992; Tallman and Li 1996), meaning that the balance of

potential value creation versus the costs associated with complexity and information asymmetry is more favorable for acquisitions with a certain degree of diversification. Therefore, as long as the buyer and the target company are somehow related, the strategy can create significant operational value (Chakrabarti, Sigh, and Mahmood 2007; Tallman and Li 1996). PE firms in B&B strategies are unlikely to target a conglomerate of completely unrelated companies during the holding period, which is why Hammer et al. (2017) argue that even industry-diversifying add-on acquisitions have a certain degree of relatedness to the platform. This potential relationship in the case of industry-diversification occurs, for example, if the add-on is an acquisition along the value chain of the platform's business (vertical integration).

Furthermore, in the context of serial acquisition programs, there is vast evidence that the abnormal returns decrease from deal-to-deal (Fuller, Netter, and Stegemoller 2002; Ismail 2008). Besides growing hubris and budget constraints, decreasing investment opportunities and increasing competition for deals are possible explanations for this observation, as they result in less attractive investment opportunities on the M&A market (Bertrand and Betschinger 2012; Aktas, Bodt, and Roll 2009). Given this, it is not surprising that, by examining the acquisition programs of 611 serial acquirers in the United States, Laamanen and Keil (2008) provide evidence of a significant positive effect on the operational performance of the serial acquirer from buying industry-diversifying targets. As acquisitions of companies from other industries may also be vertically integrated, diversification can create added value by increasing the quality of the product and reducing costs through shared facilities and improved transactions and communication (Harrigan 1985, 1986; Hammer et al. 2017).

It is expected that the efficiency and profitability gains will increase by including diversifying add-ons, as the special sources of value creation in diversification strategies, such as knowledge gains from related industries, the development of new markets, economies of scope, and lower transactions costs, enable operational improvements that would not be possible by acquiring

add-ons solely within the market. Furthermore, especially with several acquisitions in a short period of time, diversifying add-ons may solve the problem of decreasing opportunities for attractive targets in the platform industry. This leads to the following hypotheses:

Hypothesis 1a (H1a): Buy-and-build strategies with at least one product-diversifying add-on experience a greater performance improvement of the platform than buy-and-build strategies with add-on acquisitions solely within the market.

Hypothesis 1b (H1b): Buy-and-build strategies with at least one industry-diversifying add-on experience a greater performance improvement of the platform than buy-and-build strategies with add-on acquisitions solely within the market.

2.3 Cross-Border Hypothesis

Although CBT have become an essential part of a company's inorganic growth strategy, they can also pose major challenges. In contrast to domestic transactions, additional costs and uncertainties arise from unknown legal systems, languages, corporate cultures, and accounting standards (Erel, Liao, and Weisbach 2012; Kang and Kim 2008; Ragozzino and Reuer 2011). Moreover, although information asymmetry is a general problem in M&A, it can be particularly serious in international transactions and lead to adverse selection (Akerlof 1970). These risks of additional complexity and coordination not only affect the deal process but can also slow down the integration phase. Due to the limited holding period of PE investments, the synergies of the acquisitions may not be realized before the exit (Erel, Liao, and Weisbach 2012; Cumming, Fleming Grant, and Schwienbacher 2005; Hammer 2016).

Nevertheless, the risks of uncertainty and costs are offset by several advantages that have been encouraging companies to grow and develop through CBT for decades. Add-on acquisitions beyond the platform's national boundaries can not only mitigate country-specific risk and reduce the costs of capital through more stable cash flows but can also significantly increase

both efficiency and profitability. This operational added value can be achieved through economies of scale and scope as well as through the leverage of strategic resources and exploitation of untapped market potential (Smit 2001; Smit and Moraitis 2010; Seth, K. Song, and Pettit 2002; Aybar and Aysun 2009). Whereas value is created both for the target company and the buyer; the acquirer can not only apply their existing stock of valuable knowledge in a new context (asset sharing) but also optimize their operations and deploy new investment opportunities in their home country through the newly acquired skills and resources of the target (Seth, K. Song, and Pettit 2002; Seth 1990; Seth, K. Song, and Pettit 2000). Furthermore, in the context of serial acquisition strategies, cross-border and domestic add-ons can complement each other. The value creation potential of domestic transactions can decrease over time as the best opportunities are already taken off the market, whereas cross-border add-ons can offer additional sources of efficiency and profitability gains which are not feasible in the home country (Bertrand and Betschinger 2012). In addition, the costs and risks associated with the complexity and uncertainties of CBT are reduced by having the financial investor as a partner not only throughout the acquisition process but also throughout the holding period. The general partners can contribute important capital, knowledge, and skills through their extensive experience in both the transaction and integration phase (Humphery-Jenner, Sautner, and Suchard 2017; Rousseau 2010).

Due to the potential cost savings, efficiency gains, knowledge acquisition opportunities, and influence of the PE firm as a partner, it is expected that CBT will lead to profitability and efficiency gains that would not be possible with solely domestic add-ons. This leads to the following hypothesis:

Hypothesis 2 (H2): Buy-and-build strategies with at least one cross-border add-on experience a greater performance improvement of the platform than buy-and-build strategies with solely domestic add-on acquisitions.

3. Data and Variables

To create a comprehensive dataset of B&B strategies, the Zephyr and Orbis databases of Bureau van Dijk (BvD) are used. Zephyr is a transaction database containing over 1.8 million deals from the fields of M&A, IPO, PE, and venture capital (Bureau van Dijk 2020b). In recent years, Zephyr has received increasing attention from academic PE researchers (e.g. Hammer et al. 2017; Wang 2012; Knauer et al. 2014), indicating its reliability as a data source. For general information and financial data of the companies, the Orbis database, which contains information from over 365 million public and private companies worldwide, is used (Bureau van Dijk 2020a). Although both Zephyr and Orbis include data from around the world, the coverage is greatest in Europe, especially Western Europe (Wang 2012). Therefore, this study focuses on platform companies in this geographical area.

Following the procedure of Borell and Heger (2013) and Hammer et al. (2014), the steps described below are applied in Zephyr to identify a comprehensive collection of platform companies and their add-on acquisitions. First, all deals classified as “institutional buyout” in the period between 1997 and 2020 are compiled. In addition, all deals categorized as “management buy-out” and “management buy-in” with deal financing declared as either “private equity” or “leveraged buy-out” are added. For the purpose of this study, only deals where at least 50% of the target is acquired are considered; this is a common percentage in the B&B literature, as it ensures control of the PE firm (Wang 2012; Hammer et al. 2017; Knauer et al. 2014). To measure the operational performance of the platform company post-exit, it is checked that the PE firm has already sold its investment. For this purpose, in step 2, all deals are extracted in which the potential platforms from step 1 are declared as the target, regardless of how they are categorized. If the buyer of a potential platform is later identified as the seller of the same company, these deals are identified as PE firm’s entry and exit. The BvD identification (ID) number of the companies is used, which also takes a change of name into

account. Accordingly, 374 PE deals in Western Europe with known entry and exit dates between 1997 to 2020 are extracted. The third step is to find out which of these PE deals have made several add-on acquisitions within the holding period and can therefore be identified as platform. For this purpose, all deals are extracted in which the potential platforms from step 2 are listed as buyer of a company with majority stake. If the dates of these deals are within the holding period of the PE firm, they are considered as add-on acquisitions. In accordance with Smit's (2001) definition of B&B strategies, companies are only considered as platforms if they have acquired at least two add-ons within the holding period. Typically, the platform itself acts as the buyer of the add-ons. However, in some cases, a holding company between the PE firm and the platform, or even the PE firm itself, acts as the buyer of the add-on (Bansraj, Smit, and Volosovych 2019). In order to take these deals into account, all other deals made by the buyer of the platforms from step 1 within the holding period are individually analyzed to determine whether they are add-ons for the platform. These steps uncover 165 platform companies that have made a total of 621 add-on acquisitions. Company-related information such as the financial data of the platform and the add-on acquisitions are collected from Orbis using the BvD ID numbers that correspond to Zephyr. Orbis data are retrieved, downloaded, and cleansed according to the recommended methodology of Kalemli-Ozcean et al. (2015). This ensures high coverage of historical data and reduces the survivorship bias associated with downloading information from the Orbis database.

3.1 Descriptive Statistics

Table 1 presents the distribution of the platform acquisitions by the financial investor according to the year of entry. The distribution of this sample shows a similar pattern to those of comparable studies (e.g. Hammer et al. 2017, 2014; Borell and Heger 2013). Until 2007, the table shows a strong increase of buyout activity. It then declined sharply in 2008 and 2009, probably due to the global financial crisis, but recovers from 2010 onwards. As a result of the

poor market conditions in 2008 and 2009, the holding period, which is defined as the months between entry and exit, increased in the pre-crisis phase, as financial investors are unwilling to exit their investments in times of economic difficulties (Hammer et al. 2014). When examining the low number of deals and short holding periods in 2016 and 2017, it should be noted that only B&B strategies with announced exits are included in the sample, hence the number of entries is probably higher than stated. A detailed distribution of the sample data by country, industry, and number of add-ons can be found in panels A, B, and C of Table A1, respectively. Regarding the countries in panel B, the most buyout activity can be found in France, with 24% of all deals in the sample, followed by the United Kingdom (21%), Sweden (13%) and Germany (12%). The platform companies of the sample are further divided in panel C according to the industry sections of the statistical classification of economic activities in the European community (NACE Rev. 2). In terms of this industry classification, most platform companies belong to the sectors “Professional, Scientific and Technical Activities” (21%), “Wholesale and Retail Trade” (18%), “Financial and Insurance Activities” (14%), and “Real Estate Activities” (10%). The number of acquisitions of platform companies during the holding period is provided in panel C, which indicates an average of 3.8 add-ons per platform.

Table 1: Sample Distribution (I/II)

This table provides the sample distribution of 165 B&B strategies by year of entry over the period ranging from 1997 to 2020. The entry is measured as the year the financial investor acquired the platform. Both the absolute and the relative number of deals regarding the sample are presented. Furthermore, the table shows the median holding period (in months) of the platforms in the corresponding year. The underlying data are retrieved from Bureau van Dijk’s Zephyr and Orbis.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Deals	1	8	5	10	6	4	10	11	15	14
%	1%	5%	3%	6%	4%	2%	6%	7%	9%	8%
Holding Period	66	79	60	83	49	47	32	68	87	71
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Deals	6	5	13	12	8	11	10	11	4	1
%	4%	3%	8%	7%	5%	7%	6%	7%	2%	1%
Holding Period	63	68	69	68	59	57	51	48	40	23

3.2 Dependent Variables

The dependent variable of this study is the change in the platform company's operational performance ($\Delta Perf$) during the holding period of the PE firm. Following the methodology of Meles, Monferra, and Verdoliva (2014) and Nikoskelainen and Wright (2007) the operational improvement of the platform is measured as the difference between the time of exit (investment realization) and the time of entry (leveraged buyout):

$$(I) \Delta Perf_i = Perf_{i,ex} - Perf_{i,en}$$

Here, i denotes a platform company ($i = 1, 2, \dots, 165$), ex denotes the fiscal year after the exit, and en denotes the fiscal year before the entry of the PE firm. In order to ensure a sufficient sample size, in case of missing information in the fiscal year before the entry and the fiscal year after the exit, the financial data from the fiscal year of entry and exit are also considered.

Three accounting-based performance measures, which are widely used in previous studies on PE backed companies, are used to estimate the dependent variables (e.g. Borell and Heger 2013; Bansraj, Smit, and Volosovych 2019; Jain and Kini 1994; Meles, Monferra, and Verdoliva 2014): the change in earnings before interest and taxes (EBIT) margin ($\Delta EBIT-M$), measured as EBIT over sales; the change in return on assets (ROA) (ΔROA), which corresponds to EBIT normalized by the number of total assets; and the change in the asset turnover rate (ATR) (ΔATR), which indicates how much sales the invested capital generates. All these performance measures are essential components of a fundamental analysis and provide critical information on the extent to which added value is created.

3.3 Main Independent Variables

The main independent variables of this study are the types of add-ons: product- or industry-diversifying acquisition and cross-border transaction. To determine whether the add-on is a diversifying or horizontal acquisition, this study follows the procedure of Haleblan and

Finkelstein (1999), Hammer et al. (2017), Laamanen and Keil (2008), and Neffke and Henning (2013). Since this study refers exclusively to platform companies in Western Europe, the European equivalent of the widely used standard industrial classification (SIC) code, the 4-digit NACE Rev. 2 code, is used. A differentiation is made between three levels of diversification: no diversification (*NDIV*), product-diversification (*PDIV*), and industry-diversification (*IDIV*). The primary NACE Rev. 2 is used, which corresponds to the core business of the respective company. *NDIV* means that all four digits of the platform match each primary NACE code of the add-ons. *PDIV* is defined as the last two digits of at least one of the add-ons' codes differing from the primary NACE code of the platform. In this case, the core business of the add-on is in the same industry (first two digits of the NACE code) but does not offer the same product or service as the platform. *IDIV* is defined as the first two digits of at least one of the add-ons' codes differing from the primary NACE code of the platform. In this case, the add-on's core business is in a different industry than the platform's core business. The three levels of diversification are each coded as dummy variables which take the value 1 if the above cases apply and the value 0 if not, with *NDIV* being the reference variable. Regarding the cross-border variable (*CBT*), the conventional measure used in several M&A studies (e.g. Hammer et al. 2017; Boeh 2011) is applied, which compares the headquarters of the platform and the add-ons. Consequently, the cross-border dummy variable takes the value 0 if the country code assigned to the platform matches all codes of the add-ons, otherwise it is 1.

3.4 Control Variables and Fixed Effects

In order to determine the impact of the add-on determinants “cross-border”, “product-diversification”, and “industry-diversification” on $\Delta Perf$, it is necessary to control for various additional factors that could be responsible for changes in the operational performance. Both company- and deal-specific characteristics as well as the business environment are considered in the regression models. First, previous studies (e.g. Hammer et al. 2017; Smit 2001) suggest

that the size of the platform has a significant impact on platform performance, which is why the natural logarithm of the pre-entry total assets of the platform is controlled ($LN(Size)$). Integrating multiple acquisitions requires sufficient capacity and resources, which is why the size has a significant impact on the integration and implementation success and, thus, on the operational value creation (Smit 2001). Second, following Guo, Hotchkiss, and W. Song (2011), depending on the performance measure ($\Delta Perf$), the respective value pre-entry is included in the regression ($EBIT-M_{en}$, ROA_{en} or ATR_{en}). Third, in reference to previous studies (Hammer 2016; Ismail 2008; Fuller, Netter, and Stegemoller 2002), the number of add-ons ($\#Add-ons$) and the duration of the holding period (HP), measured in months, need to be considered. The positive added value through add-ons can decrease from deal to deal due to a declining number of investment opportunities, whereas a high number of add-ons can also lead to an increasing $\Delta Perf$ by exploiting economies of scale and scope. A long holding period offers more opportunities to realize the synergies between the platform and the add-ons, and therefore, a higher performance increase is expected (Hammer 2016). Finally, macro-, meso-, and microeconomic fixed effects are considered in the regressions by adding the respective primary industry (*Industry FE*), the year of entry (*Year FE*), and country (*Country FE*) of the platform. The sections according to NACE Rev. 2 code are used for the primary industry. An overview of all variables used in this study can be found in Table A2.

3.5 Summary Statistics

Table 2 provides the summary statistics for all variables used in the empirical analyses. The values of the performance measures and the control variables are given for the entire sample and subdivided into B&B strategies with cross-border transaction or without and into the level of diversification. Since the sample is limited to platform companies for which pre-entry and post-exit financial information is available, the sample may be influenced by a selection bias.

In addition, the sample contains outliers that can strongly bias the mean value. Thus, the median is more appropriate for interpretation purposes.

Table 2: Summary Statistics

This table presents the summary statistic of the sample B&B strategies. The underlying data are 46 B&B strategies executed during the sample period from 1997 to 2020, retrieved from Bureau van Dijk Zephyr and Orbis. It also shows the summary statistics of B&B strategies with exclusively domestic transactions, with at least one cross-border transaction, without diversification, with product-diversification, and with industry-diversification. The table displays the average and median value of all independent and control variables. The independent variables correspond to the performance change of the platform pre-entry to post-exit. EBIT-Entry, ROA-Entry, and ATR-Entry correspond to the performance of the platform before the entry of the financial investor. Size corresponds to the total assets of the platform pre-entry. Holding periods are measured as the months between the entry and exit of the financial investor, and #Add-ons corresponds to the number of add-ons acquired during the holding period.

	All B&B		No Div.		Product-Div.		Industry-Div.		Domestic		Cross-Border	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Panel A: Performance Measures												
$\Delta EBIT-M$	5%	3%	5%	-5%	-2%	-2%	7%	5%	7%	2%	4%	5%
ΔROA	-1%	1%	-3%	0%	-2%	-1%	0%	2%	1%	2%	-2%	1%
ΔATR	-0.11	-0.02	-0.44	-0.21	-0.08	-0.04	-0.02	0.00	-0.23	-0.19	-0.03	-0.01
Panel B: Control Variables												
EBIT-M Entry	-8%	5%	-8%	-1%	9%	9%	-30%	4%	-38%	2%	7%	7%
ROA Entry	10%	4%	5%	0%	11%	6%	9%	4%	8%	1%	11%	6%
ATR Entry	1.0	0.8	1.1	0.9	0.8	0.5	1.1	0.8	1.2	0.8	0.9	0.9
Size in €m	268.0	44.8	53.1	26.3	1199.7	104.0	146.7	45.6	84.8	29.1	361.4	56.2
Holding Period	65.2	61.0	53.8	55.0	60.7	52.0	64.2	61.0	69.5	65.0	62.8	60.0
#Add-ons	3.8	3.0	3.9	2.0	5.9	5.5	3.8	2.0	3.3	2.0	4.0	3.0
Observations	46 (100%)		9 (19.6%)		10 (21.7%)		27 (58.7%)		17 (37.0%)		29 (63.0%)	

Regarding the inorganic diversification strategy of the platforms, Table 2 depicts a positive trend of $\Delta Perf$ with an increasing level of diversification. The medians of $\Delta EBIT-M$ and ΔATR for platforms with at least one industry-diversifying add-on show a higher value than platforms with no diversifying add-ons. It is also noticeable that platforms with product- and industry-diversifying add-ons show better pre-entry performance than platforms without diversifying acquisitions. Moreover, platforms without diversifying add-ons have a median size of €26.3 million, which is far below the median of the total sample (€44.8 million). Regarding cross-border add-ons, Table 2 depicts a higher median for $\Delta EBIT-M$ and ΔATR for platforms

with CBT than for platforms with solely domestic transactions. However, domestic strategies have a marginally higher median for ΔROA . Furthermore, the median values of the performance of platform companies with domestic strategies before entry show a lower performance, are significantly smaller, and acquire less add-ons on average.

4. Empirical Analyses and Results

Following Guo, Hotchkiss, and W. Song (2011) and Hammer, Hinrichs, and Schweizer (2016,2017), multivariate ordinary least squares (OLS) regressions are performed to test whether the impact of cross-border and diversifying add-ons on platform performance differs significantly from solely domestic transactions and acquisitions within the market. The significance of the models and the respective coefficients are checked using the F-test and the t-test (Schira 2005). The results of these analyses are shown in Table 3.

First, in *H1a* and *H1b*, a positive relationship is predicted between product-/industry-diversification and the platform's operational improvement. In models (1), (2), and (3), no significant effect is shown for product-diversifying add-ons on $\Delta EBIT-M$, ΔROA , or ΔATR . Regarding industry-diversification, the coefficients of *IDIV* are statistically significant in models (1) and (3) on a 10% and 5% level, respectively. Hence, it can be observed that the performance measures $\Delta EBIT-M$ and ΔROA of platforms with at least one industry-diversifying acquisition experience a greater positive increase than without. However, this effect cannot be observed in model (5), which shows an insignificant negative effect of *IDIV* on ΔATR . Taken together, the results from (1) and (3) provide partial support for *H1b*.

Second, *H2* predicts a positive effect for CBT on platform performance. Contrary to expectations, the results do not indicate a significant impact for *CBT* on $\Delta Perf$. This observation applies to $\Delta EBIT-M$ (2), ΔROA (4), and ΔATR (6). Since no significant coefficient of *CBT* can be observed, the cross-border hypothesis can be rejected.

Table 3: OLS Regression Analyses

This table presents the outputs of different OLS regression models for the sample platform's performance change. The underlying data are 46 B&B strategies executed during the sample period from 1997 to 2020, retrieved from Bureau van Dijk's Zephyr and Orbis. EBIT margin is calculated as earnings before interest and taxes (EBIT) over sales (1) – (2). Return on assets (ROA) is calculated as EBIT over total assets (3) – (4). Asset turnover rate (ATR) is calculated as sales over total assets (5) – (6). The independent variables include a dummy indicating whether a platform acquired at least one add-on classified as product-diversification, a dummy denoting whether a platform acquired at least one add-on classified as industry-diversification, a dummy denoting B&B strategies with at least one cross-border transaction, the natural logarithm of the pre-deal platform size, the pre-deal respective performance measure (EBIT margin, ROA or ATR), the holding period in months, and the number of add-ons acquired. The regressions include industry, year, and country fixed effects (FE). Absolute standard errors are indicated in parentheses below the corresponding coefficient. One, two, and three asterisks (shown as *, **, and ***) denote statistical significance at the 10%, 5%, and 1% levels, respectively. The data is winsorized at the 5% and 95% level.

Dependent Variable		$\Delta EBIT-M$			ΔROA			ΔATR	
	Exp. Sign	(1)	(2)	Exp. Sign	(3)	(4)	Exp. Sign	(5)	(6)
<i>PDIV</i>	(+)	-0.022 (0.038)		(+)	-0.023 (0.035)		(+)	0.002 (0.246)	
<i>IDIV</i>	(+)	0.059* (0.034)		(+)	0.064** (0.030)		(+)	-0.045 (0.141)	
<i>CBT</i>	(+)		-0.025 (0.031)	(+)		-0.038 (0.026)	(+)		-0.026 (0.136)
<i>LN(Size)</i>		0.025*** (0.007)	0.026*** (0.007)		0.017** (0.006)	0.018** (0.007)		-0.207*** (0.065)	-0.212*** (0.062)
<i>EBIT-M_{en}</i>		-0.125* (0.066)	-0.157** (0.071)						
<i>ROA_{en}</i>					-0.251*** (0.071)	-0.267*** (0.080)			
<i>ATR_{en}</i>								-0.517*** (0.102)	-0.515*** (0.099)
<i>HP</i>		0.000 (0.001)	0.001 (0.001)		0.000 (0.001)	0.001 (0.001)		0.000 (0.003)	0.000 (0.003)
<i>#Add-ons</i>		-0.002 (0.004)	-0.004 (0.004)		-0.001 (0.003)	-0.001 (0.003)		0.030 (0.024)	0.032 (0.023)
<i>Industry FE</i>		Yes	Yes		Yes	Yes		Yes	Yes
<i>Year FE</i>		No	No		No	No		No	No
<i>Country FE</i>		No	No		No	No		Yes	Yes
Adjusted R ²		0.396	0.301		0.486	0.366		0.448	0.480
F-Test		2.751	2.232		3.582	2.687		2.280	2.514
Observations		41	41		42	42		42	42

To test the robustness of the results, models (1) - (4) are performed using EBITDA instead of EBIT in the dependent variables. Although EBITDA has the advantage of being adjusted for the effects of depreciation and amortization, the available financial information is more limited than for EBIT, and therefore, the sample size decreases. Furthermore, it should be considered

that B&B strategies that are assigned to *IDIV* may also have purchased product-diversifying add-ons. Therefore, to verify the results, regressions (1), (3), and (5) are tested again with an additional dummy variable for platforms with both product- and industry-diversifying add-on acquisitions (*BDIV*). Except for a missing significance of *IDIV* on ΔROA (2), measured with EBITDA instead of EBIT, the regression results confirm the findings of Table 3, according to which *IDIV* has a statistically significant positive effect on $\Delta EBIT-M$ and ΔROA . The outputs of the regressions can be found in Table A3 and A4. Furthermore, considering the number of deals for the respective levels of diversification as the main independent variables allows a deeper understanding of the findings from Table 3. The output indicates whether the number of diversifying add-ons is critical for a superior operational improvement. As shown in Table A5, neither the number of product-diversifying add-ons (*#PDIV*) nor the number of industry-diversifying add-ons (*#IDIV*) has a significant impact on $\Delta Perf$.

5. Discussion

The first hypothesis, the diversification hypothesis, addresses one of the two main questions of this study, namely whether portfolios with at least one diversifying add-on have a greater positive effect on the platform performance than portfolios with solely horizontal add-ons. First, the results in Table 3 indicate a negative but not significant relationship between product-diversification and performance measures. Apparently, platform companies with add-ons that are in the same industry but offering different products or services do not necessarily outperform those with solely horizontal acquisitions. However, this does not mean that they do not add value at all, and therefore, the results do not stay in conflict with the strategic literature on synergy potentials of product-diversification. Second, the results of the previous analyses as well as the robustness checks indicate that industry-diversification has a positive effect on the platform, at least on its EBIT margin and ROA. It does not matter how many diversifying acquisitions are integrated into the portfolio of add-ons; it simply matters that there are any at

all. This is consistent with the findings of Laamanen and Keil (2008), which provide evidence for superior operational performance of serial acquirers with industry-diversifying acquisitions within their portfolio. With regard to the view of Hammer et al. (2017) that, in the case of B&B strategies, the majority of industry-diversifying add-ons are likely to be vertically integrated, one possible explanation for the positive effect could be that PE firms with targets along the value chain not only mitigate the negative effect of decreasing acquisition opportunities in the platform's industry but also create significant operational value through synergy effects. Moreover, if the presumption of Hammer et al. (2017) applies, the empirical results would be consistent with the prevailing view of strategic researchers on the value creation potential of related diversification, as vertical integration implies a certain degree of relatedness to the platform. Given this, it is not surprising that the summary statistics in Table 2 show that the majority (58%) of the sample platforms integrated at least one industry-diversifying add-on into their portfolio. However, without the necessary data, it is not possible to make a definite statement regarding the type of integration and, therefore, the relationship between the platform and its add-ons. Although the business descriptions in Orbis mostly indicate a vertical integration, the possibility of companies without a specific relatedness to the platform among the industry-diversifying add-ons cannot be excluded. In summary, a more detailed analysis of the relationship between the platforms and their industry-diversifying acquisitions is required to provide an explanation for the positive effect on platform performance.

The second hypothesis of this study, the cross-border hypothesis, deals with the question of whether portfolios with add-ons based in a different country than the platform have a more positive impact on performance than portfolios without CBT. Although a wide range of academic studies highlight the synergy benefits of CBT (e.g. Aybar and Aysun 2009; Seth, K. Song, and Pettit 2002; Smit 2001) and that these should be particularly strong with the PE firm as an acquisition partner (e.g. Humphery-Jenner, Sautner, and Suchard 2017), the results in

Table 3 indicate no significant difference to platforms with solely domestic transactions. Nevertheless, the summary statistics in Table 2 show that the majority of the sample platforms perform CBT. An explanation for this could be provided by the findings of Hammer, Hinrichs, and Schweizer (2016), according to which CBT increase the exit price multiple, as buyers appreciate the complexity of CBT and are willing to pay a higher price multiple for international operating companies. Another reason for the high volume of CBT may be the lack of investment opportunities in the home country. Growing numbers of financial investors increase competition for attractive add-ons, and thus, the GP may be willing to accept the potential additional costs associated with CBT for attractive targets even though they do not necessarily result in more operational improvements than domestic transactions.

6. Conclusion

Although the B&B strategy is well-established in the PE industry and the interest among researchers is increasing, large fields of research are still unexplored. To reduce this deficit, this study examines the influence of CBT and inorganic diversification on the change in performance of 46 platform companies. These platform companies were part of PE backed B&B strategies between 1997 and 2020. By applying proven and well-established research methods, this study can offer several relevant observations and, thus, contribute a significant added value to the existing literature.

While there is no indication that the integration of product-diversification into the portfolio of add-ons has an operational advantage over exclusively horizontal acquisitions, this does not appear to be the case with industry-diversification, at least not in terms of profitability. In fact, a positive effect of industry-diversifying add-ons on the EBIT margin and ROA can be observed. Thus, the findings of this study imply that the inclusion of add-ons that have their core business in a different industry than the platform mitigates the problem of decreasing investment opportunities in the platform's core industry and allows more efficient and cost

effective operations. Although it cannot be proven due to the lack of information regarding the platforms' suppliers and customers, it is reasonable to consider the synergy effects of vertical integration as a possible explanation for the positive effect of industry-diversification. These findings contribute to the research of B&B strategies as well as traditional M&A. First, this study increases understanding of the high amount of industry-diversifying add-on acquisitions in B&B strategies and provides further insights into the drivers of platforms' operational improvements. Although previous studies have emphasized the importance of add-on determinants in the context of B&B, the impact on the operational performance of the platform is relatively unexplored. Second, the results provide further insights into the realization of synergy effects in serial acquisition programs through industry-diversification.

Contrary to expectations, no significant effect of integrating cross-border acquisitions into the portfolio of add-ons is found. Although the majority of financial investors rely on international add-ons when executing B&B strategies, this is not because they provide more efficiency or profitability improvements than add-on portfolios with exclusively domestic transactions. Rather, it is probably due to increasing competition at the domestic level and the prestige of foreign subsidiaries that platforms seek CBT. Previous researchers in the field of B&B provide evidence that CBT have a positive effect on the exit price multiple and that they are included in almost every second B&B strategy. This study contributes to the understanding of the high number of CBT in B&B strategies to the extent that excessive operational improvements are unlikely to be the incentive for choosing CBT as add-on acquisitions.

Nevertheless, this study has some limitations and raises several aspects that should be considered in future research. First, the sample consists of a relatively small number of observations and is subject to the potential for both selection and survivorship bias. The compilation of the sample may lead to a selection bias, as the complex ownership structure of private equity investments makes it difficult to identify all B&B strategies. Moreover, the

empirical analyses of exited B&B strategies may be subject to a survivorship bias, as only companies with pre-entry and post-exit unconsolidated financial statements are included in the regression models. Consequently, although the sample size of this study is sufficient according to Schira (2005) and Wooldridge (2013), the small number of observations weakens the explanatory power of the findings. Therefore, in further studies, attention could be paid to expanding the scope and sample size of the research. As this study concentrates exclusively on B&B strategies with platform companies in Western Europe, the consideration of other regions with high PE activity, such as America or Asia, could provide interesting insights and increase the number of observations. Second, without appropriate data that can provide evidence that the industry-diversifying add-ons are solely vertically integrated acquisitions, it cannot be concluded why the empirical analyses show a positive effect of industry-diversification on the platform's performance. Therefore, further studies could focus on examining the relationship between the platform and its industry-diversifying add-ons in more detail. This would not only contribute to the explanation of this study's findings but also provide interesting insights into the preferred direction of vertical integration in B&B strategies. Third, in this study, platform performance is measured as change from pre-entry to post-exit. Hence, the individual impact of the add-ons after the transaction is not taken into account. Future research could examine the impact of each add-on on the platform after the respective acquisition on a monthly or annual basis. This may result in a deeper understanding of the immediate and isolated effect of certain add-ons on platform performance. Fourth, when measuring the performance of the platform pre-entry and post-exit, it is necessary to analyze the unconsolidated financial data of the platform. Although only the financial statements stated as unconsolidated in Orbis are used in this study, the lack of information regarding the revenue origin and ownership structure post-exit does not completely exclude the possibility that acquisitions are integrated into the platform's financial data, which could lead to additional biases.

References

- Akerlof, Georg A. 1970. "The Market for "Lemons": Quality Uncertainty and the Market Mechanism." *The Quarterly Journal of Economics* 84 (3): 488–500.
- Aktas, Nihat, Eric de Bodt, and Richard Roll. 2009. "Leaning, Hubris and Corporate Serial Acquisitions." *Journal of Corporate Finance* 15 (5): 543–61.
- Archarya, Viral V., Oliver F. Gottschalg, Moritz Hahn, and Conor Kehoe. 2013. "Corporate Governance and Value Creation: Evidence from Private Equity." *The Review of Financial Studies* 26 (2): 368–402.
- Aybar, Bülent, and Ficici Aysun. 2009. "Cross-Border Acquisitions and Firm Value: An Analysis of Emerging-Market Multinationals." *Journal of International Studies* 40 (8): 1317–38.
- Bain and Company. 2020. "Global Private Equity Report 2020." Accessed August 12, 2020. https://www.bain.com/globalassets/noindex/2020/bain_report_private_equity_report_2020.pdf.
- Bansraj, Dyaran S., Han T.J. Smit, and Vadym Volosovych. 2019. "Can Private Equity Act as Strategic Buyers? Evidence from Serial (Buy-and-Build) Strategies." Erasmus School of Economics Working Paper.
- Bertrand, Olivier, and Marie-Ann Betschinger. 2012. "Performance of Domestic and Cross-Border Acquisitions: Empirical Evidence from Russian Acquirers." *Journal of Comparative Economics* 40 (3): 413–37.
- Boeh, Kevin K. 2011. "Contracting Costs and Information Asymmetry Reduction in Cross-Border M&A." *Journal of Management Studies* 48 (3): 568–90.

- Borell, Mariela, and Diana Heger. 2013. "Sources of Value Creation Through Private Equity-Backed Mergers and Acquisitions: The Case of Buy-and-Build Strategies." ZEW.Centre for European Economic Research Discussion Paper 13-94.
- Braun, Reiner, Tim Jenkinson, and Ingo Stoff. 2017. "How Persistent Is Private Equity Performance? Evidence from Deal-Level Data." *Journal of Financial Economics* 123 (2): 273–91.
- Brigl, Michael, Peter Nowotnik, Krista Pelisari, John Rose, and Paul Zwillenberg. 2012. "Private Equity: Engaging for Growth." *The Boston Consulting Group*. <https://mkt-bcg-com-public-images.s3.amazonaws.com/public-pdfs/legacy-documents/file95414.pdf>.
- Bureau van Dijk. 2020a. "Orbis." Accessed August 15, 2020. <https://www.bvdinfo.com/en-gb/our-products/data/international/orbis>.
- Bureau van Dijk. 2020b. "Zephyr." Accessed August 16, 2020. https://www.bvdinfo.com/de-de/unsere-losungen/daten/economic-and-ma/zephyr?gclid=EAIaIQobChMI36-d3dSf6wIVeEJ3Ch0jWQCOEAAYASAAEgIX7vD_BwE.
- Chakrabarti, Abhirup, Kulwant Sigh, and Ishtiaq Mahmood. 2007. "Diversification and Performance: Evidence from Asian Firms." *Strategic Management Journal* 28 (2): 101–20.
- Cumming, Douglas, Fleming Grant, and Armin Schwienbacher. 2005. "Liquidity Risk and Venture Capital Finance." *Financial Management* 34 (4): 77–105.
- Erel, Isil, Rose C. Liao, and Michael S. Weisbach. 2012. "Determinants of Cross-Border Mergers and Acquisitions." *The Journal of Finance* 67 (3): 1045–82.

- Fuller, Kathleen, Jeffry Netter, and Mike Stegemoller. 2002. "What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions." *The Journal of Finance* 57 (4): 1763–93.
- Geringer, Michael J., Stephen Tallman, and David M. Olsen. 2000. "Product and International Diversification Among Japanese Multinational Firms." *Strategic Management Journal* 21 (1): 51–80.
- Grant, Robert M., Azar P. Jammie, and Howard Thomas. 1988. "Diversity, Diversification, and Profitability Among British Manufacturing Companies." *Academy of Management Journal* 31 (4): 771–801.
- Guo, Shourun., Edith. Hotchkiss, and Weihong Song. 2011. "Do Buyouts (Still) Create Value?" *The Journal of Finance* 66 (2): 479–517.
- Haleblian, Jerayr, and Sydney Finkelstein. 1999. "The Influence of Organizational Acquisition Experience on Acquisition Performance: A Behavioral Learning Perspective." *Administrative Science Quarterly* 44 (1): 29–56.
- Hammer, Benjamin. 2016. "Do Buy and Build Strategies Increase Illiquidity of Private Equity Investments?" HHL Leipzig Graduate School of Management Working Paper.
- Hammer, Benjamin, Heiko Hinrichs, and Denis Schweizer. 2016. "Buy and Build Strategies in Private Equity: Boost or Transformation?" HHL Leipzig Graduate School of Management Working Paper.
- Hammer, Benjamin, Alexander Knauer, Pflücke Magnus, and Bernhard Schwetzler. 2014. "Inorganic Growth Strategies in Private Equity: Empirical Evidence on Add-on

- Acquisitions.” HHL Leipzig Graduate School of Management Working Paper. SSRN, 2338115.
- Hammer, Benjamin, Alexander Knauer, Pflücke Magnus, and Bernhard Schwetzler. 2017. “Inorganic Growth Strategies and the Evolution of the Private Equity Business Model.” *Journal of Corporate Finance* 45: 31–63.
- Harrigan, Kathryn Rudie. 1985. “Vertical Integration and Corporate Strategy.” *The Academy of Management Journal* 28 (2): 397–425.
- Harrigan, Kathryn Rudie. 1986. “Matching Vertical Integration Strategies to Competitive Conditions.” *Strategic Management Journal* 7 (6): 535–55.
- Humphery-Jenner, Mark, Zacharias Sautner, and Jo-Ann Suchard. 2017. “Cross-Border Mergers and Acquisitions: The Role of Private Equity Firms.” *Strategic Management Journal* 38 (8): 1688–1700.
- Ismail, Ahmad. 2008. “Which Acquirers Gain More, Single or Multiple? Recent Evidence from the USA Market.” *Global Finance Journal* 19 (1): 72–84.
- Jain, Bharat A., and Omesh Kini. 1994. “The Post-Issue Operating Performance of IPO Firms.” *The Journal of Finance* 49 (5): 1699–1726.
- Kalemli-Ozcean, Sebnem, Bent Sorensen, Carolina Villegas-Sanchez, Vadym Volosovych, and Sevcan Yesiltas. 2015. “How to Construct Nationally Representative Firm Level Data from the Orbis Global Database: New Facts and Aggregate Implications.” National Bureau of Economic Research NBER Working Papers 21558.
- Kang, Jun-Koo, and Jin-Mo Kim. 2008. “The Geography of Block Acquisitions.” *The Journal of Finance* 63 (6): 2817–58.

- Kaplan, Steven N., and Per Strömberg. 2009. "Leveraged Buyouts and Private Equity." *Journal of Economic Perspectives* 23 (1): 121–416.
- Knauer, Alexander, Alexander Lahmann, Magnus Pflücke, and Bernhard Schwetzler. 2014. "How Much Do Private Equity Funds Benefit from Debt-Related Tax Shields?" *Journal of Applied Corporate Finance* 26 (1): 85–93.
- Laamanen, Tomi, and Thomas Keil. 2008. "Performance of Serial Acquirers: Toward an Acquisitions Program Perspective." *Strategic Management Journal* 29 (6): 663–72.
- Markides, Constantinos C. 1992. "Consequences of Corporate Refocusing: Ex Ante Evidence." *The Academy of Management Journal* 35 (2): 398–412.
- Meles, Antonio, Stefano Monferra, and Vincenzo Verdoliva. 2014. "Do the Effects of Private Equity Investments on Firm Performance Persist over Time?" *Applied Financial Economics* 24 (3): 203–18.
- Neffke, Frank, and Martin Henning. 2013. "Skill Relatedness and Firm Diversification." *Strategic Management Journal* 34 (3): 297–316.
- Nikoskelainen, Erkki, and Mike Wright. 2007. "The Impact of Corporate Governance Mechanisms on Value Increase in Leveraged Buyouts." *Journal of Corporate Finance* 13 (4): 511–37.
- Ragozzino, Roberto, and Jeffrey J. Reuer. 2011. "Geographic Distance and Corporate Acquisitions: Signals from IPO Firms." *Strategic Management Journal* 32 (8): 876–94.
- Rousseau, Philippe C. 2010. "Joint Acquisitions by Financial and Strategic Buyers: An Overview of Key Business and Legal Issues." *The Journal of Private Equity* 14 (1): 53–60.

- Schira, Josef. 2005. *Statistische Methoden Der VWL Und BWL: Theorie Und Praxis*. 2nd. Munich: Pearson Deutschland GmbH.
- Seth, Anju. 1990. "Value Creation in Acquisitions: A Re-Examination of Performance Issues." *Strategic Management Journal* 11 (2): 99–115.
- Seth, Anju, Kean Song, and Richardson Pettit. 2000. "Synergy, Managerialism or Hubris? An Empirical Examination of Motives for Foreign Acquisitions of U.S. Firms." *Journal of International Business Studies* 31 (3): 387–405.
- Seth, Anju, Kean Song, and Richardson Pettit. 2002. "Value Creation and Destruction in Cross-Border Acquisitions: An Empirical Analysis of Foreign Acquisitions of US Firms." *Strategic Management Journal* 23 (10): 921–40.
- Smit, Han T.J. 2001. "Acquisition Strategies as Option Games." *Journal of Applied Corporate Finance* 14 (2): 79–89.
- Smit, Han T.J., and Thrass Moraitis. 2010. "Serial Acquisition Options." *Long Range Planning* 43 (1): 85–103.
- Tallman, Stephen, and Jiatao Li. 1996. "Effects of International Diversity and Product Diversity on the Performance of Multinational Firms." *The Academy of Management Journal* 39 (1): 179–96.
- Valkama, Petri, Markku Maula, Erkki Nikoskelainen, and Mike Wright. 2013. "Drivers of Holding Period Firmlevel Returns in Private Equity-Backed Buyout." *Journal of Banking & Finance* 37 (7): 2378–91.
- Wang, Yingdi. 2012. "Secondary Buyouts: Why Buy and at What Price?" *Journal of Corporate Finance* 18 (5): 1306–25.

Wooldridge, Jeffrey M. 2013. *Introductory Econometrics – a Modern Approach*. 5th. Mason: South-Western Cengage Learning.

Zhou, Yue Maggie. 2011. “Synergy, Coordination Costs, and Diversification Choices.” *Strategic Management Journal* 32 (6): 624–39.

Appendix

Table A1: Sample Distribution (II/II)

This table provides the sample distribution of 165 B&B strategies over the period ranging from 1998 to 2020. Panel A presents the geographic distribution of the platform companies according to 13 different countries, while the industry sections of the sample firms are presented in Panel B. At this point, the primary NACE Rev. 2 classification used by Bureau van Dijk Orbis is applied. Panel C displays the number of acquisitions made by the platform during the holding period. Both the absolute and the relative frequencies regarding the total sample are provided. The underlying data are retrieved from Bureau van Dijk's Zephyr and Orbis.

PANEL A			PANEL B			PANEL C		
Country	Deals	%	NACE Rev. 2 Industry Section	Deals	%	#Add-ons	Deals	%
Austria	2	1%	Accommodation and Food Service Activities	1	1%	2	70	42%
Denmark	6	4%	Administrative and Support Service Activities	11	7%	3	32	19%
Finland	5	3%	Construction	1	1%	4	24	15%
France	40	24%	Education	1	1%	5	10	6%
Germany	19	12%	Electricity, Gas and Steam	1	1%	6	11	7%
Great Britain	35	21%	Financial and Insurance Activities	23	14%	7	6	4%
Italy	8	5%	Human Health and Social Work Activities	7	4%	8	4	2%
Luxemburg	3	2%	Information and Communication	3	2%	9	1	1%
Netherlands	7	4%	Manufacturing	8	5%	10	3	2%
Norway	5	3%	Other Service Activities	14	8%	15	4	2%
Spain	10	6%	Professional, Scientific and Technical Activities	35	21%			
Sweden	21	13%	Real Estate Activities	17	10%			
Switzerland	4	2%	Transportation and Storage	13	8%			
			Wholesale and Retail Trade	30	18%			
N:	165		N:	165		N:	165	

Table A2: List of Variables

This table provides a list of all variables used in this study with their respective abbreviation and definition. Panel A presents the dependent variables and Panel B the independent variables.

Panel A: Dependent Variables		
Variable	Abbreviation	Definition
Change in EBIT Margin	$\Delta EBIT-M$	Variable that measures the change in the platform's EBIT margin between the entry and exit of the financial investor. Source: Orbis
Change in Return on Assets	ΔROA	Variable that measures the change in the platform's return on assets between the entry and exit of the financial investor. Source: Orbis
Change in Asset Turnover Rate	ΔATR	Variable that measures the change in the platform's asset turnover rate between the entry and exit of the financial investor. Source: Orbis

Panel B: Independent Variables

Variable	Abbreviation	Definition
No Diversification	<i>NDIV</i>	Dummy variable indicating whether the add-on acquisitions have the same core business (primary 4-digit NACE code) as the platform. Source: Orbis
Product-Diversification	<i>PDIV</i>	Dummy variable indicating whether at least one add-on acquisition has its last two digits of the primary NACE code different from the platform. Source: Orbis
Industry-Diversification	<i>IDIV</i>	Dummy variable indicating whether at least one add-on acquisition has its first two digits of the primary NACE code different from the platform. Source: Orbis
Product- and Industry-Diversification	<i>BDIV</i>	Dummy variable indicating whether at least one add-on acquisition has its first two digits of the primary NACE code different from the platform and at least one add-on acquisition has its last two digits of the primary NACE code different from the platform. Source: Orbis
Number of Add-ons without Diversification	<i>#NDIV</i>	Variable indicating the number of add-on acquisitions with the same core business (primary 4-digit NACE code) as the platform. Sources: Orbis, Zephyr
Number of Add-ons with Product-Diversification	<i>#PDIV</i>	Variable indicating the number of add-on acquisitions with the last two digits of the primary NACE code different from the platform. Source: Orbis
Number of Add-ons without Industry-Diversification	<i>#IDIV</i>	Variable indicating the number of add-on acquisitions with the first two digits of the primary NACE code different from the platform. Source: Orbis
Domestic Transaction	<i>DT</i>	Dummy variable that indicates whether the add-on acquisitions have the same country of origin as the platform. Sources: Orbis, Zephyr, Company Website
Cross-Border Transaction	<i>CBT</i>	Dummy variable that indicates whether at least one add-on acquisition has a different country of origin as the platform. Sources: Orbis, Zephyr, Company Website
Pre-entry Size	<i>LN(Size)</i>	Variable indicating the size of the platform measured as the natural logarithm of total assets pre-entry. Source: Orbis
Pre-entry EBIT-Margin	<i>EBIT-M_{en}</i>	Variable indicating the EBIT margin of the platform pre-entry. Source: Orbis
Pre-entry Return on Assets	<i>ROA_{en}</i>	Variable indicating the return on assets of the platform pre-entry. Source: Orbis
Pre-entry Asset Turnover Rate	<i>ATR_{en}</i>	Variable indicating the asset turnover rate of the platform pre-entry. Source: Orbis
Holding Period	<i>HP</i>	Variable indicating the holding period of the platform measured as the months between entry and exit of the financial investor. Source: Zephyr
Number of Add-on Acquisitions	<i>#Add-ons</i>	Variable indicating the number of the platform's add-on acquisitions between entry and exit of the financial investor. Source: Zephyr
Industry Fixed Effect	<i>Industry FE</i>	Variable indicating the industry of the platform measured by sections of the statistical classification code NACE Rev. 2. Source: Orbis
Year Fixed Effect	<i>Year FE</i>	Variable indicating the year in which the financial investor acquired the majority of the platform (entry). Source: Zephyr
Country Fixed Effect	<i>Country FE</i>	Variable indicating the country where the platform is headquartered. Sources: Orbis, Zephyr, Company Website

Table A3: Robustness Check (I/III) – OLS Regression Analyses (EBITDA)

As a robustness check, this table reports the outputs of different OLS regression models for the sample platform's performance change. The underlying data are 46 B&B strategies executed during the sample period from 1997 to 2020, retrieved from Bureau van Dijk's Zephyr and Orbis. EBITDA margin is calculated as earnings before interest, taxes, depreciation, and amortization (EBITDA) over sales (1) – (2). Return on assets (ROA) is calculated as EBITDA over total assets (3) – (4). The independent variables include a dummy indicating whether a platform acquired at least one add-on classified as product-diversification, a dummy denoting whether a platform acquired at least one add-on classified as industry-diversification, a dummy denoting B&B strategies with at least one cross-border transaction, the natural logarithm of the pre-deal platform size, the pre-deal respective performance measure (EBITDA margin or ROA), the holding period in months and the number of add-ons acquired. The regressions include industry, year, and country fixed effects. Absolute standard errors are indicated in parentheses below the corresponding coefficient. One, two, and three asterisks (shown as *, **, and ***) denote statistical significance at the 10%, 5%, and 1% levels, respectively. The data is winsorized at the 10% and 90% level.

Dependent Variable		$\Delta EBITDA-M$			ΔROA	
	Exp. Sign	(1)	(2)	Exp. Sign	(3)	(4)
<i>PDIV</i>	(+)	0.029 (0.041)		(+)	0.001 (0.044)	
<i>IDIV</i>	(+)	0.060* (0.029)		(+)	0.054 (0.039)	
<i>CBT</i>	(+)		0.025 (0.028)	(+)		0.004 (0.032)
<i>LN(Size)</i>		0.022** (0.009)	0.023*** (0.008)		0.018** (0.008)	0.019** (0.008)
<i>EBITDA-M_{en}</i>		-0.034*** (0.010)	-0.040*** (0.011)			
<i>ROA_{en}</i>					-0.401*** (0.133)	-0.432*** (0.136)
<i>ATR_{en}</i>						
<i>HP</i>		0.000 (0.001)	0.000 (0.001)		0.002 (0.001)	0.002 (0.001)
<i>#Add-ons</i>		0.000 (0.003)	-0.002 (0.004)		-0.006 (0.004)	-0.007 (0.005)
<i>Industry FE</i>		Yes	Yes		Yes	Yes
<i>Year FE</i>		No	No		No	No
<i>Country FE</i>		No	No		No	No
Adjusted R ²		0.419	0.359		0.451	0.415
F-test		2.878	2.562		3.23	3.076
Observations		39	39		39	39

Table A4: Robustness Check (II/III) – OLS Regression Analyses (BDIV)

As a robustness check, this table reports the outputs of different OLS regression models for the sample platform's performance change. The underlying data are 46 B&B strategies executed during the sample period from 1997 to 2020, retrieved from Bureau van Dijk's Zephyr and Orbis. EBIT margin is calculated as earnings before interest and taxes (EBIT) over sales (1). Return on assets (ROA) is calculated as EBIT over total assets (3). Asset turnover rate (ATR) is calculated as sales over total assets (5). The independent variables include a dummy indicating whether a platform acquired at least one add-on classified as product-diversification, a dummy denoting whether a platform acquired at least one add-on classified as industry-diversification, a dummy indicating whether a platform acquired an add-on classified as product-diversification and an add-on classified as industry-diversification, the natural logarithm of the pre-deal platform size, the pre-deal respective performance measure (EBIT margin, ROA or ATR), the holding period in months and the number of add-ons acquired. The regressions include industry, year, and country fixed effects. Absolute standard errors are indicated in parentheses below the corresponding coefficient. One, two, and three asterisks (shown as *, **, and ***) denote statistical significance at the 10%, 5%, and 1% levels, respectively. The data is winsorized at the 5% and 95% level.

Dependent Variable		$\Delta EBIT-M$		ΔROA		ΔATR
	Exp. Sign	(1)	Exp. Sign	(3)	Exp. Sign	(5)
<i>PDIV</i>	(+)	-0.023 (0.039)	(+)	-0.026 (0.070)	(+)	-0.012 (0.251)
<i>IDIV</i>	(+)	0.063* (0.035)	(+)	0.072** (0.029)	(+)	-0.095 (0.160)
<i>BDIV</i>		0.040 (0.045)		0.018 (0.040)		0.092 (0.243)
<i>LN(Size)</i>		0.026*** (0.007)		0.018** (0.006)		0.237*** (0.079)
<i>EBIT-M_{en}</i>		-0.123* (0.067)				
<i>ROA_{en}</i>				-0.274*** (0.070)		
<i>ATR_{en}</i>						-0.562*** (0.121)
<i>HP</i>		0.000 (0.001)		0.000 (0.001)		0.000 (0.003)
<i>#Add-ons</i>		-0.002 (0.004)		-0.001 (0.003)		0.038 (0.027)
<i>Industry FE</i>		Yes		Yes		Yes
<i>Year FE</i>		No		No		No
<i>Country FE</i>		No		No		Yes
Adjusted R ²		0.382		0.518		0.429
F-test		2.545		3.758		2.149
Observations		41		42		42

Table A5: Robustness Check (III/III) – Number of Add-ons

As a robustness check, this table reports the outputs of different OLS regression models for the sample platform's performance change. The underlying data are 46 B&B strategies executed during the sample period from 1997 to 2020, retrieved from Bureau van Dijk's Zephyr and Orbis. EBIT margin is calculated as earnings before interest and taxes (EBIT) over sales (1). Return on assets (ROA) is calculated as EBIT over total assets (3). Asset turnover rate (ATR) is calculated as sales over total assets (5). The independent variables include the number of non-diversified add-ons purchased by the platform, the number of product-diversifying add-ons purchased by the platform, the number of industry-diversifying add-ons purchased by the platform, the natural logarithm of the pre-deal platform size, the pre-deal respective performance measure (EBIT margin, ROA or ATR), and the holding period in months. Due to the high correlation with the main independent variables, the control variable indicating the number of add-ons is removed. The regressions include industry, year, and country fixed effects. Absolute standard errors are indicated in parentheses below the corresponding coefficient. One, two, and three asterisks (shown as *, **, and ***) denote statistical significance at the 10%, 5%, and 1% levels, respectively. The data is winsorized at the 5% and 95% level.

Dependent Variable	$\Delta EBIT-M$	ΔROA	ΔATR
	(1)	(3)	(5)
<i>#NDIV</i>	-0.002 (0.005)	-0.001 (0.004)	0.063 (0.053)
<i>#PDIV</i>	-0.014 (0.009)	-0.015 (0.008)	0.020 (0.044)
<i>#IDIV</i>	0.006 (0.008)	0.008 (0.007)	0.094 (0.079)
<i>LN(Size)</i>	0.029*** (0.007)	0.022*** (0.007)	-0.206*** (0.058)
<i>EBIT-M_{en}</i>	-0.119 (0.072)		
<i>ROA_{en}</i>		-0.244*** (0.074)	
<i>ATR_{en}</i>			-0.518*** (0.107)
<i>HP</i>	0.000 (0.001)	0.000 (0.001)	-0.001 (0.003)
<i>Industry FE</i>	Yes	Yes	Yes
<i>Year FE</i>	No	No	No
<i>Country FE</i>	No	No	Yes
Adjusted R ²	0.343	0.452	0.47
F-test	2.39	3.256	2.401
Observations	41	42	42

Table A6: List of Abbreviation

This table provides a list of all abbreviations used in this study with their respective definition

Abbreviation	Definition
ATR	Asset Turnover Rate
B&B	Buy-and-Build
BvD	Bureau van Dijk
CBT	Cross-Border Transaction
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
FE	Fixed Effects
GP	General Partners
IPO	Initial Public Offering
IRR	Internal Rate of Return
LBO	Leveraged Buyout
LP	Limited Partner
M&A	Mergers and Acquisitions
NACE	Statistical Classification of Economic Activities in the European Community
OLS	Ordinary Least Squares
PE	Private Equity
ROA	Return on Assets
SIC	Standard Industrial Classification