

ERASMUS UNIVERSITY ROTTERDAM

ERASMUS SCHOOL OF ECONOMICS



MASTER THESIS [MSc ECONOMICS & BUSINESS]

SPECIALIZATION FINANCIAL ECONOMICS

The effect of Institutional Ownership on short-term M&A  
performance: the case of Serial Acquirers

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Date of Final Version: 29/04/2022

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## Abstract

This thesis investigates the relationship between Institutional Ownership and the short-term post-announcement performance of Serial Acquirers. The analysis aims at explaining the effect of active institutional monitoring on firm performance and assesses the implications that the heterogeneous characteristics of institutional investors have on serial acquirers' post-announcement CARs. The study makes use of both OLS regression and 2SLS regression models to mitigate the endogeneity of Institutional Ownership. The results suggest that concentrated ownership by institutions exerts a positive effect on the post-announcement CARs of multiple acquirers. The presence of non-LTIIs shareholders has negative implications for their short-term (abnormal) performance. The results are resistant to employing an alternative measure of short-term performance and additional measures of concentrated institutional ownership. Finally, the findings demonstrate the effectiveness of institutional investors as active monitors of serial acquirers.

**Keywords:** Takeovers, mergers and acquisitions, corporate control, firm performance, corporate governance, serial acquirers, institutional investors, instrumental variables, 2SLS

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# 1. INTRODUCTION

The growth of institutional investors makes them the largest category of owners of listed equity in the world, accounting for more than 40% of the global stock market capitalization (De La Cruz, Medina & Yang, 2019). In the US, they own more than 80% of the equity capital of the most common indices such as the S&P 500 and the Russell 1000 index according to Pensions & Investments Online (2017)<sup>1</sup>. Their massive size and relevance in the modern economy, coupled with their predominance of financial markets make studying these institutions a very important theme of research. The scope of this thesis thus is to investigate the relationship between Institutional Ownership and Serial Acquirers' short-term post-acquisition performance, and test whether the heterogeneous characteristics of the institutions and the relative size of their holdings cause an effect on it. While their effect on firms' policies and performance has been tested extensively (Agrawal & Mandelker, 1990; Crane & Michenaud, 2016; Kang, Luo & Na, 2018), research about the relationship between Institutional Ownership (hereby, IO), the proportion of a firm's equity which is owned by institutional investors, and firms' acquisition performance has yielded mixed results (Chen et al., 2007; Bebchuck, Cohen, & Ferrell, 2017; Eldemans & Holderness, 2015). On one side, the literature has found that institutional ownership has a positive impact on M&A performance (Ma, 2019) because it reduces the likelihood of completing bad deals (Ambrose & Megginson, 2009; Andriosopoulos & Yang, 2015), improves target selection (Smith, 1996) and signals the quality of the acquisition to the market (Ong, Mohd-Raschid & Taufil-Mohd, 2020); on the other, scholars have either found no evidence of a meaningful effect of aggregate institutional ownership on acquisition performance (Chen et al., 2007), or have uncovered a negative link between the two which is attributed to the institutions' choice to side with managers (Bebchuck, Cohen & Hirst, 2017; Heath, Maciocchi, Michaely & Riggensberg, 2019) or their investor profile (Qiu, 2008; Bushee, 1998). However, according to the author's knowledge there is no study in the literature which has tested the effect of concentrated ownership by institutions on serial acquirers' short-term performance. Institutional investors exert their influence over their invested firms through monitoring, which consists of both information gathering and efforts to influence management (Chen, Harford & Li, 2007). In doing so they face a trade-off between active and passive monitoring: while active monitoring implies that investors actively engage with the firm's management to pursue value-increasing acquisitions and reject bad bids ("voice"), passive monitoring institutions are more likely to trade away their positions in the company rather than engage with the management ("exit"). The

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<sup>1</sup> A reference to the portion of institutional ownership concentration which characterizes the main US equity indices can be accessed here: <https://www.pionline.com/article/20170425/INTERACTIVE/170429926/80-of-equity-market-cap-held-by-institutions>. Retrieved on April 28<sup>th</sup>, 2022.

literature has identified specific traits which allow to discern a priori between the institutions which exert their efforts to actively monitor and those which instead trade for private gains (Pound, 1988; Brickley et al., 1988). Institutional investors which are characterized by long-term orientation, are insensitive to pressures from the management (Pound, 1988), hold large stakes of ownership (Sheifler & Vishny, 1986) and are “dedicated” to their investments (Bushee, 1998) have higher incentives to specialize in active monitoring because, given their attention and dedication to their investments, they extract the highest benefits from doing so rather than trading their positions away (Chen et al., 2007; Brickley et al., 1988; Pound, 1988). All other institutions which do not share these characteristics do not have enough incentives to actively monitoring thus, they shift to passive monitoring by trading in the company’s shares when they disagree with the management about their strategic orientation, such as the case of the announcement of bad M&A decisions (Chen et al., 2007; Versteegen Ryan & Schneider, 2002). This thesis contributes valuable knowledge to the study of the effects of active institutional monitoring on the post-announcement returns of acquirers and substantiates the findings of the prior literature which focuses on the heterogeneity of financial institutions and their impact on firm’s performance.

The choice of Mergers & Acquisitions as the setting for studying this relationship is twofold. First, acquisition decisions are important and have a large impact on the valuation of the firm, thus institutional investors in these cases should be very concerned with the prospective effects of such decisions for their long-term impact on firm’s value and ultimately on shareholders’ wealth. Second, this investigation allows to focus the analysis on Serial Acquirers, a special class of firms that conduct an acquisition sequence, involving buying multiple target firms, in a limited time frame. A large body of literature has focused on investigating the reasons why the firm’s management decide to acquire (or merge with) a target company. Many point to acquisitions as set of strategic decisions that managers make in pursuit of growth and to exploit operational synergies (Gort, 1969; Maksimovic & Phillips, 2001; Maksimovic & Phillips, 2002) to improve their competitive position (Mitchell & Mulherin, 1996), or to exploit their relative market overvaluation (Sheifler & Vishny, 2003; Rhodes-Kropf & Viswanathan, 2004). A different strand of the literature has revolved around testing the validity of the agency theory (Jensen, 1986; 1988) and trying to adduce alternative behavioral motivations (Roll, 1986; Malmendier & Tate, 2003) to explain the reasons that lead the firm’s management to make the decision to conduct an acquisition. Since the literature has produced mixed evidence about the success of M&As (Ruback & Jensen, 1983; Moeller, Schlingemann, & Stulz, 2005) with respect to whether these decisions create shareholders’ wealth or rather have the effect of reducing the acquiring firm value (Moeller et al., 2003; 2004), many scholars have purported to discover if behavioral motives may cause a firm to become a Serial Acquirer. Evidence shows that multiple acquirers tend to underperform single acquirers (Ismail, 2008; Kengelbach et al., 2012; Fuller et al., 2002) and to display a decreasing trend

in their cumulative abnormal returns along the acquisitions sequence that is proportional to the increase in the number of deals announced by the bidding firm (Moeller et al., 2005; Aktas, de Bodt & Roll; 2005, 2009). Albeit this declining trend would appear to contrast the rationale of the learning hypothesis (Harford, 2002), it confirms the finding of Aktas, de Bodt and Roll (2011) which argue that serial acquirers tend to pay higher premiums as the number of deals in the sequence increases because, as their integration experience grows, they become better at recognizing the benefit of the potential synergies, thus they award a greater value to the latter deals pursued along their series of acquisitions. Despite the reasons which might suggest that multiple acquirers are worse performers than others, recent studies show that albeit their relative bad performance in the short-term, this special class of acquirers tend to generate more value for their shareholders in the long-term due to their superior acquisition abilities and their experience (Hansell et., 2014; Ooghe et al., 2006). The most successful among them share similar characteristics and follow a common rationale: they conduct industry-related acquisitions, they leverage these as means to grow in those areas where they lack internal resources, are consistent in their target selection strategy throughout the deal sequence and are better at integrating the acquired company within their organizational structure (Haas, 2014). Macias et al. (2016) found them to be characterized by a high degree of operating performance and efficiency, and a rather limited amount of resources invested in research & development, which is compatible with the idea for which they use their resources to achieve external growth as a substitute for (the lack of) internal investments in innovation.

To address the endogeneity bias which affects the relationship between institutional ownership and firm performance, this thesis first relies on the use of ordinary least-squares (OLS) regression models to estimate the coefficients of interest for testing all three hypotheses, then the analysis leverages an instrumental variables approach, in particular a two stage least-squares (2SLS) regression to control for the bias in the tests. Following the test of endogeneity, the first two hypotheses show the presence of bias, caused by omitted variables in these cases, while the third one is best studied with the use of the OLS model. For the models characterized by endogeneity the empirical results considered are estimated using the 2SLS regression technique, while for the third model the results from the OLS regression are discussed. I find that concentrated ownership by institutional investors causes a positive effect on the short-term post-acquisition performance of serial acquirers. As I expected, institutions focus on active monitoring serial acquirers because they create the highest value for shareholders in the long-term (Hansell et al., 2014) hence, I accept the first hypothesis. In testing the second hypothesis I take into account the heterogeneity of institutional investors; I found that contrary to the original expectations, high levels of ownership by engaged long-term institutional investors (LTIIs) do not cause a positive effect on serial acquirers' performance. However, I cannot fully refute the second hypothesis because I find that high levels of ownership by

non-engaged institutions causes a negative effect on serial acquirers, which supports the theory for which the heterogeneity of investors matters for the effectiveness of active institutional monitoring (Chen, Harford & Li, 2007; Versteegen Ryan & Schneider, 2002). Finally, I refute the third hypothesis because there is no evidence that the serial acquirers which are characterized by the highest proportion of institutional ownership perform significantly better than the others. Additionally, this finding does not support the assumption that the impact of institutional ownership on firm performance is best described as a threshold effect, for which institutions engage in active monitoring when the size of their individual ownership stakes exceeds a relative threshold (Chen et al., 2007).

According to my knowledge, this is the first study which investigates the interaction between Institutional Investors and Serial Acquirers' performance and discusses how this interaction translates over their short-term value creation ability. I provide new evidence in support of the Institutional monitoring hypothesis and the importance of accounting for the heterogeneity of institutions while investigating the relationship. To do so I leverage the use of proxies for the ownership by long-term independent institutional investors and a revised classification system. Furthermore, I expand the research which uses instrumental variables approach to testing the effect of IO on firm performance (Qiu, 2008; Crane et al., 2016). I introduce a new instrument which appears to be valid for the test, the number of analysts following the security, and I find further evidence that using the inclusion to the S&P 500 index proves to be a valid instrument. Finally, I expand previous research by carrying out the analysis on a recent sample of takeover transactions which ranges from the end of the financial crisis, January 1<sup>st</sup> 2011, to the middle of the Covid-19 crisis, December 31<sup>st</sup> 2021; this period encompasses two recessions and two phases of economic expansion as witnessed by the presence of two merger waves (Bain & Co., 2022), also, it comprises several deals which were announced during the first two years of the crisis caused by the Covid-19, 2020 and 2021.

The rest of thesis is articulated as follows: Section II introduces a review of the literature on Institutional Investors and Serial Acquirers, Section III discusses the data and the methodology used in the analysis, Section IV presents the empirical results from both the OLS and the 2SLS regression models, Section V discusses the additional robustness checks and the limitations of the study and lastly, Section VI concludes the project with a summary of the findings and some recommendations for future research.

## 2. LITERATURE REVIEW & HYPOTHESES DEVELOPMENT

### 2.1 Institutional Investors

The central role that Institutional Investors have in the contemporary structure of developed and emerging economies' capital markets, coupled with the lack of a complete understanding of the effects they exert on a company's governance and performance, make this topic worthy of further investigation by academics for its societal implications (Ben-David, Franzoni, Moussawi, & Sedunov, 2021; Chen, Harford & Li, 2007).

Financial Institutions underwent a period of tight government regulation at the beginning of the 20<sup>th</sup> century due to the increasing concern that their relevance (importance) to the US Economy and the overall stock market raised amongst politicians and scholars of economics and law of the time. The increased political scrutiny caused discern among the public and contempt towards these institutions which culminated in the infamous stock market crash of 1929. That event led the US government, under the administration of Franklin D. Roosevelt, to address the issues surrounding the stability of financial markets and ensuring public trust in them by enacting laws which protect individual households' investments by limiting the actions of larger financial institutions and insiders. The most relevant still to date, the Securities Act of 1933 and the Securities and Exchange Act of 1934, put an obligation on Institutional Investors and Managers (i.e., Insiders) to disclose their holdings and trade patterns quarterly with the SEC, an entity which was granted the authority to oversee the capital markets and ensure their efficiency, investors protection and facilitating the exchange of financial information between the parties involved in the market<sup>2</sup>. Central to this thesis is the Securities and Exchange Act of 1975, which amended the SEC Act of 1934 and introduced Section 13(f). This article requires Institutional Investment Managers, and in general all those entities that either exercise discretionary power over a portfolio in excess of USD 100 Millions or hold positions in 13(f) securities<sup>3</sup> in excess of USD 200,000, or 10,000 shares, to file their long positions (and related equity options) with the SEC within 45 days from the end of each quarter. These disclosures allow investors to track the trades of large institutions, but they also present a series of setbacks for several reasons such as the occasional exclusions granted to filers, filings delayed on purpose and errors in the submission of the reports which all contribute to less-reliable institutional ownership figures (Anderson & Brockman, 2016)<sup>4</sup>.

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<sup>2</sup> **"The Laws That Govern the Securities Industry" & "The Role of the SEC"**. Accessible at: <https://www.investor.gov/introduction-investing>. Retrieved on April 12<sup>th</sup>, 2022.

<sup>3</sup> Sourced from the official SEC 13(f) form. Accessible at <https://www.sec.gov/about/forms/form13f.pdf>. Retrieved on April 10<sup>th</sup>, 2022.

<sup>4</sup> For a discussion on this topic rf. This post on the Harvard Law School Forum on Corporate Governance. Accessible at <https://corpgov.law.harvard.edu/2016/08/08/form-13f-mis-filings/>. Retrieved on April 10<sup>th</sup>, 2022.



The study of Institutional Ownership (hereby IO) or Concentrated Ownership by institutions has been an important theme of research in the fields of economics, finance and management for decades, though it was not until the 1980s that researchers flocked to the field to study the implications of ownership of phenomena such as “the market for corporate control” in light of the increased Shareholder Activism raising by the end of that decade (Demsetz & Lehn, 1985; Jensen, 1988) in a market characterized by hostile takeovers (Straska & Waller, 2014)<sup>5</sup>. It’s in this period that new theories such as that of the principal-agent conflict (Jensen & Meckling, 1976; Jensen, 1988; Sheifler & Vushny, 1988) and the hubris hypothesis (Roll, 1986) were introduced to this field of research.

Research in this field can be categorized in two classes based on the scope and range of the analysis. Many scholars have investigated the impact that “smart money”<sup>6</sup> investors have on the overall stock market by studying market liquidity, equity prices and stock volatility (Bennet, Sias, & Starks, 2003; Gompers & Metrick, 2001; Rubin & Smith, 2008; Ben-David, Franzoni, Moussawi, & Sedunov, 2021).

Others have addressed the relationship at firm level by focusing on dividend policy, stock performance, executive compensation, investments in R&D (a proxy for corporate innovation), M&A decisions and post-IPO performance (Bushee, 1998; Hartzell & Starks, 2003; Almazan, Hartzell, & Starks, August 2005; Gaspar, Massa, & Matos, 2005; Nguyen & Li, 2020; Grinstein & Michaely, 2005; Michel, Oded, & Shaked, 2020; Lo, Wu, & Kweh, 2017); In the era of globalization, an ever-larger number of authors have started investigating the role of Institutional Ownership in new geographies, like the emerging economies which have less structured governance mechanisms in place to protect the rights of shareholders (Sheifler & Vishny, 1997)<sup>7</sup>; in such kind of environments the presence of institutional investors can actually positively contribute to the stability of the financial markets and to reduce system-wide risk (International Monetary Fund, 2004).

### 2.1.1 The preferences of Institutional Investors

The literature on Institutional Ownership contains plenty of examples of investors being attracted to the characteristics of certain stocks over those of others. Common to the findings is that due to the size of their holdings and trade volumes, their preferences affect the equity market at the aggregate level.

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<sup>5</sup> The 1980s were a peculiar market for institutional investors. The rise of conglomerate firms created the situations for which the market welcomed the first LBOs conducted by PE funds.

<sup>6</sup> “Smart Money” is commonly used to define Institutional Investors in the financial press.

<sup>7</sup> Governance mechanisms around the world turn out to be less structured and ineffective against enforcing (minority) shareholder rights. A brief international overview can be accessed at <https://bit.ly/3uWwGig>. “Corporate Governance in Emerging Markets”; Mishra, Subodh, ISS, Inc. (2019). Accessed on April 8<sup>th</sup>, 2022.

Gompers & Metrick (2001) study the characteristics of the stocks institutions sought after in the period 1980-1996 and analysed the effect that such investors have had on their prices and returns. Their research shows that “large” institutions, those who are obliged to disclose their holdings under the SEC section 13-f, almost doubled their share of the overall US stock market in the period causing an increase in the demand for large capitalization stocks over small-cap ones. Evidence suggests that they prefer to invest in relatively larger and more liquid securities, and that ownership by them can predict future stock price.

Consistent with their findings, Bennet, Sias, & Starks (2003) find a significant institutional preference for large cap stocks. However, they noticed a shift towards smaller and riskier stocks that investors behold as more profitable return opportunities or, as the authors would put it, “Greener Pastures” which, they argue, was driven partially by an institutional “demand shock” for large capitalization stocks, which drove their valuation upwards in line with the hypothesis of Gompers and Metrick (2001), and partially by increased competition for similar target deals among institutions<sup>8</sup>.

Consistent with Gompers and Metrick (2001), in a recent paper Ben-David, Franzoni, Moussawi, & Sedunov (2021) found evidence that institutional ownership, restricted to large institutions only, leads to increased volatility and noise risk because, according to their findings, these institutions trade in bigger volumes than smaller ones hence having a greater impact on stock prices. Ben-David et alia (2018) added to their findings with an investigation of ETFs. According to them, short-term liquidity traders (a subset of institutional investors) exploit these passive funds for their gains because of their unique ability to provide intra-day liquidity at a very low costs, trading in the funds has implications on the price and liquidity of the underlying securities due to the arbitrage mechanism (arbitrageurs are another subset of institutional investors). Furthermore, Coval and Stafford (2007) found that institutional investors exercise positive (negative) pressures on equity prices by trading in larger volumes of stocks in response to an increase in the fund inflows (outflows).

In a related strand of the literature, scholars found that the quality of the governance affects the price performance of stocks, in particular the relationship will be positive for firms with independent boards of directors and a low number of anti-takeover provisions. Gompers, Ishii and Metrick (2001, 2003) analyse corporations based on their governance structures and find that a significant relationship between companies’ governance quality, as measured by an index they construct using 24 governance metrics, and their stock performance. Indeed, they found that the companies with the best governance structures, thus those which have the strongest shareholder

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<sup>8</sup> The increased competition was driven in recent years not only by the extremely low interest rates environment, which prompted institutions to make investments rather than hold cash reserves, but preeminently by the consolidation phase through which underwent the industry. For a particular reference to the case of Asset Management, please refer. “Consolidation in the Asset Management Industry” by Accenture and State Street. Retrieved on March 3<sup>rd</sup>, 2022. Available at <https://bit.ly/3Jpa9jv>.

rights, significantly outperform the ones with the worst governance (as measured by their proprietary index). The authors come to this conclusion by implementing a strategy which goes long in the companies occupying the lowest decile of the index while shorting the companies which make up the top decile of the index (those with the least shareholder rights); they found that such strategy earned an abnormal 8.5% return during the sample period 1990 to 1999. Nevertheless, the authors expanded the analysis and found out that the quality of the governance of the firm is related to other measures other than their stock performance. They uncovered that a 1% increase in their governance index leads to a reduction between 2.4% (1990) and 8.9% (1999) of the company's Tobin's Q, which implies that governance quality is positively correlated to firm value. They also proved that the companies in the top decile of the index (worst quality governance) on average display lower profit margins and sales growth rates though commit to more capital expenditure and carry out a higher number of acquisitions than the firms characterised by the best governance quality when controlling for market valuation and industry. They argue that the cause of such difference is managerial discretion, in particular differences in managerial power which have given rise to differences in agency costs which were not fully incorporated nor reflected in the stock prices during the sample period. These results are mirrored in the works of Bebchuk, Cohen & Ferrell (2004, 2009) which employed a similar empirical research strategy; they built a different index using only 6 of the 24 provisions used by Gompers et al. (2003) and concluded that the presence of antitakeover measures, which reflect higher executive entrenchment, is negatively correlated with firm's value and led to relative stock underperformance in the sample period, 1990-2003.

### 2.1.2 Heterogeneity of Institutional Investors

The relationship between the influence exerted by Institutional Ownership on (serial) acquirers' M&A performance is best studied in relation to the intrinsic characteristics of the institutional investors. The question surrounding the effectiveness of this relation, concerns whether these companies can effectively monitor the decisions of managers. Indeed, much of the literature has focused on studying the institutional incentives to exercise monitoring efforts versus trading around the announcement of acquisitions. Even though some authors have found that aggregate ownership by institutional investors has a positive effect on the firm's likelihood to engage in a large, cross-border deal seeking majority of control (Andriosopoulos & Yang, 2015). Yet, without an assessment of the intrinsic characteristics and the identity of the investors, it is difficult to make an economically meaningful inference on the impact of IO on (serial) acquirers' performance.

The answer to this dilemma resides in the high level of heterogeneity within the institutional investors landscape (Çelik & Isaksson, 2014) and the fact that each institutional group engage with the firms' management to different extents for different reasons. Some institutions have stricter fiduciary

duties towards their investors than others, and in some cases it requires them to intervene in the firm business to preserve value for their clients (Qiu, 2008), such as the case of pension funds. The opposite holds for institutions which follow an indexed (i.e., passive) strategy or specialize in short-term trading: they do not engage in activism. Other institutions, such as hedge funds, are known to be very activist investors even though they usually do not own major stakes in the firms; however, for their well-known ability to influence management they are often joined in their cause by less activist institutions, such as Sovereign Wealth Funds (SWFs), that own substantially larger ownership stakes (Çelik & Isaksson, 2014).

### 2.1.3 Monitoring Institutions

Taking such differences between the identity and the scope of institutional investors into account, it would be a mistake to make an analysis on total (aggregate) institutional ownership whereas studying subsets of institutions might prove more valuable in making statistically and economically sound inferences (Chen, Harford, & Li, 2007).

An abundant class of researchers (Vishny, 1986; Maug, 1998; Kahn & Winton, 1998; Chen, Harford, & Li, 2007; Brickley, Lease, & Smith Jr., 1988) uncovered that, when in disagreement with the firm's management, Institutional Investors face a trade-off between trading for private gains ("exit") and exerting their monitoring power ("voice"). Such a trade-off can explain both the heterogeneity which characterizes this class of investors and the varying degree of influence exerted by different types of institutions. Differences between them originate from the fact that they will engage in monitoring only when the economic benefits of doing so outweigh the cost. Therefore, the influence exerted by Institutional Ownership on (serial) acquirers' M&A performance is dependent on the characteristics of the institutions and their degree of ownership engagement (Çelik & Isaksson, 2014). Based on the analysis of the extant literature, institutions can be classified according to three main features: their degree of independence, the size of their ownership stake, their fiduciary duties towards their investors and their time horizon. Even though all these investor characteristics have implications for institutional monitoring effectiveness, this research mainly focuses on the size of the institutional ownership stake (Blockholder vs non-Blockholder) and the institutions' time horizon (long-term vs short-term), in accordance with the analysis of Porter (1992) and Bushee (2004).

### 2.1.4 Size of the ownership stake

A fundamental characteristics of institutional shareholders which is addressed in this study, is the size of the ownership stake held by institutions in the firm and the relative proportion of ownership concentrated in the hands of the largest shareholders (i.e., blockholders) with respect to the total ownership of the firm (not limited to institutions. The link between the size of the stake and firm performance has been widely studied to ascertain the monitoring effectiveness of large owners

Sheifler & Vishny, 1986). According to common theory, the economic benefits deriving from an institution's decision to monitor a firm's management accrue proportionately with the size of its holdings in the company (Shleifer and Vishny, 1986; Demsetz and Lehn, 1985; Xia, Harford & Li, 2007). Therefore, higher levels of ownership concentration by institutions shall have a favourable effect on the value of the firm (Kahn & Winton, 1998).

According to Brickley, Lease and Smith Jr. (1988), independent institutions<sup>9</sup> which own a large stake in the company (i.e., the blockholders) are those who have more incentives to vote on company matters than other institutions and to stand in favour of value-increasing proposals more often than non-blockholders. Likewise, Agrawal and Mandelker (1990), show that ownership by institutional blockholders has a positive effect on shareholders' wealth and lead to effective monitoring of managers.

A common feature of all institutional investors is that they seek economic profit, in particular they strive to maximize the value of their investments (shareholdings) on behalf of clients because doing so allows them to extract the highest value for themselves (the institutional managers). Nevertheless, more recently researchers found that even though due to the size of their stake they are the investors who benefit the most from monitoring, they are also most likely to possess private information and realize gains trading on them in advance of future events -informed trading- (Bushee & Goodman; 2007).

### 2.1.5 Time Horizon

The investment horizon is an important component of monitoring benefits and has positive implications for the creation of value within the firm. According to Xia, Harford and Li (2007) monitoring benefits<sup>10</sup> increase proportionately with the "length of time invested". The authors avail of previous economical caveats relating to previous research and use Mergers and Acquisition decisions as the setting for their empirical analysis, with the purpose of investigating whether Independent Long-Term Institutions (ILTIs) exercise monitoring efforts over the company's management, thus creating value shared with other investors, or rather trade for private gains. Their results are consistent with the prior literature and are amongst the first to provide evidence that the long-term orientation of investors is beneficial to shareholders' value creation within the firm. Specifically, they find that ownership (concentration) by ILTIs can improve firms' M&A performance and increase the likelihood

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<sup>9</sup> Independent institutions do not have potential business ties with the company. This is the case for Public pension funds or Endowments. Institutions such as Insurance companies and private pension funds are considered business-dependent.

<sup>10</sup> The authors define monitoring benefits as "the ability to influence management, the potential financial gain from the influence and better information" (Xia, Harford & Li; 2007)

of withdrawing from bad bids, thus implying these institutions use their power to exert monitoring. However, they also seem to trade well in advance of the announcement of the worst deals, which displays a tendency to "informed trading". Contrariwise, the presence of short-term institutions has a negative impact on acquirers' returns at announcement and might lead to long-term underperformance. This finding implies that short-term oriented shareholders have reduced monitoring capabilities during takeovers (Gaspar et al., 2005)

Analogously, other researchers have found evidence that long-term ownership by outside institutions has positive implications for the firm long-term value, while ownership by institutions which hold their positions in the firm for short periods of time has no effect on value creation (Yin, Ward, & Tsolacos, 2018). These findings confirm that the incentive for institutions to monitor firms' managers is higher the longer they have held their positions for, and that institutions can affect firm value only when they are highly committed to the investment<sup>11</sup>. In other cases, when institutions have a short-term horizon (and small stake) the benefits associated with monitoring managers will be lower than the cost they bear to engage in monitoring.

This perspective is aligned with the research of Bushee (1998; 2004) who, while classifying institutional investors<sup>12</sup>, identified the superior advantages (in terms of accrued performance) that IO by "Dedicated" institutions have on firms' shareholder wealth. This type of investors have the highest incentives to monitor because their strategy entails holding a small number of securities for a long period of time; in particular, they follow "relationship investing" strategy (Fisch, 1994) for which they commit to a long-term investment in exchange for a "say" on the management (i.e., strategic orientation) of the company. Due to their long-term commitment, they are more likely to develop and nurture the relationship with the firms' management and to commit specific resources to manage the holdings, thus they are also the ones who have the greatest means to "voice" a change. Conversely, despite holding large stock positions, due to their short-term nature and high portfolio turnover rates "Transient" investors have the lowest incentives to monitor and simply "exit" the firm, rather than monitoring, when they are in disagree with the management; also, they tend to allocate a higher portion of their funds to short-term, liquid investments while Dedicated institutions commit to fewer investments in pursuit of long-term value. Hence, an institution's time horizon is essential in determining its incentives to monitor (hence, whether it will exert monitoring influences or not) and its effectiveness.

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<sup>11</sup> For this study, the commitment to the investment is analyzed along the dimensions of time horizon and size of the ownership stake.

<sup>12</sup> Institutional investors are classified into Transient, Dedicated and Quasi-Indexers depending on the size of their stake, the time horizon of the investment and their portfolio turnover rate.

### 2.1.6 Type

Based on the legal type and fiduciary duties, institutions can be distinguished into pressure-insensitive, or independent, and pressure sensitive if they have potential business ties with the firm's management. Public pension funds (Del Guercio & Hawkins, 1999), Independent Investment Advisors and Mutual Fund companies are deemed to be independent from "commercial pressures" (Chen et al., 2007). Of particular interest for their future implications are mutual funds. Their growth in recent years is attributed to the so-called "shift" towards passive investment strategies (Ben-David, Franzoni, & Moussawi, 2018) and to the consolidation phase which characterized the asset management industry over the last decade (BlackRock, 2022); this led to the creation of the "Big Three" — the world's largest financial institutions (Fichtner, Heemskerck, & Garcia-Bernardo, 2017). Research suggests that the rise of these passive funds is related to a system-wide decrease in active monitoring because they follow indexed strategies and suffer from potential business ties with the company. This implies that they extract less benefits from actively monitoring their invested firms than they do from trading (Bebchuck et al., 2019; Heath et al., 2018) and altogether they contribute to "shifting the power of control from the shareholders to the managers" (Heath et al., 2019). The fast rise of these passive funds, accompanied by the simultaneous slow decline of active investing means that the growth of the sector is contributing to reduce the incentives of financial institutions to monitor the "American corporation" (Kahle et al., 2017).

### 2.2 Serial Acquirers

Explaining the existence of serial acquirers is not a straightforward process. Macias, Rau and Stouraitis (2016), investigated the common features of serial acquirers and realized that these are "efficient firms with high operating performance, low internal R&D, and a habit of making frequent acquisitions". Most researchers have identified them as the acquiring companies that make at least 2 or 3 deals in a rolling 3-year window (Kengelbach, Klemmer, Schwetzler, & Sperling, 2012) or conduct at least 5 acquisitions in the span of 3 (Aktas, de Bodt, & Roll, 2013).

Most of the research conducted since 1980s has found that Mergers & Acquisitions, especially Corporate Takeovers, creates value at the combined entity level (Ruback & Jensen, 1983; Jensen, 1988; Moeller, Schlingemann, & Stulz, 2005) while evidencing a loss in value for acquirers' shareholders. Following studies uncovered that albeit displaying signs of (specialized) learning, multiple acquirers tend to underperform with respect to single acquirers by an average CAR of 0.40% at the announcement of the deal (Kengelbach J., Klemmer, Schwetzler, & Sperling, 2012). Compared to them, serial acquirers tend to make larger acquisitions, over 50% bigger on average according to (Kengelbach, Klemmer, Schwetzler, Sperling & Roos, 2011) which generate a larger loss of value for shareholders; research shows that despite showing an ability to create value at the beginning of their acquisition sequence,

their performance decrease as the number of deals completed increases (Moeller et al., 2005; Aktas, de Bodt & Roll; 2005)). Regardless of the empirical findings which would suggest otherwise, an ever greater number of large corporations make (related) acquisitions at an increasingly higher pace; they do so in order to foster corporate growth and pursue their strategic objectives (Laamanen & Keil, 2008).

This trend might be explained by recent evidence that some specialized frequent acquirers can, through numerous deals, deliver extraordinary results. Hansell, Walker and Kengelbach (2014) effectively ascertain the superior performance of what they call “Successful Serial Acquirers”; granted they spend about 5% of their market value each year to conduct acquisitions, they grow much faster than their respective competitors and thus create shareholders’ value steadily over time. This findings show that the best acquirers are able to integrate the targets they bought and to extract value from the deals, they manage to do so by extensively scouting the market for opportunities, assessing the cultural fit of the targets and by “building and refining a compelling investment thesis”. Their finding confirms the results obtained by Ooghe, De Langhe, & Camerlynck (2006), which demonstrated that serial acquirers perform (on average) better than single acquirers. They attribute the relationship to prior acquisition experience and highlights that multiple acquirers seek to buy targets with complimentary resources that allow the firm to grow and increase their sales. Supporting evidence was provided by Kengelbach et al (2011) who found that serial acquirers substantially outperforms single ones when buying relatively small, privately-held and foreign targets.

There are multiple scholars that have purported to explain the reasons behind corporate M&A decisions. As found in previous literature, firms carry out acquisitions with the strategic intent of exploiting growth opportunities (Gort, 1969; Maksimovic & Phillips, 2001; Maksimovic & Phillips, 2002); to act in response to exogenous shocks, like industry consolidation, to the economy which affect either the competitiveness of the industry, the competitive position of the firm or both (Mitchell & Mulherin, 1996), while for Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004) firms are induced to making acquisitions when the stock market is overvalued. Alternatively, M&As might be caused by merger waves (Harford, 2005), a theory that would also explain why scholars have consistently found a clustering of deals across the dimensions of time and industry (Rhodes-Kropf & Viswanathan, 2004; Shleifer & Vishny, 2003), researchers have found evidence that during such periods, the markets are characterized by overvaluation (Harford, 2005) and managerial herding behaviour (Martynova & Renneboog, 2008) which in turn leads executives to overpay for targets and make bad deals at the detriment of shareholders (Duchin & Schmidt, 2013). In fact, as noted by Duchin et al. (2013), merger waves might sharpen the agency conflict because shareholders seem to exert less monitoring efforts during these periods, with the result of value-reducing deals being carried out.



Empire building motives are implied in the context of the principal-agent conflict, such view poses that the managers with available internal resources, acting with self-interest, will more likely pursue diversified acquisitions which lead to stock underperformance, and ultimately destroy shareholders' value (Harford, 1999; Jensen, 1986). Acquisition decisions are also attributable to behavioural biases. Within this group of theories, we observe Malmendier and Tate's (2008) research which shows that overconfident CEOs have a significant impact on a firm's M&A decisions. This type of managers is more likely to make acquisitions than non-overconfident ones because they "overestimate their abilities to generate returns", hence they will overpay for targets and commit to deals which shrink down shareholders' value. These findings corroborate Roll's Hubris hypothesis for which some managers pursue acquisitions even when there are no gains in value thus meaning that "companies infected by hubris...pay too much for their targets" and end up destroying value (Roll, 1986, p.213). This perspective is key also to understand the possible explanations behind the firms' decisions to conduct multiple deals and the characteristic decreasing returns trend in acquisition sequences (Aktas, de Bodt, & Roll, Hubris, Learning, and M&A Decisions, 2005).

### 2.2.1 Learning and Serial Acquirers performance

As for the reasons why serial acquirers exist in the first place, the most accredited theory is based on the Learning hypothesis; Fiol & Lyles (1985) define organizational learning as a change in the organization's knowledge that occurs as a function of experience. According to this theory, organizations (firms) can learn from their operations, mostly from repetitive activities, and by routinizing such actions the firm will improve their competences and will foster corporate culture (Penrose, 1959; Levit & March, 1988). Applied to the case of serial acquirers, this translates into firms which specialize in acquisitions over time and turn out to be more successful in making bids for target companies than non-serial acquirers are. Hayward (2002) shows evidence that firms can learn to acquire, by investigating the relationship between successive deals. He posits that learning works if buyers pursue industry-related (not diversifying) deals -specialized learning hypothesis- and if they suffered relatively small losses in prior takeovers (rf. risk aversion), but also if the time between two successive deals (hereby TBD) is such that it allows acquirers to learn (and thus learn how to integrate) but is not too long as it would otherwise hinder their experience, thus resulting in a "loss of memory". In fact, Hayward shows that Learning (similar to experience building) is a concave function of TBD, which implies that there is a threshold after which acquirers no longer can learn from their experience<sup>13</sup>. In support of his findings, Chao (2018) reported a similar shape of for the relationship

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<sup>13</sup> Such a phenomena could be mitigated by the internalization of M&A capabilities within the organizational structures of Serial Acquirers. According to the literature, specialized M&A functions (plus trusting the same advisors) can serve the purpose of improved success of bids and improved post-merger integration performance.

between acquirer performance and velocity of acquisition of experience. Similarly Haleblan et al. (1999) found evidence of a U-shaped relation between deal experience and performance which substantiates the declining trend found by previous researchers, and attribute such phenomenon to a misuse of the acquired experience.

For Aktas, de Bodt and Roll (2013) there is a trade-off between acquisition experience and integration costs, because as firms go through their acquisition sequence, they build competences (coherent with the managerial theory of the Resource-Based View) and knowledge that allows them to pursue further targets, though as they complete acquisitions, firms grow in size and so does the complexity associated with the post-merger integration of the two entities<sup>14</sup>. Despite evidence of learning, other researchers have uncovered a declining trend in CARs to the acquirers as they process through their deal order (Fuller, Netter & Stegemoller, 2002; Moeller et al., 2005; Aktas et al., 2005), albeit not homogenous across all types of serial buyers (Macias, Rau & Stouraitis, 2016<sup>15</sup>). This decline could be attributed to several motives.

Billet and Qian (2008) researched historical sequences of mergers by CEOs and uncovered a link between their success in prior deals and the destruction of shareholders' wealth in subsequent ones which highlights a declining pattern for CARs measured at public announcement. They attribute such a pattern to behavioral reasons: namely the CEO overconfidence due to self-attribution bias, which means that when the management has had success in acquiring targets in the past, they will overweight the upside of a successful deal outcome at the detriment of the uncertainty and financial risk associated with the deal turning out unsuccessful. This declining trend though cannot be exclusively attributed to the overconfidence of the CEO because there are many factors (variables) which make a deal more or less successful: such as buying private targets or subsidiaries (Fuller, Netter & Stegemoller, 2002; Lys & Yehuda, 2013), pursuing integration strategies (due to the superior synergies and enhanced market power) or using stock to finance the deals.

Opposite to behavioral motives, is the direction pursued by Aktas, de Bodt and Roll (2009), whose study offers an alternative explanation: they argue that, although they cannot exclude behavioral biases they ascertained that the declining trend cannot be entirely attributable to it and that the pattern is compatible with learning by doing. As the management progresses through the

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<sup>14</sup> Issues associated with PMI are considered to be one the main determinants of failure in M&As. Merging corporate culture, staff, processes, customers, products and all other aspects of a business organization is the very difficult and is the root cause of several M&A "disasters" such as the failed 37.8 USD billions merger of Sprint and Nextel Comms. in 2005 or the dissolution of the 25 USD billions mega-merger between Hewlett-Packard and Compaq.

<sup>15</sup> Macias, Rau and Stouraitis (2016) recognizes 4 types of serial acquirers, Marathoners and Sprinters have better operating performance and firm value across the deal sequence while Loners and Occasional Acquirers experience negative returns when their sequence terminates.

acquisition sequence, they accumulate knowledge and learn from the previous deals hence their ability to estimate synergies and PMI costs arises and so does their confidence in increasing deal premiums.

### 2.3 Hypotheses Development

There is a large body of literature which focuses on the relationship between Institutional Shareholders and firm's M&A activity and performance. While some scholars identified that Institutional Ownership exerts a positive effect on acquirers' returns (Chen et al., 2007; Ferreira et al, 2010; Andriosopoulos, 2015; Ma, 2020), others have not been able to draw any significant conclusion about this (Qiu, 2006; Goranova et al., 2017).

Scholars are usually interested in whether institutions exert their active monitoring efforts over the invested firms to reduce agency costs and improve shareholders' value creation, or rather trade for private gains by selling shares of companies prior to announcement to harness their superior informational advantage (Chen, Harford, & Li, 2007). Previous studies have showed that the responses of these institutions are linked to dimension of their holdings (i.e., block-holders), their nature (e.g. pension funds vs investment managers) and their time orientation (short-term vs long-term) hence more engaged (or active) institutions will tend to enforce their monitoring power over firms' management while less-engaged ones will rather trade around announcement based on their superior informational advantage (Chen et al., 2007; Bushee, 1998; Versteegen Ryan & Schneider, 2002); with the consequence that this trading behavior reflects negatively on the acquirers' performance (Gaspar, Massa, & Matos, 2005).

The ultimate scope of this thesis is hence to study the relationship between IO and the performance of serial acquirers around announcement of deals, and investigate whether institutions exert active monitoring over the serial acquirers they have invested in. Since acquisition decisions represent one of the most important strategic (and financial) decision that a firm's managers can make, they offer a good setting for the study (Chen et al., 2007). Rather than conducting the analysis on a general sample of acquiring firms, by focusing on serial acquirers this thesis aims to add new knowledge to the literature.

As a special class of firms, they show good learning capacity (Aktas, de Bodt & Roll, 2013; Hayward, 2002) albeit evidence that they achieve inferior returns than non-serial buyers (Ismail, 2008). Despite the evidence of poor acquisition performance around announcement of the deal (Fuller et al., 2002), which result in a loss in shareholders' wealth, they are an unconventional group of companies that display high operating efficiency, the ability to generate high operating income and complete a very high number of deals in a short time frame (Macias et al., 2016). According to Thomson One M&A database (former, Securities' Data Company) they carried out over 38% of all acquisition involving an

explicit change of control in the period between 2011 and 2021, a figure in line with the sample used in the study conducted by Kengelbach , Klemmer, Schwetzler, Sperling and Roos (2011).

## Hypothesis 1

While prior literature suggests that the relationship between acquirers' performance and the level of aggregate Institutional Ownership has produced mixed results (Qiu, 2006; Goranova et al., 2017), the same results may not apply to the study of serial acquirers. The characteristic traits of serial acquirers: better learning capabilities, higher operating efficiency (Macias, Rau & Stouraitis, 2016) and the tendency to pursue industry-related deals (Laamanen & Keil, 2008), might imply that institutional investors are more focused on actively monitoring these firms, which are ultimately the ones who create more value in the long run (Hansell et al., 2014; Haas, 2014), because they have higher benefits to do so.

**H1:** Accordingly, Institutional Investors shall have higher incentives to actively monitor serial acquirers rather than non-serial acquirers. Therefore, the aggregate portion of Institutional Ownership shall have a positive effect on the acquisition performance of serial acquirers around the announcement of the deal. The effect shall be stronger for more concentrated measures of ownership than it is for the total portion of institutional holdings.

## Hypothesis 2

When I take into consideration the heterogeneity of financial institutions, as I garnered from the extant literature (Chen et al., 2007; Bushee, 2004; ; Versteegen Ryan & Schneider, 2002; Çelik & Isaksson, 2014), I should be able to detect a significant and positive relationship between serial acquirers' performance and the relative proportion of ownership held by Long-Term Independent Institutions (LTIIs), those which have been identified by other researchers as the ones which have the highest incentives for monitoring (Chen et al., 2007; Qiu, 2006).

**H2:** Therefore, due to the relative differences among institutions in terms of legal structure, time-orientation, investment strategy and fiduciary duties towards their ultimate investors, the portion of Institutional Ownership which is held by Long-Term Independent Institutions will have a positive effect on serial acquirers' cumulative abnormal returns around announcement. The magnitude of the effect shall be stronger than for the aggregate measures of IO used to test Hypothesis 1.

## Hypothesis 3

According to Chen et al. (2007), Institutions decide to actively monitor their holding companies only when the size of their stakes exceeds a relative threshold level. This implies that the channel through which IO influences firm performance is a rather non-linear one.

Thus, the effect of monitoring shall be stronger for the companies which are characterized by the greatest levels of concentrated ownership by institutions.

**H3:** If the level of IO can significantly affect the returns of serial acquirers it would imply that investors have the power to influence the decisions of management, thus they would exert active monitoring efforts. I therefore expect the serial acquirers' which are characterized by the highest levels of Institutional Ownership to perform significantly better than the firms whose level of IO is lowest.

### 3. DATA & METHODOLOGY

The scope of this thesis is to study the influence of Institutional Ownership on Serial Acquirers' performance; hence the analysis will focus on studying how institutional ownership can affect the returns of serial acquirers around the announcement of the deals, whether they exert active monitoring or rather they act as passive monitors. The focus will be on the characteristics of certain types of institutions and how these will reflect on their ability to influence the firm's management to conduct value-increasing transactions.

#### 3.1 Sample of acquisitions

The sample used in this thesis contains the short-term acquisition performance of all M&As conducted by serial acquirers in the period from January 2011 until December 2021.

The sample is drawn from the Thomson One M&A (SDC) Database to draw comparisons with most studies on acquisition performance. It contains all the transactions that took place between January 2011 and December 2021 for which Thomson disclosed the deal value. By selecting this time interval, the sample covers a period which encompasses at least two relevant macro-economic recessions and a full M&A cycle, which goes from the post-2008 recession trough to the "unexpected" peak the M&A market reached over the last two years regardless of the Covid-19 crisis, which signals that the market is in the middle of the latest M&A wave<sup>16</sup>.

The acquirers' geography was limited to US-based firms only given the need to retrieve institutional ownership data from Thomson Reuters 13f database and stock information from the CRSP database. No further restrictions were imposed based on the classification of the deal, following Aktas

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<sup>16</sup> For a deeper analysis, please refer to "How to capitalize on the coming M&A wave" (HBR, 2021). Accessible at: <https://hbr.org/2021/02/how-to-capitalize-on-the-coming-ma-wave>. Retrieved on April 14<sup>th</sup>, 2022.

et al. (2011)<sup>17</sup>, hence deals can be categorized by Thomson as “Acquisition”, “Acquisition of Assets”, “Acquisition of Majority Interest”, “Acquisition of Remaining Interest”, “Merger”, “Acquisition of Certain Assets” or “Exchange Offer”. To be included a deal needed to be at least USD 1 million as in Aktas et al. (2011) and Masulis et al. (2007). Furthermore, while there is no constraint on the status of the target (listed vs private), the acquiror must be publicly listed in order to retrieve stock price data from CRSP and conduct an event study on its stock performance. Moreover, to focus the objective of the study exclusively on corporate takeovers with an explicit change of control the acquiror must have owned less than 50% of the target share capital prior to the announcement of the acquisition; the acquiror had to purchase more than 50% of the target share capital in the transaction; the acquirer shall own more than 50% of the share capital after the completion of the transaction. The status of the deal must be indicated as completed by T1 because this study focuses on the performance of serial acquirers rather than serial bidders.

After dropping duplicate observations, the number of deals completed (with disclosed value) in the period amounts to 11,667<sup>18</sup> which is in line with Zhang et alia (2021) and Golubov et al. (2015). To be categorized as a serial acquirer a firm needed to have completed at least 3 deals in the 3 years preceding the announcement date as in Kengelbach et alia (2012), meaning that a deal is identified as being conducted by a serial acquirer, if at time T=0 the same firm (identified by the 8-digit Cusip provided by Thomson Datastream) has made 3 deals including the current one. The total number of transactions carried out by serial acquirers between 2011 and 2021 equals to 4,376, as can be seen in Figure 1, while the total number of unique serial acquirers in the same period is 1,108.

**Figure 1.** *The table reports the main summary statistics for Serial Acquirers in the sample. The values are reported for every year. Frequency identifies the number of deals taking place every year. Deal Size is adjusted to account for inflation using the CPI-index; the value is reported by Thomson One. Total Assets, Market Value, Leverage and Tobin’s Q are computed as of the end of the year prior to the announcement of the deal. All financial figures are in Millions USD. Deal Size is adjusted at 2011 CPI level for comparison within the sample. Sample period is from 01/01/2011 to 12/31/2021. Financial data are downloaded from Compustat and CRSP, using the CRSP Compustat Merged table available on the WRDS online platform.*

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<sup>17</sup> The authors use a similar sample of deals. Theirs covers the period from 1992 to 2007,

<sup>18</sup> Thomson One database accessed on February 17<sup>th</sup>, 2022. It is possible that Thomson adjusts their database to account for failed mergers, to report on additional deals or to make changes to the listed deals.

Year	Frequency	Deal Count	Deal Size (CPI-Adjusted)	Total Assets	Deal Size to Total Assets	Market Value	Leverage	Tobin's Q
2011	248	6	434	16731	0,32	18379	0,30	1,87
2012	274	5	378	24713	0,26	16209	0,31	1,73
2013	228	6	388	32305	0,49	21463	0,31	1,78
2014	296	6	652	15656	0,51	15288	0,31	1,82
2015	291	7	776	19165	1,28	14254	0,32	1,69
2016	343	6	948	19001	1,77	24795	0,32	1,74
2017	173	7	580	17779	0,48	16341	0,34	1,84
2018	334	7	540	24070	0,78	14407	0,34	1,81
2019	255	7	1173	25469	0,58	15978	0,32	1,93
2020	185	8	721	24467	0,70	16684	0,33	1,94
2021	144	6	666	17905	1,13	21639	0,30	1,98
<b>Total/Average</b>	<b>2772</b>	<b>6</b>	<b>669</b>	<b>21553</b>	<b>0,79</b>	<b>17678</b>	<b>0,32</b>	<b>1,82</b>

Acquiring firms must have available financial (stock) information in the Center for Research on Securities' Prices (CRSP) database; daily data for the period starting from 210 trading days before the event date (i.e., deal date) and monthly data which covers the 4 quarters preceding a deal. Additionally, the acquirers are matched with accounting data gathered from COMPUSTAT; these data (e.g., Total Assets) are obtained for the year prior to the acquisitions being announced and are used to compute firm-level control variables in accordance with previous studies. From the Thomson One M&A database<sup>19</sup>, financial information about the deal and transaction dummies (e.g., cross-border deal, horizontal deal) are collected to use to control for deal-specific characteristics, according to previous studies (Kengelbach et al., 2012; Golubov et al., 2015). Finally, additional data for the instrumental variables approach are sourced online. The number of analysts following is proxied by the number of analysts which issue forecasts about the companies' EPS for the year the deal is announced, the data are gathered from Thomson I/B/E/S. Information about the inclusion of the companies to the S&P500 index and the data needed for the computation of the BCF index are instead sourced from the ISS database. After matching all variables to the main dataset, the final number of observations is 2,772.

### 3.1.1 Measures of Institutional Ownership

In order to conduct a study on the influence of institutional ownership on acquirers' performance, individual deal observations must be supplemented with different measures of Institutional Ownership, as done previously by Chen, Harford, Li (2007) and Bushee and Goodman (2007). Data on Institutional Ownership are retrieved from the Thomson Reuters 13f database as in most of prior

<sup>19</sup> The specification is needed to discern between Thomson One M&A database and Thomson One Banker database. While the former contains deal data for the overall market, the latter contains only data on financial companies.

studies (Gaspar, Massa & Matos, 2005; Lewellen, 2011; Qiu, 2008)<sup>20</sup>. The data from TR-13f is used to compute different proxies of Institutional Ownership (IO) to test the model relationship following the procedure adopted by Chen, Harford & Li (2007).

Several measures of Institutional Ownership concentration are used for testing the proposed hypotheses: Total Institutional Ownership (Total IO %), corresponds to the total shares outstanding owned by all institutional investors listed among the firm's shareholders as of the quarter-end prior to the announcement date of the deal, divided by the number of total shares outstanding reported at the same quarter-end<sup>21</sup>. The other measures are Top 5 Institutional Ownership (Top 5 IO %), Top 1 Institutional Ownership (Top 1 IO %), and Top 10 Institutional Ownership (Top 10 IO%). Finally, Ownership by Institutional Blockholders (Blockholders IO %) equals the percentage of total ownership which is held by institutional investors who own at least 5% of total outstanding shares<sup>22</sup>.

In accordance with Chen, Harford and Li (2007), and drawing on the research of Bushee (1998; 2001; 2007), I use the data to construct heterogeneous measures of IO which account for the institutional investors' time-horizon, the size of their stake, their legal type and investment strategy.

Investors are classified as either long-term or short-term depending on whether they have been a shareholder in the company for over or less than a year, as their experience in the firm and contacts with the management accrue over time (Almazan, Hartzell & Starks, 2005). The size of their stake is relevant because it is an important factor which indicates the propensity of the institution to exert monitoring efforts rather than trade (Demsetz & Lehn, 1985; Sheifler & Vishny, 1986; Agrawal & Mandelker, 1990). The larger the position held, the greater the impact on stock price resulting from unwinding their stakes due to liquidity concerns. Lastly, the type of institution matters because it indicates both the propensity to engage with the management of the company and to strive to improve shareholders' value creation (Brickley et al., 1988; Versteegen Ryan & Schneider, 2002). Financial institutions differ based on both their fiduciary duties towards their investors and the type of business they conduct; pressure-sensitive institutions have lower benefits because they have potential business ties with the invested firm, while pressure-insensitive have the highest benefits because they do not have any commercial interest (Pound, 1988).

Institutional Ownership is measured at the quarter-end prior to the deal. To compute the Top 5 IO %, I aggregate the holdings by the 5 largest institutions as of the quarter end. In order to ascertain their time horizon, the entities are split into **Long-Term investors**, those which have held long positions in the company both as of the quarter end prior to the deal (Q-1) and the year before the event (Q-5),

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<sup>20</sup> Please refer to Section 2 for a discussion of the characteristics and requirements of 13f filers.

<sup>22</sup> According to the SEC 13f (and 13d), blockholders are investors who own at least 5 % of the overall company shares outstanding; 5% is legally considered a "block of shares".



and **Short-Term investors**, those which did not hold shares in the company for the previous year. The same procedure is applied to the computations of the Top 10 IO %, Top 1 IO % and Blockholders IO %.

Furthermore, institutions are assigned a type using the Thomson Reuters (former CDA/Spectrum) proprietary classification: Banks and Bank Trusts (Type 1), Insurance companies (Type 2), Investment Managers, such as mutual funds (Type 3), Independent Investment Advisors (Type 4) and Others (Type 5). According to extant research on institutional investors, I refine the classification as done by Bushee (1998; 2004) and Chen et alia (2007) so as to identify Public Pension Funds (hereby PPFs) among the Type 5 institutions<sup>23</sup> because these investors are known in the literature to be activist investors (Del Guercio & Hawkins, 1999; Qiu, 2008). To accomplish such task, I employ professor Bushee's proprietary system which allowed to correctly identify all PPFs in the sample<sup>24</sup>. According to them and to previous researchers (Brickley, Lease & Smith, 1988), I further categorize all institutions in two types based on their legal form and degree to which the investors may entertain business relationships with their portfolio companies. Independent Institutions: Investment Management Companies (Type 3), Independent Investment Advisors (Type 4) and Public Pension Funds (Type 5); and Grey Institutions, Banks (Type 1), Insurance Companies (Type 2) and all other institutions (Type 5) except for PPFs<sup>25</sup>. From the figure below (Fig.2), we can see that the different measures of ownership, all taken at different levels of concentration, are highly correlated between each other. Hence, the empirical results from studying one measure, namely the TOP 5 IO %, shall provide a correct estimate which applies across all dimensions.

**Figure 2.** *Pair-wise correlation matrix between the measures of Institutional Ownership Concentration. For instance, "TOP5\_OWNERSHIP" equals the sum of the shares owned by the five largest institutional investors, by size of their stake, in the company in the quarter prior to the deal announcement. The significance level is indicated by the "\*" sign. The 99% significance level is indicated by \*\*\*; the 95% level is indicated by \*\*; while the 90% significance level is indicated by \*.*

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<sup>23</sup> Institutional classification by CDA/Spectrum has displayed problems since 1998. An overbearing majority of the Type 3 institutions are misclassified as Type 5, thus negatively affecting the ability to do research based on such classification system.

<sup>24</sup> The re-classification system managed by professor Bushee is available online at <https://accounting-faculty.wharton.upenn.edu/bushee/>. Despite data are updated until 2019, the matched institutions in the dataset are over 90%, the mismatched ones are usually smaller institutions. Data were retrieved as of March 16<sup>th</sup>, 2022.

<sup>25</sup> Type 5 includes Pension Funds, both public and private, Endowments and Foundations, and Employees Stock Ownership Plans (ESOPs).

Variables	(1)	(2)	(3)	(4)	(5)
(1) TOTALOWNERSHIP	1.000				
(2) TOP1_OWNERSHIP	0.495*	1.000			
(3) TOP5_OWNERSHIP	0.801*	0.834*	1.000		
(4) TOP10_OWNERSHIP	0.876*	0.740*	0.974*	1.000	
(5) TOTAL_BLOCKHOLD~S	0.742*	0.732*	0.935*	0.921*	1.000

Following the procedure used by Chen et al. (2007), the groups of Long-Term Independent Institutions (LTIs) and Grey Institutions are further intersected with the investor classification crafted by Bushee, which seeks to discern between institutions which have incentives to monitor and those which do not. He identified them as Dedicated, Quasi-Indexers and Transient Institutional investors due to their differences in investment strategies and portfolio turnover. According to his research, Dedicated institutions are the most likely entities to monitor the management of the firms, their investment usually represents a substantial portion of their total holdings, and they also tend to display lower levels of portfolio turnover. Opposite to them are Transient institutions which albeit making consistent investments, they tend to trade rather than actively monitor and show high level of portfolio turnover. Lastly, Quasi-Indexers are the biggest group of institutions according to Bushee's own classification. These institutions have lower incentives than Dedicated ones to monitor because they usually employ a well-diversified strategy and typically do not own more than 1% or 2% of a firm's own share capital; they display a tendency to follow indexed strategies (hence, the origin of the name) and even though they do not own rather large ownership stakes, on average they hold positions in the same companies for longer periods than Transient investors, hence they might have the incentives to join Dedicated institutions in their efforts to influence the management.

Attesting to the validity of the processed metrics, Figure 3 presents the correlation matrix between the various measures of heterogeneous ownership by institutions. It clearly emerges a significant link between size, long-term orientation and business independence, which was anticipated by previous researchers (Brickley et al., 1988; Bushee, 2001; Chen et al., 2007).

**Figure 3.** Correlation matrix including the main measures of heterogeneous Institutional Ownership. LTITOP5 represents the variable which measures the portion of ownership held by LTIs at the end of the quarter leading up to the announcement of the deal. The significance levels associated to the p-values of the coefficients are reported as \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Variables	(1)	(2)	(3)	(4)	(5)
(1) BlockHoldersTOP5	1.000				
(2) LongHoldersTOP5	0.685*	1.000			
(3) IndependentTOP5	0.862*	0.593*	1.000		
(4) LTTTOP5	0.622*	0.922*	0.719*	1.000	
(5) GreyTOP5	0.356*	0.502*	-0.065*	0.153*	1.000

In summary, the institutional ownership is measured for each serial acquirer as of the end of the quarter prior to the deal. As of each quarter, the holdings of the five (in case of the TOP 5) largest investors are aggregated in two groups: Top 5 Long-Term Independent Investors (LTIs) and Top 5 Others<sup>26</sup>. Figure 5 reports the (main) descriptive statistics for the sample of heterogeneous institutional ownership measures.

**Figure 4.** Descriptive Statistics for the sample of heterogeneous measures of Institutional Ownership. The measures reported refer to the concentrated holdings for the Top 5 investors in each company. Consistent statistics apply when the focus is on Top 1 or Top 10 ownership concentration measures.

Variable	Obs.	Mean	Std. Dev.	Min	Max
BlockHoldersTOP5 w	2772	.32	.11	0	.62
LongHoldersTOP5 w	2772	.27	.15	0	.60
IndependentTOP5 w	2772	.25	.10	0	.52
LTTTOP5 w	2772	.22	.13	0	.50
GreyTOP5 w	2772	.05	.05	0	.20

The measures of ownership not only are highly correlated with each other as it emerges from Fig.3, but also have a very similar distribution. Of particular interest is that Block holders, Long Holders and Independent institutions all own a sizeable percentage of the equity capital of the firms in the sample.

### 3.1.3 Acquisition Performance measures

The performance of Serial Acquirers is measured using a short-term methodology replicating much of the extant literature (Chen et al., 2007; Masulis et al., 2007; Kengelbach et al., 2011; Golubov et al., 2015). Although in the short-term the stock price market reaction might be noisy because it accounts for the influence of other factors besides incorporating the news of the announcement of the deal, studying the CARs over such short event window provides useful information about the sentiment of the overall market with respect to the upcoming deal. For this thesis, short market reaction will be measured across 2 time periods:

<sup>26</sup> The same procedure is applied to aggregate the holdings for the Top 1, Top 10 and Block-Holders in the firm.

- CAR7 or CAR [-3;3]: the sum of the stock price abnormal returns from 3 days prior to the announcement to the 3 days following;
- CAR11 or CAR [-5;5]: the sum of the stock price abnormal returns from 5 days before the deal is announced to the following 5 days.

The Cumulative Abnormal Returns (CARs) are computed by summing up the daily abnormal returns earned by the securities in the period surrounding the date of the announcement (e.g., from 3 days prior to the announcement to 3 after that). The individual security daily abnormal returns (ARs) are computed using the Market Model and the Value-weighted CRSP Index returns<sup>27</sup>. To compute the abnormal returns, this thesis employs an estimation window which goes from 210 to 60 trading days prior to the event date; if a firm has already completed an acquisition within this period, the estimation of the returns excludes the 10 days following the previous event date since the market might show a reaction to that happening which could bias the performance measures. Furthermore, clustered deals— when a firm makes two or more acquisitions within a 7-day window, are excluded from the analysis following Fuller et alia (2002).

### 3.1.4 Sample Description

The main statistics of this study relate to the measures of Institutional Ownership employed in the analysis. In Figure 5, we can notice the trend of acquisitions volume by serial acquirers over time. We see that the market for serial acquirers peaked between 2016 and 2018, a particularly favorable period for M&A activity due to the low interest rates environment and a general growth of the global economy. In the same figure, we can appreciate the evolution of Institutional Ownership across serial acquirers, in particular the average level of IO has increased almost 10% in the period between 2011 and 2021. This evolution reflects the major growth trend which affected institutional investors over the last decade and proves the concern that financial institutions own an increasingly larger portion of the stock market (in this case the US stock market).

**Figure 5.** *Sample of 4376 acquisitions carried out by Serial Acquirers in the period between January 1st, 2011 and December 31st, 2022. Serial Acquirers are defined as firms which have completed at least 3 deals over the previous 3 years. The measures of Institutional Ownership computed are Total IO, Top1 IO, Top5 IO, Top10 IO, Block Holders IO. These measures are reported as the sample averages of the fractions of outstanding shares owned by institutions over the firms' total number of outstanding shares at the end of the quarter prior to the deal announcement.*

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<sup>27</sup> The computations of the abnormal returns were done using the CRSP US event study tool (Eventus). The tool provides 3 different cumulative measures of the performance: Cumulative Total Returns (CTRs), Cumulative Abnormal Returns (CARs) and Buy-and-Hold>Returns (BHARs).

Year	Frequency	Total	Top10	Top5	Block	Top1
2011	248	68.2%	38.9%	27.7%	21.4%	9.2%
2012	274	74.3%	42.9%	31.5%	24.7%	11.0%
2013	228	74.1%	42.5%	30.9%	23.8%	10.4%
2014	296	73.7%	42.3%	30.6%	24.5%	10.2%
2015	291	74.8%	42.9%	30.9%	24.8%	10.1%
2016	343	73.3%	42.7%	31.2%	25.2%	10.7%
2017	173	74.0%	42.4%	30.8%	24.1%	10.0%
2018	334	73.3%	41.8%	30.4%	24.1%	10.0%
2019	255	74.0%	43.0%	31.5%	24.7%	10.8%
2020	185	75.1%	43.0%	31.3%	24.6%	10.8%
2021	144	77.6%	45.0%	32.9%	26.7%	10.9%
<b>Total/Average</b>	<b>2772</b>	<b>73.9%</b>	<b>42.5%</b>	<b>30.9%</b>	<b>24.4%</b>	<b>10.4%</b>

In Figure 6, I report the two measures of merger performance. We notice that all measures of CARs are almost identical. Assuming such low heterogeneity, the main analysis will be conducted on the CARs recorded in the time range between the 3 days preceding the announcement of the deal and the 3 days which follow: CAR [-3;+3]. Additionally, the table below describes acquirer-specific characteristics which have been studied in the literature and have been found to have a significant relationship with the short-term performance of acquirers (and serial acquirers).

**Figure 6.** Sample description addressing the main continuous variables used in the study. First, various measures of short-term announcement performance. CARs, and BHARs, are measured on the 7- and 11-day windows. All continuous variables are in USD millions. The CARs are computed using the WRDS US Daily Event Study Tool available on the WRDS online platform. The event window varies from 7 to 11 days around announcement, while the estimation window goes from 200 to 60 days prior to the announcement. The deal value is adjusted for inflation using the CPI index as of 2011.

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
ACQUISITION PERFORMANCE MEASURES					
CAR (-3; 3)	2772	.07	.05	-.22	.33
CAR (-5; 5)	2772	.06	.06	-.24	.39
M&A LEARNING CONTROLS					
DEAL_COUNT	2772	6.5	5.64	3	35
ACQUIRER-SPECIFIC CHARACTERISTICS					
INFL_ADJ DEAL VALUE	2772	429	1,016	140.5	12,373
ASSETS (T-1)	2772	13,744	29,687	580.5	195,550
DEAL VALUE TO ASSETS (T-1)	2772	.23	.73	0	10.7
CAPITAL EXPENDITURES	2772	290.9	786	0	10,264

R&D INTENSITY	2772	.02	.03	0	.18
SALES GROWTH	2772	.17	.27	-.37	2.01
ROA	2772	.04	.05	-.17	.20
LEVERAGE	2772	.31	.19	0	.83
TOBIN'S Q	2772	1.8	.94	.49	6
CASH & EQUIVALENTS	2772	1,675	5,739	.59	48,716
DEAL-SPECIFIC CHARACTERISTICS					
TARGET PUBLIC STATUS	2772	.12	.32	0	1
CASH DEAL	2772	.27	.45	0	1
EQUITY DEAL	2772	.15	.36	0	1
CROSSBORDER	2772	.18	.38	0	1
HORIZONTAL DEAL	2772	.42	.49	0	1
FINANCIAL ACQUIROR	2772	.41	.49	0	1

### 3.1.5 Control Variables

The analysis will include several variables which are used to control for both acquirer- and deal-specific characteristics which might affect the performance of serial acquirers, in line with findings of previous researchers. This paragraph contains a brief description of the scientific evidence which relate to the main control variables. Figure 6 provides summary statistics for the entire sample of acquirer-specific and deal-specific control variables.

Many studies have identified the existence of a size effect<sup>28</sup> in acquisitions for which large firms are more likely to conduct transactions which result in a loss of shareholder value (Moeller, Schlingemann & Stulz, 2004; King, Wang, Samimi & Cortes; 2021) while the owners of small firms tend to earn positive abnormal returns (Moeller, Schlingemann & Stulz; 2003). This might be due to greater difficulties associated with post-merger integration of large targets which are priced in the stock by the market (Hayward, 2002; Kengelbach et al.; 2012). According to Schlingemann et al. (2004) the effect is more pronounced for large acquirers when the method of payment used in the deal is the firm's own equity and when the target is a public company; similar results were reported by Fuller et al. (2002). Indeed, Loughran and Vijh (1997) found that firms that use their own stock to buy a target display very negative post-acquisition performance while using cash leads to positive shareholders' value creation. This might be due to the fact that the choice of the method of payment could be influenced by the current level of valuation so that when the firm's management deems its stock to be

<sup>28</sup> As a measure of size the literature has used both Total Assets (and its logarithmic form) and Market Capitalization (and its logarithmic form). The effect is robust to both measures of size. The size effect stands for large acquirers and more importantly for large deals. Large acquirers and Serial acquirers are more likely to pursue such large targets than single acquirers.

overvalued, they will use it to make acquisitions of relatively less-overvalued targets (Shleifer & Vishny, 2003). According to Shleifer et al. (2003), this hypothesis shall help explain the existence of merger waves and the clustering of deals (by volume) across time periods. The method of payment effect seems to be limited only to the acquisition of public targets though, in fact when the bids are for private ones (and subsidiaries) the market appears to react positively (Fuller, Netter & Stegemoller; 2002).

According to other theorists, the profitability of mergers is affected by the firms' opportunity set meaning that as it varies over time, the post-acquisition stock returns of the acquirers shall decline because of reduced opportunities in the market (Ismail, 2008; Kengelbach et al., 2012); according to Klasa and Stegemoller (2007) though, this interplay is not fixed but relative in nature: for them, acquisition sequences begin after the firm's opportunity set grows, while they end once it starts reducing. Evidence suggests that "low q" firms, those which are relatively undervalued, perform better than "high q" firms at making acquisitions (Servaes, 1991). This might be caused by the firms increasing their investment levels in proportion to the change in their Tobin's Q so as to profit from relative overvaluation, furthermore this theory offers a plausible explanation to the existence of merger waves (Jovanovic & Rousseau, 2002).

The status of the acquirer (public vs. private) matters, Netter et alia (2002) show that acquisitions of private targets, and subsidiaries, create more value for the shareholders of the acquiring firm, on average, than when the targets are listed on public markets. Chang (1998) tries to explain this effect as the result of a liquidity discount for which acquiring companies manage to extract a higher value from the deal.

Also, the analysis controls for financial acquirers, identified by their SIC code, because according to Martos-Vila, Rhodes-Kropf and Harford (2013) they tend to outperform strategic (industrial) buyers in M&As. Nevertheless, the rationale behind their decisions to make acquisitions is different: while industrial acquirers seek out deals because of synergistic reasons, financial acquirers pursue acquisitions of undervalued and distressed assets (Dittmar, Li & Nain, 2012; Gorbenko & Malenko, 2014).

The firm's capital structure has substantial influence on the behavior of management, higher levels of debts imply that the company must consistently generate enough cash flows from operations to service their debt obligations hence, this has the effect of constraining the actions of managers (Jensen & Meckling, 1976). Higher levels of leverage thus signal high quality of the company and are associated with the presence of outside investors (Masulis, Wang & Xie, 2007). Conversely, the amount of cash holdings (and the availability of free cash flow) is negatively related to post-acquisition performance in line with Jensen's theory of free cash flow (1986). Since investments in fixed assets identify the exploitation of organic growth opportunities by the firm, capital expenditure (CAPEX) represents an alternative path to growth by acquisitions, hence higher levels of CAPEX should lead to

lower post-merger performance as it signals to the market that the company does not have extensive experience in making acquisitions (Kengelbach et al., 2012; Li, 2013).

Similarly, the level of innovation measured in terms R&D expenses can be identified as a substitute for acquisitive growth because companies face a trade-off between investing in internal innovation (internal growth) and acquiring innovative targets (external growth). According to Phillips and Zhdanov (2012), large firms are more likely to buy relatively small but innovative targets rather than investing internally; also, they find that the level of M&A activity positively affects the level of corporate innovation thus implying a negative relationship between R&D (proxy for innovation) and post-acquisition performance. This negative relationship tends to be stronger as the frequency of acquisition grows, hence the acquirers that make a large number of acquisitions are more likely to pursue innovation-related acquisitions than to invest in internal R&D (Macias et al, 2016).

Moreover, merger performance has been linked to the industry relatedness of acquirer and target, and to the geographic proximity between the two<sup>29</sup>. While Fuller, Netter and Stegemoller (2002) found a negative relationship between acquirers' post-merger CARs and transactions involving foreign targets for the sample of US firms, cross-border deals have been shown to influence positively the stock performance of acquirers, especially those from emerging economies; recent evidence shows that firms which buy foreign targets tend to create value for their shareholders (Tao, Liu, Gao & Xia, 2017; Cioli, Giannozzi, Ippoliti & Roggi, 2020) because this kind of transactions opens up new commercial opportunities for the acquirers in large, stable and less-risky markets (Li, Li, & Wang, 2016). Nevertheless, Fuller et al. (2002) and Kengelbach et al. (2012) demonstrate that horizontal deals might lead to better market reaction even though their results are not significant. The market may react positively to the announcement of these deals because it perceives a greater synergistic value in horizontal rather than industry-diversifying acquisitions (rf. Laamanen & Keil, 2008); also, the reaction could be driven by the perception that specialized acquirers possess great experience which translates into better post-merger integration capabilities (Hansell et al., 2014). In their seminal paper, Fuller et alia (2002) also found that the number of deals in the acquisition sequence, commonly referred to as Deal Order Number (Aktas et al., 2011) is negatively related to the post-acquisition performance of the bidding firms; indeed evidence suggests that as the number of deals in the sequence increases, serial acquirers will display a proportionately-worse performance than single bidders (Chao, 2018).

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<sup>29</sup> While hostile acquisitions are negatively correlated with performance, mostly because of the negotiation and the bidding contest that happen as a result of the defensive actions taken by the management. I excluded this characteristic from the analysis as it emerges from my sample that the number of hostile deals is negligible. Most studies which considered the "hostility" trait found a significant effect for the 1980s, a period characterized by a series of unsolicited deals. Nowadays, these are more difficult due to anti-takeover clauses. For a more in depth discussion please rf. <https://corpgov.law.harvard.edu/2020/11/08/the-comeback-of-hostile-takeovers/>. Accessed on April 22<sup>nd</sup>, 2022. A similar finding is shared by Andrade et al. (2001).



Lastly, also prior acquisition performance plays a role in the market reaction to new announcements even though the association is not strictly significant as demonstrated by Golubov et al. (2015). In particular, the literature found positive past acquisition performance is perceived by the market as a positive signal and is a determinant of (future) multiple acquirers performance (Macias et al. 2016; Hossain, Pham & Islam, 2021); also, the success of the first acquisition is instrumental for firms to learn and become better at making deals in the future (Ismail, 2008). Opposite to them, Billett and Qian (2008) conduct their investigation in a behavioral context and find that positive prior performance affects CEO overconfidence and leads to both a higher likelihood of making acquisitions and to underperforming in subsequent deals (Billett & Qian, 2008).

Finally, I also control for sales growth and acquirer's profitability in accordance to Kenegelbach et al. (2012). Sales growth can proxy the growth trajectory of the acquiring firm meaning that as the company grows its sales it also needs to expand its business operations, at the same time high growth rates may even proxy the firm's FCF which in turn influence managers' behavior to pursue (value-reducing) acquisitions for empire-building motives (Lakonishok, Shleifer, & Vishny, 1994). Hence, this should give rise to an inverse relationship between the two variables. On the other hand, while the evidence of the effect of ROA on the short-term post-merger performance is scarce, controlling for ROA allows to make an inference on whether the relative profitability of the acquirer influences their returns around announcement<sup>30</sup>.

## 3.2 Methodology

In order to test the formulated hypothesis (rf. Section 2), I will employ multivariate regression analysis techniques which consider not only the measures of Institutional Ownership, but also multiple control variables cited in the previous literature. Additionally, 2SLS (IV) regression is used to counteract the endogeneity bias.

### 3.2.1 Aggregate Institutional Ownership and Serial Acquirers' performance

At first, the analysis will be conducted using an Ordinary Least Squares (OLS) regression in which the short-term performance, e.g., CAR7 or CAR [-3; +3], of the serial acquirers is regressed on the measures of aggregate, undifferentiated measures of Institutional Ownership. These measures of IO correspond to the ones listed in Figure 2 above<sup>31</sup>. For testing the first hypothesis I create a model in which the short-term cumulative abnormal performance is regressed on a measure of IO, the Top 5 Institutional

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<sup>30</sup> Stock market returns may be influenced by several factors among which the relative company profitability. Indeed, it is not possible to estimate whether the companies in the sample release quarterly data or whether new information floods the market in the period around announcement.

<sup>31</sup> The institutional data for the analysis are gathered from the Thomson Reuters 13(f) database, or S34 Master File according to their own data structure. Additional data are obtained from the WRDS® 13f suite which enables users to access aggregate statistics on the holdings by Institutions.

Ownership equivalent to the portion of total shares outstanding held by the largest five institutions listed as company shareholders. The model is supplemented with the use of control variables which shall help explain more in depth the variation in the dependent, CAR performance. Despite, the use of several firm-specific and deal-specific characteristics the literature has reached inconclusive results relating to the determinants of serial acquirer performance, this supports the reason why most models attempted by researchers display a rather low explanatory power in this context (Golubov et al., 2015). The first hypothesis will then be tested on the following equation:

$$CAR_7 = \alpha + \beta_i IO_{i,t} + \beta_i X_{i,t} + i + \mu + \varepsilon$$

Where  $CAR_7$ , the cumulative short-run acquisition performance of a firm over a 7-day event window, is the dependent variable of the study.  $IO_{i,t}$  is an aggregate measure of Ownership concentration, such as “Top5 IO%”, and is the main independent (or explanatory) variable in the study.  $X_{i,t}$  is a vector of control variables which have been used by previous researchers to investigate the performance of Serial Acquirers and are relevant to draw comparison with the previous literature and to check the validity of the empirical results (more in the next section).  $i$  represents firm or industry fixed effects, since the first encompass the second, it is possible to use a unique factor which accounts for both; these factors are important to use in model of Serial Acquirers because much of the variation in their acquisition performance is explained by firm-specific attributes rather than exogenous variables studied in the prior literature (Golubov et al, 2015).  $\mu$  instead represents year fixed effects, these are very important; as Rhodes-Kropf, Viswanathan (2004) and Shleifer, Vishny (2003) have shown that deals tend to cluster across the dimension of time and industry.  $\varepsilon$  is the firm’s specific error term and accounts for the portion of variation in the dependent variable which cannot be fully explained by the independent covariates.

### 3.2.2 Measuring the impact of Long-Term Institutional Investors (LTIIs)

As specified in the previous paragraphs, not all institutions share the same economic incentives; there are several types of institutions and they do not have common goals except for the scope of maximizing the wealth of their Assets under Management (hence, their portfolio), hence they all share Value-Maximizing behavior. According to Chen et alia (2007) though, different factors affect their behavior and their choice between monitoring the firms in which they invested or simply trading, briefly these are Time Horizon, the Size of their Ownership Stake and the Legal Form (type) which encompasses different fiduciary duties towards their investors.

To test whether these institutions which are characterized by attributes such as long-term orientation, substantial ownership stake and business (commercial) independence, make better

monitors than all the “Others” institutions, I first compute the level of ownership by long-term, those which held long positions in the company for at least one year, and independent (Type 3 and 4, and Public Pension Funds) institutions individually. Second, I identify the largest investors (in the base case, I identify the largest 5 investors to run the analysis on the Top5 IO measure) while I exclude the rest. Then, I can intersect the long-term and independent investors and aggregate their holdings per company for every quarter in the sample. Besides that, I further classify institutions using Bushee’s classification (1998; 2004) into two classes: Dedicated and Quasi-Indexers together should be effective monitors, while Transient should not behave as to monitor at all. The holdings by this first class of institutions are then merged with those of belonging to the long-term, independent subjects; in this way the final figures are attributable to the concentrated holdings in the hands of those institutions which have the highest incentives to monitor, Long-Term Independent Institutions, while the rest is attributed to Other Institutions, those which have potential business ties with the companies and are not strictly oriented towards long-run value creation. Using these two measures, which in the analysis of the TOP 5 ownership concentration are defined as *LTII Top 5 Holdings* and *Others Top 5 Holdings*, I created a dummy variable *LTII\_TopQtile* which is equal to 1 in case LTII Holdings are in the top quintile of the distribution<sup>32</sup> and 0 otherwise, the same applies to Other Holdings. This second hypothesis is tested using the following (OLS) regression model:

$$CAR_7 = \alpha + \beta_1 IO_{i,t} + \beta_2 LTII\_TopQtile_{i,t} + \beta_3 Others\_TopQtile_{i,t} + \beta_n X_{n,t} + i + \mu + \varepsilon$$

Where  $CAR_7$  is the dependent variable, as in testing the previous hypothesis, which records the short-run acquisition performance over a 7-day event window employing the Market Model and the CRSP Value-Weighted Index and 150 days estimation window [-210; -60].  $IO_{i,t}$  is the aggregate (undifferentiated) measure of ownership concentration, in the base case it measures the Top 5 Institutional Holdings % but it applies to also Top 1 and Top 10 in further extensions of the model.  $LTII\_TopQtile_1$  is the dummy equal to 1 in case the LTII Top 5 Holdings are in the top quintile of the distribution and 0 otherwise; while  $Others\_TopQtile$  is the dummy equal to 1 in case Others Top 5 Holdings are in the top quintile of the distribution and 0 otherwise<sup>33</sup>.  $X_n$  is a set of variables taken from the literature which are used to control for firm-specific as well as deal-specific attributes.  $i$  represents firm or industry fixed effects; these are important to explain much of the variation in the performance of the different serial acquirers.  $\mu$  instead represents year fixed effects which are important to keep

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<sup>32</sup> Meaning that the firm is identified in the top quintile if its LTII Holdings are in the top quintile of the LTII Holdings distribution.

<sup>33</sup> I refer to Top5 throughout the paper when the study works with different measure of ownership concentration, such as Top10, Top1, Block Holders %.

the variation in deal volume and size constant across years.  $\varepsilon$  is the firm's specific error term and explains a part of the variation in performance which cannot be fully explained by neither the independent covariates, nor the controls, nor the industry and year fixed effects.

### 3.2.3 Greater Institutional Concentration and Serial Acquirers' M&A performance.

The link between Institutional Ownership and firm performance is not straightforward. As witnessed by the literature, the study of this relationship has produced mixed results. In order to test whether higher levels of concentrated ownership by institutions<sup>34</sup> are associated with better short-term acquisition performance, the models used to test the first and second hypothesis will be expanded and will include dummies which indicate which quintile the concentrated holdings by institutional investors belong to. By using a top quintile dummy and a bottom quintile dummy in the regression model, the empirical results shall provide evidence as to what extent higher levels of IO cause (determine) Serial Acquirers to perform better around announcement than those who are not.

Hence, both models will change. The first one, used in testing H1, will be:

$$CAR_7 = \alpha + \beta_1 IO_{i,t} + \beta_2 IO\_TopQtile + \beta_3 IO\_BottomQtile_{i,t} + \beta_i X_{n,t} + i + \mu + \varepsilon$$

Where the additional variables are: *IO\_TopQtile*, a dummy which is equal to 1 if the firm level of concentrated institutional ownership is in the top quintile of the respective ownership distribution; and *IO\_BottomQtile*, a dummy which is equal to 1 if the firm level of concentrated institutional ownership is in the bottom quintile of the distribution.  $X_n$  is a set of variables taken from the literature which are used to control for firm-specific as well as deal-specific characteristics.  $i$  represents firm or industry fixed effects; these are important to explain much of the variation in the performance of the different serial acquirers.  $\mu$  instead represents the year fixed effects which are important to keep the variation in deal volume and size constant across years.  $\varepsilon$  is the firm's specific error term and explains a part of the variation in performance which cannot be fully explained by neither the independent covariates, nor the controls, nor the industry and year fixed effects.

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<sup>34</sup> I use measures of ownership concentration rather than the total Institutional Ownership because the figures on IO are usually biased upward. While the SEC requires institutional investors to file only long positions and stock options, the market is more advanced. IO figures might be inflated by multiple institutions reporting the same holdings or as a sign of short interest. Short interest accrues when investors keep building short positions in a company, in order to do so entities such as Hedge Funds borrow securities from other Institutional Investors and sell them on the open market. This has the result to flood the market with the stock and can cause to misreporting because there are more shares in circulation than the amount of outstanding ones.

### 3.3 Mitigating the Endogeneity Bias

In order to ascertain the existence of a relationship between firms' acquisition performance and their institutional investors base, and to test its causality, the analysis requires to implement additional econometric techniques which mitigate the endogeneity bias which permeates the relationship between Institutional Ownership and Acquiring firms' performance (Aghion et al., 2013; Qiu, 2008). Endogeneity in this relationship emerges from the superior information possessed by Institutional investors (Parrino, Sias & Starks, 2003) which allows them to invest in the best-performing firms a priori. Institutions might choose to invest in companies which they deem more attractive (Gompers et al., 2003). Therefore, the level of Institutional Ownership and firm performance might be "jointly determined" leading the relationship between the dependent (performance) and independent (IO) to be endogenous in nature according to Qiu (2008). From an econometric point of view, in this case, the issue emerges because of "omitted variables"; this means that the level of concentrated ownership by institutions (IO) is related to the unknown variance (i.e., the error term) of the model " $\varepsilon$ ", so that  $E [IO|\varepsilon] \neq 0$ , which is a violation of the basic assumptions of the Ordinary Least Square regression, hence the resulting coefficients will be biased due to confounding effects<sup>35</sup>.

Therefore, after employing OLS regression models at first, I shall use an instrumental variables (IV) approach which is aimed at mitigating the omitted variable bias, the source of endogeneity in this case. Even though mitigating endogeneity is a rather complicated affair for econometricians and is mostly required for policy implications and macroeconomic recommendations, by applying such technique the inference on the causality (and sign) of the relationship between the firm's serial acquisition performance and its reported level of Institutional Ownership can be ascertained with more prowess.

The study will then rely on an Instrumental Variable (IV) approach. The analysis will follow a 2 Stage Least Squares (2SLS) regression approach as suggested by previous researchers (Aghion, Van Reenen, & Zingales, 2013; Qiu, 2008). In the first stage, the measure of Institutional Ownership will be individually regressed, using an OLS technique, on a set of variables: a dummy which equals to 1 if the firm belongs to the S&P500 index for the year in which the deal was announced, or equals to 0 otherwise; a continuous variable which expresses the number of equity analysts who cover the stock; and the BCF index, a variable which indicates the quality of the governance of the firm. Using the inclusion to the S&P500 is one of the most widely used instrument to mitigate endogeneity in the study of IO as in Aghion, Van Reenen and Zingales (2008; 2013); the inclusion of the firm to the S&P500 is used as a proxy for firm quality which should attract higher levels of institutional ownership while not

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<sup>35</sup> For a more in-depth discussion of the topic, please refer to "Endogeneity", a collection from Elsevier. Accessible at <https://www.sciencedirect.com/topics/psychology/endogeneity>. Retrieved on April 21<sup>st</sup>, 2022.

being correlated with (a priori) with firm-specific performance. As the authors specify, given the diversified nature and the diversification objectives at the base of the S&P500, Standard & Poor's selects the firms to be added (or excluded) to the index because they are well-representative of their economic sector, their industry, rather than based on performance<sup>36</sup>. Therefore, the S&P500 indicator variable should be a good instrument which according to economic theory does not directly influence the acquirers' short-term M&A performance (exclusion principle), thus it should not be correlated with the error term of the regression of CARs since it is this term which contains the part of the variation in the dependent which cannot be explained by the independent (exogenous) variables and is thus attributable to omitted explanatory factors. On the other hand, it should also accomplish the task of being able to directly affect the endogenous variable, in this case the level of Institutional Ownership; this is because institutions display a preference for high-quality, large, and well-governed firms. Moreover, institutions might decide to track the index with their portfolio because many funds (and investment managers) are benchmarked against the S&P500 and many other follow an investment strategy indexed against it (Aghion et al., 2013; Crane et al., 2016).

Despite several researchers attesting to its validity (Aghion et al, 2013; Crane et al., 2016), in recent years there has been a growing use of alternative instruments which perform better in comparison with the S&P500 (Qiu, 2008; Elyasiani & Jia, 2010). For this reason, I chose to use two additional instruments which according to economic theory exert an influence of the level of concentrated holdings by institutions in a firm: the number of analysts following the firm's stock and the Bebchuck, Cohen and Ferrell index (2009). There is evidence in the literature that there is positive relationship between the number of equity analysts which report on (and forecast) the firm performance and the proportion of concentrated ownership by institutions (O'Brien & Bhushan, 1990); furthermore, there is evidence which suggest that the amount of analysts following is related to the characteristics of the institutional investors (Chan, Zhang, & Zhang, 2013). The BCF index, is used to proxy for the quality of governance of the firm, which is a characteristic which attracts the preferences of institutional investors for its positive impact on the firm's long-term value (Gompers, Ishii and Metrick, 2003; Bebchuck, Cohen and Ferrell, 2009).

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<sup>36</sup> The stated objective of the S&P500<sup>®</sup> is to be a benchmark which tracks the stock performance of a basket of well-diversified securities which are representative of the general US stock market and are constrained to minimum liquidity requirements among the many factors. Besides, in order to be included there shall be minimum company size requirements which limits the number of firms in the sample which can be members of the index. Hence, this is a good reason to choose the S&P500<sup>®</sup> rather than a wider index such as the Russell 3000<sup>®</sup> which, as stated in the name, includes around 3,000 firms of varying sizes. Besides, the process of including or excluding companies to/from the index is managed rather arbitrarily and is not made public to outsiders. For a reference of the process please refer to <https://www.forbes.com/sites/jacobwolinsky/2022/01/20/why-the-sp-500-is-a-useless-benchmark-for-actively-traded-funds/>. Retrieved on April 21<sup>st</sup>, 2022.

For these characteristics these additional variables shall serve as good instruments; their use allows to separate the effect that the quality of the firm, hence its performance, exerts on the level of concentrated ownership by institutions, from the effect that institutional ownership has on performance. Technically, the predicted values from the first-stage regression shall not be correlated with the error terms of the first-stage (Angrist & Krueger, 2001).

In the first stage, I will simply regress IO on the instruments, using the following model:

$$IO = \alpha + \beta_{i,j}X_{i,j} + \varepsilon$$

Where  $\beta_{i,j}$  is the statistical coefficient associated with the instruments.  $X_{i,t}$  is a vector which represents the dependent variables of the study: the S&P500 indicator variable, it varies for every firm and, not necessarily, from year to year— a company might be included in year T=2011 but could be excluded in year T=2018<sup>37</sup>; the Number of Analysts that follow the firm's security, which is proxied by the number of equity analysts which publish forecasts on the firm's expected EPS<sup>38</sup> for the year the deal is announced; the BCF index, a variable which is computed by adding one point for the presence of each of the governance provisions that according to Bebchuk, Cohen and Ferrell (2009) are negatively related to firm valuation<sup>39</sup>.

In the second stage the predicted values of IO, hereby  $\widehat{IO}$ , will be used as the independent variable; these predicted values are considered to be exogenous because they are uncorrelated with the residual the error term of the first stage equation, this means that these values actually represent the part of the variation in the level of concentrated institutional ownership which is not attributable to the quality of the firm, which is signaled by the proxy variables used as instruments in the first-stage equation.

Therefore, in the second stage regression the dependent variable, CARs, is regressed on the predicted values of  $\widehat{IO}$  and a set of control variables, including the ones presented in Figure 4:

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<sup>37</sup> This is the case for companies which belong to long-declining economic sectors or to industries which are highly scrutinized by the public and/or the government. For instance, this applies to Altria, the world's largest producer of cigarettes and similar products, as well as to Oil & Energy companies. Please refer to this article by CNBC for more information. Accessible at <https://www.cnbc.com/2020/08/25/exxon-mobil-replaced-by-a-software-stock-after-92-years-in-the-dow-is-a-sign-of-the-times.html>. Retrieved on April 20<sup>th</sup>, 2022.

<sup>38</sup> The number of equity analysts which publish estimates on the firm's EPS for the year the announcement of the deal takes place. This data is sourced from Thomson I/B/E/S database via the WRDS online platform.

<sup>39</sup> The data for the construction of the index are sourced from the ISS (former RiskMetrics) database via the WRDS online platform. For an interesting discussion on the use of the index in academia, please refer to <https://today.law.harvard.edu/more-than-300-research-papers-have-applied-the-entrenchment-index-of-bebchuk-cohen-and-ferrell/>.

$$CAR_7 = \alpha + \beta_i \widehat{IO}_{i,t} + \beta_i X_{i,t} + i + \mu + \varepsilon$$

Where,  $CAR_7$ , the Cumulative Abnormal Returns to the acquirers over a 7-day event window is the dependent variable.  $\widehat{IO}$  represent the predicted values from the first-stage regression and are used as the main explanatory variable in this model.  $X_{i,t}$  represents a set of control variables which are taken from the literature on Serial Acquirers.  $i$  indicates firm fixed effects which can explain much of the variation in serial acquirers' returns.  $\mu$  instead represents the year fixed effects which are used to control for the variation in deal volume and size across years.  $\varepsilon$  is the firm's specific error term and explains a component of the variation in performance which cannot be fully explained by neither the independent covariates, nor the controls, nor the industry and year fixed effects.

This procedure to mitigate endogeneity does not apply only to the testing of the first hypothesis but also to the second and third. The only requirement is that we shall substitute the vector which measures the concentrated ownership by institutional investors across firms with the newfound vector of predicted ownership values, and the additional variables (factors) used to test the second and third hypotheses.

## 4. EMPIRICAL RESULTS

This chapter introduces the results of the methods of econometric analysis applied to testing the validity of the hypotheses stated in Section II (rf. Literature Review section), and purports to explain the scientific evidence found with respect to the rationale presented in previous paragraphs. As argued in previous paragraphs, the presence of institutional investors among the shareholders of a firm might indicate a preference of institutions for the specific characteristics of the firm. Thus, if the relationship between the proportion of a company's share capital owned by institutions and their post-acquisition performance is significant, this might imply a spurious correlation due to omitted variables (bias). In fact, institutions may harness their superior information advantage to select the best-performing acquirers in advance of the announcement of mergers, alternatively they may invest in the firm because it matches their preferences (Chen et al, 2007; Qiu, 2008; Aghion, Van Reenen, & Zingales, 2013).

Endogeneity of the relationship is controlled using an instrumental variables approach (IV), in particular a 2-stage least squares regression which employs three instruments: a dummy variable which indicates whether the firm is a member of the S&P 500 index in the year the deal is announced, the Bebchuk, Cohen and Ferrell index (hereby, BCF index) which indicates the quality of the firm's governance (Bebchuk, Cohen & Ferrell, 2009), and a variable which counts the number of analysts



covering the firm for the year the deal is announced. According to Aghion et al. (2013), the inclusion to the S&P 500 index is correlated to the level of ownership owned by institutions and proves to be a valid instrument<sup>40</sup>. However, Qiu (2004; 2008) and Elyasiani and Jia (2008; 2010) find it to be a weak instrument. Opposite to their findings, in preliminary analysis I found the use of such measure to be a valid. Therefore, following Chen, Harford and Li (2007) and Elyasiani and Jia (2010), I supplement the analysis with use of two additional instruments; differently from them though, I select the number of analysts covering the security, and the BCF index. Based on preliminary analysis, I found the models used in testing hypothesis 1 and hypothesis 2 to suffer from endogeneity hence, in these cases I use a 2SLS regression analysis. For testing the third hypothesis I use the OLS regression because the model results to be unbiased.

#### 4.1 Results on Aggregate Ownership

The first hypothesis posits that due to the unique knowledge about corporate acquisition processes possessed by Serial Acquirers, and the mixed scientific evidence concerning their long-term success, Institutional Investors shall actively monitor these companies and exert a positive effect on their short-term post-acquisition performance. Such a positive effect reflects efforts to influence the management of serial acquirers, in particular, as these firms see mergers and acquisitions as non-extraordinary events institutional shareholders in these entities should expect a high volume of transaction being completed hence, rather than try to change their strategic growth focus from acquisitions to organic, they will work towards improving the quality of the firms' acquisition decisions.

**Table 1.** Results of 2 Stage Least Square regression. Dependent variable is CAR (-3; 3). The models control for Industry and Year fixed effects with the implementation of Least Square Dummy Variables method. All continuous variables are expressed in millions USD. Deal Value is in constant 2011 USD, adjusted using CPI index. The models control for Industry and Year fixed effects with the implementation of Least Square Dummy Variables method. All continuous variables are expressed in millions USD. Deal Value is in constant 2011 USD, adjusted using CPI index. "LOG" identifies the continuous variables which underwent a logarithmic transformation. Model 1 is the first stage Least-Square regression which employs S&P500 dummy, Analysts Number and BCF index as instruments for TOP\_5 Institutional Ownership; Model2, is the second-stage Least-Square regression which uses the predicted values of institutional ownership from the first stage model as dependent variable. All the models use White's (1980) robust standard errors to control for heteroscedasticity and autocorrelation in the CAR time-series. White's robust standard errors are in parentheses. Significance levels are expressed as \*\*\* P<0.01, \*\* P<0.05, \* P<0.1.

CAR (-3; 3)	(1) FIRST-STAGE REGRESSION	(2) SECOND-STAGE REGRESSION
TOP_5 INSTITUTIONAL OWNERSHIP		.185* (.097)
LOG_ASSETS	-.005 (.008)	.001 (.004)
LOG_DEAL VALUE	-.002 (.008)	.001 (.004)

<sup>40</sup> A similar approach was pursued also by Heath et alia (2018) in their paper "Passive Investors are Passive Monitors". The authors use the Russell index as an instrument for their analysis.

LOG_DEAL VALUE TO ASSETS	-.003 (.007)	.001 (.004)
LOG_TOBIN Q	-.006 (.007)	0 (.004)
LEVERAGE	.06*** (.014)	-.006 (.01)
LOG_CAPEX	-.001 (.002)	0 (.001)
LOG_CASH & EQUIVALENTS	0 (.002)	0 (.001)
R&D_INTENSITY	-.055 (.085)	.053 (.045)
SALES GROWTH	-.018* (.01)	.009 (.007)
ROA	.028 (.054)	.013 (.028)
DEAL_COUNT	0 (.001)	0 (0)
CROSSBRODER	-.005 (.006)	-.002 (.003)
HORIZONTAL	-.004 (.005)	-.004 (.003)
FINANCIAL ACQUIRER	.006 (.025)	.011 (.013)
PUBLIC TARGET x CASH DEAL	.012 (.009)	.002 (.006)
PUBLIC TARGET x EQUITY DEAL	-.006 (.011)	-.021*** (.007)
CONSTANT TERM	.304*** (.03)	-.039 (.034)
INSTRUMENTS		
S&P500 DUMMY	-.012* (.007)	
BCF INDEX	.005 (.003)	
ANALYSTS NUMBER	-.001*** (0)	
FIXED EFFECTS		
YEAR DUMMIES	YES	YES
INDUSTRY DUMMIES	YES	YES
TEST STATISTICS		
DEG FREEDOM	2729	.z
OBSERVATIONS	2772	2772
R-SQUARED	.171	.
ADJ R <sup>2</sup>	.148	.
F-STAT	9.09	.z
CHI <sup>2</sup>	.z	71.909

From Table 1, the results from the 2SLS regression models show the effectiveness of using this treatment rather than applying a simple OLS model. It emerges from the first-stage regression that the instruments used are valid although show signs of weakness as it can be deduced from the interpretation of the F-statistics which is significant at the 99.9% level even though in this case, its value is slightly lower than  $10^{41}$ . In particular, the instruments S&P500 dummy and the number of

<sup>41</sup> For a deep discussion on the validity of instruments for linear regression models, please refer to “Testing for Weak Instruments in Linear IV Regression”. Available at

analysts covering the security display significant regression coefficients which is a good sign that the instruments work well and do not produce biased estimates (Angrist & Krueger, 2001) while the coefficient on the Bebchuck, Cohen and Ferrell index demonstrate it is a weak instrument. The results from the second-stage regression improve the results from the original OLS regression. The level of concentrated ownership by the largest five institutional investors in a firm is positively related to the short-term post-announcement returns, albeit being significant only at the 5% level. This evidence supports the theory that ownership by concentrated institutions has a positive impact on M&A performance (Ma, 2019; Andriosopoulos & Yang, 2015; Chen, Harford & Li, 2007) because the presence of these informed investors within a firm's shareholders sends a positive signal to the market about the quality of the transactions (Ajina, Lakhal, & Sougné, 2015). Therefore, the level of institutionalization of serial acquirers (the relative proportion of ownership held by institutions) has a positive and significant impact on their performance; the results are robust to controlling for firm and deal characteristics, time and industry fixed effects, heteroscedasticity and omitted variables.

In conclusion, **I accept the first hypotheses that institutional investors exert a positive influence on serial acquirers' short-term post-acquisition performance.**

#### 4.2 Institutional Heterogeneity and Performance

Contrary to the first and third hypotheses, the second hypothesis of this thesis does not investigate the effect of aggregate Institutional Ownership on M&A performance but rather takes the heterogeneity of institutional investors into account. Indeed, when considering the heterogeneity which characterizes institutional investors, we shall find a significant relationship between the post-acquisition performance of serial acquirers and the proportion of ownership held by those types of institutions which extract the greatest benefits from active monitoring ("voice"), while the relationship should not hold true for the other types of institutions. The institutions which extract the highest benefits from actively monitoring their portfolio firms, here defined as Long-Term Independent Institutions are characterized by long-term orientation (long-term investment strategy), independence (or pressure-insensitive) and a relatively low turnover strategy (Dedicated and Quasi-Indexers), whereas the other category includes all institutions which do not meet all three requirements, grouped as Other Institutions (Chen, Harford & Li, 2007; Bushee, 1998; Bushee & Goodman, 2007; Brickely et al., 1988; Gaspar, Massimo & Matos, 2005).

This hypothesis is tested using a similar approach to hypotheses 1, though in this case the regression models will include two dummies which indicate whether each firm's percentage of institutional ownership held by Long Term Institutional Investors (LTIIIs) and by Other Institutions

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[https://scholar.harvard.edu/files/stock/files/testing\\_for\\_weak\\_instruments\\_in\\_linear\\_iv\\_regression.pdf](https://scholar.harvard.edu/files/stock/files/testing_for_weak_instruments_in_linear_iv_regression.pdf). Retrieved on April 26<sup>th</sup>, 2022.

belong in the top quintile of their respective distributions. This dummy approach is adapted from Chen, Harford and Li (2007), and is used because, as the authors argue, institutional investors decide to exert active monitoring when their ownership stake exceeds a relative threshold level.

**Table 2.** Results of 2 Stage Least Square regression. Dependent variable is CAR (-3; 3). *LTII\_TOP5, TOP QUINTILE* is a dummy variable which indicates whether the level of ownership by the top5 Long-Term Institutional Investors (LTII) is in the top quintile of the ownership by LTII distribution. *OTHERS\_TOP5, TOP QUINTILE* is a dummy variable which indicates whether the level of ownership by the top5 institutions which are not identified as LTII (Others) is in the top quintile of the ownership by Others Institution distribution. The models control for Industry and Year fixed effects with the implementation of Least Square Dummy Variables method. All continuous variables are expressed in millions USD. Deal Value is in constant 2011 USD, adjusted using CPI index. All continuous variables are expressed in millions USD. Deal Value is in constant 2011 USD, adjusted using CPI index. The models control for Industry and Year fixed effects with the implementation of Least Square Dummy Variables method. "LOG" identifies the continuous variables which underwent a logarithmic transformation. Model 1 is the first stage Least-Square regression which employs S&P500 dummy, Analysts Number and BCF index as instruments for TOP\_5 Institutional Ownership; Model2, is the second-stage Least-Square regression which uses the predicted values of institutional ownership from the first stage model as dependent variable. All the models use White's (1980) robust standard errors to control for heteroscedasticity and autocorrelation in the CAR time-series. White's robust standard errors are in parentheses. Significance levels are expressed as \*\*\* P<0.01, \*\* P<0.05, \* P<0.1.

CAR (-3; 3)	(1) FIRST-STAGE REGRESSION	(2) SECOND-STAGE REGRESSION
TOP_5 INSTITUTIONAL OWNERSHIP		.271* (.151)
LTII_TOP5, TOP QUINTILE	.116*** (.005)	-.029 (.019)
OTHERS_TOP5, TOP QUINTILE	.064*** (.005)	-.019* (.01)
LOG_ASSETS	.003 (.007)	-.001 (.004)
LOG_DEALVALUE	-.004 (.007)	.002 (.004)
LOG_DEAL VALUE TO ASSETS	.003 (.007)	0 (.004)
LOG_TOBIN Q	-.003 (.006)	0 (.004)
LEVERAGE	.037*** (.012)	-.005 (.01)
LOG_CAPEX	-.001 (.002)	.001 (.001)
LOG_CASH & EQUIVALENTS	-.001 (.002)	0 (.001)
R&D_INTENSITY	-.008 (.072)	.047 (.047)
SALES GROWTH	-.007 (.008)	.007 (.007)
ROA	.005 (.046)	.019 (.029)
DEAL_COUNT	0 (.001)	0 (0)
CROSSBRODER	-.001 (.005)	-.002 (.003)
HORIZONTAL	-.004 (.005)	-.004 (.003)
FINANCIAL ACQUIRER	.019 (.019)	.008 (.014)

PUBLIC TARGET x CASH DEAL	.013 (.009)	.001 (.006)
PUBLIC TARGET x EQUITY DEAL	-.003 (.009)	-.02*** (.007)
CONSTANT TERM	.249*** (.027)	-.05 (.041)
INSTRUMENTS		
SP500_DUMMY	-.004* (.006)	
BCF_INDEX	.003 (.003)	
ANALYSTS_NUM	-.001*** (0)	
FIXED EFFECTS		
YEAR DUMMIES	YES	YES
INDUSTRY DUMMIES	YES	YES
TEST STATISTICS		
DEG FREEDOM	2729	.z
OBSERVATIONS	2772	2772
R-SQUARED	.407	.
ADJ R <sup>2</sup>	.39	.
F-STAT	28.76	.z
CHI <sup>2</sup>	.z	69.823

The empirical results of the endogenous treatment on testing hypothesis 2 yields positive consequences for the analysis. While the results from the original OLS (not reported) seem to be contradicting the literature which found a positive effect of institutional ownership on post-announcement M&A performance when the heterogeneity of the institutions is taken into account (Chen, Harford and Li, 2007; Edmans, 2009; Ma, 2019; Ryan & Schneider, 2002), the findings which emerge from the endogenous treatment are in favour of the prescribed theory. Differently from Chen et al. (2007) which found a positive and significant link between ownership by the largest five long-term independent (pressure-insensitive) institutional investors, this analysis highlights a negative link between the proportion of ownership which is held in the hands of all other types of institutions (short-term, or pressure-sensitive) and the short-term post-announcement performance of Serial Acquirers, as it can be inferred from the significance and magnitude of the second-stage regression coefficient in Table 2. The negative effect exerted by the “Others” group of institutions is explained by the nature of these investors which altogether do not have high-enough incentives to actively monitor their investments in public equity, hence they will be more likely be passive monitors and “exit” the company when they are in disagreement with the management (Chen et al., 2007; Versteegen Ryan & Schneider, 2002; Parrino, Sias & Starks, 2003). These findings are in line with the results obtained by Bushee (1998; 2001; 2007), Chen et al. (2007) and Park and Song (1995), which besides finding a positive effect on firm’s performance caused by the presence of large, long-term and independent (or pressure-insensitive) institutional shareholders, also reached the conclusion that acquirers’ performance suffers the detrimental effect caused by the presence of (large) pressure-sensitive, short-term and transient institutional investors among their shareholders.

Given the statistical significance of the coefficients of interest and the economic interpretation of those, **I shall reject the second hypothesis**. However, even though I refute the original statement that concentrated ownership by Long-Term Independent Investors causes a positive effect on the serial acquirers' short-term post-announcement performance, **I can infer that the large presence of non-LTIIs (or "Others") among a firm shareholders causes a negative effect on their acquisition performance**.

### 4.3 Do the highest levels of IO cause better performance?

According to the third hypothesis of this thesis, if the relationship between aggregate ownership by institutions and post-acquisition firm performance is positive (negative), then it should hold that the effect will be stronger for those serial acquirers which show the highest levels of institutional ownership relative to the sample. This hypothesis is substantiated by the idea that the relationship between institutional ownership and acquisition performance is best described as a "threshold effect" for which institutions will be actively monitoring their invested companies only when their ownership stake is greater than the threshold value (Chen, Harford & Li, 2007; Crane, Michenaud, & Weston, 2016; Baghdadi, Bhatti, Nguyen, & Podolski, 2018).

Testing of this hypothesis is achieved by supplementing the multivariate OLS model used in testing the first hypothesis (the results of the OLS regression models for the first and second hypotheses are not reported for reasons of space availability) with the use of dummy variables which indicate whether each serial acquirer's level of concentrated ownership by institutions (at the aggregate level) is either in the top quintile of the respective Institutional Ownership distribution, per year, or it is not.

**Table 1.** Multivariate OLS Regression analysis of 7-day CARs. All the models use White's (1980) robust standard errors to control for heteroscedasticity and autocorrelation in the CAR time-series. The models control for Industry and Year fixed effects with the implementation of Least Square Dummy Variables method. All continuous variables are expressed in millions USD. Deal Value is in constant 2011 USD, adjusted using CPI index. The models control for Industry and Year fixed effects with the implementation of Least Square Dummy Variables method. All continuous variables are expressed in millions USD. Deal Value is in constant 2011 USD, adjusted using CPI index. QUINTILE\_TOP5 is a categorical variable which indicates what quintile the level of TOP5 IO of each deal belongs to in the TOP5 ownership distribution. QUINTILE\_BLOCKS is a categorical variable which indicates what quintile the level of Block Holders IO of each deal belongs to in the Block Holders ownership distribution. All the models use White's (1980) robust standard errors to control for heteroscedasticity and autocorrelation in the CAR time-series. White's robust standard errors are in parentheses. Significance levels are expressed as \*\*\* P<0.01, \*\* P<0.05, \* P<0.1.

	(1) CAR (-3; 3)	(2) CAR (-3; 3)
TOP_5 INSTITUTIONAL OWNERSHIP	-0.005 (.027)	
BLOCK HOLDERS' OWNERSHIP		-0.021 (.019)
TOP5, QUINTILE 1 (BOTTOM)		

TOP5, QUINTILE 2	-0.03 (.004)	
TOP5, QUINTILE 3	-0.03 (.005)	
TOP5, QUINTILE 4	-0.01 (.007)	
TOP5, QUINTILE 5 (TOP)	-0.02 (.009)	
BLOCKHOLDERS, QUINTILE 1 (BOTTOM)		
BLOCKHOLDERS, QUINTILE 2		-.001 (.004)
BLOCKHOLDERS, QUINTILE 3		0 (.005)
BLOCKHOLDERS, QUINTILE 4		.003 (.006)
BLOCKHOLDERS, QUINTILE 5 (TOP)		.005 (.008)
LOG_ASSETS	.001 (.003)	.001 (.003)
LOG_DEAL VALUE	0 (.003)	0 (.003)
LOG_DEAL VALUE TO ASSETS	0 (.003)	0 (.003)
LOG_TOBIN Q	.004 (.003)	.004 (.003)
LEVERAGE	.008 (.007)	.008 (.007)
LOG_CAPEX	-.001 (.001)	-.001 (.001)
LOG_CASH & EQUIVALENTS	-.001 (.001)	-.001 (.001)
R&D_INTENSITY	-.021 (.038)	-.021 (.038)
SALES GROWTH	.007 (.005)	.007 (.005)
ROA	-.017 (.025)	-.017 (.025)
DEAL_COUNT	0 (0)	0 (0)
CROSSBRODER	-.003 (.003)	-.003 (.003)
HORIZONTAL	0 (.003)	0 (.003)
FINANCIAL ACQUIRER	.022* (.012)	.022* (.012)
PUBLIC TARGET x CASH DEAL	-.002 (.004)	-.002 (.004)
PUBLIC TARGET x EQUITY DEAL	-.016*** (.005)	-.016*** (.005)
CONSTANT TERM	.018 (.012)	.019* (.011)
FIXED EFFECTS		
YEAR DUMMIES	YES	YES
INDUSTRY DUMMIES	YES	YES
TEST STATISTICS		
DEG FREEDOM	2729	2729
OBSERVATIONS	2772	2772
R-SQUARED	.026	.027
ADJ R <sup>2</sup>	.011	.012
F-STAT	1.713	1.742

Table 3 reports the results of a multivariate OLS regression of the 7-day CARs on two measures of concentrated institutional ownership, Model 1 studies the effect of ownership by the largest five institutional investors while Model 2 investigates the effect of ownership by Block Holders. Accordingly, Model 1 includes the dummies which indicate what quintile of Top 5 ownership the specific firm level belongs to whereas Model 2 includes dummies that indicate what quintile of Block Holders ownership the firm level is part of. The analysis is limited to these two models because, as it was mentioned in the previous chapter, the measures of Institutional Ownership are all highly correlated between each other and the results on one measure are very likely to have the same validity as those obtained when employing alternative measures (the use of these alternatives is discussed in the following chapter) <sup>42</sup>.

Notwithstanding the literature which predicts that a threshold effect regulates the relationship between an institutional investor's decision to specialize in active monitoring and the relative size of their ownership stakes, there is no significant effect that the greatest levels of institutional ownership exert a positive influence on the short-term post-announcement performance of serial acquirers, controlling for the relative level of concentrated ownership by institutions via the use of the Institutional Ownership quintile dummies thus does not add power to the first hypothesis. Indeed, while the results of the analysis which concerns the first hypothesis suggest that aggregate level of (concentrated) holdings by institutions does have a positive and significant effect on post-acquisition performance, incorporating the quintiles into the analysis reduces the explanatory power of the model and hinders the validity of the effect of aggregate institutional ownership.

All the coefficients associated with the ownership quintile dummies are not significant, even the top quintile dummy (whose coefficient is not directly shown) has no significant effect as we can infer from the interpretation of the regression coefficient of the constant term.

Furthermore, the results on the concentrated ownership by block holders (Model\_2) contradict the theory which find that ownership by block holders has a significant and positive effect on firm performance (Edmans, 2009; Park et al., 2008) while supports evidence which points to them as being ineffective monitors (Zhong et al., 2007; Bebchuck et al., 2017). However, these results could be explained by the fact that the analysis has focused on aggregate measures of ownership. Even though block holders shall positively influence the merger performance of serial acquirers given the size of their stake (Agrawal et al., 1990), the fact that the models do not take into consideration neither the time horizon nor the legal type (i.e., independent vs dependent) of institutional investors might

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<sup>42</sup> Chen, Harford and Li (2007) demonstrate that using different measures of ownership does not change the significance of their results nor have detrimental effects on their model explanatory power. A further discussion is presented in the robustness checks section.



explain the lack of significance in the relationship (Chen et al., 2007) because multiple block holders which are characterized by different strategies, objectives and fiduciary duties may behave independently in pursuing their own agenda rather than coordinating their efforts to influence management (Edmans, 2014; Edmans & Holderness, 2017).

**Therefore, I reject the third hypothesis because I do not find any significant evidence that the firms with the greatest proportion of ownership held by institutional investors outperform those which are characterized by the lowest proportion of IO.**

## 5. ROBUSTNESS CHECKS

### 5.1 Alternative Measures of Performance

As an additional check to the robustness of the results I used the post-acquisition cumulative abnormal returns computed over the 11 days surrounding the event date, the CAR [-5; 5]<sup>43</sup>. Even though this is much akin to the measure of post-acquisition performance CAR [-3; 3], which is used to compute the main results, extending the window by two days on both tails of the event window might convey more information about the future of the deal and give investors more time to estimate the impact on the acquirer's performance.

It emerges from my analysis that the results from the OLS regression models, presented in Table 1 to 3, still hold when the dependent variable accounts for the extended event window. There is no change in the effect of institutional ownership on post-acquisition performance and the coefficients are still insignificant. It seems however that despite the low number of factors which are found to be significant, the use of this extended window reinforces the magnitude of these effects, particularly the interaction between the public status of the target and equity as the method of payment.

These findings are corroborated by the unreported results of the IV regression models. Substituting CAR [-3; 3] with CAR [-5; 5] does not lead to any significant change in the sign of the coefficients, however the magnitude of the results shows a general increase. From these further tests, I can infer that the effects of institutional ownership on the post-acquisition performance of serial acquirers is robust to using an extended, albeit short-term measure of cumulative performance.

### 5.2 Alternative Measures of Institutional Ownership

The validity of the results may be disputed because of the use of the specific measure of concentrated ownership by the largest five institutional investors (Top5), which may produce different results with respect to employing the other measures introduced in Section III: ownership by the largest institution

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<sup>43</sup> A detailed introduction of the measure and how its calculated is presented in Section III.

(Top1), ownership by the largest ten institutions (Top10) and ownership by block holders (Blocks). These measures are expression of concentrated institutional ownership, this implies that the analysis does not focus on the total ownership by institutions as these data include very small institutions and might be biased by double-counting<sup>44</sup> and short-selling interest<sup>45</sup>.

In unreported results, I re-run the OLS and IV regression models substituting for the alternative measures of ownership. The evidence supports the original findings. In the case of the OLS regressions, the coefficients which measure the effect of institutional ownership on post-acquisition performance are still insignificant, thus lending to support the reduced monitoring hypothesis. In the case of the instrumental variables (IV) models, employing alternative measures of ownership does not bear any significant differences; in the case of the top1 ownership the effect on post-announcement performance is greater which leads to interpreting this as evidence that the single largest shareholder<sup>46</sup> exerts the greatest influence over the firm management and pressures them to make value-increasing decisions (Agrawal & Mandelker, 1990; Zeckhauser & Pound, 1990). Even though using the alternative measures is consistent with the findings presented in Section IV, testing the third hypothesis still produces insignificant results even when the analysis considers the alternative measures of institutional ownership concentration.

This evidence might imply a lack of coordination among institutions, in particular among block holders. This could be due to the individual characteristics of block holders (shareholders in excess of 5% of a firm's equity capital) which separates among them; they might follow different investment strategies or behave inconsistently because their managers are bound to different fiduciary duties<sup>47</sup>. Such differences may cause their cumulative effect on performance to be not significant because exerting uncoordinated efforts might imply they pursue different goals (Hadlock et al., 2019).

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<sup>44</sup> The reported holdings figures may include double-counting because even though institutions report their consolidated holdings across their business units, other investment managers could mistakenly report the holdings they manage on behalf of the reporting institutions while the latter have already done so.

<sup>45</sup> The issue with short interest is rather common in research which involves the analysis of institutional holdings data. (source?) Many companies display levels of institutional ownership which are superior to 100%. This is caused by both double-counting and when there is high short interest on the securities. In the latter case, active institutional investors like hedge funds will borrow the shares owned by other large institutions, usually investment management companies and pension funds, and sell them on the open market to assume a short position in the company. When the amount of stock shorted is very high this reflects in the extreme levels of IO.

<sup>46</sup> On average, the single largest institutional shareholder in a firm of this sample, owns more than 10% of the total firm stock capital. Therefore, the largest investors has sizeable power and can exert great influence on the management.

<sup>47</sup> Being a block holder per se does not convey much information about the identity of the investors, besides the size of its stake (>5%). Hence, besides the size of their ownership stakes block holders may be mutual funds, IIAs, pension funds and any other type of institutions, which implies that coordination among them is rather difficult because they follow different strategies and have different investment objectives to attain.

Therefore, studying the aggregate ownership of block holders does not add substantial value to the analysis as demonstrated by Hadlock and Schwartz-Ziv (2019). Alternatively, block holders may be less effective monitors because they follow an indexed or passive allocation strategy (Appel, Gormley, & Keim, 2016) which might lead them to have reduced monitoring incentives and side with managers more often than active investors (Heath, Macciocchi, Michaely, & Ringgenberg, 2020; Bebchuk & Hirst, 2019).

Overall, I can conclude that the results of my analysis are resistant to the employment of alternative institutional ownership concentration measures in accordance with the findings of Chen, Harford and Li (2007).

### 5.3 Limitations of the Study

The issue of using short-term measures of performance in event studies like this is that the returns of the stock in the days leading up to the announcement of the deal might be noisy due to the abnormal trading behavior of informed investors such as financial institutions and intermediaries (Chen et al., 2007). Therefore, using this classic event study methodology might prove to produce biased results due to information asymmetries between the larger, more informed investors and the rest of the market. Chen et al. (2007) supplement their analysis of the post-announcement returns of acquirers with long-term measure of performance and found a significant relationship between IO and long-term performance. However, even though they apply a methodology similar to that of Barber and Lyon (1997), their results over the three-year post-deal period incorporates so much information which may not be related to the announced merger. The exclusion of such measure of performance in this study rests on the necessity to avoid the returns from multiple deals to interact and bias the efficiency of the performance measurement. This is extremely relevant in this case because the focus of the analysis is on serial acquirers, which implies that every firm conducts multiple deals in the three years following the announcement of the deal.

The other major limitation of this and all studies which are designed to detect and investigate the effect that the different types of institutional investors exert on firm performance, is the availability and reliability of the data. Even though ownership data are sourced from a public entity, the Securities and Exchange Commission, the information about institutional holdings have just recently been made available in electronic format, after the reform which took place in June 2013. Moreover, only large institutions are required to file their long positions with the SEC while the others are exempt; this means we have a very incomplete picture of institutional ownership trends in the US and the implications of the studies which rely on the use of these information may be altered or biased upward because data are available only for large investors.

Furthermore, there is no coherent and conclusive method of classifying institutional investors according to their business model and legal type; the most trusted source of holdings data is Thomson Reuters which provides information going back to the 1980s. Thanks to their proprietary classification system<sup>48</sup>, most researchers have been able to conduct studies and make inference about the effect that the different types of institutional investors have on portfolio firms. However, the Thomson database shows inconsistencies in the classification of institutional investors which has been investigated extensively by several researcher like Gompers and Metrick (2001); after 1998 the number of institutions classified as Type 5 institutions become disproportionate because Thomson misclassified most Independent Investment Advisers and Investment Managers in this category<sup>49</sup>. This misclassification has a detrimental impact on all studies which purport to make a distinction among the different types of institutions, most notably the studies of professor Bushee (1998; 2007). Thanks to his efforts, most researchers can make use of the data adjustments produced by his research team (as mentioned in the previous chapters) to correct for the distortions in the holdings reported by Thomson Reuters; others simply amend Thomson classification by researching the individual companies which make up the type 5 institutions.

It emerges then a need for lawmakers to create a common classification system which identifies institutional investors (and financial intermediaries alike) based on their intrinsic characteristics, similar to a SIC or NAICS code. Like these codes, financial research demands a more coherent approach to classifying institutions (as well as industries), and a classification system which is public and possibly shared by multiple countries<sup>50</sup>. This would have the consequence of enabling researchers to investigate the effect of institutional ownership on firms' performance across multiple markets, particularly this will allow them to make an inference with respect to both the differences in institutional ownership practices around the world, and the influence that different corporate governance mechanisms have on the ownership structure of the firms in different countries.

## 6. SUMMARY & CONCLUSIONS

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<sup>48</sup> More details are presented in both Section II and Section III.

<sup>49</sup> For a very detailed discussion of the errors in TR-13f institutional classification please refer to this research note published online by the WRDS data team. Available at <https://wrds-www.wharton.upenn.edu/pages/support/applications/institutional-ownership-research/introduction-thomson-reuters-13f-tr-13f-database-and-its-classification-institutional-investors/>. Retrieved on February 16<sup>th</sup>, 2022.

<sup>50</sup> For a detailed discussion about the implications of using standard industry codes in financial research, please refer to <https://www.jstor.org/stable/2331394?seq=1>. And to understand the differences between SIC and NAICS please refer to [https://www.tandfonline.com/doi/abs/10.1300/J109v05n02\\_02?journalCode=wbfl20](https://www.tandfonline.com/doi/abs/10.1300/J109v05n02_02?journalCode=wbfl20).

## 6.1 Summary

The scope of this thesis was to investigate the relationship between institutional investors and serial acquirers short-term post acquisition performance by focusing on active monitoring efforts exerted by institutional investors.

The questions which this project seek to answer concern whether the proportion of a firm's stock capital that is owned by financial institutions matters for the short-term market reaction to firm's announcement of takeovers, and if taking into account the heterogeneity of the institutions and the relative size of their collective ownership stakes may predict the post-announcement acquisition performance of serial acquirers.

According to the literature, institutional investors face a trade-off between actively monitoring their investments and trading for private gains (Pound, 1988; Brickley, Lease & Smith, 1988; Verstege Ryan & Schneider, 2002). To restrict the focus of the analysis on active monitoring this thesis employs advanced measures of concentrated ownership by institutions which convey information exclusively about large, long-term oriented, independent, and dedicated investors, in a similar fashion to Chen, Harford and Li (2007) and Bushee (1998; 2007).

The use of these measures excludes the noise in the effect of institutional ownership caused by transient, short-term, and pressure-sensitive institutions which do not have high-enough incentives to engage in actively monitoring their portfolio firms' management, rather than monitoring they often decide to trade their positions away when they disagree about the firm's strategy (Chen et al., 2007; Qiu, 2008; Bebchuck et al., 2017).

To remedy the potential endogeneity in the relationship between institutional ownership and firm performance, which derives from omitted variable bias this thesis employs both OLS regressions and Instrumental Variables approach<sup>51</sup>. The instruments used for the investigation are the firm's inclusion to the S&P 500 index, the number of analysts following the security and the Bebchuck, Cohen and Ferrell index which proxies for the quality of corporate governance. I find that albeit prior literature is concerned with the use of the inclusion to the S&P 500 index as an instrument for IO (see Qiu (2008)), in my analysis it is a relevant and good instrument similarly to the number of analysts following. Surprisingly, the BCF index does not show signs of being an effective instrument even though it should be highly correlated with the level of institutional ownership in the firm (Bebchuk, Cohen & Ferrell, 2009). Employing these instruments contributes novelty to the IV procedure and to the study of

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<sup>51</sup> The endogeneity bias is caused by the correlation between the independent Institutional Ownership variable and the error term of the equation (model) which best describes the performance of the firm, in this case the short-term post-acquisition CARs. Correlation with the error term implies a violation of the OLS principles and thus requires the application of endogenous treatment.

institutional ownership, this is the first paper according to the author's knowledge to make use of this specific approach.

From the interpretation of the empirical results, a mixed picture emerges about the relationship of ownership by institutions and post-announcement performance of serial acquirers. The OLS regression analysis shows that there is no significant relationship between the proportion of IO in a firm and its short-term acquisition performance, even when I control for firm-specific and deal-specific characteristics, and both industry and time fixed effects, the results do not change. The inference is unchanged when the heterogeneity of the institutions is taken into consideration; these contradictory findings indicate there may be some confounding factor which alters the significance of the effect. The evidence then suggests that institutional investors have lower incentives to actively monitor their portfolio investments which derives from the changed environment in which institutions operate and from differences in the investment strategies today with respect to earlier decades (Bebchuck & Hirst, 2019; Heath et al., 2018).

Controlling for the endogeneity in the relationship has a positive impact on the significance of the results. From the results of this method new evidence emerges which substantiates the claim that concentrated institutional ownership (i.e., ownership restricted to a few institutions) has a positive impact on performance, a finding which confirms the active monitoring hypothesis (Pound, 1988; Brickley, et al., 1988) and the first hypothesis of this thesis.

The use of this approach allowed to establish a causal inference also about the second and third hypotheses although the findings are not all coherent with the results of previous tests (such as Chen, Harford and Li (2007)). Like Chen et al. (2007) I find a significant relationship for the level of Institutional Ownership when I account for the heterogeneity of the investors, with the difference that I do not find a positive association between firm performance and the highest relative levels of ownership by long-term independent institutions, rather I find that the firms which are characterized by the highest levels of ownership by non-LTIIs (i.e., Others) institutions tend to underperform other serial acquirers; evidence that non-engaged institutions might actually lead to worse performance (Burns, Kedia, & Lipson, 2010). Finally, I find that the serial acquirers which are characterized by the highest proportion of IO do not perform better than those whose relative ownership level is in the bottom quintile of the distribution. These findings still hold when the analysis considers the relative percentage of ownership by block holders.

While the results of the first two hypotheses are substantiated by the strength and significance of the instrumental variables coefficients, the same does not hold for the third hypothesis. I find that the third model does not suffer from endogeneity hence, inference about the results of the third hypothesis is based on the results of the OLS regression model. The results are robust to the use of alternative measures of short-term performance and different measures of ownership concentration.

## 6.2 Conclusions

The evidence which emerged from the multiple analyses I conducted, allowed me to accept the first hypothesis that the proportion of concentrated ownership by institutions causes serial acquirers to perform positively better (than otherwise). These results suggest that large shareholders are effective monitors; even more so, they might decide to exert a greater and closer influence on their portfolio holdings when these firms follow riskier strategies such as conducting multiple deals, because of the potential negative impact that acquisitions might have on shareholders' wealth. Additionally, they might decide to monitor more closely their investments in serial acquirers if these firms proved to be better at integrating targets and exploiting operational synergies which enable them to enhance their long-term shareholders' value creation (see Hansell et al. (2014) and Haas (2014)).

While I cannot completely accept the second hypothesis because I do not find a significant association with the proportion of stock owned by LTIs, I can infer however that ownership by non-engaged institutions has a detrimental effect on firm's performance which is line with what I first hypothesized. I believe this effect to be driven by the dramatic growth of passive investment funds which tend to be less interested in active monitoring, and the high number of financial institutions which follow indexed investment strategies. The rising adoption of these strategies might have negative long-term implications on the propensity of institutional investors to influence the decisions of managers and would reflect negatively on their ability to enhance firms' value creation strategies (see Bebchuck et al. (2019) and Heath et al. (2019)).

Finally, based on the reasons I adduced above; I shall refute the third hypothesis for which the best performing serial acquirers are those characterized by the greatest levels of Institutional Ownership. Future research shall focus on studying to a greater extent the effect that institutional ownership exerts on other characteristics of serial acquirers other than their post-announcement performance or acquisition intensity. Particularly interesting would be the study of the impact that institutional investors might have on the serial acquirers' ability to learn from previous acquisitions, and on the likelihood that high levels of institutional ownership lead a firm to initiate a sequence of acquisitions. Finally, another captivating topic is represented by the investigation of the effect that the experience of individual institutional shareholders (both industry-specific and country-specific experience) exerts on the performance of serial acquirers, as this is likely a channel through which they harness their superior information to successfully influence firms' management and enhance the performance of their portfolio companies.

## REFERENCES

- Çelik, S., & Isaksson, M. (2014). Institutional investors and ownership engagement. *OECD Journal: Financial Market Trends*, vol. 2013/2.
- Abarbanell, J. S., Bushee, B. J., & Smith Raedy, J. (2003, April). Institutional Investor Preferences and Price Pressure: The Case of Corporate Spin-Offs. *The Journal of Business*, Vol. 76, No. 2, pp. 233-262.
- Aghion, P., Van Reenen, J., & Zingales, L. (2013, FEBRUARY). *American Economic Review*, Vol. 103, No. 1, pp. 277-304.
- Agrawal, A., & Mandelker, G. N. (1990, June). Large Shareholders and the Monitoring of Managers: The Case of Antitakeover Charter Amendments. *The Journal of Financial and Quantitative Analysis* Vol. 25, No. 2, pp. 143-161.
- Ajina, A., Lakhali, F., & Sougné, D. (2015). Institutional investors, information asymmetry and stock market liquidity in France. *International Journal of Managerial Finance*, Vol. 11 No. 1, 44-59.
- Aktas, N., de Bodt, E., & Roll, R. (2005). *Hubris, Learning, and M&A Decisions*. Retrieved from UCLA: Finance\esScholarship: <https://escholarship.org/uc/item/7j94111c>.
- Aktas, N., de Bodt, E., & Roll, R. (2013). Learning from repetitive acquisitions: Evidence from the time between deals. *Journal of Financial Economics*, Vol. 108 , 99–117.
- Almazan, A., Hartzell, J. C., & Starks, L. T. (August 2005). Active Institutional Shareholders and Costs of Monitoring: Evidence from Executive Compensation. *SSRN*. Retrieved from SSRN.
- Anderson, A. M., & Brockman, P. (2016, October 15). *Form 13F (Mis)Filings*. Retrieved from SSRN: <http://dx.doi.org/10.2139/ssrn.2809128>
- Andrade, G., Mitchell, M., & Stafford, E. (2001, Spring ). New Evidence and Perspectives on Mergers. *Journal of Economic Perspectives—Volume 15, Number 2*, pp. 103-120.
- Andriosopoulos, D., & Yang, S. (2015). The impact of institutional investors on mergers and acquisitions in the United Kingdom. *Journal of Banking & Finance*, vol. 50(C), 547-561.
- Angrist, J. D., & Krueger, A. B. (2001, FALL). Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments. *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 69-85.
- Appel, I. R., Gormley, T. A., & Keim, D. B. (2016, July). Passive investors, not passive owners. *Journal of Financial Economics Volume 121, Issue 1*, pp. 111-141.
- Argote, L. (2011). Organizational learning research: Past, present and future. *Management Learning*, Vol. 42, No. 4, 439–446.
- Asness, C. (2018, June 20). *It Ain't What You Don't Know That Gets You Into Trouble*. Retrieved from AQR.com: <https://www.aqr.com/Insights/Perspectives/It-Aint-What-You-Dont-Know-That-Gets-You-Into-Trouble>.
- Azar, J., Schmalz, M. C., & Tecu, I. (2018). Anticompetitive Effects of Common Ownership. *Journal of Finance*, Vol. 73, No. 4.
- Baghdadi, G. A., Bhatti, I. M., Nguyen, L. H., & Podolski, E. J. (2018, June). Skill or effort? Institutional ownership and managerial efficiency. *Journal of Banking & Finance Volume 91*, pp. 19-33.
- Bagwell, L. S. (1991, May). Shareholder Heterogeneity: Evidence and Implications. *The American Economic Review Vol. 81, No. 2, Papers and Proceedings of the Hundred and Third Annual Meeting of the American Economic Association.*, pp. 218-221.
- Banz, R. W. (1981, March). The relationship between return and market value of common stocks. *Journal of Financial Economics, Volume 9, Issue 1*, pp. 3-18.
- Barber, B. M. (2007, Winter). Monitoring the Monitor . *The Journal of Investing*, Vol. 16, Issue 4, pp. 66-80.
- Barber, B. M., & Lyon, J. D. (1997, March). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics Volume 43, Issue 3*, pp. 341-372.



- Barberis, N., & Shleifer, A. (2003). Style investing. *Journal of Financial Economics*, Vol. 68, No. 2, pp. 161–199.
- Bebchuk, L. A., Brav, A., & Jiang, W. (2015, June). THE LONG-TERM EFFECTS OF HEDGE FUND ACTIVISM. *Columbia Law Review* Vol. 115, No. 5 , pp. 1085-1155.
- Bebchuk, L. A., Cohen, A., & Ferrell, A. (2004). What Matters in Corporate Governance?. *Harvard Law School John M. Olin Center Discussion Paper No. 491*.
- Bebchuk, L. A., Cohen, A., & Ferrell, A. (February 2009 ). What Matters in Corporate Governance?. *Review of Financial Studies*, Vol. 22, No. 2, 783-827.
- Bebchuk, L. A., & Hirst, S. (2019, December). Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy. *Columbia Law Review*, Vol. 119, pp. 2029-2146.
- Bebchuk, L. A., Cohen, A., & Hirst, S. (2017, Summer). The Agency Problems of Institutional Investors. *Journal of Economic Perspectives*, Vol. 31, pp. 89-102.
- Ben-David, I., Franzoni, F., & Moussawi, R. (2018, September 22). *Do ETFs Increase Volatility?* Retrieved from Wiley Online Library: <https://doi.org/10.1111/jofi.12727>
- Ben\_David, I., Franzoni, F., & Moussawi, R. (2018, December). Do ETFs Increase Volatility? . *The Journal of Finance*, Volume 73, Issue 6, pp. 2471-2535.
- Ben-David, I., Franzoni, F., Moussawi, R., & Sedunov, J. (2016, May). *The Granular Nature of Large Institutional Investors*. Retrieved from National Bureau of Economic Research, NBER Working Paper No. 22247: 10.3386/w22247
- Ben-David, I., Franzoni, F., Moussawi, R., & Sedunov, J. (2021). The Granular Nature of Institutional Investors. *Management Science*, vol 67(11), 6629-6659.
- Bennet, J. A., Sias, R. W., & Starks, L. T. (2003). Greener Pastures and the Impact of Dynamic Institutional Preferences. *The Review of Financial Studies*, Winter 2003 Vol. 16, No. 4, pp. 1203-1238.
- Bhaumik, S. K., & Selarka, E. (2012, September). Does ownership concentration improve M&A outcomes in emerging markets?: Evidence from India. *Journal of Corporate Finance*, Volume 18, Issue 4, pp. 717-726.
- Billet, M., & Qian, Y. (2008, April 25). *Are Overconfident CEOs Born or Made? Evidence of Self-Attribution Bias from Frequent Acquirers*. Retrieved from Management Science, Volume 54, Issue 6: <https://doi.org/10.1287/mnsc.1070.0830>
- BlackRock. (2022). *Benefits of scale economies in U.S. asset management*. Retrieved from BlackRock: <https://www.blackrock.com/corporate/literature/whitepaper/spotlight-benefits-of-scale-economies-in-us-asset-management.pdf>
- Blitz, D., & Hanauer, M. X. (2020). Settling the Size Matter. Retrieved from SSRN: <https://dx.doi.org/10.2139/ssrn.3686583>.
- Blouin, J., Bushee, B. J., & Sikes, S. (2017, January 30). *Measuring Tax-Sensitive Institutional Investor Ownership*. Retrieved from The Wharton Business School, Accounting Department: [https://faculty-wharton-upenn-edu.eur.idm.oclc.org/wp-content/uploads/2016/10/BBS\\_20170130.pdf?\\_ga=2.63795565.315227228.1649356137-1451905566.1638017575](https://faculty-wharton-upenn-edu.eur.idm.oclc.org/wp-content/uploads/2016/10/BBS_20170130.pdf?_ga=2.63795565.315227228.1649356137-1451905566.1638017575)
- Borokhovich, K. A., Brunarski, K., Harman, Y. S., & Parrino, R. (2006, October). Variation in the Monitoring Incentives of Outside Stockholders. *The Journal of Law and Economics*, Volume 49, Number 2.
- Brav, A., Jiang, W., & Kim, H. (2010). Hedge Fund Activism: A Review. *Foundations and Trends in Finance*, Vol. 4, no. 3, 1-66.
- Brav, A., Jiang, W., Partnoy, F., & Thomas, R. (2008, August). Hedge Fund Activism, Corporate Governance, and Firm Performance. *The Journal of Finance*, Vol. 63, No. 4, pp. 1729-1775.
- Brickley, J. A., Lease, R. C., & Smith Jr., C. W. (1988, January–March). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, Volume 20, pp. 267-291.
- Burns, N., Kedia, S., & Lipson, M. (2010, September). Institutional ownership and monitoring: Evidence from financial misreporting. *Journal of Corporate Finance* Volume 16, Issue 4, pp. 443-455.

- Bushee, B. J. (1997). *Institutional investors, long-term investment, and earnings management*. Retrieved from University of Michigan - ProQuest Dissertations Publishing: <https://www.proquest.com/openview/a6e5b138275ca3d4780be5626e3d66a6/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behavior. *Accounting Review* 73, 305–333.
- Bushee, B. J. (2001, Summer). Do Institutional Investors Prefer Near-Term Earnings over Long-Run Value? *Contemporary Accounting Research, Volume 18, Issue 2*, pp. 207-246.
- Bushee, B. J. (2004). Identifying and Attracting the “Right” Investors: Evidence on the Behavior of Institutional Investors. *Journal of Applied Corporate Finance, Vol. 16, Issue 4*.
- Bushee, B. J., & Goodman, T. H. (2007, May ). Which Institutional Investors Trade Based on Private Information About Earnings and Returns? . *Journal of Accounting Research, Volume 45, Issue 2* , pp. 289-321.
- Bushee, B. J., & Noe, C. F. (2000). Corporate Disclosure Practices, Institutional Investors, and Stock Return Volatility. *Journal of Accounting Research Vol. 38, Supplement: Studies on Accounting Information and the Economics of the Firm* , 171-202.
- Bushee, B. J., Carter, M. E., & Gerakos, J. (2014). Institutional Investor Preferences for Corporate Governance Mechanisms. *JOURNAL OF MANAGEMENT ACCOUNTING RESEARCH, Vol. 26, No. 2*, 123-149.
- Cao, C., Liang, B., Yao, T., & Zhang, A. (2020, December 31). *Liquidity Characteristics of Market Anomalies and Institutional Trading*. Retrieved from SSRN: <http://dx.doi.org/10.2139/ssrn.3739219>.
- Chan, K. C., Zhang, F., & Zhang, W. (2013, February 15 ). Analyst coverage and types of institutional investors. *Review of Accounting and Finance, Vol. 12, No. 1*, pp. 60-80.
- Chang, S. (1998, April). Takeovers of Privately Held Targets, Methods of Payment, and Bidder Returns. *The Journal of Finance, Vol. 53, No. 2*, pp. 773-784.
- Chao, Y.-C. (2018, September). Organizational learning and acquirer performance: How do serial acquirers learn from acquisition experience? *Asia Pacific Management Review Volume 23, Issue 3*, pp. 161-168.
- Chen, B., Duong, L., & Truong, T. P. (2018). The Wall Street Rule and Its Impact on Board Monitoring. *9th Conference on Financial Markets and Corporate Governance (FMCG) 2018*. SSRN.
- Chen, X., Harford, J., & Li, K. (2007). Monitoring: Which institutions matter? *Journal of Financial Economics* 86, 279–305.
- Chordia, T., Roll, R., & Subrahmanyam, A. (2001, April). Market Liquidity and Trading Activity. *The Journal of Finance Vol. 56, No. 2*, pp. 501-530.
- Cioli, V., Giannozzi, A., Ippoliti, V., & Roggi, O. (2020). Cross-Border M&A and Financial Performance: Empirical Evidence on Bidder/Target Companies. *International Journal of Business and Management, Vol. 15, No. 4*, 67-86.
- Coval, J., & Stafford, E. (2007, November). Asset fire sales (and purchases) in equity markets. *Journal of Financial Economics, Volume 86, Issue 2*, pp. 479-512.
- Crane, A. D., Michenaud, S., & Weston, J. P. (2016, June). The Effect of Institutional Ownership on Payout Policy: Evidence from Index Thresholds. *The Review of Financial Studies, Volume 29, Issue 6*, pp. 1377–1408.
- De La Cruz, A., Medina, A., & Tang, Y. (2019), “Owners of the World’s Listed Companies”, OECD Capital Market Series, Paris. Available at: <http://www.oecd.org/corporate/Owners-of-the-Worlds-Listed-Companies.htm>.
- Del Guercio, D., & Hawkins, J. (1999, June). The motivation and impact of pension fund activism. *Journal of Financial Economics, Volume 52, Issue 3*, pp. 293-340.
- Demsetz, H., & Lehn, K. (1985, December). The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy Vol. 93, No. 6*, pp. 1155-1177.
- Denis, D. K., McConnell, J. J., Ovtchinniko, A. V., & Yu, Y. (2003, October). Expectations, S&P 500 Index Additions and Earnings. *The Journal of Finance, Vol. 58, No. 5*, pp. 1821-1840.

- Dittmar, A., Li, D., & Nain, A. (2012, October). It Pays to Follow the Leader: Acquiring Targets Picked by Private Equity. *Journal of Financial and Quantitative Analysis*, Volume 47, Issue 5, pp. 901-931.
- Duchin, R., & Schmidt, B. (2013, January). Riding the merger wave: Uncertainty, reduced monitoring, and bad acquisitions. *Journal of Financial Economics* Volume 107, Issue 1, pp. 69-88.
- Duggal, R., & Millar, J. A. (1999, June). Institutional ownership and firm performance: The case of bidder returns Author links open overlay panel. *Journal of Corporate Finance* Volume 5, Issue 2, pp. 103-117.
- Eckstein, A. (2019). *The Virtue of Common Ownership in an Era of Corporate Compliance*. Retrieved from SSRN: <https://dx.doi.org/10.2139/ssrn.3194605>.
- Edmans, A. (2009, December). Blockholder Trading, Market Efficiency, and Managerial Myopia. *The Journal of Finance*, Volume 64, Issue 6, pp. 2481-2513.
- Edmans, A. (2014, December). Blockholders and Corporate Governance. *Annual Review of Financial Economics* Vol. 6, pp. 23-50.
- Edmans, A., & Holderness, C. G. (2017). Blockholders: A Survey of Theory and Evidence. In B. E. Hermalin, & M. S. Weisbach, *The Handbook of the Economics of Corporate Governance*, Volume 1 (pp. 541-636). North-Holland.
- Elyasiani, E., & Jia, J. (2010). Distribution of institutional ownership and corporate firm performance. *Journal of Banking & Finance*, Vol. 34, pp. 606–620.
- Elyasiani, E., & Jia, J. J. (2008, September). Institutional ownership stability and BHC performance. *Journal of Banking & Finance*, Vol 32, Issue 9, pp. 1767-1781.
- Ferreira, M.A., Massa, M., & Matos, P. (2010, February). Shareholders at the Gate? Institutional Investors and Cross-Border Mergers and Acquisitions. *The Review of Financial Studies*, Vol. 23, No. 2, pp. 601-644.
- Fichtner, J., Heemskerk, E., & Garcia-Bernardo, J. (2017). Hidden power of the Big Three? Passive index funds, re-concentration of corporate ownership, and new financial risk. *Business and Politics*, 19(2), pp. 298-326.
- Fiol, C. M., & Lyles, M. A. (1985). Organizational learning. *The Academy of Management Review*, 10(4), pp. 803–813.
- Fisch, J. E. (1994). Relationship Investing: Will It Happen? Will It Work? *Ohio State Law Journal*, Volume 55, Number 5, pp. 1009-1048.
- Friedman, M. (1962). *Capitalism and Freedom*. Chicago: University of Chicago Press.
- Froot, K., & Teo, M. (2008, December). Style Investing and Institutional Investors. *Journal of Financial and Quantitative Analysis*, Volume 43, Issue 4, pp. 883-906.
- Fuller, K., Netter, J., & Stegemoller, M. (2002, August). What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions. *The Journal of Finance*, Vol. 57, No. 4, pp. 1763-1793.
- Gao, X., & Wang, Y.-C. (2019). Do Institutional Investors Exploit Market Anomalies? New Evidence from Alternative Mutual Funds. Orlando, FL.: Southern Finance Association Annual Meeting.
- Gaspar, J., Massa, M., & Matos, P. (2005). Shareholder investment horizons and the market for corporate control. *Journal of Financial Economics* 76, 135–165.
- Gompers, P. A., & Metrick, A. (2001, February). Institutional Investors and Equity Prices. *The Quarterly Journal of Economics*, 116(1), pp. 229-259.
- Gompers, P. A., Ishii, J. L., & Metrick, A. (2003). Corporate Governance and Equity Prices. *Quarterly Journal of Economics*, Vol. 118, No. 1, pp. 107-155.
- Goranova, M., Dharwadkar, R., & Brandes, P. (2010, October). Owners on both sides of the deal: mergers and acquisitions and overlapping institutional ownership. *Strategic Management Journal*, Volume 31, Issue 10, pp. 1114-1135.
- Gorbenko, A. S., & Malenko, A. (2014, December). Strategic and Financial Bidders in Takeover Auctions. *The Journal of Finance* Vol. 69, No. 6, pp. 2513-2555. Retrieved from SSRN: <https://ssrn.com/abstract=1559481>.
- Gort, M. (1969, November). An Economic Disturbance Theory of Mergers. *The Quarterly Journal of Economics* Vol. 83, No. 4, pp. 624-642.

- Grinstein, Y., & Michaely, R. (2005). Institutional Holdings and Payout Policy. *The Journal of Finance* Vol. 60, No. 3, pp. 1389-1426.
- Haas, B. (2014). *ATKearney*. Retrieved from Build your M&A muscle: why serial acquirers win at value creation: <https://www.kearney.com/mergers-acquisitions/article?/a/build-your-m-a-muscle-why-serial-acquirers-win-at-value-creation>
- Haleblian, J., & Finkelstein, S. (1999). The Influence of Organizational Acquisition Experience on Acquisition Performance: A Behavioral Learning Perspective. *Administrative Science Quarterly*.
- Hadlock, C. J., & Schwartz-Ziv, M. (2019, November). Blockholder Heterogeneity, Multiple Blocks, and the Dance between Blockholders. *The Review of Financial Studies*, Volume 32, Issue 11, pp. 4196–4227.
- Hansell, G., Walker, D., & Kengelbach, J. (2014, October 1). *Lessons from successful serial acquirers: Unlocking acquisitive growth*. Retrieved from Boston Consulting Group: [https://www.bcgperspectives.com/content/articles/mergers\\_acquisitions\\_unlocking\\_acquisitive\\_growth/](https://www.bcgperspectives.com/content/articles/mergers_acquisitions_unlocking_acquisitive_growth/)
- Harford, J. (1999, December). Corporate Cash Reserves and Acquisitions. *The Journal of Finance*, Volume 54, Issue 6, pp. 1969-1997.
- Harford, J. (2005, September). What drives merger waves? *Journal of Financial Economics*, Volume 77, Issue 3, pp. 529-560.
- Hartzell, J., & Starks, L. T. (2003). Institutional investors and executive compensation. *Journal of Finance* 58, 2351–2374.
- Hayward, M. (2002, January 21-39). When do firms learn from their acquisition experience? Evidence from 1990 to 1995. *Strategic Management Journal*.
- Heath, D., Macciocchi, D., Michaely, R., & Ringgenberg, M. C. (2022, January). Do Index Funds Monitor? *The Review of Financial Studies*, Volume 35, Issue 1, pp. 91–131.
- Heath, D., Macciocchi, D., Michaely, R., & Ringgenberg, M. C. (2019). Passive Investors are Passive Monitors. *European Corporate Governance Institute – Finance Working Paper No. 638/2019*.
- Holderness, C. (2009, April). The Myth of Diffuse Ownership in the United States. *The Review of Financial Studies*, Volume 22, Issue 4, pp. 1377–1408.
- Hoskisson, R. E., Hitt, M. A., Johnson, R. A., & Grossman, W. (2002, August). Conflicting Voices: The Effects of Institutional Ownership Heterogeneity and Internal Governance on Corporate Innovation Strategies. *The Academy of Management Journal*, Vol. 45, No. 4, pp. 697-716.
- Hossain, M., Pham, M. D., & Islam, N. (2021, October 2021). The performance and motivation of serial acquisitions: Evidence from Australia. *International Review of Financial Analysis* Volume 77.
- International Monetary Fund (IMF). Monetary and Capital Markets Department. (2004). *Global Financial Stability Report*. International Monetary Fund.
- Jain, P. C. (1987). The Effect on Stock Price of Inclusion in or Exclusion from the S&P 500. *Financial Analysts Journal*, Vol. 43, Issue 1, 58-65.
- Jensen, M. (1986, May). Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review* Vol. 76, No. 2, *Papers and Proceedings of the Ninety-Eighth Annual Meeting of the American Economic Association*, pp. 323-329.
- Jensen, M. C., & Meckling, W. H. (1976, October). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, Vol. 3, No. 4, pp. 305-360.
- Jensen, M. G. (1988, Winter). Takeovers: Their Causes and Consequences. *Journal of Economic Perspectives — Volume 2, Number 1*, pp. 21–48.
- Jovanovic, B., & Rousseau, P. L. (2002, January). *The Q-Theory of Mergers*. Retrieved from National Bureau of Economic Research: <https://www.nber.org/papers/w8740>
- Kahle, K. M., & Stulz, R. M. (2017, Summer). Is the US Public Corporation in Trouble? *Journal of Economic Perspectives*, Volume 31, Number 3, pp. 67–88.
- Kahn, C., & Winton, A. (1998, February). Ownership Structure, Speculation, and Shareholder Intervention. *The Journal of Finance*, 53.

- Kang, J.-K., Luo, J., & Na, H. S. (2018, March). Are Institutional Investors with Multiple Blockholdings Effective Monitors? *Journal of Financial Economics (JFE)*, Forthcoming, AFA 2013 San Diego Meetings Paper, Asian Finance Association (AsianFA) 2017 Conference.
- Kengelbach, J., Klemmer, D. C., Schwetzler, B., & Sperling, M. O. (2012). An anatomy of serial acquirers, M&A learning, and the role of post-merger integration. SSRN.
- Kengelbach, J., Klemmer, D. C., Schwetzler, B., Sperling, M. O., & Roos, A. (2011, April). *Does Practice Make Perfect?: How the Top Serial Acquirers Create Value*. Retrieved from Boston Consulting Group & HHL Leipzig Graduate School of Management: <https://www.blconsulting.org/public/uploads/files/serial%20acquirers.pdf>.
- Kim, Kyonghee (2010, December). Blockholder monitoring and the efficiency of pay-performance benchmarking. *Journal of Corporate Finance*, Volume 16, Issue 5, pp. 748-766.
- King, D. R., Wang, G., Samimi, M., & Cortes, A. F. (2021, July). A Meta-Analytic Integration of Acquisition Performance Prediction. *Journal of Management Studies*, Vol. 58, No. 5, pp. 1198-1236.
- Klasa, S., & Stegemoller, M. (2007, Summer). Takeover Activity as a Response to Time-Varying Changes in Investment Opportunity Sets: Evidence from Takeover Sequences. *Financial Management* Vol. 36, No. 2, pp. 19-43.
- Laamanen, T., & Keil, T. (2008). Performance of serial acquirers: Toward an acquisition program perspective. *Strategic Management Journal*, Vol. 29, No. 6, pp. 663-672.
- Lakonishok, J., Shleifer, A., & Vishny, R. W. (1994, December). Contrarian Investment, Extrapolation, and Risk. *The Journal of Finance*, Volume 49, Issue 5, pp. 1541-1578.
- Levitt, B., & March, J. G. (1988, August). Organizational Learning. *Annual Review of Sociology*, Vol. 14, pp. 319-338.
- Li, J., Li, P., & Wang, B. (2016, April). Do cross-border acquisitions create value? Evidence from overseas acquisitions by Chinese firms. *International Business Review* Volume 25, Issue 2, pp. 471-483.
- Li, X. (2013, July). Journal of Financial Economics Productivity, restructuring, and the gains from takeovers. *Journal of Financial Economics* Volume 109, Issue 1, pp. 250-271.
- Lo, H.-C., Wu, R.-S., & Kweh, Q. L. (2017, July). Do institutional investors reinforce or reduce agency problems? Earnings management and the post-IPO performance. *International Review of Financial Analysis*, Volume 52, pp. 62-76.
- Lou, D. (2012, December). A Flow-Based Explanation for Return Predictability. *The Review of Financial Studies*, Volume 25, Issue 12, pp. 3457-3489.
- Loughran, T., & Vijh, A. M. (1997, December). Do Long-Term Shareholders Benefit From Corporate Acquisitions?. *The Journal of Finance*, Volume 52, Issue 5, pp. 1765-1790.
- Lys, T. Z., & Yehuda, N. (2013, March). Are Private Targets Better Buys? *Unpublished paper*. Kellogg School of Management, Northwestern University.
- Ma, L. (2020). The effect of institutional ownership on M&A performance: evidence from China. *Applied Economics Letters*, Vol. 27, Issue 2.
- Macias, A. J., Rau, R. P., & Stouraitis, A. (2016, July 16). *Can Serial Acquirers Be Profiled?* Retrieved from SSRN: <https://dx.doi.org/10.2139/ssrn.2667649>
- Maksimovic, V., & Phillips, G. (2001, December). The Market for Corporate Assets: Who Engages in Mergers and Asset Sales and Are There Efficiency Gains? *The Journal of Finance*, Volume 56, Issue 6, pp. 2019-2065.
- Maksimovic, V., & Phillips, G. (2002, April). Do Conglomerate Firms Allocate Resources Inefficiently Across Industries? Theory and Evidence. *The Journal of Finance*, Volume 57, Issue 2, pp. 721-767.
- Malmendier, U., & Tate, G. (2008, July). Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics*, Volume 89, Issue 1, pp. 20-43.
- Martos-Vila, M., Rhodes-Kropf, M., & Harford, J. (2013, March). *Financial vs. Strategic Buyers*. AFA 2012 Chicago Meetings Paper. Retrieved from SSRN: <http://dx.doi.org/10.2139/ssrn.1725031>
- Martynova, M., & Renneboog, L. (2008, October). A century of corporate takeovers: What have we learned and where do we stand? *Journal of Banking & Finance*, Volume 32, Issue 10, pp. 2148-2177.

- Masulis, R. W., Wang, C., & Xie, F. (2007, August). Corporate Governance and Acquirer Returns. *The Journal of Finance, Volume 62, Issue 4*, pp. 1851-1889 .
- Maug, E. (1998, February). Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control? *The Journal of Finance Vol. 53, No. 1*, pp. 65-98.
- Michel, A., Oded, J., & Shaked, I. (2020, January). Institutional investors and firm performance: Evidence from IPOs. *The North American Journal of Economics and Finance, Volume 51*, pp. 2-19.
- Mitchell, M. L., & Mulherin, H. J. (1996, June). The impact of industry shocks on takeover and restructuring activity. *Journal of Financial Economics, Volume 41, Issue 2*, pp. 193-229.
- Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004, August). Firm size and the gains from acquisitions. *Journal of Financial Economics, Volume 73, Issue 2*, pp. 201-228.
- Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2005, April). Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave. *The Journal of Finance Vol. 60, No. 2* , pp. 757-782.
- Morillon, T. G. (2021, August). Serial acquirers and decreasing returns: Do bidders' acquisition patterns matter? *The Financial Review, Volume 56, Issue 3*, pp. 407-432.
- Netter, J., Stagemoller, M., & Wintoki, B. M. (2011, July). Implications of data screens on merger and acquisition analysis: a large sample of mergers and acquisitions from 1992 to 2009. *The Review of Financial Studies , July 2011, Vol. 24, No. 7*, pp. 2316-2357.
- Nguyen, T., & Li, H. (2020). Dividend Policy and Institutional Holdings: Evidence from Australia. *International Journal of Financial Studies*.
- O'Brien, P. C., & Bhushan, R. (1990). Analyst Following and Institutional Ownership. *Journal of Accounting Research Vol. 28, Studies on Judgment Issues in Accounting and Auditing*, 55-76.
- Ooghe, H., De Langhe, T., & Camerlynck, J. (2006). Profile of multiple versus single acquirers and their targets: a research note. *Applied Economics Volume 38, Issue 7*, pp. 725-733.
- Park, S., & Song, M. H. (1995, Winter). Employee Stock Ownership Plans, Firm Performance, and Monitoring by outside Blockholders. *Financial Management Vol. 24, No. 4*, pp. 52-65.
- Park, Yun W., Selvili, Zekiye, Song, Moon H. (2008, October). *International Review of Economics & Finance, Volume 17, Issue 4*, pp. 529-545.
- Parrino, Robert, Sias, Richard W., Starks, Laura T. (2003, April). Voting with their feet: institutional ownership changes around forced CEO turnover. *Journal of Financial Economics, Vol. 68, Issue 1*, pp. 3-46.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. Oxford: Basil Blackwell.
- Phillips, G. M., & Zhdanov, A. (2012, August). *R&D and the Incentives from Merger and Acquisition Activity*. Retrieved from NBER: <https://www.nber.org/papers/w18346>.
- Pound, J. (1988, January–March). Proxy contests and the efficiency of shareholder oversight. *Journal of Financial Economics, Vol. 20*, pp. 237-265.
- Qiu, L. X. (2008, April 1). *Selection or Influence? Institutional Investors and Corporate Acquisitions*. Retrieved from SSRN: <https://dx.doi.org/10.2139/ssrn.1364751>.
- Rhodes-Kropf, M., & Viswanathan, S. (2004, December). Market Valuation and Merger Waves. *The Journal of Finance, Vol. 59, No. 6*, pp. 2685-2718.
- Roll, R. (1986, April ). The Hubris Hypothesis of Corporate Takeovers. *The Journal of Business Vol. 59, No. 2, Part 1* , pp. 197-216.
- Rose, N. L., & Shepard, A. (1997, Autumn). Firm Diversification and CEO Compensation: Managerial Ability or Executive Entrenchment? *The RAND Journal of Economics Vol. 28, No. 3*, pp. 489-514.
- Ryan, L. V., & Schneider, M. (2002, October). The Antecedents of Institutional Investor Activism. *The Academy of Management Review Vol. 27, No. 4*, pp. 554-573.
- Ruback, R. S., & Jensen, M. C. (1983). The Market for Corporate Control: The Scientific Evidence. *Journal of Financial Economics, Vol. 11*, 5-50.
- Rubin, A., & Smith, D. R. (January 2008). Institutional Ownership, Volatility and Dividends. *AFA 2008 New Orleans Meetings Paper*.

- Schnatterly, K., & Johnson, S. G. (2014, October). Independent boards and the institutional investors that prefer them: Drivers of institutional investor heterogeneity in governance preferences. *Strategic Management Journal, Volume 35, Issue 10*, pp. 1552-1563.
- Servaes, H. (1991, Mar). Tobin's Q and the Gains from Takeovers. *The Journal of Finance Vol. 46, No. 1*, pp. 409-419.
- Sheifler, A. (1986, July). Do Demand Curves for Stocks Slope Down? *The Journal of Finance Vol. 41, No. 3*, pp. 579-590.
- Sheifler, A., & Vishny, R. W. (1997, June). A Survey of Corporate Governance. *The Journal of Finance, Vol. 52, No. 2*, pp. 737-775.
- Shleifer, A., & Vishny, R. W. (1988, Winter). Value Maximization and the Acquisition Process. *Journal of Economic Perspectives, Vol. 2, No. 1*, pp. 7-20.
- Shleifer, A., & Vishny, R. W. (2001, October 4). *Stock Market Driven Acquisitions*. Retrieved from SSRN: <https://dx.doi.org/10.2139/ssrn.278563>
- Shleifer, A., & Vishny, R. W. (2003, December). Stock market driven acquisitions. *Journal of Financial Economics, Volume 70, Issue 3*, pp. 295-311.
- Sherman, H., Beldona, S., & Joshi, M. (1998, July). Institutional Investor Heterogeneity: Implications for Strategic Decisions. *Corporate Governance: an International Review, Volume 6, Issue 3*, pp. 166-173.
- Shin, J. Y., & Seo, J. (2011). Less Pay and More Sensitivity? Institutional Investor Heterogeneity and CEO Pay. *Journal of Management, Vol. 37, No. 6*, 1719-1746.
- Smith, M. P. (1996, March). Shareholder Activism by Institutional Investors: Evidence from CalPERS. *The Journal of Finance, Vol. 51, Issue 1*, pp. 227-252.
- Straska, M., & Waller, G. H. (2014, August). Antitakeover Provisions and Shareholder Wealth: A Survey of the Literature. *The Journal of Financial and Quantitative Analysis, Vol. 49, No. 4*, pp. 933-956.
- Tao, F., Liu, X., Gao, L., & Xia, E. (2017, February). Do cross-border mergers and acquisitions increase short-term market performance? The case of Chinese firms. *International Business Review Volume 26, Issue 1*, pp. 189-202.
- Thinking Ahead Institute. (2021, November). *The Asset Owner 100 2021*. Retrieved from Thinking Ahead Institute: <https://www.thinkingaheadinstitute.org/research-papers/the-asset-owner-100-2021/>
- Thinking Ahead Institute. (2021, October). *The world's largest asset managers – 2021*. Retrieved from Thinking Ahead Institute: <https://www.thinkingaheadinstitute.org/research-papers/the-worlds-largest-asset-managers-2021/>
- Vayanos, D., & Woolley, P. (2013, May). An Institutional Theory of Momentum and Reversal. *The Review of Financial Studies, Volume 26, Issue 5*, pp. 1087–1145.
- White, H. (1980, May). A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica Vol. 48, No. 4*, pp. 817-838.
- Woidtke, T. (2002). Agents watching agents?: evidence from pension fund ownership and firm value. *Journal of Financial Economics, Vol. 63*, 99-131.
- Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge: The MIT Press.
- Yin, C., Ward, C., & Tzolacos, S. (2018, November). Motivated monitoring: The importance of the institutional investment horizon. *International Review of Financial Analysis, Volume 60*, pp. 197-212.
- Zeckhauser, R. J., & Pound, J. (1990, January 149-180). *Are Large Shareholders Effective Monitors? An Investigation of Share Ownership and Corporate Performance*. Retrieved from NBER: <https://www.nber.org/books-and-chapters/asymmetric-information-corporate-finance-and-investment/are-large-shareholders-effective-monitors-investigation-share-ownership-and-corporate-performance>.

Zhong, Ke, Gribbin, Donald W., & Zheng, Xiaofan (Winter, 2007). The Effect of Monitoring by outside Blockholders on Earnings Management. *Quarterly Journal of Business and Economics*, Vol. 46, No. 1, pp. 37-60.



## APPENDIX A

### Control Variables Description:

VARIABLE	DESCRIPTION
CAR (-3; 3)	Cumulative Abnormal Returns computed as the difference between the arithmetic sum of the returns of the firm's security and that of the CRSP Value-Weighted Index. The expected returns are computed over the window from 200 to 60 days prior to date of announcement. The abnormal returns are computed over the event window from 3 (5) days prior to the announcement date to 3 (5) days following that date.
CAR (-5; 5)	
DEAL_COUNT	The number of deals announced during the acquisition sequence. The sequence includes all deals announced within the 3 years preceding the announcement of the deal. The variable are estimated by the author using data from Thomson One M&A.
INFL_ADJ DEAL VALUE	The value of the deal as reported from Thomson One M&A; it is adjusted at constant 2011 US Dollars using the CPI index. The index data are sourced from the U.S. Bureau of Labor Statistics.
ASSETS (T-1)	The value of the total assets of the firm measured at the end of the year prior to the announcement of the deal. The data are sourced from Compustat North America using the WRDS online platform. Variable name: "AT".
DEAL VALUE TO ASSETS (T-1)	The ratio of deal value to the amount of total assets is expressed in percentage terms. The data are sourced from Thomson One M&A and Compustat North America.
CAPITAL EXPENDITURES	Capital Expenditure represents the additional investments in fixed assets and related expenses incurred by the firm in the year of the announcement. The data are sourced from Compustat North America using the WRDS online platform. Variable name: "CAPX".
R&D INTENSITY	It represents the relative percentage of Research & Development expenses incurred by the firm, over the size of its total assets. It is computed as $\frac{XRD}{AT}$ where "XRD" is R&D expenses and "AT" are the total assets of the firm for the year prior to the announcement of the deal. The data are sourced from Compustat North America using the WRDS online platform.
SALES GROWTH	It is computed as the ratio of net sales (revenues) in the year prior to the deal announcement date and the current figure. The data are sourced from the Compustat North America database using the WRDS online platform. Variable name "SALE".
ROA	Return on Assets is computed as the ratio of Net Income to Total Assets in the year prior to the announcement of the deal, $\frac{NI}{AT}$ , where "NI" is Net Income while "AT" is total assets. The data are sourced from Compustat North

	America using the WRDS online platform.
LEVERAGE	This measure of leverage follows that of Kengelbach et al. (2012). The computations follow the formula: $\frac{DLTT + DLC}{SEQ}$ , where DLTT is the firm's Total Long-Term Debt, DLC is the debt in current liabilities, and SEQ is the Total Shareholders' (Stockholders) Equity. The data are sourced from Compustat North America using the WRDS online platform.
TOBIN'S Q	Tobin's Q is originally the ratio of the company's market value of assets to its net replacement costs. Due to the difficulty of computing net replacement cost of assets, this thesis uses the book value of assets as its proxy. It is computed as follows: $\frac{AT+(CSHO*PRCCF)-CEQ}{AT}$ . The data are sourced from Compustat North America using the WRDS online platform.
CASH & EQUIVALENTS	It is the sum of a firm's holdings in cash and short-term equivalents. The data are sourced from Compustat North America using the WRDS online platform. Variable name "CHE".
TARGET PUBLIC STATUS	A dummy (binomial) variable which indicates whether the target company is listed or held privately. Data are sourced from the Thomson One M&A database. It equals 1 if the target company is public, and 0 otherwise
CASH DEAL	A dummy (binomial) variable which indicates whether the deal is entirely financed by cash. Data are sourced from the Thomson One M&A database. It equals 1 if the deal method of payment is 100% cash, and 0 otherwise
EQUITY DEAL	A dummy (binomial) variable which indicates whether the deal is at least partially financed with stock. Data are sourced from the Thomson One M&A database. It equals 1 if the deal is financed with stock, and 0 otherwise
CROSSBORDER	A dummy (binomial) variable which indicates whether the target company is headquartered in the same country as the acquirer. Data are sourced from the Thomson One M&A database. It equals 1 if they are based in the same country, and 0 otherwise.
HORIZONTAL DEAL	A dummy (binomial) variable which indicates whether the acquirer and target are active in the same industry. Data are sourced from the Thomson One M&A database. It equals 1 if they have the same primary 2-digit SIC code, and 0 otherwise.
FINANCIAL ACQUIROR	A dummy (binomial) variable which indicates whether the acquirer is a financial firm. Data are sourced from the Thomson One M&A database. It equals 1 if they acquiror's primary 2-digit SIC code is the 60 to 69 range, and 0 otherwise.