Does learning offset hubris in serial acquisitions? International Evidence

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Abstract

How do serial mergers affect the Cumulative Abnormal Return (CAR) of the acquiring firms? Although the topic is particularly popular, no consensus has been reached due to contradictory evidence. If management hubris really can explain the declining CAR, how could this be consistent with learning effect through serial acquisitions? Our results reconcile the two competing explanations and indicate that both the quantitative and temporal dimensions of the measure of merger frequency need to carefully considered.

With a comprehensive sample of over 14,000 acquisitions announced and completed internationally from 1st January, 2000 to 31st December, 2010, our results suggest that frequent acquisitions within four-year span have significant negative impact on the firm performance five days around announcement date; while with a measure as the cumulative number of the acquisitions across the whole sample period, the impact is insignificant. The results support the management hubris explanation to the negative CAR. However our results also indicate that it takes time for the acquiring firms to digest and learn from the past experience, the benefit of the learning effect will offset the negative impact caused by the management hubris in the long run.

Our analysis is robust to that of the subsamples of OECD countries, developed countries, US companies and EU countries, indicating that frequent acquisition within a relatively short to medium interval is perceived negatively by the market regardless of the differences in culture, anti-trust law, investor protection, competition of the mergers and acquisition markets.

1. Introduction

With the emerge of globalisation and competition, merger and acquisition activities have been extensively observed as corporate strategies to create value for their shareholders. The study of the performance of the acquisition has become particularly attractive for both researchers and practitioners. With the complex context of the acquisition, despite the merger wave was predominant by multiple acquirers, few studies have investigated the performance of serial acquirers.

Recent empirical studies found that the high frequent serial acquisitions are negatively related to the performance (e.g., Kusewitt, 1985; Fuller et al.,2002;Ismail, 2008; Billett and Qian, 2008; Aktas et al,. 2009, etc.). Most of the studies attribute the declining cumulative abnormal return (CAR) or insignificant CAR around the announcement date to growing hubris (which is defined by Roll (1986) as the over-confidence in the evaluation of the target firms) across the deal sequence. As a result, a significant negative CAR around the announcement date should be observed. More researches further argue that the managerial overconfidence stems from self-attribution bias (see for example, Doukas and Petmezas, 2007; Billett and Qian, 2008).

While concurrently a growing stream of literature finds positive relationship between the serial acquisitions and the firm performance, implying that market believes that the acquirers have the potential to learn from the past experience (Hayward, 2002; Harding and Rovit, 2004 and Aktas et al., 2009). Rovit et al, (2003) argue that successful frequent acquirers often start with small, low-risk deals, create a feedback loop and learn from mistakes.

The conflict evidences as well as the explanations lead to potential further study. If the managerial hubris does attribute to the declining CAR, do acquirers learn at the same time? The answer to the question has important practical implication. However, interestingly there is very limited literature, to our best knowledge, investigates the acquisition performance with both perspectives. Aktas et al., (2009) argue that the impact of learning and hubris on the time between successive deals should be able to be derived, which suggest that the time between successive deals needs to be considered when studies are conducted.

With two measures of the merger frequency which interact with both the number of acquisitions and the temporal interval, this paper makes significant contribution to the existent literature that the results could provide explanation to the conflicting results in the existent studies with both the theories of the managerial hubris and the managers learning curve explanations. Our empirical results indicate that the frequent acquisitions within recent four years have significant negative relationship with the announcement performance; however when the repetitive acquisitions are spread across a long temporal interval, the negative impact on the stock performance is insignificantly. The results help to reconcile the conflicting results related to the theory explanations, implying that due to the managerial hubris, the CAR around the announcement date would be negatively affected. However when the serial acquisitions take place within a long time spam, the market would expect the managers to learn and digest from past experience, hence the market reaction to the announcement of the acquisition positively. The positive impact of the learning effect will offset the negative impact caused by the management hubris.

In this paper, we contribute to an improved understanding how the market perceive the patterns of serial acquisitions. We test the explanations with a comprehensive sample of more than over 14,000 takeover transactions by 6,800 unique firms throughout 117 countries. The results suggest that market reacts negatively to frequent serial acquisitions within short to medium temporal interval due to the suspicion of potential managerial hubris. Nevertheless the market reacts positively to the serial acquisitions within long temporal interval with the hope that managers learn from the past experience. Our findings contribute to the emerging research on acquisition performance and provide an extended explanation to the existent conflicting empirical results. At the same time, our results will have practical implication to practitioners as a thought while mergers and acquisitions take place.

2. Related Literature

2.1. Related Theory

Consider an acquiring firm starts acquisitions without any bias, and gradually management hubris develops from previous acquisition experience. When the firm undertakes the first acquisition it will not overpay because the value of the first acquisition and the expectation of the value created are not biased by hubris. Once managerial hubris is developed, the expectation of the firm about the benefit from subsequent takeovers becomes over optimistic and biased from the real outcomes. However, when the acquiring firm learns from past merger experience about its true ability, the impact of hubris may be levelled off and eventually decline with additional experience.

With the growing literature providing contradictory empirical results, two theories are developed from opposite ends of a spectrum. At one end is managerial hubris hypothesis of acquisitions driven by managerial optimistic behaviour in corporate decisions. While at the other end is organizational learning hypothesis that drives better outcomes for current acquisition than the prior ones, since firms accumulate experience on acquisition which can enhance management's acquisition expertise (Kusewitt, 1985; Fowler and Schmidt, 1989; Bruton et al. 1994; Barkema et al. 1996; Ashkenas et al., 1998; Hitt et al., 1998).

The well-accepted explanation for the declining CARs of the serial acquisitions is due to the managerial hubris, which, by original definition, is referred to the tendency to be overconfident in the merger planning (Roll, 1986). According to this theory, if the acquisitive decisions develop hubris, it is expected that the management of the acquiring firm will tend to make frequent acquisitions that exceed their acquisitive capability, and therefore has negative impact on the stock performance around the announcement date. It is also expected that the bias would be more serious as acquirers are more aggressive in acquisition during a relatively shorter time period.

However according to the organisational learning explanation, with cumulated experience of acquisitions, managers can enhance the related acquisition expertise, therefore the more recent acquisition/should end up with more profitable outcome than the prior ones. This theory is widely discussed by scholars, especially since

Argyris and Schon (1978). Organizational learning theory emphasizes the role of prior acquisition experience in determining the positive outcomes of serial acquisitions. However, Hayward (2001) argues that learning does not necessarily benefit acquirers if there is a very short temporal interval between two acquisitions since acquirers may be unable to learn so meaningfully in such a short time period. From this point of view, an acquirer is more likely to generate better inferences suited for subsequent acquisitions from prior experience as such experience can take root more successfully in a relatively longer time period.

To sum up, it is expected that it may not be suitable for firms to make frequent acquisitions in the short term since investors perceive negatively to high frequent acquisitions due to the awareness of the potential of management hubris. However serial mergers in the long-run may result in improvements in the effect of learning, which will therefore offset the negative effect caused by management hubris.

2.2. Empirical research about merger frequency

Since Jensen and Ruback (1983) finds a significant negative relationship between the acquisition frequency and the announcement date performance, a wide range of literature provides supporting evidence both in the U.S, (Kusewitt, 1985; Laamanen and Keil, 2008; Billett and Qian, 2008, etc.) and international wide (e.g. Conn et al., 2005). Kusewitt (1985) is the first research that raises the issue of the relationship between merger frequency and the stock performance. Kusewitt (1985) finds that the merger frequency is negatively related to the performance of acquiring firms. Conn et al. (2005) further examined the difference in merger performance among three frequencies: one acquisition, two to three acquisitions, and more than three acquisitions with a sample of 4,344 UK acquisitions during the period from 1984 to 1998. In the multivariate analysis, Conn et al. (2005) define a dummy variable to present multiple acquirers and find that both the dummy and the number of acquisitions are significantly negative in relation to the announcement returns after announcement. Laamanen and Keil (2008) use an acquisition rate[1] in order to capture

[1] Acquisition rate is calculated as the average number of acquisitions over three years

the effect of the temporal interval between acquisitions. They find that the time of two acquisitions will affect the stock performance, and the acquisition rate is negatively related to acquirer performance.

Meanwhile some researches explore more in depth about the cause of the management hubris. Empirical evidence indicates that the heuristic bias, more specifically the self-attribution bias makes the managers overconfident, leading to management hubris. Using two alternative measures of overconfidence, Doukas and Petmezas, (2007) find overconfident bidders realise lower announcement returns and exhibit poor long-term performance. They argue that managers tend to credit the initial success to their own ability and therefore become overconfident and engage in more deals; Billett and Qian, (2008) explore the managerial self-attribution bias in mergers and acquisitions by looking at the sequence of deals made by individual CEOs. They argue that if CEOs develop management hubris through acquisition experience, the pattern will exhibit three patterns: the first deal should have non-negative wealth effect followed by subsequent negative return; the successful acquirers will have the tendency to engage in more transactions and overconfident experienced acquirers will exhibit greater optimism regarding the firm prospects. And they find supporting evidence for all three conjectures.

While concurrently, a stream of empirical literature find exactly opposite evidence, supporting the organisational learning theory. Fowler and Schmidt, (1989) find that, on the average, post-acquisition financial performance in the long run improved significantly for organizations that had previous acquisition experience, acquired a higher percentage of a target, or were older. More research find that the more the merger experience, the better the performance of acquiring firms (e.g. Lubatkin, 1983; Hitt et al., 1993). More specifically, Haleblian and Finkelstein (1999) find that the acquiring firms with multiple acquisitions in the same industry outperform others. Their findings suggest that acquisition experiences are important for the performance of the new integration.

With the growth of the study in Merger and Acquisition area, further literature shows that the relationship between merger frequency and stock performance is not pure linear. Haleblian and Finkelstein (1999) argue that the Managerial Learning Theory has a wider variety of conditions than the Learning-curve Theory. The authors focus on the influence of organizational acquisition experience [2] on returns to investors in the time span of the merger announcement. Their evidence shows a U-shaped relationship between the acquisition experience and cumulative abnormal returns. A negative relationship when a firm's current acquisition is dissimilar to its prior acquisitions and the relationship can become positive if the focal acquisition is similar to prior ones. Hayward (2002)[3] investigate the impact of the merger frequency from the perspective of temporal interval. He introduced two measures in temporal perspective: the average temporal interval between deals and the temporal interval between focal acquisition and prior acquisition. The results suggest that acquiring firms with a higher merger frequency perform worse than those with a lower merger frequency in terms of the stock return. It is also evident that there is an inverted U-shaped relationship between the similarity of prior acquisition and the performance of the focal acquisition. The moderately temporal intervals between acquisitions could benefit the performance of acquiring firms. He argues that it may be because a very short interval between acquisitions may not allow enough time for the acquirers to digest prior experiences; and a very long interval means that the prior experiences may become unavailable, inaccessible, irrelevant or forgotten (Argote et al., 1990; Huber, 1991; Chang, 1998).

With the ongoing growing trend of merger and acquisition national and international wide, it is vitally important to understand why firms still undertake the acquisitions with the negative impact of the serial acquisition on the performance of acquiring firms. How to explain the contradictory evidences so far? Surprisingly very

[2] The acquisition experience is defined as the total number of acquisitions that sample acquiring firms made from 1948 up to the acquisition of interest.

[3] Hayward (2002) focused his research on firms' learning from the acquisition experience by using a sample of 214 US acquisitions during the period between 1990 and 1995. The study measures the acquisition experience as the sum of recent acquisitions that conduct by acquiring firms, which is similar to Haleblian and Finkelstein (1999).

few studies have considered to combine or examine the measure of merger frequency in both quantitative and temporal perspective at the same time. Our paper contributes to the existent literature as with two measures which takes into account both quantitative and temporal perspective, we find the co-existence of management hubris and learning effect. However as Hayward (2002) argued the market believes that a reasonable time is needed for the acquiring firm to digest and learn for past experience.

3. Data and Methodology

3.1. Data

The acquisition data used for this study is collected from Global Mergers & Acquisitions database by Securities Data Corporation (SDC). This database is a comprehensive database consisting over 1.9 million transactions by wither public or private acquirers since 1992. As our research aims to investigate the acquisitions where there is significant change of ownership from the target to the bidders, only the transactions with an explicit transfer of control are included[4]. All the deals announced and completed from 1st January, 2000 to 31st December, 2010 have been primarily included. We then narrow down our samples when takeover deals match the following criteria. The transaction value of the deal must exceed one million dollars. The acquisitions must be completed and have data for both announcement date, effective date[5] and disclosed dollar deal value. The time between the announcement date and the effective date must be between zero and 1,000 days. Acquirer firm is a public firm[6] while target firm has to be a public firm, a private firm or a subsidiary. Payment method classified by SDC of a deal falls into one of the four categories: cash only, stock only, combination of cash and stock and others[7] . Neither the target nor the

[4] "The explicit transfer of control" is defined as a case when the acquirer own none or less than 50% of the target's voting shares prior to the merger announcement while after the merger the acquirer must own at least 50% of the ownership.

[5] "Effective date" is defined as a date when the entire transaction is completed and effective by SDC dataset.

[6]Due to the availability of financial data for privately owned acquiring firms, the sample is restricted to public acquirers.

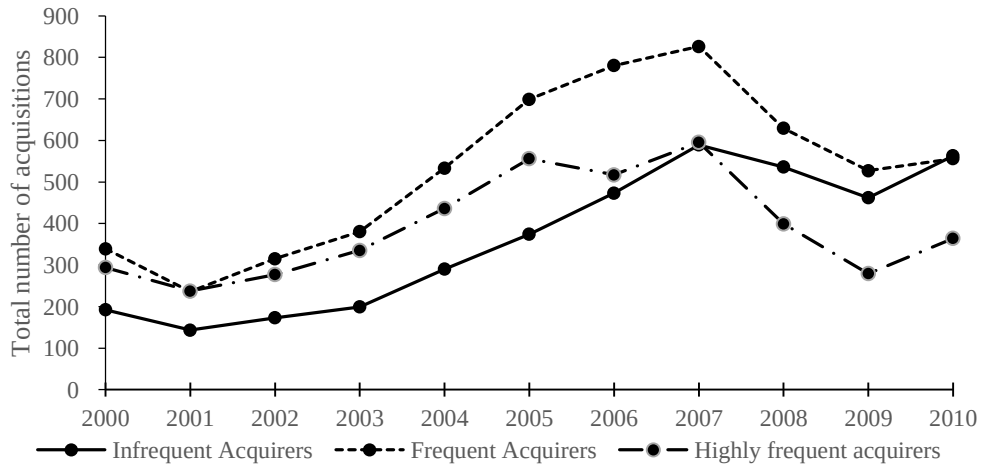
[7]The “Other” category describes a mixture of payment methods including cash, bonds, preferred stock, earn outs,

acquirer is in the financial or utilities industry[8]. Acquirers must not purchase more than two targets within ten trading days. Acquisitions do not involve in buyback offers, repurchase, or self-tender offers. To avoid sample selection bias, we keep the unbalanced panel.

After the filtering process, the sample consists more than 6,800 unique firms with over 14,000 takeover transactions throughout 117 countries with a total transaction value of $4.49 trillion. Among these acquisitions, 3,994 deals are made by infrequent acquirer and 10,109 deals are by frequent acquirers respectively[9] . All the relevant financial and stock market data of the sample acquirers are obtained from Datastream.

Figure 1a demonstrates an almost unified trend of takeovers undertaken by infrequent, frequent and high frequent acquirers during the period 2000-2010. It can be seen that all the three groups show a similar pattern of growth of the number of acquisitions. The volume of acquisitions declined after the stock market crashes in 2000 and 2007 and increased with the recovery of the global economy.

Figure 1a Total number of acquisitions

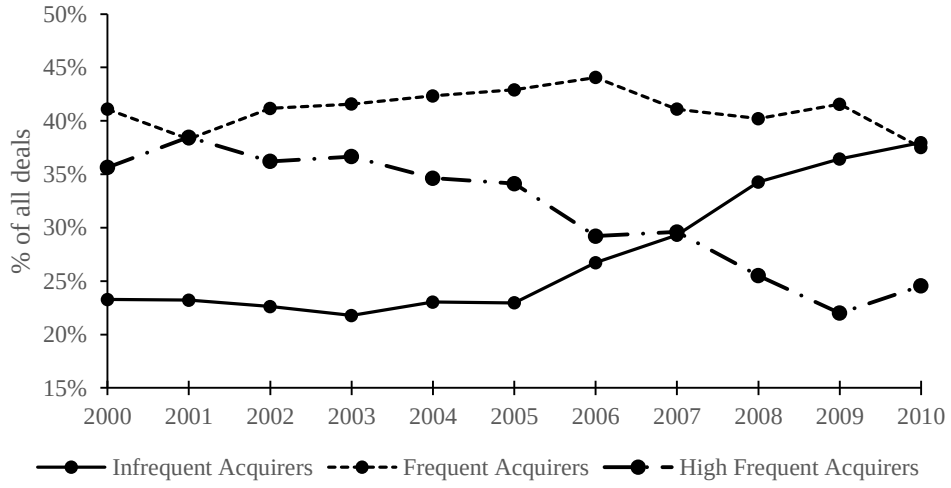


assumption of liabilities and the other consideration offered is a form of stock.

[8] Firms with a primary SIC code between 4900 and 4999(utilities) or 6000 and 6999 (financial institutions) are excluded.

[9] Infrequent, frequent and highly frequent bidder is defined as an acquirer undertaking one, two to four and more than four acquisition(s), respectively.

Figure 1b.Percentage of deals by infrequent, frequent and high frequent acquirers



Note:Infrequent, frequent and highly frequent bidder is defined as an acquirer undertaking one, two to four and more than four acquisition(s), respectively.

Figure 1bdemonstrates the percentage of the merger and acquisition deals made by infrequent, frequent and high frequent acquirers respectively. It is interesting to notice that frequent acquirers dominate the market almost all through the sample period, while high frequent acquirers and infrequent acquirers exchange roles after 2007 with a substantial increase of infrequent acquirers. 2010 even saw the same percentage of the deals made by both frequent and infrequent acquirers.

Figure 1c Five-day Window Cumulative Abnormal Returns (CAR) around announcement day across acquirers

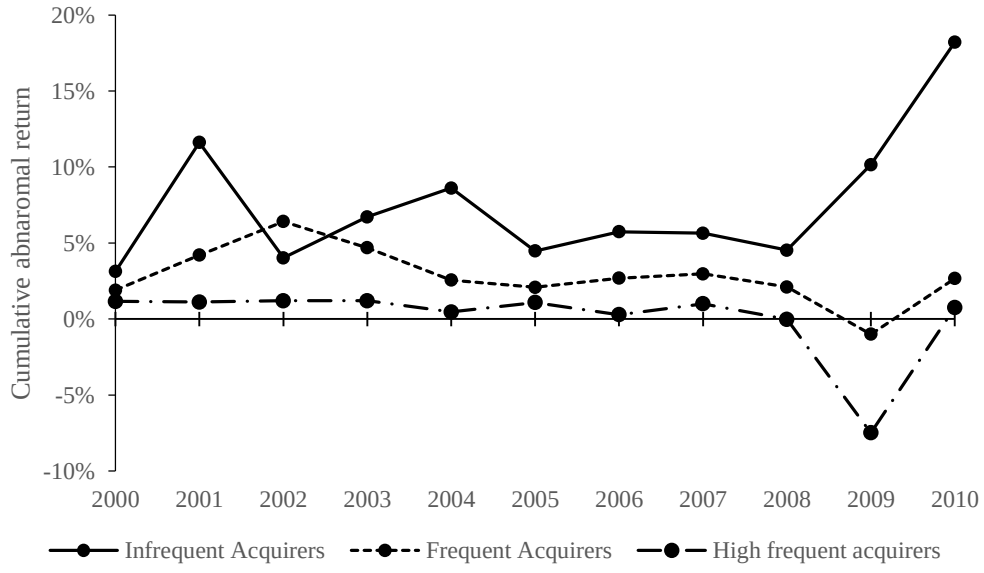


Figure 1c presents the CAR around the announcement day across different acquirers' categories. Very interestingly we find that for most of the cases, the average CAR by infrequent acquirers is the highest among all the categories; while the high-frequent acquirers achieve the lowest CAR.

3.2. Model Specification

In order to capture the relationship between the announcement performance with the merger frequency, Least Square Dummy Variable (LSDV) estimator is applied to estimate the model as below:

$$Y_{it} = \alpha_0 + \alpha_1 freq_{it} + \sum_{j=1}^{n} \beta_j M_{j,it} + \sum_{k=1}^{m} \gamma_k F_{k,it} + T_t + c_i + \varepsilon_{it} \qquad (1)$$

where: Y_{it} is the announcement performance measured by CARs over a 5 days window of the merger announcement; $freq_{it}$ is the measure of merger frequency; $M_{j,it}$ captures deal characteristics' effects; $F_{k,it}$ captures the time variant effects of the acquiring firms; T_t as a time dummy controls macroeconomic shocks; $c_i$captures firm specific effects; captures the impact of merger frequencies on investor's value of stocks and ε_{it} denotes the error term in estimation.

CAR is specified as follows:

$$CAR_{i(T1-T2)} = \sum_{T1}^{T2} AR_{it} = \sum_{t=T1}^{t=T2} (R_{it} - R_{mt}) \qquad (2)$$

where T_1 is the start date of the event window, T_2 is the end date of the event window. R_{it} represents the observed returns on stock i for dayt. R_{mt} represents returns on the market portfolio for day t.

Argument always arises about how to balance between the short window which is usually 3 days and the longer window, such as 5 days or 7 days or even longer. The short window may not be able to capture complete information on market response to a merger announcement. However, the longer window may cause a confounding effect on the evaluation of an event, which can reduce predictive power of the stock price change (Mackinlay, 1997). As a result, to balance the two counter effects, this study defines 5-day as the event window (-2, +2) for empirical estimation

of CARs in (1) and (2) which is consistent with existing studies (Cox and Portes, 1998; Fuller et al., 2002; Faccio et al., 2006; Boubakri et al., 2012; Gaur et. al, 2013).

The measure of merger frequency will directly affect the validity of the results. Kusewitt (1985) is the very first study to measures merger frequency as the number of acquisitions that the sample firms made in a given year. However, how long shall a specific time period be defined to count a number of mergers, one year, three years or five years? It can be argued that investors or stock markets respond to a new merger announcement by taking into account the short history of merger made by the acquirer. This is because mergers in the remote past do not have much effect on the new integration of business. To test this argument, we define two types of merger frequency according to the temporal business effect of a merger:

$freq_1$: to assume that the business effect lasts long, $freq_1$ is defined as the cumulative number of acquisitions for an acquiring firm over the whole sample span;

$freq_2$: to assume that the business effect lasts a few years: $freq_2$ is defined as the number of acquisitions for an acquiring firm in given year t plus the three preceding years.

Table 1 shows the example of coding the different merger frequencies at each year for firm

Table 1. Example of serially coding for the three measures of merger frequency

Year	2000	2001	2002	2003	2004	2005	2006
Number of mergers	**3**	**2**	**0**	**2**	**1**	**1**	**2**
Freq1	**3**	**5**	**5**	**7**	**8**	**9**	**11**
$Freq2_{00\text{-}03}$	**3**	**5**	**5**	**7**	-	-	-
$Freq2_{01\text{-}04}$	-	**5**	**5**	**7**	**5**	-	-
$Freq2_{02\text{-}05}$	-	-	**5**	**7**	**5**	**4**	-
$Freq2_{03\text{-}06}$	-	-	-	**7**	**5**	**4**	**6**

Table 2 reports the summary statistics of the frequency of the acquisitions and the relevant information for acquisitions between 2000 and 2010. Interestingly we can clearly notice the difference between the three measures of the frequency of the acquisition. For variable Freq1, the mean monotonically increases across the time scale. Different picture is given by observing the measures as Freq2. the new measure Freq2, which is defined as the number of acquisitions in a given year plus three

preceding years, is relatively stable, with the highest mean of 2.73 in 2007.

The results of other relevant variables indicate that the mean of the CAR of the acquisitions (event window of 3 and 5 days)is the highest in 2003 and the second highest in 2009 with the highest relative size, which both are during financial crisis period(while in 2009, the mean of the free cash flow is even negative). The results suggest that the acquiring companies bore more risk in acquisitions during financial crisis, and as a result, they made higher abnormal return.

According to existent literature (e.g. Jensen, 1986, Fuller et al., 2002, Billet and Qian, 2008 and Gaur et al., 2013 etc.), CARs after a merger announcement will be affected by both the deal specific characteristics and firm specific characteristics. More specifically, each of the variables is defined as follows:

Deal-Specific Variables

a). Method of payment: binary variables, where Cash (Stock) equals one if target is acquired with 100% cash (stock), zero otherwise.

b). Ownership of target: binary variables, where Public (Private) equals one if target is publicly (privately) held, zero otherwise.

c). Attitude: binary variable, where Attitude equals one if the takeover is classified as hostile (friendly) by SDC, zero otherwise.

d). Acquirer to target industrial relatedness: binary variables, where Relatedness equals one if target is sharing the same two-digit SIC code as acquirer, zero otherwise. This is obtained as the traditional SIC code-based measure of relatedness following the same approach as Servaes (1996).

e). Acquirer international scope: binary variables, where Cross border equals one if the target is a foreign company, otherwise it is zero.

Firm-Specific Variables

a). Relative acquisition size: the ratio of the deal transaction value to acquirer's market value it 4 weeks prior to the announcement.

b). Acquirer slack: measured by Leverage ratio, defined as the acquiring firm's total debt to total assets.

c). Free Cash Flow: the ratio of acquiring firm's free cash flow to total assets.

Table 2. Summary statistics of merger frequency and relevant measures

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Panel A: Mean (median) [standard deviation] of merger frequency variables											
Freq1	1.46	1.72	1.82	2.03	2.51	2.71	2.68	3.04	3.01	3.06	3.39
	(1.00)	(1.00)	(1.00)	(1.00)	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)
	[1.33]	[1.39]	[1.66]	[1.95]	[3.05]	[3.45]	[3.16]	[3.65]	[3.15]	[4.26]	[3.95]
Freq2	1.92	1.95	2.00	2.22	2.42	2.59	2.43	2.73	2.50	2.22	2.35
	(1.00)	(1.00)	(1.00)	(1.00)	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)
	[2.16]	[1.58]	[1.85]	[2.13]	[2.47]	[2.84]	[2.31]	[2.86]	[2.43]	[2.00]	[2.02]
Panel B: Mean (median) [standard deviation] of firm characteristics											
Relative size	37.40%	36.80%	35.40%	45.30%	33.20%	36.30%	32.10%	32.00%	35.10%	44.70%	35.00%
	(6.36%)	(7.08%)	(6.92%)	(7.09%)	(6.95%)	(7.28%)	(7.57%)	(6.92%)	(7.37%)	(10.10%)	(8.53%)
	[1.10]	[0.98]	[1.03]	[1.30]	[0.92]	[1.07]	[0.94]	[0.93]	[1.00]	[1.18]	[0.99]
Leverage	19.80%	21.80%	22.80%	21.20%	21.50%	20.00%	18.30%	20.10%	19.10%	19.40%	22.00%
	(10.80%)	(16.30%)	(16.60%)	(18.20%)	(17.00%)	(15.50%)	(13.70%)	(15.40%)	(14.40%)	(12.10%)	(16.00%)
	[0.28]	[0.26]	[0.28]	[0.24]	[0.25]	[0.24]	[0.22]	[0.25]	[0.21]	[0.27]	[0.30]
Free cash/total assets	-0.49%	-0.33%	1.56%	2.31%	2.88%	2.73%	2.25%	1.76%	1.05%	-0.38%	2.65%
	(0.53%)	(1.00%)	(1.99%)	(2.69%)	(2.87%)	(2.61%)	(2.59%)	(1.66%)	(1.32%)	(0.91%)	(3.03%)
	[0.10]	[0.10]	[0.09]	[0.09]	[0.07]	[0.08]	[0.09]	[0.08]	[0.09]	[0.11]	[0.08]
CAR[-2,+2]	2.43%	3.12%	2.48%	3.69%	2.34%	2.19%	2.19%	2.50%	2.36%	3.35%	3.11%
	(0.09%)	(1.35%)	(1.32%)	(1.56%)	(0.89%)	(0.85%)	(0.81%)	(0.91%)	(0.70%)	(1.00%)	(0.81%)
	[0.14]	[0.13]	[0.10]	[0.12]	[0.10]	[0.09]	[0.10]	[0.10]	[0.12]	[0.13]	[0.11]
CAR[-1,+1]	2.08%	2.19%	2.08%	2.81%	1.95%	1.94%	1.77%	2.08%	1.85%	2.70%	2.45%
	(0.14%)	(1.19%)	(1.03%)	(0.98%)	(0.73%)	(0.71%)	(0.52%)	(0.76%)	(0.67%)	(0.69%)	(0.81%)
	[0.12]	[0.10]	[0.09]	[0.10]	[0.08]	[0.08]	[0.08]	[0.08]	[0.10]	[0.11]	[0.09]
Number of observations	825	616	765	914	1,259	1,629	1,770	2,010	1,564	1,268	1,483

Note: The table reports the sample characteristics of merger frequency and relevant information of the whole sample. The results are tabulated based on a sample of 14103 acquisitions made by 6836 unique bidders from January 1, 2000 to December 31, 2010.***Freq1***is the cumulative number of acquisitions for an acquiring firm over the sample span, ***Freq2*** is the number of acquisitions for an acquiring firm in a given year plus the three preceding years; ***Relative size*** is the ratio of the deal transaction value to the acquirer's market value 4 weeks prior to the announcement. ***Leverage*** is the ratio of acquiring firm's total debt to total assets. ***FCF*** is the ratio of acquiring firm's free cash flow to total assets. Median values are shown in parentheses; standard deviations are shown in brackets.

Pearson correlations coefficients between all variables used in the regression models are reported in Table 3. First of all, Table 3 shows a significant negative relationship between the announcement performance and both the measures of the merger frequency, indicating that a preliminary negative linear relationship between the merger frequency and five-day window CAR. It can also be observed that the correlation coefficient between ***Cash*** and ***Stock*** is high, as well as ***Private*** and ***Public***.

4. Empirical Results

4.1 Relationship between merger frequency and announcement performance

Table 4 report the result of the estimation of model (1) with the full sample. Interestingly, we observe different results when different measures of the merger frequency are used. The classical measure freq_1, which is defined as the cumulative acquisitions across the sample period, is not statistically significant, implying that the cumulative number of the mergers within 7 to 11 years will not affect the performance around the merger and acquisition announcement window. While in contrast, the coefficient of freq_2 is significantly negative, suggesting that the cumulative number of the mergers within the recent four years will negatively affect the announcement performance. This result indicates that investors don't think high-frequent mergers and acquisitions within a relatively short period will have a positive impact on the company. This finding is consistent with management hubris theory as well as Kusewitt (1985) who also finds a significantly negative relation between merger frequency and performance using a sample of 155 U.S. companies that made two or more large acquisitions during the 1967 – 1976 period.

One possible explanation for the contradictory results with different measures of the mergers frequency is that it is the mixed effects of management hubris developed with increased experience and the management learning from repeated activities over a certain length of time. It takes time for the acquiring companies to digest and learn from the past experience, so in the long term it will offset the negative impact caused by the management hubris.

Table 3 Pearson correlations

	CAR[-2,+2]	Freq1	Freq2	Cash	Stock	Public	Private	Attitude	Relatedness	Cross border	Relative size	Leverage	FCF
CAR[-2,+2]	1												
Freq1	-0.09***	1											
Freq2	-0.06***	0.50***	1										
Cash	-0.11***	0.14***	0.04***	1									
Stock	0.08***	-0.12***	-0.03***	-0.54***	1								
Public	-0.11***	0.01	-0.04***	-0.10***	0.18***	1							
Private	0.06***	0.05***	0.10***	-0.07***	-0.06***	-0.48***	1						
Attitude	-0.02*	-0.01	-0.01	0.01	-0.01	0.09***	-0.04***	1					
Relatedness	0.00	-0.05***	-0.03***	-0.05***	0.00	0.03***	-0.03***	-0.01	1				
Cross border	0.01	0.02**	-0.01	0.11***	-0.09***	-0.02**	-0.01	0.03***	-0.01	1			
Relative size	0.24***	-0.11***	-0.11***	-0.19***	0.15***	-0.01	0.02**	0.01	0.03***	0.00	1		
Leverage	0.05***	-0.03***	-0.03***	-0.01	0.03***	0.01	-0.04***	0.00	0.01	-0.04***	0.10***	1	
FCF	-0.15***	0.12***	0.08***	0.20***	-0.18***	0.04***	-0.04***	0.01	-0.04***	0.02*	-0.25***	-0.24***	1

Freq1is the cumulative number of acquisitions for an acquiring firm over the sample span, ***Freq2*** is the number of acquisitions for an acquiring firm in a given year plus the three preceding years; ***Cash*** equals one if target is acquired with 100% cash, zero otherwise; ***Stock*** equals one if target is acquired with 100% stock, zero otherwise***;*** ***Public*** equals one if target is publicly held, zero otherwise; ***Private*** equals one if target is privately held, zero otherwise; ***Attitude*** equals one if the takeover is classified as hostile (friendly) by SDC, zero otherwise; ***Relatedness*** equals one if target is sharing the same two-digit SIC code as acquirer, zero otherwise; ***Cross border*** equals one if the target is a foreign company, otherwise it is zero. ***Relative size*** is the ratio of the deal transaction value to the acquirer's market value 4 weeks prior to the announcement. ***Leverage*** is the ratio of acquiring firm's total debt to total assets. ***FCF*** is the ratio of acquiring firm's free cash flow to total assets. Median values are shown in parentheses; standard deviations are shown in brackets.

It is also noted that the relative size of acquisition is significantly positive. This is consistent with Asquith et al. (1983) who find that the larger the size of acquisition relatively to acquiring firm the higher cumulative abnormal returns around announcement. One explanation for this is that acquirers will be more careful when deal with a large acquisition as they are exposed to higher risk. Increasing acquisitions size can increase "the risk-driven pressure" on the decision makers of acquiring firms, as a result will have positive impact on the announcement performance.

The coefficient of public is significantly negative for the models in Panel A, and more specifically from Panel B with interacted variables, we can see that it is the Public target traded by stocks that have significantly negative impact on the announcement performance. Fuller et al., (2002) argue that this is due to the fact that in order to make the investment opportunity more attractive, private firms generally are sold at a price with liquidity discount. Or it could be the negative market percept of the dilution of ownership caused by acquisitions of large public targets.

Lastly, consistent with Jensen (1986), we find that the coefficient of free cash flow (FCF) is significantly negative. This indicates that the increased free cash flow will have negative impact on the announcement performance. Jensen (1986) argues that due to agency cost the increase of free cash flow making it possible for the managers to spend more perks at the expense of the shareholders, leading to poor announcement performance.

4.2 Detangle the coefficient of *frq2*

In order to examine more in detail of the measure of merger frequency ***freq2***, we further break down the sample according to the definition of the measure of ***freq2***. Table 5 presents the break-down estimation of the coefficient of ***freq2*** with the rolling window of the sample:

For both Panel A and Panel B, the coefficients of ***freq2*** are all statistically significant before 2007. This results is consistent with what we have found from Figure 1a that there is a significant decline of the mergers by high-frequent acquirers and a significant increase of the deals by infrequent acquirers. As in general the average number of high-frequency acquisition declined since 2007, leading to the insignificant result.

Table 4. The effect of merger frequency on stock performance of acquirers

	Panel A:Full sample		Panel B:Full sample with interacted variable	
Dependent variable: CAR[-2,+2]	(1)	(2)	(3)	(4)
Merger Frequency				
Freq1	-0.0003		-0.0003	
	(-0.59)		(-0.55)	
Freq2		-0.0022*		-0.0021*
		(-1.85)		(-1.79)
Deal-specific variables				
Cash	0.0004	0.0004		
	(0.14)	(0.14)		
Stock	-0.0035	-0.0030		
	(-0.86)	(-0.75)		
Public	-0.0187***	-0.0189***		
	(-5.64)	(-5.72)		
Private	-0.0016	-0.0014		
	(-0.59)	(-0.54)		
Cash*public			0.0004	0.0003
			(0.12)	(0.08)
Stock*public			-0.0231***	-0.0230***
			(-4.68)	(-4.67)
Cash*private			-0.0021	-0.0020
			(-0.78)	(-0.76)
Stock*private			0.0068	0.0076
			(1.28)	(1.45)
Attitude	-0.0225	-0.0233	-0.0321	-0.0329
	(-1.06)	(-1.09)	(-1.53)	(-1.57)
Relatedness	-0.0024	-0.0023	-0.0023	-0.0023
	(-0.89)	(-0.87)	(-0.87)	(-0.85)
Cross border	0.0049*	0.0050*	0.0055*	0.0056*
	(1.66)	(1.68)	(1.89)	(1.91)
Firm-specific variables				
Relative size	0.0160***	0.0159***	0.0154***	0.0153***
	(9.00)	(8.94)	(8.84)	(8.77)
Leverage	0.0139	0.0131	0.0145	0.0137
	(1.56)	(1.46)	(1.63)	(1.55)
FCF	-0.0360***	-0.0359***	-0.0359***	-0.0358***
	(-5.43)	(-5.41)	(-5.49)	(-5.48)
Constant	0.0259***	0.0309***	0.0217***	0.0264***
	(4.38)	(4.92)	(4.09)	(4.63)
R^2-adjusted	32.69%	32.72%	33.07%	33.09%
Heterogeneity	1.811***	1.816***	1.828***	1.833***
Firm Dummy	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES
F-statistic	11.07	11.22	10.71	10.85
No. of pooled observations	12968	12968	12968	12968
No. of firms	6098	6098	6098	6098

Note:t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors. *, **, *** represent significance at the 1%, 5% and 10% level, respectively.

Table 5. The effect of 4-year merger frequency on stock performance of acquirers with rolling window

Panel A: Full sample				
	(1) 2000-2003	(2) 2001-2004	(3) 2002-2005	(4) 2003-2006
β_i of ***freq2***	-0.0014**	-0.0023***	-0.0018***	-0.0015***
	(-2.52)	(-2.90)	(-2.91)	(-2.80)
	(5) 2004-2007	(6) 2005-2008	(7) 2006-2009	(8) 2007-2010
β_i of ***freq2***	-0.0009*	-0.0006	-0.0005	-0.0003
	(-1.83)	(-1.06)	(-0.80)	(-0.62)
Panel B: Full sample with interacted variables				
	(1) 2000-2003	(2) 2001-2004	(3) 2002-2005	(4) 2003-2006
β_i of f***req2***	-0.0014**	-0.0024***	-0.0018***	-0.0016***
	(-2.44)	(-3.09)	(-3.01)	(-2.89)
	(5) 2004-2007	(6) 2005-2008	(7) 2006-2009	(8) 2007-2010
β_i of ***freq2***	-0.0009*	-0.0006	-0.0005	-0.0003
	(-1.87)	(-1.10)	(-0.81)	(-0.64)

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors. *, **, *** represent significance at the 1%, 5% and 10% level, respectively.

4.3 Relationship between merger frequency and announcement performance with sub-samples

We group the full sample into four subsamples: (1) developed countries, (2) economic co-operation and development (OECD) countries, (3) US and (4) EU economies. to see whether the findings with the full sample are robust across different economies. Due to data constraint, developing countries are excluded as within our full sample, as only 680 international acquisitions are dealt within developing countries.

We first report the results of the OECD countries and developed countries in Table 6 for two reasons. Firstly, at the firm-level, the acquirers from both developed and developing economies belonging to OECD could be relatively more capable in terms of firm operations, corporate governance and structures than others in the world. Secondly, in terms of M&A activity, acquirers of OECD members play a pivotal role in the global M&A market with 12,815 acquisitions during the period 2000-2010, accounting for 92.65% of the total deals.

We can observe consistent results of the OECD countries and developed countries with the whole sample. More particularly the cumulative number of acquisitions as a measure of merger frequency has not impact on the announcement

performance; while the cumulative number of acquisitions within four year span has significantly negative impact on the announcement performance. The results for the control variables present exactly the same stories as the full sample. From Panel C and Panel D we can see that the coefficients of ***freq2*** with breakdown rolling sample window is consistent with the whole sample as well. Given that majority of the mergers and acquisitions activities are within the two sub-samples the results are as expected.

We further investigate the mergers and acquisitions in both US and EU countries. While the researches of M&A effects in US and EU are well documented in previous studies. With respect to merger activity, the US has been historically the most active country. Among OECD countries the U.S. and EU countries stand in the top two position. The US had 5,619 acquisitions and the EU had 2,552 acquisitions, which accounted for 46.77% and 21.24% of OECD acquisitions respectively. In terms of regulation, the merger regulation of the European Commission is relatively lenient, which tolerates acquisitions that would be unlawful in the United States (Kauper, 2000). For example, according to anti-trust law, the EU rarely brings actions against mergers that tend to create or enhance oligopolies, while the US actively enforced against oligopolies.

The results are presented in Table 7. Interestingly find difference between the two sub-samples. The result of the US sample now indicates that the longer lasting effect of new integration seems stronger in the US evidenced by the significant negative relationship between CARs and the long-term frequency, which implies that managerial hubris grows with the increase of the mergers and it dominates other effects, particularly, the learning effects. The finding of US is consistent with Boubakri et al. (2012) who find that acquirers experience significant loss from frequent acquisition, using a sample of 4,215 acquisitions by 397 US acquirers from 1999 to 2010. The EU results also are in line with Martynova and Renneboog (2006) who examine 2,419 EU acquisitions made across 28 EU countries and document that the wealth of acquirer's shareholders reduces as merger frequency increases.

Table 6. The effect of merger frequency on acquirer stock performance across different economies

	Panel A:Developed economies		Panel B:OECD economies	
Dependent variable: CAR[-2,+2]	(1)	(2)	(3)	(4)
Merger Frequency				
Freq1	-0.0002		-0.0004	
	(-0.42)		(-0.72)	
Freq2		-0.0021*		-0.0020*
		(-1.83)		(-1.68)
Deal-specific variables				
Cash	0.0004	0.0004	0.0007	0.0007
	(0.12)	(0.13)	(0.22)	(0.22)
Stock	-0.0045	-0.0041	-0.0055	-0.0050
	(-1.16)	(-1.05)	(-1.32)	(-1.20)
Public	-0.0181***	-0.0183***	-0.0201***	-0.0203***
	(-5.61)	(-5.68)	(-5.80)	(-5.87)
Private	-0.0018	-0.0016	-0.0014	-0.0013
	(-0.68)	(-0.64)	(-0.51)	(-0.47)
Attitude	-0.0216	-0.0225	-0.0180	-0.0190
	(-1.03)	(-1.08)	(-0.81)	(-0.85)
Relatedness	-0.0021	-0.0021	-0.0020	-0.0019
	(-0.83)	(-0.81)	(-0.71)	(-0.70)
Cross border	0.0051*	0.0052*	0.0061**	0.0062**
	(1.78)	(1.80)	(1.98)	(2.00)
Firm-specific variables				
Relative size	0.0177***	0.0176***	0.0174***	0.0173***
	(9.85)	(9.79)	(8.85)	(8.79)
Leverage	0.0093	0.0086	0.0148	0.0140
	(1.08)	(1.00)	(1.61)	(1.52)
FCF	-0.0366***	-0.0365***	-0.0365***	-0.0363***
	(-5.72)	(-5.71)	(-5.31)	(-5.30)
Constant	0.0326***	0.0372***	0.0214***	0.0263***
	(5.76)	(6.18)	(3.53)	(4.07)
R-squared	35.71%	35.74%	32.89%	32.91%
Heterogeneity	1.945***	1.950***	1.876***	1.880***
Firm Dummy	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES
F-stat	12.52	12.67	10.96	11.07
No. of pooled observations	12246	12246	12015	12015
No. of firms	5584	5584	5407	5407

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors.*, **, *** represents the significance at the 1%, 5% and 10% level..

Table 6. The effect of merger frequency on acquirer stock performance across different economies - Continued

Panel C: Medium-term frequency for developed countries

	(1) 2000-2003 CAR[-2,+2]	(2) 2001-2004 CAR[-2,+2]	(3) 2002-2005 CAR[-2,+2]	(4) 2003-2006 CAR[-2,+2]	(5) 2004-2007 CAR[-2,+2]	(6) 2005-2008 CAR[-2,+2]	(7) 2006-2009 CAR[-2,+2]	(8) 2007-2010 CAR[-2,+2]
Freq2	-0.0015***	-0.0025***	-0.0019***	-0.0016***	-0.0009*	-0.0006	-0.0006	-0.0003
	(-2.61)	(-3.20)	(-3.11)	(-2.98)	(-1.86)	(-1.03)	(-0.83)	(-0.57)
Deal-specific variables								
Cash	0.0001	0.0035*	-0.0006	-0.0007	-0.0008	-0.0008	-0.0008	0.0005
	(0.10)	(1.94)	(-0.35)	(-0.37)	(-0.44)	(-0.44)	(-0.43)	(0.38)
Stock	-0.0030	-0.0052**	-0.0033	-0.0034	-0.0034	-0.0033	-0.0033	-0.0029*
	(-1.53)	(-2.11)	(-1.36)	(-1.38)	(-1.41)	(-1.37)	(-1.36)	(-1.66)
Public	-0.0082***	-0.0114***	-0.0104***	-0.0103***	-0.0103***	-0.0104***	-0.0104***	-0.0075***
	(-5.15)	(-5.62)	(-5.14)	(-5.12)	(-5.12)	(-5.14)	(-5.14)	(-5.20)
Private	-0.0004	0.0009	-0.0009	-0.0008	-0.0009	-0.0009	-0.0009	-0.0005
	(-0.35)	(0.56)	(-0.55)	(-0.52)	(-0.57)	(-0.56)	(-0.54)	(-0.43)
Attitude	-0.0119	-0.0091	-0.0166	-0.0168	-0.0165	-0.0164	-0.0163	-0.0109
	(-1.15)	(-0.69)	(-1.27)	(-1.28)	(-1.26)	(-1.25)	(-1.24)	(-1.17)
Relatedness	0.0004	0.0002	-0.0004	-0.0004	-0.0003	-0.0004	-0.0004	0.0005
	(0.33)	(0.12)	(-0.24)	(-0.22)	(-0.21)	(-0.23)	(-0.23)	(0.46)
Cross border	0.0020	0.0030	0.0024	0.0024	0.0025	0.0025	0.0025	0.0017
	(1.37)	(1.64)	(1.35)	(1.35)	(1.38)	(1.38)	(1.40)	(1.34)
Firm-specific variables								
Relative size	0.0029***	-0.0001	0.0061***	0.0061***	0.0061***	0.0061***	0.0061***	0.0020**
	(3.18)	(-0.10)	(5.35)	(5.38)	(5.36)	(5.35)	(5.35)	(2.48)
Leverage	0.0056	0.0109**	0.0085	0.0085	0.0087	0.0087	0.0087	0.0048
	(1.31)	(2.03)	(1.59)	(1.59)	(1.63)	(1.63)	(1.63)	(1.26)
FCF	-0.0081***	-0.0086**	-0.0129***	-0.0130***	-0.0129***	-0.0130***	-0.0130***	-0.0072**
	(-2.60)	(-2.18)	(-3.27)	(-3.30)	(-3.29)	(-3.29)	(-3.30)	(-2.56)
Constant	0.0124***	-0.0221***	0.0237***	0.0236***	0.0239***	0.0241***	0.0241***	0.0057**
	(4.34)	(-6.27)	(6.76)	(6.75)	(6.81)	(6.89)	(6.89)	(2.27)
R^2-adjusted	31.84%	32.86%	32.44%	32.43%	32.35%	32.32%	32.31%	31.65%
Heterogeneity	1.206***	1.266***	1.333***	1.331***	1.330***	1.330***	1.332***	1.172***
Firm Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	5.91	9.29	7.92	7.88	7.61	7.49	7.48	5.30
Observations	12246	12246	12246	12246	12246	12246	12246	12246
No. of firms	5584	5584	5584	5584	5584	5584	5584	5584

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors. *, **, *** represents significance at the 1%, 5% and 10% level.

Table 6. The effect of merger frequency on acquirer stock performance across different economies - Continued

Panel D: Medium-term frequency for OECD countries

	(1) 2000-2003 CAR[-2,+2]	(2) 2001-2004 CAR[-2,+2]	(3) 2002-2005 CAR[-2,+2]	(4) 2003-2006 CAR[-2,+2]	(5) 2004-2007 CAR[-2,+2]	(6) 2005-2008 CAR[-2,+2]	(7) 2006-2009 CAR[-2,+2]	(8) 2007-2010 CAR[-2,+2]
Freq2	-0.0014**	-0.0026***	-0.0019***	-0.0017***	-0.0009*	-0.0006	-0.0006	-0.0003
	(-2.45)	(-3.23)	(-3.16)	(-3.05)	(-1.91)	(-1.01)	(-0.88)	(-0.63)
Deal-specific variables								
Cash	0.0001	0.0032*	-0.0007	-0.0007	-0.0008	-0.0008	-0.0008	0.0004
	(0.07)	(1.78)	(-0.37)	(-0.38)	(-0.46)	(-0.45)	(-0.44)	(0.34)
Stock	-0.0028	-0.0050**	-0.0031	-0.0031	-0.0032	-0.0031	-0.0031	-0.0028
	(-1.46)	(-2.02)	(-1.26)	(-1.29)	(-1.32)	(-1.27)	(-1.26)	(-1.58)
Public	-0.0083***	-0.0117***	-0.0105***	-0.0105***	-0.0104***	-0.0105***	-0.0105***	-0.0076***
	(-5.20)	(-5.75)	(-5.20)	(-5.19)	(-5.18)	(-5.20)	(-5.21)	(-5.25)
Private	-0.0005	0.0006	-0.0009	-0.0008	-0.0009	-0.0009	-0.0008	-0.0005
	(-0.36)	(0.39)	(-0.53)	(-0.51)	(-0.55)	(-0.53)	(-0.52)	(-0.44)
Attitude	-0.0117	-0.0088	-0.0164	-0.0165	-0.0163	-0.0161	-0.0160	-0.0107
	(-1.13)	(-0.67)	(-1.26)	(-1.27)	(-1.25)	(-1.24)	(-1.23)	(-1.15)
Relatedness	0.0007	0.0004	0.0000	0.0000	0.0001	0.0000	0.0000	0.0008
	(0.55)	(0.23)	(0.01)	(0.02)	(0.03)	(0.01)	(0.01)	(0.66)
Cross border	0.0023	0.0033*	0.0027	0.0027	0.0027	0.0027	0.0028	0.0020
	(1.57)	(1.81)	(1.48)	(1.49)	(1.51)	(1.52)	(1.53)	(1.55)
Firm-specific variables								
Relative size	0.0031***	-0.0003	0.0066***	0.0066***	0.0066***	0.0066***	0.0066***	0.0022***
	(3.30)	(-0.21)	(5.50)	(5.52)	(5.51)	(5.51)	(5.51)	(2.58)
Leverage	0.0064	0.0121**	0.0095*	0.0095*	0.0097*	0.0096*	0.0097*	0.0056
	(1.52)	(2.25)	(1.79)	(1.79)	(1.83)	(1.82)	(1.82)	(1.47)
FCF	-0.0079**	-0.0088**	-0.0123***	-0.0124***	-0.0124***	-0.0124***	-0.0124***	-0.0071**
	(-2.54)	(-2.23)	(-3.15)	(-3.18)	(-3.17)	(-3.17)	(-3.17)	(-2.51)
Constant	0.0113***	-0.0226***	0.0222***	0.0221***	0.0223***	0.0226***	0.0226***	0.0049*
	(3.99)	(-6.41)	(6.36)	(6.35)	(6.41)	(6.48)	(6.48)	(1.96)
R^2-adjusted	31.80%	32.88%	32.43%	32.41%	32.33%	32.29%	32.29%	31.63%
Heterogeneity	1.204***	1.267***	1.324***	1.323***	1.322***	1.322***	1.323***	1.171***
Firm Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	5.75	9.29	7.79	7.76	7.48	7.35	7.34	5.20
Observations	12015	12015	12015	12015	12015	12015	12015	12015
No. of firms	5407	5407	5407	5407	5407	5407	5407	5407

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors. *, **, *** represents significance at the 1%, 5% and 10% level.

Instead of ***freq2***, Panel C presents the results of the coefficients of ***freq1*** with the rolling sample. Consistent with the results of the EU countries, the merger frequency has significantly negative impact on the announcement performance.

Overall, all results for the OECD, developed countries US and the EU countries robustly exhibit that frequent acquisition is value-destructive regardless of the differences in culture, anti-trust law, investor protection, competition of the M&A market and economic system. For the EU countries, the key mechanism which allows an acquiring firm to be able to create acquisitive capabilities in frequent acquisitions may need more time to learn. Yet, for the U.S., the negative effect of frequent acquisition could possibly be attributed to agency issues due to the significant long-lasting effect of the frequency.

Table 7. Empirical results across US and EU countries

	Panel A:USA		Panel B:EU countries	
Dependent variable: CAR[-2,+2]	(1)	(2)	(3)	(4)
Merger Frequency				
Freq1	-0.0049**		-0.0026	
	(-2.46)		(-1.29)	
Freq2		-0.0001		-0.0085*
		(-0.04)		(-1.95)
Deal-specific variables				
Cash	0.0044	0.0042	-0.0037	-0.0036
	(0.79)	(0.75)	(-0.75)	(-0.74)
Stock	-0.0013	-0.0017	0.0034	0.0035
	(-0.17)	(-0.22)	(0.38)	(0.39)
Public	-0.0279***	-0.0277***	-0.0116*	-0.0115*
	(-4.51)	(-4.48)	(-1.88)	(-1.86)
Private	0.0074	0.0073	-0.0026	-0.0025
	(1.55)	(1.52)	(-0.59)	(-0.57)
Attitude	-0.0312	-0.0349	-0.0317	-0.0344
	(-0.72)	(-0.80)	(-0.98)	(-1.07)
Relatedness	-0.0049	-0.0047	0.0039	0.0037
	(-1.01)	(-0.96)	(0.91)	(0.88)
Cross border	0.0044	0.0037	0.0086*	0.0083*
	(0.84)	(0.71)	(1.90)	(1.83)
Firm-specific variables				
Relative size	0.0634***	0.0634***	0.0078***	0.0075***
	(7.14)	(7.12)	(2.94)	(2.80)
Leverage	0.0248	0.0241	-0.0177	-0.0192
	(1.26)	(1.22)	(-1.17)	(-1.27)
FCF	-0.0543***	-0.0546***	-0.0346**	-0.0334**
	(-4.84)	(-4.86)	(-2.46)	(-2.37)
Constant	-0.0039	-0.0019	-0.0332**	-0.0233
	(-0.38)	(-0.17)	(-2.07)	(-1.40)
R-squared	43.63%	43.48%	28.01%	28.11%
Heterogeneity	2.028***	2.025***	1.814***	1.825***
Firm Dummy	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES
F-stat	7.18	6.87	4.04	4.14
No. of pooled observations	5619	5619	2552	2552
No. of firms	3377	3377	1065	1065

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors.*, **, *** represents significance at the 1%, 5% and 10% level.

Table 8. Empirical results across US and EU countries - Continued

Panel C: Medium-term frequency for US	(1) 2000-2003 CAR[-2,+2]	(2) 2001-2004 CAR[-2,+2]	(3) 2002-2005 CAR[-2,+2]	(4) 2003-2006 CAR[-2,+2]	(5) 2004-2007 CAR[-2,+2]	(6) 2005-2008 CAR[-2,+2]	(7) 2006-2009 CAR[-2,+2]	(8) 2007-2010 CAR[-2,+2]
Freq1	-0.0019**	-0.0019**	-0.0014***	-0.0008*	-0.0001	-0.0016***	0.0002	-0.0008
	(-2.04)	(-2.38)	(-2.83)	(-1.79)	(-0.15)	(-3.21)	(0.26)	(-0.96)
Deal-specific variables								
Cash	0.0013	-0.0005	-0.0007	-0.0008	-0.0009	-0.0008	-0.0006	-0.0003
	(0.45)	(-0.24)	(-0.40)	(-0.45)	(-0.48)	(-0.47)	(-0.24)	(-0.15)
Stock	-0.0023	0.0006	0.0016	0.0016	0.0018	0.0020	-0.0001	-0.0008
	(-0.57)	(0.18)	(0.64)	(0.63)	(0.71)	(0.79)	(-0.02)	(-0.25)
Public	-0.0149***	-0.0093***	-0.0064***	-0.0065***	-0.0066***	-0.0066***	-0.0110***	-0.0103***
	(-4.73)	(-3.79)	(-3.27)	(-3.29)	(-3.31)	(-3.35)	(-4.08)	(-4.22)
Private	0.0021	-0.0001	-0.0004	-0.0003	-0.0003	-0.0003	-0.0001	-0.0004
	(0.83)	(-0.06)	(-0.23)	(-0.20)	(-0.20)	(-0.21)	(-0.03)	(-0.21)
Attitude	-0.0021	-0.0167	-0.0167	-0.0170	-0.0172	-0.0173	-0.0144	-0.0114
	(-0.10)	(-0.95)	(-1.19)	(-1.21)	(-1.23)	(-1.23)	(-0.75)	(-0.66)
Relatedness	-0.0002	0.0005	0.0002	0.0003	0.0003	0.0003	0.0006	0.0008
	(-0.09)	(0.27)	(0.12)	(0.18)	(0.18)	(0.17)	(0.27)	(0.40)
Cross border	0.0009	0.0013	0.0010	0.0010	0.0012	0.0011	0.0012	0.0009
	(0.31)	(0.62)	(0.61)	(0.60)	(0.68)	(0.67)	(0.51)	(0.41)
Firm-specific variables								
Relative size	-0.0018	0.0024	0.0030**	0.0030**	0.0030**	0.0030**	0.0019	0.0007
	(-0.91)	(1.59)	(2.49)	(2.48)	(2.49)	(2.51)	(1.17)	(0.46)
Leverage	-0.0084	-0.0027	-0.0012	-0.0013	-0.0012	-0.0012	-0.0036	-0.0032
	(-1.40)	(-0.57)	(-0.33)	(-0.36)	(-0.32)	(-0.32)	(-0.71)	(-0.69)
FCF	-0.0325***	-0.0214***	-0.0135**	-0.0137**	-0.0139**	-0.0136**	-0.0258***	-0.0242***
	(-3.56)	(-3.01)	(-2.37)	(-2.40)	(-2.43)	(-2.37)	(-3.31)	(-3.44)
Constant	-0.0244***	0.0046	0.0164***	0.0166***	0.0169***	0.0172***	-0.0001	-0.0037
	(-4.43)	(1.10)	(4.89)	(4.95)	(5.03)	(5.12)	(-0.02)	(-0.89)
R^2-adjusted	35.24%	32.90%	32.90%	32.69%	32.55%	32.61%	32.93%	33.04%
Heterogeneity	1.292***	1.252***	1.277***	1.273***	1.272***	1.275***	1.250***	1.207***
Firm Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	5.84	3.16	3.15	2.92	2.76	2.83	3.19	3.31
Observations	5619	5619	5619	5619	5619	5619	5619	5619
No. of firms	3377	3377	3377	3377	3377	3377	3377	3377

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors. *, **, *** represents significance at the 1%, 5% and 10% level.

Table 8. Empirical results across US and EU countries - Continued

Panel D: Medium-term frequency for EU	(1) 2000-2003 CAR[-2,+2]	(2) 2001-2004 CAR[-2,+2]	(3) 2002-2005 CAR[-2,+2]	(4) 2003-2006 CAR[-2,+2]	(5) 2004-2007 CAR[-2,+2]	(6) 2005-2008 CAR[-2,+2]	(7) 2006-2009 CAR[-2,+2]	(8) 2007-2010 CAR[-2,+2]
Freq2	-0.0030**	-0.0025*	-0.0021***	-0.0013**	-0.0001	-0.0017**	0.0000	0.0001
	(-2.14)	(-1.94)	(-2.99)	(-2.04)	(-0.21)	(-2.17)	(0.05)	(0.15)
Deal-specific variables								
Cash	-0.0036	-0.0036	-0.0035*	-0.0036*	-0.0035*	-0.0035*	-0.0033	-0.0025
	(-1.56)	(-1.57)	(-1.84)	(-1.87)	(-1.86)	(-1.84)	(-1.35)	(-1.13)
Stock	-0.0012	-0.0013	-0.0000	0.0001	0.0001	0.0001	-0.0012	-0.0012
	(-0.30)	(-0.31)	(-0.01)	(0.03)	(0.03)	(0.04)	(-0.28)	(-0.31)
Public	-0.0053*	-0.0055*	-0.0042*	-0.0040*	-0.0040*	-0.0041*	-0.0064**	-0.0059**
	(-1.85)	(-1.91)	(-1.77)	(-1.72)	(-1.72)	(-1.75)	(-2.06)	(-2.12)
Private	-0.0019	-0.0019	-0.0019	-0.0019	-0.0020	-0.0020	-0.0020	-0.0015
	(-0.95)	(-0.94)	(-1.16)	(-1.15)	(-1.22)	(-1.23)	(-0.95)	(-0.78)
Attitude	-0.0227	-0.0234	-0.0181	-0.0176	-0.0168	-0.0166	-0.0260	-0.0256*
	(-1.51)	(-1.56)	(-1.47)	(-1.43)	(-1.36)	(-1.35)	(-1.61)	(-1.76)
Relatedness	0.0020	0.0019	0.0015	0.0015	0.0017	0.0017	0.0021	0.0021
	(1.00)	(0.95)	(0.90)	(0.93)	(1.03)	(1.02)	(1.01)	(1.12)
Cross border	0.0027**	0.0028**	0.0025**	0.0025**	0.0027	0.0028	0.0028	0.0023
	(2.16)	(2.11)	(2.14)	(2.17)	(1.55)	(1.59)	(1.22)	(1.11)
Firm-specific variables								
Relative size	0.0025*	0.0026*	0.0023*	0.0024*	0.0024*	0.0024**	0.0027*	0.0020
	(1.66)	(1.72)	(1.92)	(1.94)	(1.96)	(1.99)	(1.71)	(1.40)
Leverage	-0.0158	-0.0153	-0.0099	-0.0104	-0.0110	-0.0109	-0.0186	-0.0176*
	(-1.44)	(-1.40)	(-1.10)	(-1.15)	(-1.22)	(-1.22)	(-1.58)	(-1.66)
FCF	-0.0005	-0.0013	0.0007	-0.0002	0.0002	0.0008	-0.0025	-0.0038
	(-0.05)	(-0.12)	(0.08)	(-0.03)	(0.03)	(0.10)	(-0.23)	(-0.39)
Constant	-0.0125	0.0005	0.0109*	0.0107*	0.0108*	0.0109*	-0.0035	-0.0061
	(-0.99)	(0.07)	(1.72)	(1.70)	(1.71)	(1.73)	(-0.42)	(-0.81)
R^2-adjusted	34.15%	33.93%	34.34%	34.03%	33.76%	33.85%	33.72%	33.61%
Heterogeneity	1.315***	1.231***	1.247***	1.241***	1.240***	1.252***	1.231***	1.201***
Firm Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	3.02	2.85	3.17	2.93	2.73	2.79	2.70	2.61
Observations	2552	2552	2552	2552	2552	2552	2552	2552
No. of firms	1065	1065	1065	1065	1065	1065	1065	1065

Note: t-statistics are reported in parentheses. All t-statistics are based on robust, firm-clustered standard errors. *, **, *** represents significance at the 1%, 5% and 10% level,.

4.4 Alternative event window of the CAR

As discuss, the choice of the event window for CAR is crucial, which will directly affect the results. As part of robustness check, we hereby present the results with the 3-day event window CAR to avoid any compound effect. From Table 9, we can find that all the results are consistent with the main results that we have found with 5-day window CAR which indicate that the frequent acquisition in medium term will negatively affect the performance around 3 days of the announcement date.

5. Conclusion

Does merger frequency affects stock performance? It is evident from this study that short-term frequency and medium-term frequency are negatively related to CARs. However, long-term frequency is not significantly related to the market expectation of performance improvement. This suggests that both quantity and the temporal dimensions need to be considered when choose a measure of merger frequency.

In particular , in order to explore the impact of merger frequency on market expectation about the future performance of an acquiring firm more in detail, this paper examines the interaction of the number of takeover events with the time. The interaction provides the advantage of assessing the argument between the management hubris and the learning effect explanations to the mergers and acquisition activities. The estimation results with the interaction of frequency with time indicates that the two managerial behaviours co-exist. Results indicate that the negative effect of the short term and medium term merger frequency decreases over time and may become insignificant, suggesting that it takes time for the managers to digest and learn from their past experience, which will gradually offset the negative impact caused by the management hubris. The results are robustness with the subsample of OECD countries, developed countries, US and EU countries.

Table 9. The effect of merger frequency on acquirer stock performance based on 3-day CARs

	Panel A: Full sample		Panel B: Full sample with interaction variable	
Dependent variable: CAR[-1+1]	(1)	(2)	(3)	(4)
Merger Frequency				
Freq1	-0.0002		-0.0002	
	(-0.42)		(-0.41)	
Freq2		-0.0017*		-0.0016*
		(-1.74)		(-1.65)
Deal-specific variables				
Cash	0.0015	0.0016		
	-0.63	-0.63		
Stock	-0.0017	-0.0014		
	(-0.52)	(-0.42)		
Public	-0.0165***	-0.0167***		
	(-6.00)	(-6.06)		
Private	-0.0014	-0.0013		
	(-0.65)	(-0.60)		
Cash*public			0.0004	0.0003
			-0.11	-0.09
Stock*public			-0.0211***	-0.0211***
			(-5.16)	(-5.15)
Cash*private			-0.0008	-0.0007
			(-0.35)	(-0.33)
Stock*private			0.006	0.0066
			-1.37	-1.52
Attitude	-0.0310*	-0.0316*	-0.0397**	-0.0403**
	(-1.75)	(-1.79)	(-2.28)	(-2.31)
Relatedness	-0.0032	-0.0031	-0.0031	-0.0031
	(-1.42)	(-1.40)	(-1.41)	(-1.39)
Cross border	0.0039	0.004	0.0045*	0.0045*
	-1.58	-1.6	-1.85	-1.87
Firm-specific variables				
Relative size	0.0107***	0.0106***	0.0102***	0.0101***
	-7.22	-7.16	-7.07	-7.01
Leverage	0.0035	0.0029	0.0042	0.0036
	-0.47	-0.39	-0.57	-0.5
FCF	-0.0257***	-0.0256***	-0.0260***	-0.0259***
	(-4.66)	(-4.65)	(-4.79)	(-4.78)
Constant	0.0232***	0.0270***	0.0203***	0.0238***
	-4.73	-5.18	-4.6	-5.02
R^2-adjusted	33.15%	33.17%	33.61%	33.63%
Heterogeneity	1.85***	1.85***	1.87***	1.87***
Firm Dummy	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES
F-statistic	8.22	8.36	7.89	8.02
No. of pooled observations	12968	12968	12968	12968
No. of firms	6098	6098	6098	6098

Note: Cumulative abnormal returns are calculated for the 3-day (−1, +1) around the acquisition announcement (day 0). A modified market-adjusted model:$AR_{it} = R_{it} - R_{mt}$ is obtained to estimate the abnormal returns.. Statistical significance is marked at 1% (***), 5% (**) and 10 (%) levels, based on robust standard errors.

Table 9 Panel C. The effect of medium-term merger frequency on acquirer stock performance based on 3-day CARs Continued

VARIABLES	(1) 2000-2003 CAR[-1,+1]	(2) 2001-2004 CAR[-1,+1]	(3) 2002-2005 CAR[-1,+1]	(4) 2003-2006 CAR[-1,+1]	(5) 2004-2007 CAR[-1,+1]	(6) 2005-2008 CAR[-1,+1]	(7) 2006-2009 CAR[-1,+1]	(8) 2007-2010 CAR[-1,+1]
Freq2	-0.0012***	-0.0018***	-0.0011**	-0.0009*	-0.0008*	-0.0009*	-0.0010*	-0.0003
	(-2.60)	(-2.81)	(-2.30)	(-1.94)	(-1.87)	(-1.89)	(-1.81)	(-0.74)
Deal-specific variables								
Cash	0.0015	0.0044***	0.0006	0.0006	0.0005	0.0005	0.0005	0.0018*
	(1.31)	(3.02)	(0.41)	(0.39)	(0.34)	(0.34)	(0.36)	(1.72)
Stock	-0.0007	-0.0034*	-0.0009	-0.0009	-0.0010	-0.0009	-0.0009	-0.0008
	(-0.44)	(-1.74)	(-0.45)	(-0.47)	(-0.50)	(-0.48)	(-0.46)	(-0.61)
Public	-0.0062***	-0.0107***	-0.0079***	-0.0079***	-0.0079***	-0.0079***	-0.0079***	-0.0054***
	(-4.85)	(-6.54)	(-4.86)	(-4.84)	(-4.83)	(-4.84)	(-4.85)	(-4.73)
Private	-0.0004	0.0017	-0.0014	-0.0014	-0.0015	-0.0014	-0.0014	-0.0001
	(-0.41)	(1.28)	(-1.10)	(-1.08)	(-1.11)	(-1.10)	(-1.07)	(-0.16)
Attitude	-0.0197**	-0.0203*	-0.0229**	-0.0230**	-0.0229**	-0.0229**	-0.0227**	-0.0184**
	(-2.42)	(-1.92)	(-2.19)	(-2.19)	(-2.18)	(-2.18)	(-2.17)	(-2.51)
Relatedness	0.0002	-0.0008	-0.0006	-0.0005	-0.0005	-0.0006	-0.0006	0.0002
	(0.17)	(-0.57)	(-0.43)	(-0.42)	(-0.41)	(-0.43)	(-0.44)	(0.23)
Cross border	0.0011	0.0021	0.0014	0.0015	0.0015	0.0015	0.0016	0.0010
	(0.93)	(1.44)	(0.99)	(0.99)	(1.01)	(1.03)	(1.06)	(1.00)
Firm-specific variables								
Relative size	0.0019***	-0.0008	0.0042***	0.0042***	0.0042***	0.0042***	0.0042***	0.0013**
	(2.72)	(-0.87)	(4.77)	(4.78)	(4.78)	(4.77)	(4.76)	(2.05)
Leverage	0.0025	0.0066	0.0041	0.0041	0.0043	0.0044	0.0044	0.0021
	(0.73)	(1.49)	(0.93)	(0.93)	(0.98)	(0.99)	(1.00)	(0.69)
FCF	-0.0053**	-0.0047	-0.0097***	-0.0098***	-0.0098***	-0.0098***	-0.0098***	-0.0043*
	(-2.09)	(-1.43)	(-2.98)	(-3.00)	(-3.00)	(-3.00)	(-3.01)	(-1.87)
Constant	0.0086***	-0.0177***	0.0190***	0.0191***	0.0191***	0.0192***	0.0192***	0.0029
	(3.75)	(-6.14)	(6.64)	(6.64)	(6.65)	(6.69)	(6.68)	(1.45)
R^2-adjusted	31.46%	33.01%	31.72%	31.70%	31.69%	31.69%	31.69%	31.40%
Heterogeneity	1.227***	1.250***	1.372***	1.375***	1.321***	1.341***	1.373***	1.183***
Firm Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	4.84	10.12	5.70	5.63	5.61	5.62	5.60	4.63
No. of pooled observations	12968	12968	12968	12968	12968	12968	12968	12968
No. of firms	6098	6098	6098	6098	6098	6098	6098	6098

Note: Cumulative abnormal returns are calculated for the 3-day (−1, +1) around the acquisition announcement (day 0). A modified market-adjusted model:$AR_{it} = R_{it} - R_{mt}$ is obtained to estimate the abnormal returns. Statistical significance is marked at 1% (***), 5% (**) and 10 (%) levels, based on robust standard errors.

Table 9 Panel D. The effect of medium-term merger frequency on acquirer stock performance based on 3-day CARs (with interaction variables)

VARIABLES	(1) 2000-2003 CAR[-1,+1]	(2) 2001-2004 CAR[-1,+1]	(3) 2002-2005 CAR[-1,+1]	(4) 2003-2006 CAR[-1,+1]	(5) 2004-2007 CAR[-1,+1]	(6) 2005-2008 CAR[-1,+1]	(7) 2006-2009 CAR[-1,+1]	(8) 2007-2010 CAR[-1,+1]
Merger Frequency								
Freq2	-0.0012***	-0.0018***	-0.0011**	-0.0009*	-0.0008*	-0.0009*	-0.0010*	-0.0003
	(-2.60)	(-2.81)	(-2.30)	(-1.94)	(-1.87)	(-1.89)	(-1.81)	(-0.74)
Deal-specific variables								
Cash*public	0.0019	0.0019	0.0016	0.0016	0.0016	0.0015	0.0016	0.0020
	(1.33)	(0.99)	(0.85)	(0.85)	(0.85)	(0.82)	(0.83)	(1.56)
Stock*public	-0.0097***	-0.0181***	-0.0111***	-0.0111***	-0.0111***	-0.0111***	-0.0112***	-0.0088***
	(-5.08)	(-7.32)	(-4.51)	(-4.52)	(-4.52)	(-4.52)	(-4.54)	(-5.14)
Cash*private	0.0002	0.0034**	-0.0008	-0.0007	-0.0008	-0.0008	-0.0008	0.0006
	(0.22)	(2.54)	(-0.58)	(-0.56)	(-0.61)	(-0.61)	(-0.59)	(0.68)
Stock*private	0.0007	-0.0006	0.0004	0.0004	0.0003	0.0004	0.0006	-0.0000
	(0.36)	(-0.23)	(0.17)	(0.15)	(0.11)	(0.16)	(0.23)	(-0.00)
Attitude	-0.0235***	-0.0266**	-0.0273***	-0.0274***	-0.0273***	-0.0272***	-0.0271***	-0.0218***
	(-2.88)	(-2.52)	(-2.61)	(-2.61)	(-2.60)	(-2.60)	(-2.59)	(-2.98)
Relatedness	0.0002	-0.0009	-0.0006	-0.0006	-0.0005	-0.0006	-0.0006	0.0002
	(0.16)	(-0.66)	(-0.43)	(-0.42)	(-0.41)	(-0.43)	(-0.44)	(0.20)
Cross border	0.0013	0.0027*	0.0017	0.0017	0.0017	0.0017	0.0018	0.0012
	(1.12)	(1.81)	(1.15)	(1.15)	(1.17)	(1.18)	(1.22)	(1.21)
Firm-specific variables								
Relative size	0.0016**	-0.0013	0.0039***	0.0039***	0.0039***	0.0039***	0.0039***	0.0010
	(2.34)	(-1.52)	(4.46)	(4.47)	(4.48)	(4.47)	(4.46)	(1.64)
Leverage	0.0029	0.0071	0.0047	0.0047	0.0048	0.0049	0.0050	0.0025
	(0.85)	(1.61)	(1.06)	(1.06)	(1.10)	(1.11)	(1.13)	(0.80)
FCF	-0.0055**	-0.0050	-0.0100***	-0.0100***	-0.0100***	-0.0100***	-0.0100***	-0.0044*
	(-2.15)	(-1.52)	(-3.05)	(-3.07)	(-3.06)	(-3.06)	(-3.07)	(-1.94)
Constant	0.0078***	-0.0179***	0.0172***	0.0172***	0.0172***	0.0173***	0.0173***	0.0024
	(3.72)	(-6.83)	(6.60)	(6.61)	(6.59)	(6.64)	(6.63)	(1.33)
R^2-adjusted	31.43%	32.60%	31.66%	31.62%	31.61%	31.64%	31.34%	31.35%
Heterogeneity	1.238***	1.250***	1.389***	1.338***	1.318***	1.389***	1.390***	1.192***
Firm Dummy	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES
F-statistic	4.72	8.71	5.50	5.45	5.74	5.44	5.43	4.47
No. of pooled observations	12968	12968	12968	12968	12968	12968	12968	12968
No. of firms	6098	6098	6098	6098	6098	6098	6098	6098

Note: Cumulative abnormal returns are calculated for the 3-day (−1, +1) around the acquisition announcement (day 0). A modified market-adjusted model:$\mathrm{AR}_{it} = \mathrm{R}_{it} - R_{mt}$ is obtained to estimate the abnormal returns. Statistical significance is marked at 1% (***), 5% (**) and 10 (%) levels, based on robust standard errors.

References

Aktas, N., Bodt, E. and Roll, R. (2009). Learning, hubris and corporate serial acquisitions, Journal of Corporate Finance, Vol15, 5, 543-561.

Argote, L., Beckman, S.L. and Epple, D. (1990). The Persistence and Transfer of Learning in Industrial Settings. Management Science, 36(2), 140-154.

Argyris, C. and Schön, D.A. (1978). Organizational learning: a theory of action perspective. Addison-Wesley OD series. 1. Reading, MA: Addison-Wesley.

Asquith, P., Bruner, R., Mullins, D.,. (1983). The gains to bidding firms from merger. Journal of Financial Economics 11 (April), 121-39

Ashkenas, R. N., DeMonaco, L. J., & Francis, S. C. (1998). Making the deal real: How GE Capital integrates acquisitions. Harvard Business Review 76, 165-178.

Barkema, H. G., Bell, J. H. J., & Pennings, J. M. (1996). Foreign entry, cultural barriers, and learning. Strategic Management Journal, 17, 151-166.

Billet, M.T. and Y. Qian. (2008). Are Overconfident CEOs Born or Made? Evidence of Self-Attribution Bias from Frequent Acquirers. Management Science 54, 1037-1051.

Boubakri, N., Chan,A. and Kooli, M. (2012). Are the busiest really the best? Further evidence from frequent acquirers, Journal of Multinational Financial Management 22, 1–23.

Bruton, G. D., Oviatt, B. M., & White, M. A. (1994). Performance of acquisitions of distressed firms. Academy of Management Journal, 37, 972-989.

Chang, S. (1998). Takeovers of privately held targets, method of payment, and bidder returns. Journal of Finance, 773−784.

Conn, R.L., Cosh, A., Guest, P.M. and Hughes, A. (2005). The Impact on UK Acquirers of Domestic, Cross-border, Public and Private Acquisitions. Journal of Business Finance and Accounting, 32, 815-870.

Cox, A. J., Portes, J. (1998). Mergers in Regulated Industries: the Uses and Abuses of Event Studies. Journal of Regulatory Economics 14, 281-304.

Doukas, J. and Petmezas, D. (2007). Acquisitions, Overconfident Managers and Self‐attribution Bias. European Financial Management, Vol 13, 3, 531-577.

Faccio, Mara, and Larry H. P. Lang. (2002). The ultimate ownership of western European corporations,. Journal of Financial Economics, 65, 365–395.

Fowler, K. L. & Schmidt, D. R. (1989). Determinants of tender offer post-acquisition financial performance. Strategic Management Journal 10, 339-350.

Fuller, K.P., Netter, J. and M. Stegemoller. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. Journal of Finance 57, 1763–1794.

Gaur, A., Malhotra, S., & Zhu, P. . (2013). Acquisition announcement and stock market valuation of rivals: A test of growth probability hypothesis. Strategic Management Journal, 34, 215-232.

Haleblian, J. and Finkelstein, S. (1999). The influence of organization acquisition experience on acquisition performance: A behavioral learning theory perspective. Administrative Science Quarterly, 44, 29-56.

Harding, D and Rovit, S. (2004). Building deals on bedrock, Harvard Business Review, 82, 121–128.

Hayward, M. L.A. (2001). When do firms learn from their acquisition experience? Evidence from 1990 to 1995. Strategic Management Journal, 23, 21-39.

Hitt, M. A., Harrison, J., Ireland, R. D., & Best, A. (1998). Attributes of successful and unsuccessful acquisitions of US firms. British Journal of Management, 9, 91-114.

Huber, G.P. (1991). Organizational Learning: The Contributing Processes and the Literatures. Organization Science, Vol. 2, No. 1, Special Issue: Organizational Learning: Papers in Honor of (and by) James G. , pp. 88-115.

Ismail, A. (2008). Which acquirers gain more, single or multiple? Recent evidence from the USA market. Global Finance 19, 72-84.

Jensen, M. (1986). Agency cost of free cash flow, corporate finance and takeovers. American Economic Review Papers and Proceedings, 323-329.

Jensen, M.C. and Ruback, R.S. (1983). The market for corporate control: The scientific evidence. Journal of Finance Economics, 11, 5-50.

Kauper, T.E. (2000) Merger Control in the United States and the European Union: Some Observations. St. John's Law Review.

Kusewitt, J. B. (1985). An exploratory study of strategic acquisition factors relating to

performance. Strategic Management Journal, Vol 6, 151-169.

Laamanen, T. and Keil, T. (2008). Performance of serial acquirers: toward an acquisition program perspective. Strategic Management Journal. 29, 663-672.

Lubatkin, M. (1983). Mergers and the Performance of the Acquiring Firm. Academy of Management Review, 8, 218-225.

MacKinlay, A.C. (1997). Event Studies in Economics and Finance. Journal of Economic Literature. 35, 13-39.

Martynova, M. & Renneboog, L.D.R.,. (2006). The Performance of the European Market for Corporate Control: Evidence from the 5th Takeover Wave. Discussion Paper .

Roll, R. (1986). The hypothesis of corporate takeovers. Journal of Business 59, 197-216.

Rovit,S., Harding,D. and Lemire, C. (2003). Turning deal smarts into M&A payoffs: frequent buyers usually score the best deals, provided that they add skills in each transaction, Merger and Acquisitions The Dealmakers Journal.