Master thesis

Financial Economics

Does Buy and Build strategy creates value ?

Evidence for 12 EU countries in the period 2005-2015

Student: *Student number:*

Heinrich Esajas 401254

Supervisor

Dr. J.C.M. Kil

Abstract

This paper examines several value drivers in order to find evidence for value creation by using the buy-and-build strategy. The study covers a time period of ten years, from 2005 to 2015, with firms located in 12 European countries. The comparison between firms who use the buy and build strategy and similar firms who do not use the strategy is made in order to test the value drivers and the financial performance. The period of the financial crisis is highlighted as an interesting feature to test the resilience of the buy-and-build strategy. The private equity investors' main goal is to bring platform firms with low capacity utilization together with add-on firms with great potential in order to allocate the resources and to increase the firms' performance. The results indicate that financial ratios are very relevant for determine the firms' performance.

Keywords: Buy-and-build, control sample, performance

JEL classification: G24, G34

Contents

1 Introduction

Private equity (PE) investors are well-known of discovering early signs of companies - which are in distress - and successfully turning it around in their favor. Because of this phenomenon Tykvová & Borell (2012) asked the question whether this success comes from value creation or from value transfer? In case of high debt levels, there is a positive effect on tax shields, which will increase PE returns. This process represent a value transfer from ratepayers. PE investors may also raise the debt levels in order to disburse extra dividend for themselves (Tykvová & Borell, 2012; Gou et al., 2011). This can be seen as a value transfer from other shareholders. Many studies link the value creation in both the increase in profitability and productivity. This means that when there is more profitability and/or productivity, more value can be added and value can be transferred from shareholders to the PE investors (Tykvová & Borell, 2012; S. Kaplan, 1989; A. J. Smith, 1990).

Many researchers after Jensen (1986) admitted that the role of debt is an important part because of his discipline part. When managers issue with debt rather than equity, they are obliged to repay the debt (Gou et al., 2011). The role of debt plays a large part in the profitability of a firm and therefore also in the value creation. Another way to create value is by the buy-and-build strategy. With the buy-and-build strategy PE investors have the ability and knowledge to perform in the market, using divers strategies.

In this paper, we want to analyse whether this success comes from one of the key sources, the so-called buy-and-build strategy (B&B)[1]. The B&B strategy can be seen as a follow-up path where a PE investor builds a "platform" which will be the base for other acquisitions. This "platform" is also a acquisition made by the PE investor. Is the B&B strategy also one of the components that drives the success of the PE investors? The question is not easily to answer, furthermore the question rises up a more bigger and important question. Does the B&B strategy create value for the PE investors and is there any form of value transfer with the B&B strategy?" This will be the main focus of this paper. The paper is structured as follows. In the next section presents the theoretical background and hypotheses. In section 3 we describe the data and in section 4 the results will be presented. The last section, section 5 gives the conclusion and further research.

[1]Buy-and-build will be pronounced as B&B from this moment on. The abbreviation is used in many other literature and is well-known.

2 Theoretical background and hypotheses

2.1 Definition Buy and Build strategy

Many studies show there is common meaning of the definition "buy-and-build strategy". This strategy is an acquisition strategy, which is built up by either results concluded from literature or other acquisition strategy. There are also other names for the same phenomenon, as terms as "leverage build-up" and "consolidated play" are used more than often in previous literature. The definition of buy-and-build strategy can be defined as the add-on acquisitions by a private equity firm after establish a "platform". A platform in this case can be seen as the initial buy-out of a company (Allen, 1996; Burge, 1994; Fordyce & Stewart, 1994; Trottier, 1995; Hoffmann, 2008; H. T. Smith, 2001; Leeuw, 1993; Wright et al., 2001).

Borell & Heger (2013) describe the definition even further by the process, which combines several companies into one entity. The private equity firm which is formed then creates value during the so-called holding period. This period is ended when the entity is sold to another party. The B&B strategy, as well as other PE transactions are purchased with high debt, which means the debt to equity ratio is most likely above one. In the beginning a PE firm finds a fragmented industry with several small to medium-sized firms where the buy-and-build strategy can be applied to. In the best case, there is no firm with a dominant position in the market. The market share is approximately uniformly distributed. The PE firm will establish a platform in that particular market and include add-on acquisitions to gather that dominant role in that market (Allen, 1996; Fordyce & Stewart, 1994; Hoffmann, 2008; H. T. Smith, 2001; Trottier, 1995).

O'Donnell (2001) stated that there are four directions the buy-and-build strategy can be extended. The most known and used direction is the "build-up". In this direction the main contribute is the number of acquisitions. The establishment is most likely in a highly fragmented market with no real dominant market leader. Each investment in acquiring an add-on is relatively small which reduce the overall risk of the investment. Another often used direction is the "consolidated", where the focus is more on mature or cyclical industries. In this case the entity is created through vertical or horizontal mergers. The third direction is known as the "missing link", which is defined as including an add-on acquisition to fulfill the product range. At last the "roll-up strategy", where there

exist a successful strategy among the acquirer and this strategy is expanded to add-on acquisitions. In this direction there is not a particular focus on the types of add-ons.

2.2 Ownership issues

A well-known phenomena is the segregation between ownership and control can lead to agency problems in the case managers utilize investors funds to finance investment projects (Jensen & Meckling, 1970; Coase, 1995). Many studies have addressed that if the managers control the firms capital, the may not act in the best interest of the shareholders if the firm does not hold up a consolidated ownership structure (Shleifer & Vishny, 1986; Grossman & Hart, 1980). In theory, large investors can be very successful in solving agency problems. However empirical research shows controversial evidence of this matter. In the studies of Cronqvist & Fahlenbrach (2008) a separation is made between active and passive shareholders. They show that a specific active group of shareholders appear to be better in changing the investment policy, financial policy and operations. They conclude that although it is important to address the large and active shareholders, it is also vital to determine who they are and what there influence is. Barber (2007) conclude that given the shareholders divers ability to change corporate policy, capital markets should react to commitments of financial investors, like PE investors, who actively spot agency problems in their targeted firms.

PE investors can be seen as active financial mediators. They are most often present in markets with large information asymmetric, leading to high adverse selection and moral hazard risks (Beuselinck & Manigart, 2007; Brander et al., 2002; Bottazzi et al., 2004). In the role as active financial mediators, PE investors are able to reduce these risks by fulfilling two roles. On the one hand they control and guide the progress of a backed company and on the other hand supporting the backed company. A "backed" company is a company that is finance with private equity. These roles are referring to the corporate governance system (S. N. Kaplan & Strömberg, 2003; Cowling, 2003; Beuselinck & Manigart, 2007). The only time the influence of ownership structure is delighted in the U.S. studies is the one of Chou et al. (2006). They identified a significant upward earning management in the year of an IPO. This matter is only in the PE-backed firms. Even with this results, Chou et al. (2006) can not conclude that the engagement of PE investors in upward earnings management is significant larger than of the management-owners due to

the small sample size used in their paper. These findings can be seen as very surprising as we would expect that the upward earnings management would be larger. Based on the literature, it is interesting to investigate the impact of ownership with respect to the B&B transactions. Therefore we define our hypothesis as follows; "Lower management ownership has a negative effect on B&B firms".

2.3 Firm size and growth

An important factor in B&B is the debt ratio. The debt ratio is known in the form of debt to equity, or debt to total assets. The debt ratio explains the debt capacity of a certain firm. If a firm has a low debt ratio, this indicates there is a unutilized debt capacity. That means the firm can create value by including debt in order to acquire other firms (Trahan & Shawky, 1992). Because of the low debt ratio, it will be easier to have the transaction financing. So the low debt ratio will increase the likelihood of an initial takeover. In the results of Barnes (2000) paper, there is significant evidence that a low debt to assets ratio of potential target firms is a principal factor for motivation bid. Looking from a PE investor, firms with relatively low debt ratio are very attractive. The process is usually that PE investors purchase with a high fraction of debt which is passed on the acquired firms. Thus, firms with a high remaining debt capacity will be interesting for PE investors(Barnes, 2000; Borell & Heger, 2013; Trahan & Shawky, 1992; Ambrose & Winters, 1992). B&B transaction, like other PE transaction, are usually financed with a high level of debt and a sufficient debt capacity is essential in this matter. Because of this we expect the effect of debt at the target level on the B&B activity will be negative. This implicates that if the debt ratio is high, the B&B activity will be low (Ambrose & Winters, 1992; Borell & Heger, 2013). In the papers of Barnes (2000) and Trahan & Shawky (1992), there is significant evidence for the attractiveness of targets with high debt capacity. The suggestion can be made that the debt ratio in these firms are low. Also the leverage level after initiating will be higher due to the ability of passing on the debt of the adds-on to the platform company (Trahan & Shawky, 1992).

In the paper of Trahan & Shawky (1992) another massive factor comes to light. In this paper and also other literature, there is a clear evidence of the positive impact of firm size on the probability of being a platform for B&B transactions. The positive relation between firm size and potential target can perhaps be elaborate by the fact that the

managers grip will be extended with acquisitions in the form of increasing the resources under there control (Jensen, 1986; Jensen & Meckling, 1970). Managers attempt to take larger investments and grow rapidly compared to shareholders who has more interest in increasing the share value. When an acquire has the goal to gain market power in a specific market segment or to gain economics of scale, he will prefer acquiring a larger firm with potentially lower cost than several small firms. This concept is describe in the paper of Mueller (1972), which he called the growth-maximization theory. This aspect is strength by several evidence for the positive impact of firm size on the probability of being an acquirer in M&A transactions. In this paper the expectation will therefore be that there is a positive relation between firm size and the probability of being a platform or add-on for B&B transactions.

Barnes (2000) stated the growth-resources mismatch hypothesis. According to him, when there are high growth potentials and low liquidity, it will be an attractive investment target for an acquire. If both of these aspects are set, the acquirer gains more financial possibilities. Another research of Baeyens & Manigart (2006) stated that PE investors search for firms with multiple growth options and therefore the suggestion is made that PE investors seek for the most promising firms and use historical data to forecast the expected growth. Merging these findings, we define the second hypothesis as follows; "Firm size has a positive effect on the probability of being a platform in a B&B transaction".

2.4 Corporate performance

In order to investigate the B&B strategy, we have to view the performance using this particular strategy compared with the performance when this is not used. The performance can be set as a great indicator for value creation of the firm. In finance there are various valuation techniques which use the corporate performance as a base to define companies value.

Corporate performance is a composite assessment of how well an organization executes on its most important parameters, typically financial, market and shareholder performance. Cressy et al. (2007) compared firms supported by private equity with firms that are not supported by private equity up to 3 years after buy out. They find evidence that the firms who are supported by private equity performed significantly better. Adding up to these findings they also find clear evidence that industrial specialization adds even more

bonus to the performance of supported firms. Prior to this research, several studies find evidence of a positive impact of management and leverage buyouts on operation performance (S. Kaplan, 1989; A. J. Smith, 1990; Jensen, 1986). As operation performance is a part of corporate performance this evidence can also be true for corporate performance. In the paper of Antenucci (2013) the firm performance during recession is highlighted. He describes recessions as periods in which the economics is unstable and fragile. These periods require more managerial effort since capital is difficult to obtain together with a weaker position for shareholders (Bebchuk & Grinstein, 2005). Gulati (2010) has studied public companies during recession and in his findings, 17% do not survive the recession and additional 80% of the companies are not able to regain their financial status prior to the recession within 3 years. The latest recession period is stated from December 2007 up till June 2009, which is around 18 months (Antenucci, 2013). Because of the unstable economics in a recession, we want to investigate if and how the B&B strategy is hold and used during a certain period. This leads to the third hypothesis; "Firms based on B&B strategy perform better than other firms during recession".

3 Data

3.1 Sample selection

In this sample, the collection is made for buyout companies from 12 EU-countries. The data is collected from Zephyr[2] which provides a deal tag "Buy & Build"[3]. From these companies the financial statements are also collected via the financial database from the Bureau Van Dijk. It is a well-know phenomena that there is a lack of available private equity related data, especially through several countries. Former literature explained the difference in the reporting requirements, in financial and transaction information. In the case of deal information, this means that often information about a takeover is missing. With investigating the B&B strategy this creates problems with the lack of information

[2]Zephyr is a database by the Bureau van Dijk which contains more than 900,000 deals from 1997 up to now. The database is very useful for the buy and build strategy as it holds a sub-deal tag "Buy & Build". Furthermore Zephyr contains a large coverage of the European private equity market which consist with the European accounting system.

[3]The definition of the sub-deal tag "Buy & Build" also known as the tag "build-up" stated that the build up would be added as sub deal type when a Private Equity company builds up the company it owns by acquiring other companies. This increases the total investments through synergies and/or economies of scale. This definition comes very close with the definition of a buy-and-build strategy.

about the deal happens in the adds-on in the platform.

In order to gather the data, the need to specify the different kinds of firms is crucial. There are three kinds of firms which are important in the B&B strategy, the initial platform firm, the add-on firms and the platform firms with all the add-on firms altogether, which will be noted as the total sample in this paper. The time period for this research is ten years, from 01/01/2005 up to and including 01/01/2015 with firms that have been confirmed as completed in that time period. The period is set because the importance of including the period of the financial crisis into our sample and furthermore to not include a large time before the crisis. Besides that a significant period before and after the crisis is necessary in order to investigate this period. The second criteria is the geographical location of the acquirer. The focus will be on several countries all in Europe. To be precise, there will be 12 EU-countries and this will be shown in Table 1. The geographical location is chosen because the availability of data for this region. As already said, Zephyr covers a large area in the European private equity market. Other literature like Tykvová & Borell (2012); Bansraj & Smit (2017) also used the European private equity market in order to investigate different parts of the private equity theorem like the B&B strategy. Further the sub-deal tag Buy & Build is added to the criteria. The tag is used to consider only a sequential strategy. This tag is also used in other research of the B&B strategy. On top of that, the deal financing will be private equity, which contains most part of take-overs. Last criteria is the percentage of stake, with the percentage of initial stake at a maximum of 50% and the percentage of final stake at a minimum of 50%. This criteria is made to include only majority acquisitions, consistent with former research.

3.2 Control Sample

In order to analyze the B&B strategy properly, we compare the platform and add-on firms with similar firms which are not using the B&B strategy during the time frame. To set-up a valid control group, a critical feature is the non-random selection of firms. In the case of the industrial and geographical characteristics, former literature stated that these are not random PE investments, as several studies concluded that PE investors are specialized in certain countries and industries (Cressy et al., 2007; Tykvová & Borell, 2012).

In this case we apply the so-called three-to-one nearest neighbor matching method[4]. This means that for each platform and also each add-on we collect three control firm which consist similar size, industry and geographical location[5]. The goal is to find almost identical firms which have similar characteristics as buyouts but are not acquired by a PE investor during the given period. In order to recognize a valid set of firms which do not differ significantly from the sample, we split the whole sample into three sub samples. The three sub samples help us to make a proper control sample. The sub samples made, are shown in table 1. The selection of the three components is made due the investment decision prior to the transaction, which may influence the firm's development after the transaction (see Rosenbaum & Rubin (1983)). The matching approach is also covered in the paper of Rosenbaum & Rubin (1983). With this principle we collected 6,390 control firms over the 2,129 buyouts through B&B strategy.

3.3 Descriptive statistics

Our data set, which we collected from Zephyr, we collected the all completed transactions between 2005 and 2015 for 12 countries all in Europe. We include all acquisition that are finance through private equity. In this research we exclude the minority deals, as we set the final stake at a minimum of 50%. This include only the majority deals.

Table 1 reports the total buyouts derive from the B&B strategy with the split between the platform firms and the add-on firms. We discover that in 2014, the majority of the buyouts took place and the lowest reported in 2009. From 2010 on we see a continuously increase until 2014. Further we noted that 2009 has the lowest platform firms and this decrease started after 2007. This can be seen as a consequence of the financial crisis in 2008. The United Kingdom and France is on the top of the league with respect to the total buyouts. Those two countries together cover over 50% of the total sample. Most transactions are considered in the manufacturing together with the information and communication industry. They cover over 40% of the total sample, which indicates that potential PE investors would be interested in these industries first.

[4]Nearest neighbor matching is also known as greedy matching. It involves searching the list of treated firms and selecting the closest eligible control firm to be paired with each treated firm. The part greedy comes from the sense that each pairing occurs without reference to how other firms will be paired, and therefore does not aim to optimize any criterion (see also Zakrison et al. (2018); Thoemmes & Kim (2011)).

[5]The geographical location is mostly country, but in order to get all three components as close as possible, some firms are compared with firms from another country.

Table 1: Numbers of companies involved in a B&B strategy by year, by country and by industry

Year	Full sample	Platforms	Add-ons
2005	122	57	65
2006	169	61	108
2007	196	74	122
2008	159	62	97
2009	109	38	71
2010	186	77	109
2011	217	82	135
2012	223	81	142
2013	228	69	159
2014	279	91	188
2015	241	84	157
Total	**2129**	**776**	**1353**
Country			
United Kingdom	594	216	378
France	480	188	292
Germany	230	86	144
Spain	173	72	101
Sweden	154	58	96
Netherlands	131	39	92
Italy	95	31	64
Belgium	94	33	61
Finland	87	25	62
Denmark	50	13	37
Ireland	22	10	12
Portugal	19	5	14
Total	**2129**	**776**	**1353**
Industry			
Manufacturing	488	217	271
Information and Communication	369	139	230
Human Health and Social Work	234	54	180
Trade	204	76	128
Scientific and Technical	203	68	135
Administration and Support Service	161	66	95
Financial and Insurance activities	103	33	70
Transport and Storage	70	25	45
Accommodation and Food	66	23	43
Construction	64	18	46
Public Administration and Education	61	12	49
Art, Entertainment and Recreation	42	17	25
Other Services	28	13	15
Electricity and Gas Services	19	8	11
Real Estate Activities	17	7	10
Total	**2129**	**776**	**1353**

4 Results

4.1 Ownership

In table 2 the characteristics of the total sample is shown. The total sample has 2,123 observations and 6,390 control firms. In Panel A the total sample of each components is splits based on the percentage ownership held by the PE investors. In the appendix table 2 is extended with the cumulative percentage of the firms. From Panel A, we can derive that investors hold less than 20 % of the shares in approximately quarter of the companies in our 12 EU-countries sample. Further we see that in approximately 96% of the companies the investors holds less than 50% ownership. With the control group that is about 93 %, which holds less than 50% ownership. In Panel B the comparison is made

with the different levels of ownership between the samples with respect to the turnover per asset. Interesting to see is that when comparing the total sample to the control sample there is a significant difference from 50% ownership above. Another part is the significant difference in most ownership levels between the platform firms and the control firms. The platform firms operate as the value creators within the B&B strategy.

Table 2: Characteristics with respect to ownership

Panel A: Multiplicity of ownership of total sample

Ownership %	Percentage of total sample firms	Turnover / total asset (1)	Percentage of platform firms	Turnover / total asset (2)	Percentage of add-ons firms	Turnover / total asset (3)	Percentage of control firms	Turnover / total asset (4)
Minimum - 5.1								
5.1 % <X <10 %	4,3	1,89	3,2	1,77	4,4	1,91	2,8	1,64
10 % <X <15 %	6,7	1,88	6,8	1,7	7,1	1,84	5,1	1,68
15 % <X <20 %	7,2	1,61	6,9	1,55	7,5	1,83	5,7	1,44
20 % <X <25 %	9,1	1,31	8,8	1,2	8,2	1,58	11,9	1,18
25 % <X <30 %	13,2	1,52	12,1	1,24	10,8	1,66	11,8	1,14
30 % <X <35 %	12,8	1,74	12,2	1,42	13,1	1,76	12,6	1,36
35 % <X <40 %	14,9	1,68	13,7	1,56	15	1,71	13,8	1,39
40 % <X <45 %	15,1	1,66	14,6	1,41	14,7	1,62	14,3	1,41
45 % <X <50 %	12,6	1,55	13,9	1,42	14,4	1,61	14,8	1,19
50 % <X <55 %	1,3	1,23	4,2	1,29	3,4	1,38	4,4	1,16
55 % <X <60 %	0,8	1,41	2,2	1,25	0,7	1,51	1,4	1,34
60 % <X <65 %	0,7	1,31	0,9	1,08	0,5	1,34	0,8	1,29
65 % <X <70 %	0,4	1,09	0,3	1,14	0,2	1,28	0,3	1,26
70 % <X <75 %	0,5	1,18	0,1	1,26	0		0,1	1,25
75 % <X <80 %	0,3	1,24	0,1	1,23	0		0,1	1,25
80 % - Maximum	0,1	1,16	0		0		0,1	1,23

Panel B: T-test to compare different levels of ownership

Ownership %	T-test (1) - (4)	T-test (2) - (4)	T-test (3) - (4)	T-test (1) - (3)	T-test (2) - (3)
Minimum - 5.1					
5.1 % <X <10 %				***	
10 % <X <15 %		*		**	
15 % <X <20 %					
20 % <X <25 %		***			
25 % <X <30 %					
30 % <X <35 %		**		**	
35 % <X <40 %				*	
40 % <X <45 %		***		*	
45 % <X <50 %					
50 % <X <55 %	**				
55 % <X <60 %	*	*			
60 % <X <65 %	***		**	***	*
65 % <X <70 %	**		***		
70 % <X <75 %	***	***			
75 % <X <80 %	***				
80 % - Maximum					

In this table the summary is giving in different ownership levels with a 5% margin. The table represent the percentage of the different from groups, with the total sample, platform firms, add-ons and the control sample. Test used is the T-test for equality of means. The following figures, *, **, *** denote the significance at 10%, 5% and 1& respectively.

To analyse the ownership even further, we have to consider the management earnings, which will reflect the influence of the management and evidently the ownership of the investors. In order to do so, the proxies for the accounting quality is crucial. Other literature like Leuz et al. (2003); Ball & Shivakumar (2005) measured earnings quality via two common used accounting research, the extent of earnings management and the timeliness of loss reporting. In this paper, the focus will be on the first component in order to investigate the first hypothesis. Following the principle using in the papers of Leuz et al. (2003); Ball & Shivakumar (2005), the managements earnings will be measured via the accruals aspects in the financial statements. The accruals are often related to the

working capital and depreciation. The accruals are determined as follows:

$$\begin{aligned} \text{Accruals} = \Delta(\text{Accounts Receivables} + \text{Inventory} + \text{Other Current Assets}) \\ -\Delta(\text{Accounts Payable} + \text{Other Current Liabilities}) - \text{Depreciation} \end{aligned} \tag{1}$$

The purpose of the accruals is the primary role it plays to construct an earnings measure that is more valid than the cash flow. Often managers used the cash flow statements to create the image that the company is doing well, in order to keep the investors happy and to keep their flexibility. In our case, however we prefer less noise over time. Leuz et al. (2003) stated correctly that accruals and cash flows are negatively correlated over time but added the side note that larger size of this correlation do not always shows that a firm performs poorly and that this can be seen as a signal of earnings management. Given these facts we test the relation between accruals and cash flow and distinction between four ownership groups which is illustrated in the Appendix. The multivariate regression model is stated as follows:

$$\begin{aligned} ACC = \alpha + \beta_1 \overline{CF} + \beta_2 LOW + \beta_3 LOW \text{ x } \overline{CF} \\ +\beta_4 LOWMID + \beta_5 LOWMID \text{ x } \overline{CF} + \\ \beta_6 HIGHMID + \beta_7 HIGHMID \text{ x } \overline{CF} + \\ \beta_8 HIGH + \beta_9 HIGH \text{ x } \overline{CF} + \epsilon \end{aligned} \tag{2}$$

As Leuz et al. (2003) stated, the accruals and the cash flows are negatively correlated. This means that in our results we would expect negative coëfficients all across our regression output. In table 3 we see that this is indeed the case for most part. There are only three coëfficients with a positive cash flow. This is in line with other literature like Leuz et al. (2003). In our model we included the interaction between the sub ownership and cash flow. If there is a significant coëfficient, it shows that there is a difference in the earnings management of the sub ownership samples. The results in table 3 for this matter shows in different parts a significant difference. For the add-on firms with a ownership between 25 % and 50 % there is a 1 % significance level. Also for the total sample and the control sample we find significant differences in the ownership group between 25 and 50 %, both at 5 % significance level. Last we can also confirm significant differences in the platform firms with ownership under the 25 % and in the total sample with ownership

between 50 % and 75 %. A significant positive coëfficient of the ownership levels suggest that firms where PE investors have higher stake, the quality of the financial report is equivalent higher. On the contrary, a significant negative coëfficient indicates that PE investors with high stake produces lower quality financial reports. In table 3 we find only one significant positive coëfficient. This is in the total sample with a ownership level between 25 % and 50 % We do not find any significant negative coëfficient for the role of PE investor with respect to the financial reporting. In case of our first hypothesis, which stated that "Lower management ownership have a negative effect on B&B firms", we can not completely accept nor reject this hypothesis due to inconsistency in the results.

Table 3: Summary statistics of variables across the ownership levels

	Observation	Cash Flow	Ownership <25 %	Ownership <25 % x Cash Flow	Ownership 25 % <X <50%	Ownership 25 % <X <50% x Cash Flow	Ownership 50 % <X <75%	Ownership 50 % <X <75 % x Cash Flow	Ownership >75 %	Ownership >75 % x Cash Flow
Total Sample	411	-0,0887	-0,0380	0,0034						
N = 1504	1032	-0,05482			-0,0051	0,0003 **				
	56	0,06992					0,0416	0,0029 *		
	5	0,421							0,3965	0,1669
Platform firms	125	-0,0288	-0,0091	0,0002 *						
N = 488	325	-0,0391			0,1084	-0,0042				
	34	0,0918					0,0899	0,0083		
	4	-0,2885							0,0132	-0,00380
Add-ons	257	-0,0410	0,0055	-0,0002						
N = 945	643	-0,0966			0,0003 *	-0,0000 ***				
	45	-0,0864					0,0810	-0,0070		
	0									
Control Sample	1095	-0,0722	0,0059	-0,0004						
N = 4295	2891	-0,0102			0,0048	-0,0001 **				
	301	0,1081					0,8521	0,0921		
	8	-0,6708							0,9624	-0,6456

Table 4 shows the summary statistics of different ownership levels for the different kind of firms. The interaction between cash flow and the ownership level describe the relationship with the earning management. Cash flow is calculated by taking the natural logarithm of the cash flow following from the financial statements, all in EUR. The accruals is calculated as stated in equation (2). The coëfficient are tested with the T-test and ***,**,* denotes the significance at 1 %, 5 % and 10 % respectively.

4.2 Firm size

Barnes (2000) suggested that comparing financial ratio is sufficient because we can control for the effect of size on the financial variables. He do so by collection the financial statement of the sample firms. On top of that, the ratios make the comparison between the firm preferred and its industry possible. With this knowledge, we draw the financial ratios of the total sample and the control sample with the total sample split into the platform firms and the add-on firms. The denominator is the firms' total assets which is corrected for size adaptions.

Table 4: Summary statistics of the sample and control sample

	Total Sample (1)			Platform (2)			Add-ons (3)			Control Sample (4)			T-test (2)-(3)	Wilcoxon test (2)-(3)	T-test (2)-(4)	Wilcoxon test (2)-(4)	T-test (3)-(4)	Wilcoxon test (3)-(4)
	mean	median	Obs.	mean	median	Obs.	mean	median	Obs.	mean	median	Obs.						
Total assets (€000)	749.723	172.277	1892	778.751	178.947	690	54.701	10.856	1247	315.797	24.014	6181	***	***	*		***	***
Debt / total assets	0,61	0,59	1699	0,64	0,62	676	0,67	0,61	1221	0,59	0,58	6155	**		**		*	
Asset turnover ratio	1,59	1,47	1658	1,26	1,09	633	1,81	1,66	1189	1,39	1,21	6095	***	**	***	***	***	***
EBITDA / total assets	0,17	0,14	1690	0,18	0,16	658	0,19	0,16	1218	0,08	0,08	6174	***	***	***	***	***	***

In this table the summary is giving during the period 2005 until and including 2015. The table represent the mean and median of each independent variable. Those independent variable are total assets together with the ratios of debt, turnover and EBITDA all to total asset. The observations vary due to the availability of the data. Tests used are the T-test for equality of means and the Wilcoxon-Mann-Whitney test for equality of distributions between two groups. The following figures, *, **, *** denote the significance at 10%, 5% and 1& respectively.

Table 4 provide the summary statistics and results of two tests. Here the comparison is made of the financial ratio which drives the company. The expectation when comparing the financial ratios is that the platform firms are holding the larger assets. This is stated in the paper of Cressy et al. (2007). The results show that there are more firms as add-ons than as platform but nevertheless the mean and the median is significantly higher with respect to the total assets. This result is in line with the expectation that the platform firms holds the larger assets. Also the test result confirming this matter, with a significance level at 10% with the T-test and no significance with the Wilcoxon test. This means that with the respect to the hypothesis for equality of distribution, the comparison between the platform and the add-ons can not be accepted and with respect to the equality of means it can only be accepted no further than the significance level of 10% which explains the difference in mean and median in the total assets.

What needs to have a closer look, is the lowest turnover ratio with the platform firms compared to the highest turnover ratio with the add-ons. It looks like PE investors goal is to collect gains by allocating resources across platform and add-ons. By shifting resources and also capacity gains can be created. Also in the profitability, the discovery is made that the add-on firms perform better than the platform forms. The profitability is given by the ratio of the EBITDA and the growth rate is given by the turnover ratio. This is consistent with the growth-resource mismatch hypothesis of Barnes (2000) which stated that firms with low growth potential but with lots of resources are the acquisition targets. In line with Barnes (2000) and Borell & Heger (2013), platform firms are seeking for firms with great potential profitability and with low growth increases. The significant difference found with the add-on and platform provide us to accept the second hypothesis that firm size indeed has a positive effect on the probability of being a platform in a B&B transaction.

4.3 Performance during recession

Financial analysts often point out firms' liquidity, financial stability, profitability and efficiency in order to judge the performance. This can be done through ratio analysis, which provides well-known measurements of the companies current state and can discover the causes of possible under performance. Antenucci (2013) is one of the few researchers who specifically addresses the firm performance during recession. In his paper the focus is on the option compensation during the crisis which he stated from 2007 till and including 2009. This paper will correspond with the paper from Antenucci (2013) and denote 2007-2009 as the recession period. Gulati (2010) added that over 80 % of the firms do not recover completely after the recession compared with the position the firms had before the crisis. We will establish if the ratios also confirm Gulati (2010) findings about the delay recovery.

Table 5: Summary statistics on different performance ratios

	$\overline{LiquidityRatio}$		$\overline{AssetTurnoverRatio}$		$\overline{Debt-EquityRatio}$		$\overline{ReturnonTotalassets}$	
	Total Sample	Control Sample	Total Sample	Control Sample	Total Sample	Control Sample	Total Sample	Control Sample
2005	1,03	0,97	1,21	1,31	1,21	1,23	0,0486	0,0385
2006	1,01	1,02	1,26	1,28	1,34	1,24	0,0492	0,0404
2007	0,87	0,91	1,17	1,09	1,26	1,12	0,0511	0,0415
2008	0,76	0,71	0,85	0,78	0,73	0,88	0,0313	0,0321
2009	0,81	0,73	0,97	0,84	0,81	0,89	0,0324	0,0291
2010	0,92	0,81	1,11	1,03	0,97	1,29	0,0517	0,0392
2011	0,91	0,85	1,36	1,08	1,11	1,31	0,0503	0,0476
2012	0,89	0,92	1,57	1,19	1,17	1,24	0,0529	0,048
2013	0,94	0,93	1,85	1,31	1,37	1,26	0,0544	0,0506
2014	0,93	0,92	1,88	1,29	1,36	1,29	0,0537	0,0501
2015	0,91	0,89	1,89	1,28	1,32	1,22	0,0581	0,0562
Mean	0,91	0,88	1,37	1,13	1,15	1,18	0,0485	0,0430
S.D.	0,074	0,091	0,354	0,181	0,213	0,147	0,008	0,008

The table shows four ratios; liquidity ratio,Asset turnover ratio, debt-equity ratio and return on total assets. The total sample, which is the sum of the platform firms and the add-on firms from 2005 until and including 2015. The average ratio is determine per year for each of the four ratios calculated. Liquidity ratio is determined by the average current (short term) assets divided from the average current (short term) liabilities. The asset turnover ratio is determined by average sales divided by the average total assets. The debt-equity ratio is debt divided by equity and the return on total assets is the EBITDA divided by the average total assets. Liquidity and Asset Turnover ratio are short term ratios and debt to equity and return on total assets ratio are long term ratios

In table 5 we compare the total sample with the control sample. The total sample is the platform firms and the add-one firms together and we specify the control sample with the three-to-one nearest neighbor matching method. Comparing these two samples which have many similar components would give us similar ratios. The results in table 5 shows that the means are not the same but there are close to each other with all the ratios. The standard deviation however differs with the Asset Turnover Ratio, with 0.354 for total sample and 0.181 for the control sample. This indicate that the total sample shows more variation in the time period of 10 years. In figure 1 the trend is shown which

explains the difference in standard deviation. For all the ratios we discover that after 2006 there is a decline and the recovery begins after 2008. The decline in liquidity ratio indicates that the firms had more difficulties in meeting up their current liabilities in time, which is financially a bad position. For the decline in the asset turnover ratio it means that the sales in 2007-2009 cover a smaller part of the total assets. It indicates that the asset utilization is smaller and this can be seen as inefficiency. The debt to equity ratio describes the proportion of shareholders' equity and debt used to finance the company's assets. The decline indicates that firms are less aggressive in financing growth with debt rather then equity. Firms became more risk-avers during 2007-2009. The return on total assets ratio shows how effectively a firm can make use of its assets to get maximum profit. Declining in this ratio suggest that a firm less performance with respect to finance and operation of the firm. All these findings are in line with the theory of the financial crisis and with the paper of Antenucci (2013) regarding performance drop during recession.
Although the ratios dropped in the period 2007-2009, when we compare the total sample with the control sample we see that the control sample perform worst on average compared to the total sample. Only in the debt to equity ratio we discover that the control sample outperform the total sample. This implies that firm based on the B&B strategy are more conservative in the recession. After the recession the ratios immediately increase which is inconsistent with the findings of Gulati (2010) that 80 % of the firms do not recover properly within three years after the recession. A clear reason for the inconsistency can not be given. To answer the third hypothesis with the results given, we can not accept our hypothesis completely but there are strong arguments that firms based on the B&B strategy can outperform other firms during recession.

5 Conclusion and further research

This paper focus on different parts of the B&B strategy in order to determine which part of value creation happens through buy-and-build. We use a large database of 12 EU-countries in the period 2005-2015 to collect 2,123 firms which used the buy-and-build approach. On top of that we gather a control sample using the three-to-one nearest neighbor matching method. This give an additional 6,390 control firms. For most of these firms we also collect their financial statements. The data is collected based on our main question which states "does the B&B strategy create value for the PE investors and is there any form of value transfer with the B&B strategy?"

In order to answer this question we develop three sub-questions that we mention as our hypotheses. The first hypothesis is whether lower management ownership has a negative effect on B&B firms. To analyze the ownership impact we first split the ownership based on the percentage range of 5 % approximately and test different value drivers with the T-test. Evidence is found for the value creation within the platform firm, especially with an ownership level between 10 % and 45 %. Second we imply a multivariate regression model. We partly find results that supports the hypothesis but also evidence to reject. So we have inconsistent results regarding the first hypothesis.

The second part of this paper analyse the effect of firm size on the probability. We examine the statement if firm size has a positive effect on the probability of being a platform in a B&B transaction. In this part we use the total assets as firm size and test different value drivers with the T-test and the Wilcoxon-Mann-Whitney test. The results show consistent evidence that platform firms collect gains by allocating resources. This means that we accept the second hypothesis, there is evidence that there is a positive effect of firm size on the probability of being a platform due to the benefits the platform gains from the firm size.

In the last part of the paper, we examine the B&B strategy during the time period of 10 years, with extra focus on the behaviour around the period 2007-2009. The last hypothesis is that firms based on BB strategy perform better than other firms during recession. For this hypothesis we consider four financial ratios based on short and long term. We examine the ratios over time and compared the sample based on B&B strategy to the control sample. The results show that during the recession firms do not perform well, which is expected. We do however find that in the short term, the firms based on B&B

strategy do outperform other firms but we could not derive this part for the long term. This make us unable to accept the last hypothesis.

Based on the results of our hypotheses we believe that the B&B strategy creates value for the PE investors, if the PE investors do not hold more than 50 % of the ownership. We do not find a precise form of value transfer with the B&B strategy but our second hypothesis gave us some insides that there could be value transfer from the platform firms to the add-on firms. This indicate an interesting feature for further research. Developing a model which evaluate the value transfer from one to another firm over a time period and how that effect the firm performance. Another point of interest is in the B&B strategy during recession. We believe that in that department, a lot of new insides can be done. Questions like how does the recession effects the ownership and has it effect on the managers in term of the bonus.

The limitations in this paper are not been able to find significant results for the performance over time. There is no powerful model derive yet. Deriving a model, especially for the recession could give better results and conclusion and up top of that, the financial crisis can be compared with the current corona crisis of 2020.

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7 Appendix

Variable	Decription
Accrual	Accrual is calculated by taking the difference of accounts receivable, inventory and other current assets minus the difference of account payable and other current liabilities minus depreciation
CF	Cash flow, often cashflow is given in the financial statements. Cash flow can be calculated by profit minus depreciation
LOW	Ownership <25 %
LOWMID	Ownership 25 % <X <50 %
HIGHMID	Ownership 50 % <X <75 %
HIGHMID	Ownership >75 %
Liquidity Ratio	In this case the ratio is calculated by current asset divided by current liabilities
Asset Turnover ratio	Sales divided by total assets
Debt to Equity Ratio	Total liabilities divided by shareholders' equity
Return to Total Asset Ratio	Net Income divided by total asset

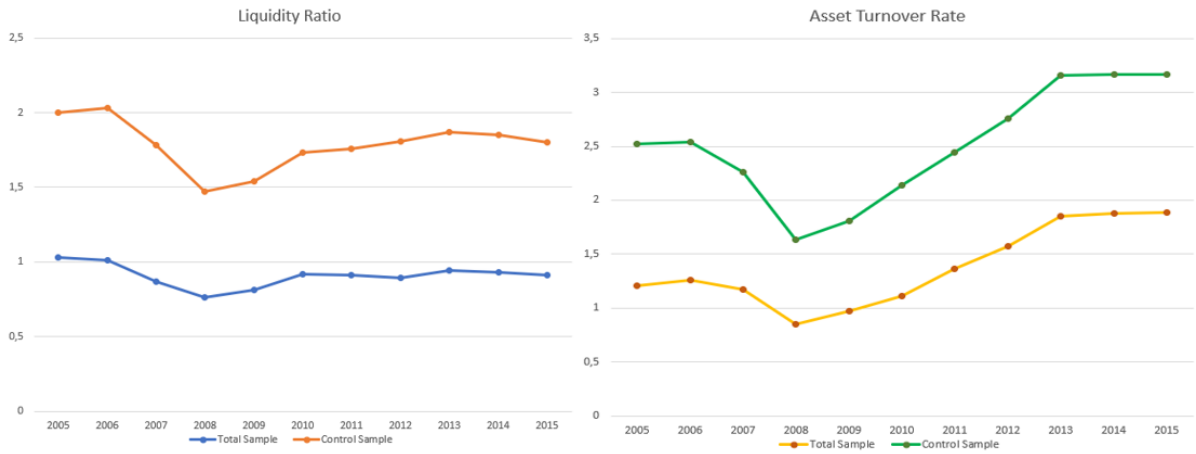

Figure 1: Trends of the liquidity ratio and asset turnover rate over time

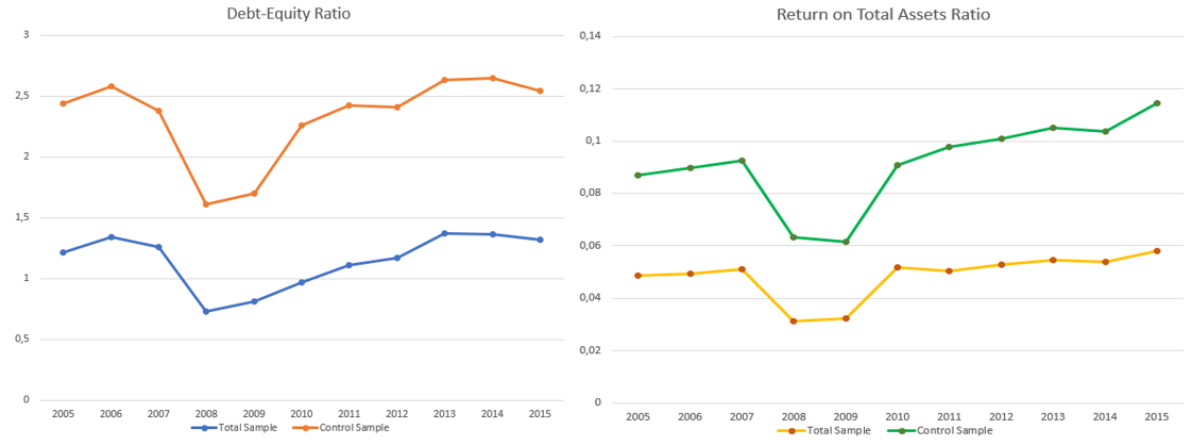

Figure 2: Trends of the Debt to equity ratio and Return on Total Asset ratio over time

Table 6: Extended version of table 2

Panel A

Ownership %	Percentage of total sample firms	Asset turnover ratio (1)	Cumulative percentage of total sample firms	Percentage of platform firms	Asset turnover ratio (2)	Cumulative percentage of platform firms	Percentage of add-ons firms	Asset turnover ratio (3)	Cumulative percentage of add-on firms	Percentage of control firms	Asset turnover ratio (4)	Cumulative percentage of control sample
Minimum - 5.1			0									
5.1 % <X <10 %	4,3	1,89		3,2	1,77	3,2	4,4	1,91	4,4	2,8	1,64	2,8
10 % <X <15 %	6,7	1,88	11	6,8	1,7	10	7,1	1,84	11,5	5,1	1,68	7,9
15 % <X <20 %	7,2	1,61	18,2	6,9	1,55	16,9	7,5	1,83	19	5,7	1,44	13,6
20 % <X <25 %	9,1	1,31	27,3	8,8	1,2	25,7	8,2	1,58	27,2	11,9	1,18	25,5
25 % <X <30 %	13,2	1,52	40,5	12,1	1,24	37,8	10,8	1,66	38	11,8	1,14	37,3
30 % <X <35 %	12,8	1,74	53,3	12,2	1,42	50	13,1	1,76	51,1	12,6	1,36	49,9
35 % <X <40 %	14,9	1,68	68,2	13,7	1,56	63,7	15	1,71	66,1	13,8	1,39	63,7
40 % <X <45 %	15,1	1,66	83,3	14,6	1,41	78,3	14,7	1,62	80,8	14,3	1,41	78
45 % <X <50 %	12,6	1,55	95,9	13,9	1,42	92,2	14,4	1,61	95,2	14,8	1,19	92,8
50 % <X <55 %	1,3	1,23	97,2	4,2	1,29	96,4	3,4	1,38	98,6	4,4	1,16	97,2
55 % <X <60 %	0,8	1,41	98	2,2	1,25	98,6	0,7	1,51	99,3	1,4	1,34	98,6
60 % <X <65 %	0,7	1,31	98,7	0,9	1,08	99,5	0,5	1,34	99,8	0,8	1,29	99,4
65 % <X <70 %	0,4	1,09	99,1	0,3	1,14	99,8	0,2	1,28	100	0,3	1,26	99,7
70 % <X <75 %	0,5	1,18	99,6	0,1	1,26	99,9	0		100	0,1	1,25	99,8
75 % <X <80 %	0,3	1,24	99,9	0,1	1,23	100	0		100	0,1	1,25	99,9
80 % - Maximum	0,1	1,16	100	0		100	0		100	0,1	1,23	100

Panel B

Ownership %	T-test (1) - (4)	T-test (2) - (4)	T-test (3) - (4)	T-test (1) - (3)	T-test (2) - (3)
Minimum - 5.1					
5.1 % <X <10 %				***	
10 % <X <15 %		*		**	
15 % <X <20 %					
20 % <X <25 %		***			
25 % <X <30 %					
30 % <X <35 %		**		**	
35 % <X <40 %				*	
40 % <X <45 %		***		*	
45 % <X <50 %					
50 % <X <55 %	**				
55 % <X <60 %	*	*			
60 % <X <65 %	***		**	***	*
65 % <X <70 %	**		***		
70 % <X <75 %	***	***			
75 % <X <80 %	***				
80 % - Maximum					

In this table the summary is giving in different ownership levels with a 5% margin. The table represent the percentage of the different from groups, with the total sample, platform firms, add-ons and the control sample. Test used is the T-test for equality of means. The following figures, *, **, *** denote the significance at 10%, 5% and 1& respectively.