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## Article

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# Acquisitions of private-equity-backed private companies: Insights from acquirer's choice of target and the implications on deal value through the subprime crisis

Josephine Gemson

## ABSTRACT

**Objective:** This study explores the characteristics of worldwide acquisitions of private-equity-backed (PE) private companies. It examines the impact of the subprime crisis, the acquirer's choice of target, and the implications on deal value.

**Research Design & Methods:** This study uses deal-level data on worldwide PE-backed private company acquisitions that were completed between 2000 and 2017. Research methods to test the hypotheses include data visualization, comparative analysis, and regression analysis.

**Findings:** Data visualization indicates that North America was the most popular region for PE-backed private company acquisitions, followed by Europe and Asia. Industry sectors such as the services sector, the technology sector, the manufacturing sector, and the healthcare, and biotechnology sectors were popular. Comparative analysis indicates that financial acquirers preferred targets with larger revenues, larger core profits and operational profitability. Regression analysis indicates that acquirer characteristics such as acquirer type and experience levels, and deal characteristics such as deal location and percentage of stake acquired influence deal size. However, target company information and performance supersede acquirer characteristics. The subprime crisis in 2008 was a minor deterrent in the acquisition activity for both financial buyers and strategic buyers resulting in larger value deals with targets with smaller revenues.

**Implications & Recommendations:** This study provides insights into the importance and relevance of signals in PE-backed private company acquisitions by examining the characteristics of such acquisitions, the acquirer preferences, and the determinants of deal value. Private companies are less visible and less transparent as compared to public companies, making them obscure and difficult to value. Therefore, strategic acquirers and financial acquirers rely on signals to assess the viability of the potential target, with PE backing serving as a notable certification. This study indicates that PE-backing influences deal value and acquirer's preferences. Despite the 2008 financial crisis influencing acquisition activity, both sets of acquirers were able to leverage their experiences into their respective acquisitions. Higher total and relevant experience seemed to work favourably for acquirers, who profited from increased bargaining power.

**Contribution & Value Added:** Firstly, this study enriches and adds to the knowledge of the literature on acquisitions, particularly private company acquisitions and the role played by PE in the same. Next, this study adds to the literature on the subprime crisis and the impact of the crisis on acquisition activity. Further, this article provides insights into strategic decision-making by the two dominant acquirers- strategic acquirers, and financial acquirers- when they are limited by a target pool and the interpretation of signals by the target. Finally, the examination of PE-backed private company acquisitions adds to the study and practice of entrepreneurial finance by examining the role of PE as a signal to deal with quality to encourage acquisitions of privately held targets.

**Article type:** research article

**Keywords:** Private company acquisitions; private equity; deal value; financial buyers; strategic buyers

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## INTRODUCTION

Mergers and acquisitions (M&A) are a characteristic feature of the modern economy with global M&A volumes amounting to USD3.4 trillion worldwide in 2022 (Statista, 2023). Extant literature has examined motivations, trends, determinants, and performance of the process to include efficiency-related reasons (Gompers & Xuan, 2008), to help firms gain access to new resources in business sectors (Pazarskis *et al.*, 2018), to cluster by industry and driven by deregulation (Andrade *et al.*, 2001; Mitchell & Mulherin, 1996), and due to managerial behaviour and promotion of self-interest (Heaton, 2002; Shleifer & Vishy, 1989; Jensen, 1986; Roll, 1986; Jensen & Meckling, 1976). A further theory based on inefficient markets and rational managers (Shleifer & Vishy, 1989) examined mergers as an arbitrage opportunity through which managers took advantage of the stock market's misvaluation of the acquiring firm's stock and its perception of resulting synergies.

The views above heighten the distinguishing features of public companies and the rationales that led to mergers and acquisitions in them. Greater visibility, regulatory disclosure requirements, greater ties with investment banks, and enhanced analysts' coverage cause public companies to be more well-known (Capron & Shen, 2007) and have more liquidity allowing for value by the market and feedback through the role of professional arbitrageurs, which helps lessen uncertainty with respect to their value. The visibility, liquidity, and disclosure requirements of public companies are juxtaposed with the opaqueness of private companies, which boast significantly larger volumes of acquisitions as compared to their public counterparts (Capron & Shen, 2007; Draper & Paudyal, 2006). This makes private company acquisitions worthy of examination.

Although private companies may be difficult to locate and value (Deeds *et al.*, 1999) and more illiquid (Fuller *et al.*, 2002), less information on private targets leads to more value-creating opportunities for exploiting private information (Capron & Shen, 2007). Therefore, acquirers have to rely on signals in the form of information transmitted by the company itself (Spence, 1974), and/or other participants, such as the PE seller. Private companies can tailor and customize the information they want to communicate (Arikan, 2005; Ragozzino & Reuer, 2007), and PE firms are known to provide certification for the quality of the target due to an alleged superior governance mechanism (the Jensen Hypothesis) (Jensen, 1986; 1989). Thus, deal values contain a combination of information presented by the target company, deal characteristics, and the acquirer's skill and experience, as well as the signals provided by the PE-backing. While the acquirer is an important player in the transaction, they constitute one of two buyers – a strategic buyer (corporate firm) seeking long-term synergies, or a financial buyer (PE firm) seeking a profit within a set time frame. Both these acquirers are active participants in the market for corporate control (Manne, 1965) seeking suitable opportunities.

In this study, I examined one particular type of acquisition – the private-equity-backed (PE) private company acquisition, and the role PE plays in the acquisition and among the private company target pool.

As part of this study, I analysed global PE-backed private company acquisitions that took place between 2000 and 2017. This timeframe also allows for the examination of the impact of the subprime crisis. This strategy study (Capron & Shen, 2007; Shen & Reuer, 2005) focuses on the acquirer's choice of target and the implications on deal value, without dealing with performance implications.

The rest of the article is organized as follows. The next section will provide a review of the private company acquisitions and the subprime crisis, the PE-backed target, and the importance of the acquirer while stating the hypotheses. Next, I will present the data used for the study followed by the analysis. Next, I will move to the results of the analysis and discuss them. The implications of the study are presented. Finally, I will present conclusions and future research directions.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### Private Company Acquisitions and the Subprime Crisis

Literature on public and private company acquisitions yields inconsistent results. Fuller *et al.* (2002) conclude that private companies may be less valuable than similar, more liquid investments and Barger *et al.* (2008) conclude that public target shareholders received 63% higher premium from public acquirer firms rather than PE firms. Lys and Yehuda (2016) developed a valuation model, in which they demonstrate that relative to public targets, private targets commanded higher premiums over their stand-alone values and generated higher synergies in their acquisitions. Thus, the competition for acquisition and the subsequent procurement of rights limit divergence from shareholder wealth maximization by managers. This provides a mechanism through which economies of scale or other synergies available from combining or reorganizing control and management of corporate resources are realized (Jensen & Ruback, 1983).

Distinguishing features of the private company acquisition market sets them apart from public company acquisitions (Capron & Shen, 2007; Vinas *et al.*, 2013; Brander & Egan, 2017; Gemson, 2021), making them relevant and worthy of discussion and research. Firstly, there are significant differences in deal structures, performance parameters, and patterns of returns between public acquisitions and private ones (Brander & Egan, 2017; Capron & Shen, 2007). Next, the analysis of private acquisitions enhances the study and practice of entrepreneurship and entrepreneurial finance (Brander & Egan, 2017) in that successful companies be acquired as privately-held targets. Finally, the nature and characteristics of private companies and the market for private acquisitions provide rich insights into the effects of information asymmetry (Brander & Egan, 2017; Gemson, 2021). Since private companies neither have a medium to automatically transmit information, nor have the onus to do so, they can tailor and customise the information they want to communicate (Arikan, 2005; Ragozzino & Reuer, 2007). Such information in the form of signals that may be transmitted may be valuable and can reduce adverse selection problems (Spence, 1974).

The market for private acquisitions is large and important, and such acquisitions form a significant part of the financial market and the market for corporate control (Brander & Egan, 2017; Gemson, 2021). Crises events can introduce shocks into the economy causing a disruption in financial systems (Bernake, 1983) including acquisition activity and can cause acquirers to become more cautious. Pazarskis *et al.* (2018) examined the impact of the economic crisis in Greece and concluded that mergers were not successful as a business strategy during the crisis period. Literature on the impact of the subprime crisis indicates that the subprime crisis negatively affected the likelihood of diversifying and cross-border acquisitions (Cerrato *et al.*, 2016) and acquisition activity levels reduced during the years preceding the financial crisis (Andriuskevicius, 2015). Despite prevailing financial and market turmoil, the global mergers and acquisitions market was resilient and witnessed unseen growth (Andriuskevicius, 2015). Limited studies have examined the private acquisition market and the effect of the global financial crisis on the determinants of acquisitions, and this study aims to fill the gap. Thus, I hypothesized:

**H1:** There is a changing nature of acquisitions post subprime crisis.

### The PE-backed Target

Private entities deals are heterogeneous (Cressy *et al.*, 2007) in terms of opportunities for performance improvements (Wright *et al.*, 2008) and PE firms have subsequently been known to seek appropriate methods to drive improvements in operational performance and improve efficiencies.

On average, academic research has found improvements in operations and performance because of PE involvement, leading to superior returns and increased value (Wright *et al.*, 2009), and the PE industry has often been hailed as a new and efficient form of organization that generates economic efficiencies through a superior governance framework (Jensen, 1986; 1989). Academic literature has examined operational and performance parameters both at a deal level (Acharya *et al.*, 2011; Achleitner *et al.*, 2011) and at the portfolio company level (Kaplan, 1989). Substantial average improvements have been noted in profitability and cash flow measures (Bull, 1989; Kaplan, 1989; Malone, 1989; Singh, 1990; Opler, 1992; Muscarella & Vetsuypens, 1990; Wright *et al.*, 1992), in sales growth, margin

expansion, streamlining of capital expenditures, and working capital (Kaplan, 1989), in increases in return of assets of PE firms (Wright *et al.*, 1992), in better financial ratios related to cash flows, sales, and return on investment (Bruining, 1992), leading to conclusions that PE-backed companies outperform peers in terms of operating performance (Kaplan, 1989; Muscarella & Vetsuypens, 1990).

Such improvements could be thought of as the result of appropriate approaches employed by PE firms (Wright *et al.*, 2008). Such approaches include active monitoring (Cotter & Peck, 2001; Guo *et al.*, 2007; Cornelli & Karakas, 2008) and resource provision (Gemson, 2015), improved incentive alignment, and governance engineering (Achleitner & Figge, 2014), and through the provision of smart capital and operational engineering (Kaplan & Stromberg, 2009). While active monitoring through involvement by PE constitutes an important contributor to improved performance (Cotter & Peck, 2001; Guo *et al.*, 2007; Cornelli & Karakas, 2008), experience and specialization add to their effectiveness. More experienced PE firms are known to enhance their learnings (Gemson, 2021) and build better businesses, while industry specialization of PE firms (Gemson, 2021) adds significantly to increases in operating profitability of PE-backed buyouts (Cressy *et al.*, 2007) and create long and lasting value through their involvement (Gottschalg & Wright, 2008). Moreover, PE firms that lack suitable resources are known to form alliances or syndicates (Lerner, 1994) for sharing information and resources. Incentive alignment can be achieved through increased managerial ownership (Leslie & Oyer, 2009; Muscarella & Vetsuypens, 1990) and the use of leverage to use the firm's free cash flows effectively (Jensen, 1989), while governance engineering results in improved reporting procedures, and the active monitoring of operations by PE firms (Acharya *et al.*, 2011; Metrick & Yasuda, 2011). Operational engineering is achieved through specific operational expertise and industry-specific capabilities to actively support portfolio companies (Kaplan & Stromberg, 2009; Sousa, 2010). Wright *et al.* (2008) argue that although enhanced incentives contribute substantially to operational performance improvements, their equity stake in PE may be directly related to the price paid for the deal or to the selection of attractive deals. Wright *et al.* (2008) found evidence suggesting that the size of the management's equity stake is an important influence on performance, and it also influences the amount of external funding that needs to be raised.

Therefore, PE presence is one of the key value-creating drivers (Guo *et al.*, 2011) and has often been akin to providing a certification effect (Wu *et al.*, 2014; Sahlman, 1990; Barry *et al.*, 1990) to signal deal quality (Jensen, 1989). Gompers and Xuan (2006) examine the characteristics of the acquisition of venture capital (VC) backed by private firms by public companies. They argue that VC-backed start-ups are composed primarily of future growth opportunities, and therefore acquirers have considerable growth capabilities so that they can fully take advantage of the real options acquired once the opportunities arise in the future. Hammer *et al.* (2022) conclude that PE-backing induces a sizable but short-lived boost to acquisition activity. Brander and Egan (2017) argue that typical patterns for successful entrepreneurial companies were to have an initial public offering (IPO) or be acquired as a privately-held target, with the latter happening more frequently. It would be interesting to examine the effect of PE-backing on private company acquisitions. Thus, I hypothesized that the PE presence and backing would signal the quality of the private target:

**H2:** The PE-backing of a private target can increase the deal value in an acquisition.

### The Importance of the Acquirer

The two dominant acquirers in the market for corporate control, *i.e.* strategic acquirers (corporate buyers) and financial acquirers (PE buyers), have different purposes of existence, business models, acquisition approach, and processes (Teerikangas, 2015), and therefore differ in their objectives for said acquisitions. The acquisition process is known to realise synergies (Zaks *et al.*, 2018; Kalsie & Singh, 2022) including realizing and enhancing growth potentials, cost-based synergies, revenue-based synergies, or organizational learning (Austin & Leonard, 2008). While strategic acquirers seek long-term synergies, financial buyers intend short to medium-time horizon exits harnessing profitable returns. Such acquirers will also differ on various dimensions including affinity for specific assets such as performance parameters (Gemson, 2021), engagement in exporting and timeframes of association with

targets, organizational skills to improve profitability and productivity (Baziki *et al.*, 2017), and varying target appeals (Gorbenko & Malenko, 2014; Gemson, 2021).

Adverse selection (Akerlof, 1970) is an inherent feature of the M&A market, heightened by the lacuna of the private target. Subsequently, the type of search is of prime importance (Capron & Shen, 2007) and acquirers will need to resort to interpreting signals the target company sends. The PE-backing of such a target aims at providing some comfort in terms of increased operational efficiency and performance parameters. However, PE firms are known to be skilled in negotiating deal values, sometimes at the expense of the acquiring firm.

The deal value is of paramount importance in the acquisition process because a favourable value will assist acquirers engage with targets to fulfil their goals. Barger *et al.* (2008) opine that target firms which harness operating synergies from their acquisitions would be acquired by operating firms and correspondingly have a higher premium. Gorbenko and Malenko (2014) conclude that the valuation of a strategic buyer is 16.7% above the stand-alone market value of the target while that of a financial buyer is 11.7% above the stand-alone market value of the target. While strategic acquirers may be limited by their ability to value targets, financial acquirers have well-honed insights (Bottazzi *et al.*, 2008). They also have well-developed professional judgments and social networks to identify target firms with potential investment value in the market (Tang & Lei, 2018). Holloway *et al.* (2016) argue that the determinants of acquisitions can be mapped to characteristic features that form the underlying heterogeneity of PE firms. Gemson (2021) concludes that financial acquirers had significantly larger-sized deals as compared to strategic buyers in private markets. Thus, I hypothesized:

**H3:** Strategic acquirers and financial acquirers have differing preferences in PE-backed private acquisition targets.

## RESEARCH METHODOLOGY

### The Sample

I obtained data for this study from the PrivCo database which provides details on privately held companies, including private market M&A, VC, and PE deals. A deal, for this study, represents a completed acquisition of a private target on a specific date made by a buyer(s) purchased from a PE seller(s) for a specific value. Deal information available in the PrivCo database includes the date of the acquisition, target name, sector, deal value, buyer, and seller information. In the analysis, I used completed acquisition deals between 2000 and 2017. There were fewer deals in the earlier years as compared to the later periods. I sourced other variables from Bloomberg and the World Bank database.

The dataset for this study consisted of 2392 PE-backed completed acquisitions of private companies between 2000 and 2017. Out of the 2392 acquisitions, 1852 acquisitions were in the United States (77.4% of the sample) while 540 acquisitions corresponded to the rest of the world (22.5% of the sample). Such trends have been noted by Capron and Shen (2007). In total, 665 (27.80%) acquisitions were by financial acquirers (PE), and 1727 (72.19%) acquisitions were by strategic acquirers (corporations). The total value of these acquisitions was approximately USD1322.5 billion and was spread over 45 countries.

### Summary Statistics

Table 1 presents a summary table of the sample of PE-backed acquisitions.

An examination of Table 1 reveals an increase in the number of PE-backed acquisitions as well as the total deal value of acquisitions during the time periods in question. In Period 1 (2000-2004) there were fewer acquisitions, which could also be due to the non-recording or unavailability of deals in the database. The Period II (2005-2008) showed a steep increase in the number of deals. This was the period just prior to the subprime crisis. Period III (2009-2012) and Period IV (2013-2017) after the subprime crisis showed an increase in a number of deals, albeit at a lower growth rate.

The average deal value fell between 37.70% in Period II just prior to the subprime crisis, indicating a cautious deal activity during the subprime crisis. Period III clocked a revival of average deal sizes, with increases of 23.14%. Period IV showed robust growth with a 42.54% increase in average

deal value globally. The total deal value throughout the four periods showed increasing trends. Although the subprime crisis resulted in caution with smaller average deal sizes, there were increased total deal values indicating that appetites were by no means destroyed. Global total deal values were USD394.34 billion in Period III and USD708.107 billion in Period IV indicating growths of 90.66% and 79.57% from prior periods respectively.

**Table 1. Summary snapshot of the sample of PE-backed acquisitions used in the study**

Period	Time Period	Number of acquisitions	Growth Rate	The average deal value of acquisitions	Growth Rate	Total deal value of acquisitions	Growth Rate
				(USD, millions)		(USD, billions)	
I	2000-2004	21		629.964		13.229	
II	2005-2008	527	2409.52%	392.461	-37.70%	206.827	1463.44%
III	2009-2012	816	54.84%	483.26	23.14%	394.34	90.66%
IV	2013-2017	1028	25.98%	688.82	42.54%	708.107	79.57%

Source: own study of data sourced from PrivCo.

Table 2 presents a summary snapshot of the acquirers of the PE-backed private company acquisitions in the sample.

**Table 2. Summary snapshot of the two dominant acquirers of PE-backed private company acquisitions**

Acquirer type	Number of acquisitions	Average deal value	Total deal value
		(USD, millions)	(USD, billions)
Strategic acquirer (corporate firm)	1727	509.1542	879.309
Financial acquirer (PE firm)	665	666.4585	443.195

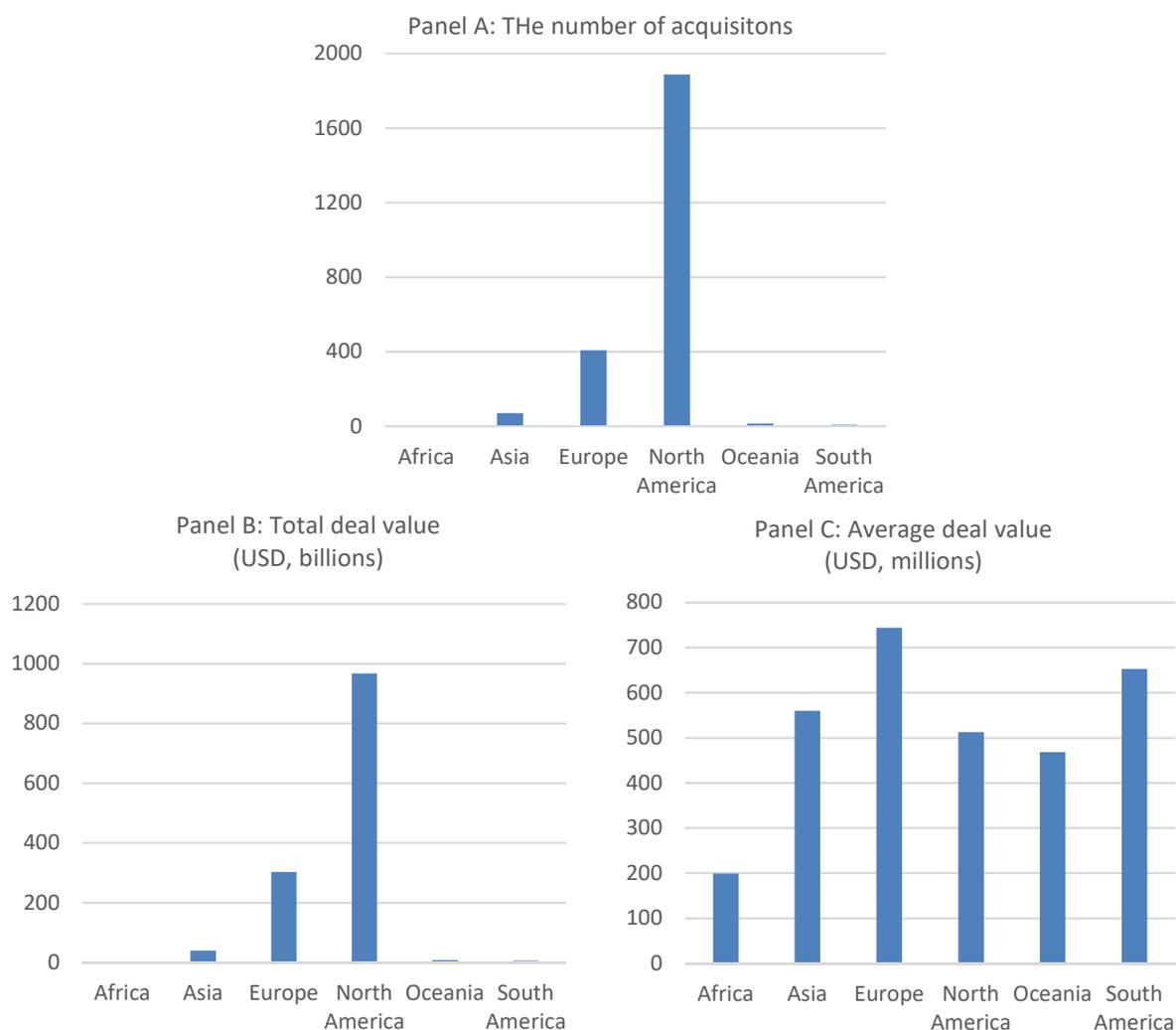
Source: own study of data sourced from PrivCo.

From Table 2, we see that strategic acquirers or corporate firms were more popular than financial acquirers or PE firms. Strategic acquirers comprised 1727 deals or 72.19% of the sample while financial acquirers or PE firms accounted for only 665 deals or 27.8% of the sample. The total deal value of these strategic acquirers was USD879.309 billion while the total deal value of financial acquirers was only 54.2% of the same, amounting to USD443.195 billion. However, when I considered the average deal value, the financial acquirer had a greater average deal value of USD0.666 billion as compared to USD0.509 billion for strategic buyers.

Figure 1 shows the distributions of acquisitions geographically.

The large number of acquisitions translated into the fact that North America had the largest total deal value comprising USD966.97 billion, followed by Europe with USD302.76 billion which has been captured in Panel B in Figure 1. The total deal value in Asia was USD39.74 billion with the Oceania regions clocking a total deal value of USD7 billion.

However, when I considered the average deal value, Panel C in Figure 1 showed a different scenario. The average PE-backed acquisition was the largest in Europe clocking USD0.7 billion, followed by South America, with an average PE-backed acquisition being valued at USD0.65 billion. Acquisitions in Asia, North America, and Oceania followed with average deal values of USD0.55 billion, USD0.51 billion, and USD0.46 billion respectively. This indicates that while North America had robust acquisition activity, the average deal value was smaller compared to acquisitions in the other regions. More specifically, deals in Africa valued at an average of USD 0.198 billion were lower in value.



**Figure 1. Distribution of PE-backed acquisitions of private companies geographically, 2000-2017**

Note: Panel A: The number of acquisitions. Panel B: Total deal value (USD, billions).

Panel C: Average deal value (USD, millions).

Source: own elaboration of data sourced from PrivCo.

Figure 2 shows the distributions of acquisitions as per industry sector. There are nine industry sectors – agriculture (including agriculture and forestry), construction (including construction and real estate), consumer products (including consumer products, e-commerce, retail, and hospitality), finances (including financial, banking, commercial financial services, insurance, lending, and trading and brokerage), healthcare & biotechnology (including healthcare, biotechnology, and pharmaceuticals), infrastructure (including clean energy, energy & utilities, and transport), manufacturing (including manufacturing and industrial), services (including media, services, administrative services, consulting, broadcasting), and technology (including technology, Internet services, Internet content, and software).

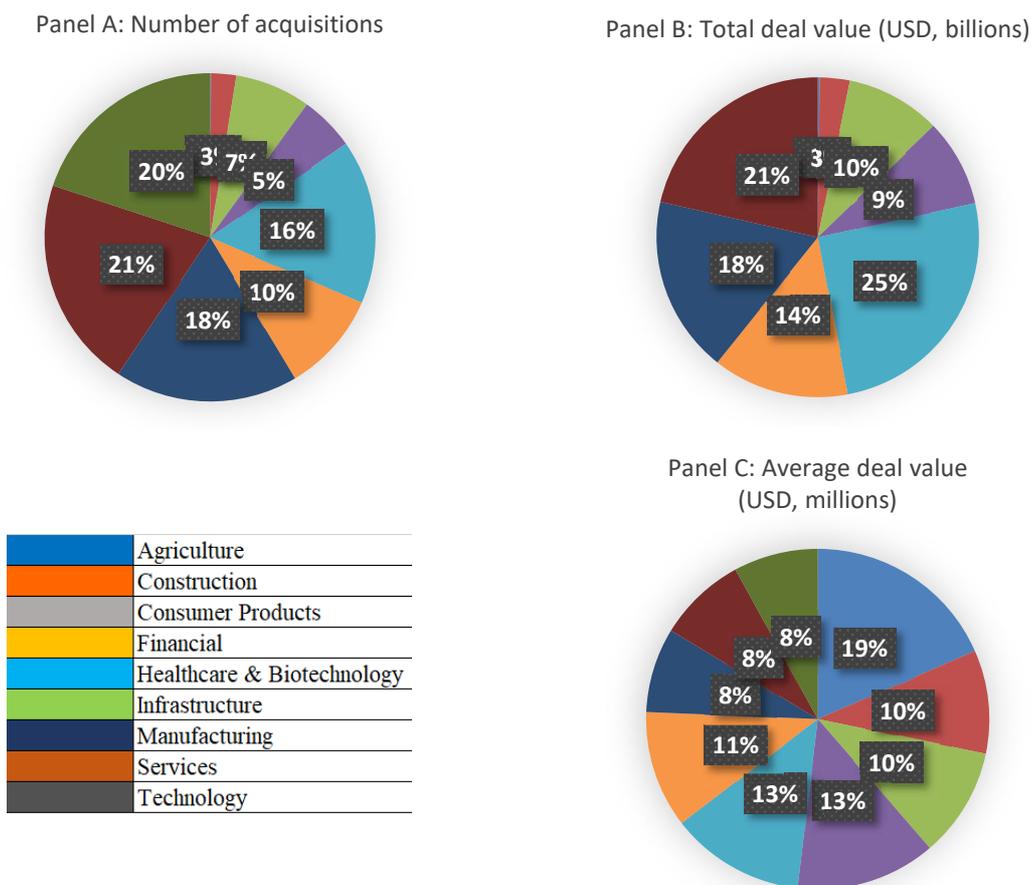
Panel A in Figure 2 shows the distribution of a number of PE-backed private company acquisitions in the nine industry sectors. The services sector (20.74%) and the technology sector (19.90%) had the greatest number of acquisitions followed by the manufacturing sector (17.94%) and the healthcare & biotechnology sector (16.18%). The infrastructure sector accounted for 9.91% of the number of acquisitions in the sample, followed by the consumer products (7.40%) and the financial sector (5.39%). The construction and agriculture sector had a smaller number of deals. An examination of Panel A indicated that the companies that were acquired were not confined to any specific sector but were from diverse

industry sectors. There were no dominant industry sectors when it came to PE-backed private company acquisitions reinstating that acquisitions were heterogeneous.

Panel B in Figure 2 shows the average deal value in PE-backed private company acquisitions in the sample. The average acquisition for this sample was valued at USD552 million. The largest averages belonged to the agriculture sector which also had the fewest number of deals in the sample. The financial sector followed with an average acquisition valued at USD756.77 million, while the healthcare & biotechnology sector had average acquisitions valued at USD726.81 million dollars. The technology sector, services sector, and manufacturing sector, while clocking the greatest number of acquisitions had average deal sizes of USD0.44 billion, USD0.478 billion and USD0.46 billion respectively.

Panel C in Figure 2 shows the total deal value of all PE-backed private company acquisitions in the sample. The healthcare & biotechnology sector accounted for the largest value with USD281.27 billion with 387 acquisitions, accounting for 21.27% of the total deal value in the sample. The services sector came in second with a total deal value of USD237.136 billion in the 496 acquisitions, accounting for 17.93% of the total deal value in the sample. The technology sector and the manufacturing sector clocked total deal values of USD217.267 billion and USD197.350 billion respectively, while the infrastructure sector saw a total deal value of USD151.027 billion. The consumer products sector and financial sector each account for 7.8% of the total deal value in the sample, while the construction and agriculture sectors together accounted for 2.5% of the total deal value.

An examination of the sample depicts the diversity in industry sectors of PE-backed acquisitions and wide variations in average and total deal values. No specific industry-dominated private company acquisitions.



**Figure 2. Distribution of PE-backed acquisitions of private companies sector-wise, 2000-2017**

Note: Panel A: The number of acquisitions. Panel B: Total deal value (USD, billions).

Panel C: Average deal value (USD, billions).

Source: own elaboration of data sourced from PrivCo.

## Methods

This study is similar to strategy studies (Capron & Shen, 2007) where the research question focuses on the acquirer's choice of target (Shen & Reuer, 2005) without dealing with performance implications.

I used comparative analysis to identify significant differences in PE-backed private company acquisitions in the sample. I performed two sets of comparative analyses. Firstly, I did a comparative analysis for two periods, 2000-2008, and 2009-2017 to identify changes, if any, in acquisitions after the subprime crisis. I analysed the key parameters such as deal value, acquirer type, acquirer experience, target's revenues, and target's EBITDA. Secondly, I conducted comparative analysis to identify differences, if any, in acquirer preferences on target companies on performance measures such as total assets, total equity, revenues, net income, cash flow, EBITDA, and operating income. I used the independent sample t-test to perform the two sets of comparative analyses.

Next, I used a 2-stage regression model to identify the determinants of deal value of PE-backed private company acquisitions. In the first stage, I regressed the acquirer variable – BUYER (a dummy variable indicated either a financial buyer or a strategic buyer) – on a set of exogenous variables. In the second-stage regressions, I used the fitted variable as an explanatory variable for the dependent variable. The dependent variable was the deal value – DEALVALUE (2010 billion USD). I used the natural log form of this variable for the analysis. Independent variables represented deal level characteristics, acquirer characteristics, and target parameters.

Table 3 presents the variables that I used in the analysis.

**Table 3. Variables used in the analysis**

Particulars	Description
<b>Dependant variables</b>	
BUYER	The acquirer in the completed acquisition. This variable is represented by a binary variable, 1 representing a financial acquirer firm, 0 representing a strategic firm. This value has been controlled for endogeneity with the age of the target, whether the deal was a local deal and the presence of a buyer syndicate.
BUYERSYN	The presence of a syndicate buyer. This variable is represented by a binary variable, 1 representing a syndicate, and 0 otherwise.
BUYEREXP	The cumulative experience of the buyer(s) in the deal, in years.
BUYERRELEXP	Relevant experience of the buyer in the deal. This variable is represented by a binary variable, 1 representing experience in the industry of the target, 0 representing no industry experience.
LOCAL	Indicating if the completed acquisition was completed in the same country as the buyer. This variable is represented by a binary variable, 1 representing a local deal, 0 otherwise.
STAKE	The percentage stake acquired in the target firm expressed as a percentage.
TARGETAGE	Age of the target, in years, at the time of acquisition.
TARGETREV	Revenue (million USD) of the target in the year of acquisition, expressed as a natural log.
<b>Control variables</b>	
NORTHAMER / EUROPE / ASIA / OCEANIA / SOUTHAMER	Region variables representing North America, Europe, Asia, Oceania, and South America. This variable is used to capture region effects.
CONSTRU / CONSUMER / FINANCIAL / HEALTHCARE / INFRA / MANU / SERVICES / TECH	Sector variables representing the construction sector, consumer sector, financial sector, healthcare & biotechnology sector, infrastructure sector, manufacturing sector, services sector, and technology sector. I used this control variable to capture industry effects.

Source: own study.

An examination of Table 4 provides interesting insights between the two periods in question. Targets that were older and had lower revenues were preferred post-subprime crisis. Brander and Egan (2017) note that private targets are often younger firms typically emerging from entrepreneurial sta-

tus, and less information about them is publicly available. However, after the subprime crisis, target firms that are older and have relatively lower revenues were acquired. This indicates a shift in the preference of both acquirers, despite PE-backing. Deal values are also significantly larger post-2008.

**Table 4. The results of the comparative analysis indicating any changes in the periods in question**

Particulars		2000-2008	2009-2017
Deal Value	N	548	1844
	$\mu$	401.563	597.856
	t	3.693***	
Buyer Type	N	548	1844
	$\mu$	0.30	0.27
	t	-1.482	
Buyer Experience	N	548	1844
	$\mu$	36.33	43.08
	t	2.345**	
Target Age	N	548	1844
	$\mu$	22.39	25.29
	t	2.075**	
Revenue during the acquisition year	N	133	278
	$\mu$	767.60	709.19
	t	-0.433	
Revenue one year prior to the acquisition	N	40	443
	$\mu$	1130.11	593.153
	t	2.075**	

Note: \*\*\*99% CI, \*\*95%CI, \*90%CI; I divided the sample into two time-periods, i.e. 2000-2008, and 2009-2017.

Source: own study.

Table 5 presents the results of the comparative analysis indicating acquirer preferences on targets. Target parameters including total assets, equity, revenue, net income, cash flow, EBITDA, and operating income are compared during the year of acquisition and one year prior to the year of acquisition to identify if company performance measures influence preferences of the two types of acquirers.

**Table 5. Comparative analysis indicating differences in acquirer preferences on target companies**

Particulars		Year of acquisition	One year prior to the acquisition
TOTAL ASSETS			
Strategic acquirer	N	30	101
	$\mu$	1708.86	1097.92
Financial acquirer	N	40	98
	$\mu$	1459.03	1146.36
	t	-0.22	0.110
TOTAL EQUITY			
Strategic acquirer	N	27	81
	$\mu$	454.33	565.75
Financial acquirer	N	40	74
	$\mu$	433.33	253.89
	t	-0.074	-1.283
REVENUE			
Strategic acquirer	N	267	305
	$\mu$	596.59	592.13
Financial acquirer	N	144	178
	$\mu$	971.93	715.57
	t	2.868**	1.061

Particulars		Year of acquisition	One year prior to the acquisition
NET INCOME			
Strategic acquirer	N	20	76
	μ	181.38	109.09
Financial acquirer	N	32	82
	μ	222.06	69.71
	t	0.224	-0.799
CASH FLOW			
Strategic acquirer	N	5	23
	μ	17.48	365.37
Financial acquirer	N	9	35
	μ	68.68	132.71
	t	1.298	-1.051
EBITDA			
Strategic acquirer	N	25	50
	μ	164.07	103.44
Financial acquirer	N	31	29
	μ	135.55	287.28
	t	0.077	2.434**
OPERATING INCOME			
Strategic acquirer	N	19	66
	μ	584.38	45.5
Financial acquirer	N	29	87
	μ	69.22	50.87
	t	0.02	0.350

Note: \*\*\*99%CI, \*\*95%CI, \*90%CI.

Source: own study.

Strategic acquirers and financial acquirers did not differ in asset and equity values, incomes, and cash flows of the targets. Only variables indicating revenues (in the year of acquisition) and EBITDA (one year prior to the year of acquisition) emerged as significant, both at 95% confidence interval. This suggests that financial acquirers preferred targets with larger revenues and EBITDA indicating that they preferred targets with larger core profits and operational profitability.

### Factors Influencing Deal Value

I conducted a regression analysis to examine the factors that affect deal value in private company acquisitions. I also attempted to verify if the acquirer influences the value of the deal. Hence, I used the dummy variable *BUYER* indicating 1 for a financial buyer and 0 for a strategic buyer to see if it is fit for acquirer choice following the procedure discussed by Boone and Mulherin (2007). Next, I used this fitted value as an independent variable to identify if it influenced deal value. Similarly, the variables *BUYEREX* and *BUYERRELEXP* were fitted with relevant experience and presence of a syndicate, and total buyer experience and presence of a syndicate respectively.

An examination of Table 6 provides insights into the various factors that affect deal value for PE-backed private company acquisitions. I observed that the variable *BUYER* emerged as positively significant in all regressions 1, 2, 3, 4. This indicates that financial buyers acquired deals at significantly higher deal values as compared to strategic buyers. Prior research on buyer influence on deal value on public targets suggested that strategic buyers tended to pay a larger premium on deals. Gorbenko and Malenko (2014) concluded that, on average, the valuation of a strategic buyer is 16.7% above the stand-alone market value of the target while that of a financial buyer is 11.7% above the stand-alone market value of the target. However, when private targets are considered, financial buyers have significantly larger deal values (Gemson, 2021). In this study, the PE-backed target seems to garner a larger deal value with financial buyers too.

**Table 6. The results of the OLS regression used the examined factors affecting deal value**

Regression	1	2	3	4	5	6
Number of Observations	2,392	2392	2280	2392	448	448
Prob > F	0.0000	0.0000	0.000	0.000	0.000	0.000
R-squared	0.0465	0.0633	0.0878	0.0651	0.4163	0.4431
Adj R-squared	0.0409	0.0570	0.0806	0.0591	0.3988	0.4198
Root MSE	1.4972	1.4846	1.4641	1.4829	1.057	1.0322
BUYERPE#	0.8642***	3.2884***	5.6353***	0.6160***	0.3445	4.0166
BUYEREXP*	–	-0.0994***	-0.1343***	–	–	-0.0545
BUYERRELEXP\$	–	-22.0346***	-17.8325***	–	–	8.0485
LOCALDEAL	–	–	-0.5347***	–	–	-0.4246**
STAKE	–	–	0.0084***	–	–	0.0128***
TARGETAGE	–	–	–	0.0077***	0.0023	-0.0025
TARGETREV	–	–	–	–	0.5662***	0.5562***
NORTHAMER	0.5213	1.5789*	0.7390	0.5223	0.7404	-0.3111
EUROPE	1.0518	2.1496**	1.1583	1.0068	0.6446	-0.4667
ASIA	0.4305	1.5580*	0.8169	0.4355	1.4566	0.4144
OCEANIA	1.0018	2.1077**	1.1336	0.9482	1.2195	–
SOUTHAMER	1.0878	2.2255**	1.4636	1.0512	–	-0.9465
CONSTRU	-1.6865	-1.6478	-1.4910	-1.4826	–	–
CONSUMER	-1.3975	-1.3342	-1.1860	-1.1975	0.3953	0.6276
FINANCIAL	-1.2152	-1.1401	-1.0202	-0.9981	0.2372	0.4888
HEALTHCARE	-1.3821	-1.3728	-1.2781	-1.1361	0.4172	0.4959
INFRA	-1.4289	-1.4039	-1.2679	-1.2291	0.2279	0.2982
MANU	-1.6184	-1.6136	-1.5645	-1.5132	0.0787	0.1978
SERVICES	-1.6150	-1.5502	-1.4468	-1.3989	0.1406	0.1628
TECH	-1.8684*	-1.7436*	-1.5955	-1.5980	0.5579	0.6505

Note: # value fitted by obtaining a predicted variable with a logit regression, in which the buyer choice was regressed against the age of the target, whether the deal was a local deal, and the presence of a buyer syndicate; \* value fitted by obtaining a predicted variable with multiple regression, in which the buyer experience was regressed against relevant experience and the presence of a buyer syndicate; \$ value fitted by obtaining a predicted variable with a logit regression where the relevant experience was regressed against total experience and the presence of a buyer syndicate; \*\*\* 99% CI, \*\*95% CI, \*90% CI. Source: own study.

When I examined acquirer characteristics, variables *BUYEREXP* and *BUYERRELEXP* emerged negatively significant in regressions 2 and 3, indicating that both total experience and relevant experience of the buyer affected deal values. The negative significance of total experience and relevant industry experience could be translated into the fact that more experienced buyers (both with overall experience and with relevant experience) are able to use their bargaining power while picking good deals and bargain for lower prices. However, these variables lose their significance when the target parameters are considered, indicating that company information and availability supersede experience levels.

The examined deal characteristics included variables representing *LOCAL* and *STAKE* – which represented a local deal and the percentage of stake acquired. The variable *LOCAL* emerged as negatively significant indicating that the physical proximity between the buyer and the target reduced deal values. Location often played a major role in deal value with cross-border deals being more expensive. Reuer and Ragozzino (2007) opine that lack of information on private firms limits the breadth of the acquirer's search and increases the risk of not evaluating properly the assets of private targets. Therefore, acquirers may prefer to buy private targets for local search. The positive significance of *STAKE* indicates that acquisitions which involved larger stakes had significantly larger deal values, which is on expected lines.

Target characteristics included variables *TARGETAGE* and *TARGETREV*, both of which appeared positively significant (regressions 4 and 5). *TARGETAGE* represented the age of the target which has been often used in academic literature to recognise the information asymmetry surrounding companies. Younger firms had more information asymmetry surrounding them translating into increased risk, indicating that

these targets are valued less (despite being PE-backed), while older targets had larger deal values. However, in private acquisitions, private targets are oft younger companies just emerging from entrepreneurial status (Brander & Egan, 2017) and less information about them is publicly available, translating into little objective data to disclose to prospective investors (Sanders & Boivie, 2004) while long-standing firms produce more objective data about their operations (Henderson, 1999). The variable *TARGETREV* represented the revenues of the target in the year of acquisition and the positive significance of the same indicates that targets with larger revenues had larger deal values. When both *TARGETAGE* and *TARGETREV* were taken together (regression 5), *TARGETAGE* lost significance indicating the revenues of the target are more significant and appear to lend an element of comfort to the deal to increase its value.

Finally, when I considered all variables together in Regression 6, the variable *TARGETREV* appeared significant. This indicates that the target's revenue was the most important regarding deal values. Company parameters superseded all other factors affecting deal value including PE-certification effects and buyer experience.

The regressions were controlled for location and industry sectors. When the experience levels of the buyer were considered, most regions emerged significant. This indicated that the levels of experience (both total and relevant) pertain to the region where the deals took place. However, industry sectors did not emerge significantly.

## RESULTS AND DISCUSSION

This study explored the characteristics of worldwide acquisitions of PE-backed private companies and examined the impact of the subprime crisis, the differences in acquirer preferences and determinants of deal value. Private companies are known to suffer from a lack of visibility and transparency making them little known, difficult to locate and value. Thus, potential acquirers may be bereft of an automatic transmission mechanism whereby information is easily obtainable, and inefficiencies identifiable, and therefore may need to rely on signals provided by the potential target and/or third parties, such as PE firms backing such companies. The presence of PE backing is known for providing a certification for the quality of the target due to alleged superior governance mechanism (Jensen, 1986; 1989). Therefore, it was interesting to examine the characteristics of such acquisitions.

The examined sample of worldwide completed acquisitions from 2000-2017 provided rich insights into the same. There was a steady increase in the number and volume of acquisitions during the sample period. The subprime crisis in 2008 was a minor deterrent in acquisition activity, with smaller-sized acquisitions immediately following the years after the subprime crisis. However, there was a significant change in the nature of deals following the crisis. Independent sample t-tests indicated significant differences in revenues of targets, with targets with smaller revenues after the subprime crisis. An increase in target age along with lower revenues indicated that acquisitions after the subprime crisis were less risky companies. However, there was no significant difference in target performance characteristics, indicating that acquirers sought similarly placed companies. This indicated that although there was comfort in the presence of the PE, the market was more risk-averse and preferred deals with lower risk levels.

The results of the comparative analysis indicated that financial acquirers preferred targets with larger revenues and operational profitability. Parameters such as asset sizes, income, or cash flows did not influence acquirer choice. This indicated that financial buyers utilized the certifications effects of PE firms, and sought companies which they could divest from in a suitable period, which still gave them adequate returns.

The 2-stage regression conducted to examine the determinants of the deal value indicated that the choice of the acquirer and target characteristics influenced the deal value. The positive significance of the acquirer type indicated that financial acquirers sought larger deal values. While the literature on public companies concluded that strategic acquirers had larger premiums, private company acquisitions concluded that financial acquirers had significantly larger deal values. The experience levels of the buyer – both total and relevant – emerged negatively significant indicating that they contributed actively to deal values, by using their bargaining power to negotiate lower deal values. When only buyer experience was considered (Regression 2), region variables also emerged

significant, indicating that experience was region-specific too. However, experience levels were superseded by target-level parameters.

Deal characteristics examined included local deals and the percentage of stake acquired. The negative significance of the variable *LOCALDEAL* and the positive significance of the variable *STAKE* was on expected terms. The existing academic literature indicates that cross-border acquisitions are usually valued more because of proximity challenges due to differences in law, customs, business procedures, and dealings, causing increased risk and information asymmetry. Further, Reuer and Ragozzino (2007) opine that lack of information on private firms limits the breadth of the acquirer's search and increases the risk of not evaluating properly the assets of private targets, therefore, acquirers may prefer to buy private targets for local search.

When target characteristics were examined, the age of the target, a variable indicating the level of information asymmetry surrounding the deal appeared positively significant. This indicated that older targets had larger deal sizes. Younger targets are often prone to information asymmetry, especially in private companies, and have little objective data to disclose to prospective investors (Sanders & Boivie, 2004) while long-standing firms produce more objective data about their operations (Henderson, 1999). The significance of target revenues indicates that targets with larger revenues have significantly larger deal values. Other performance measures such as assets, equity, net income, cash flow, and EBITDA did not appear significant and were excluded from the analysis. The two acquirers, while having clear preferences over revenue measures, were not swayed by other performance measures. The non-significance of such performance measures reinstates the certification effects of PE-backing. The target revenue was the only company performance parameter which superseded the acquirer choice and their experience levels.

### Implications

This study explored worldwide acquisitions of PE-backed private companies and examined the impact of the subprime crisis, the differences in acquirer preferences, and the determinants of deal value. Private companies face many challenges such as lack of visibility and transparency making it difficult for potential acquirers to obtain information and identify inefficiencies. The presence of PE backing is viewed as a certification of the quality of the target due to alleged superior governance mechanism (Jensen, 1986; 1989). Therefore, acquirers may rely on signals provided by the potential target and/or third parties, such as PE firms backing, as a signal and to mitigate the lack of information transmission. Therefore, it was interesting to examine the characteristics of such acquisitions.

While the timeline of this study included the subprime crisis of 2008, the results indicate that this crisis impacted acquisition activities with a minor deterrent immediately following the crisis. The years immediately following the crisis were marked with more caution – targets had greater age and significantly lower revenues. Although PE-backing provides a sense of comfort, acquirers indicated a preference for less risky companies.

The analysis of determinants of deal value indicates that acquirer and target characteristics play a significant role. Financial acquirers and strategic acquirers had varying target preferences; financial acquirers picked targets with larger revenues and operational profitability, and companies they could divest from in a suitable period, which still gave them adequate returns. Experience levels of the buyers, both total and relevant, contributed negatively to deal values. This implies that experienced buyers actively used their bargaining power to negotiate lower deal values. Moreover, target characteristics such as age and revenue also emerged as significant, with older targets and targets with larger revenues associated with larger deal sizes.

### CONCLUSIONS

This study examined PE-backed private company acquisitions while analysing acquirer preferences and determinants of deal value during the subprime crisis. I observed and analysed the trends in global private company acquisitions, the determinants of acquisitions of the two dominant acquirers – strategic acquirers and financial acquirers, and PE-backing which provides a certification effect.

While there was a steady increase in private company acquisitions throughout the period in question, the time periods post the subprime crisis saw smaller-sized targets in terms of revenue. Crisis situations are known to throw financial systems off gear, so a move towards smaller-sized targets indicates the cautious nature of the acquirers.

While PE-backing provided the certification effects making performance variable non-significant, financial acquirers preferred targets with larger revenues and larger EBITDA. The PE-backing made other performance variables non-significant, their mere presence signalling target quality. However, the target revenue emerged strongly and positively significant, nullifying the significance levels of the acquirers as well as their experience levels. The deal value was influenced by the target characteristics and deal characteristics. Targets that were older and had larger revenues were more sought after, as with deals with larger stakes.

While this study examined trends of private company acquisitions, it was not free from challenges. Private companies, due to the private nature of their existence are difficult to locate and value, and hence this study was limited with respect to the level of publicly available information. While I used global data obtained from the PrivCo database and took care to verify the correctness of deals, this database may not capture all private company acquisitions. Further, this study is limited to the extent of the variables publicly available. The availability of additional performance measures and variables could certainly increase the insights that could be derived.

While this study provided insights into the preferences of acquirers and determinants of deal value, it would be interesting to examine if the results of such acquisitions are indeed favourable given the limitations of target choice. Future studies could examine the performance of such acquisitions to analyse if subsequent synergies and returns were indeed created in the course of such strategic decision-making. While adding to the literature on the impact of crises in financial markets, this study opens up avenues to contrast and compare the impact of the subprime crisis and the impact of the COVID-19 crisis on acquisition activity. Both crises sent financial systems off gear, and it would be interesting to examine the trends and nature of private company acquisitions through the two crises. The study also provides a setting to expand the impact and implications of the strategic decision-making of both the strategic acquirers and the financial acquirers in acquiring private targets. While entrepreneurship through acquisitions is a popular and fast-growing method, a deeper examination of the nature of PE-backing will shed insights into successful, private, entrepreneurial targets.

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#### Conflict of Interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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