ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Bachelor Thesis Economics & Business Economics

An event study analysis:
The effect of M&A deal announcements classified as 'Fintech' takeovers on the acquirers' cumulative abnormal returns

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1 Introduction

Mergers and acquisitions (M&A) are frequently performed by companies for several different reasons and in multiple different ways. Motives range from entering new markets to increasing market share and from taxation advantages to increasing diversification. However, most often the motive of potential synergies is behind M&A activity. Companies predict financial gains since they believe the new combined company is not only able to reduce its fixed costs by removing duplicate factories or offices, but also by enjoying economies of scale in their production and generating significantly higher revenues. Statistics by the IMAA institute (2021) show that, even though multiple merger waves are present, you could detect a steady growth trend of the amount and size of M&A activity over the past four decades in the United States. Whereas in 1985 only 2,306 M&A deals took place for a total value of 305.64 billion US dollars, this number has increased to an all-time high of 18,385 deals for 1882.98 billion US dollars in 2019.

In recent decades, we have witnessed a rise of financial technology (FinTech) takeover specifically. Even though fintech is believed to make name for itself starting only after the economic crisis around 2018, one could also argue that decades before that fintech was already existent. According to Spindler (2019), digitalization of banks happened way before the financial crisis. In the early 1980's digitalization started when large financial networks arose. In 1995, Wells Fargo made history by being the first bank to enable customers to check their accounts digitally. Not long after, the emergence of the internet led to global online banking, digital transactions and many more online services that were offered to the clients. Nowadays, fintech is stronger related to different subjects, caused by the rise of the new blockchain network and artificial intelligence.

According to Sanicola (2018), fintech is defined as "the new applications, processes, products, or business models in the financial services industry, composed of one or more complementary financial services and provided as an end-to-end process via the internet." Regarding M&A, fintech takeovers are takeovers where the target company is bought to immediately increase the technological and innovative capacities of the acquiring company. The main motives for fintech takeovers include keeping up with the financial technology revolution and making a faster connection with new technology. Previous research demonstrates that fintech M&A announcements often lead to value creation in the short-term. Papers by Sahi (2017) and Dranev et al. (2019) find positive cumulative abnormal returns (CAR's) in the short-term after fintech deals are announced.

On the other hand, fintech takeovers may also be assumed rather risky by investors. A paper by Desyllas & Hughes (2010) mentions that fintech technological acquisitions are particularly prone to complications and disappointments. A recent example of this could be the takeover of Payvision by ING. Unknowingly, ING took over a firm that served dubious customers in the gambling and porn industry. Reportedly, ING has sold off parts of the acquired fintech firm resulting in a 200 million euro loss (Betlem et al., 2020). This perfectly illustrates the risk and potential complications of such a takeover and therefore it could cause investors to react more cautiously to the announcement of a fintech takeover compared to regular takeovers.

In line with opposing past views on this matter, this paper will address the following research question:

What effect do fintech takeover announcements have on the acquiror's short-term stock performance?

Using event study methodology, this paper will look at cumulative abnormal returns over four different event windows. The effect of the independent variable 'fintech classification' is analyzed broadly to investigate whether this could lead to different announcement returns compared to non-fintech takeovers. Furthermore, the fintech deals are analyzed to determine the effect of other independent variables such as relative deal size, crossborder/domestic and payment method.

This has led to results that are not widely supported by previous literature. Whereas previous research mostly shows results indicating a stronger short term positive stock performance, this paper displays results indicating a different relationship between fintech deals and stock performance. This paper illustrates that in general, a fintech M&A deal performed by a S&P 1500 acquiror leads to lower positive cumulative abnormal returns than non-fintech deals. On top of that, it is concluded that fintech deal CAR's do not differ significantly from 0.

The research will proceed as follows. In section 2 the theoretical framework, including the different hypotheses, is set out. Hereafter, in section 3 it is shown how specific data is gathered and how the research is designed. Section 4 displays the results. Finally, section 5 consists of concluding remarks, limitations and suggestions for further research.

2 Theoretical Framework

In this section, past literature on both M&A and fintech M&A will be analysed. First of all, past research on general M&A and fintech M&A will be discussed to review whether past papers conclude relatively higher or lower cumulative abnormal returns for fintech takeovers. This section then continues examining past research on (fintech) M&A focusing on 4 different deal characteristics. First, the size of acquirors during (fintech) takeovers will be discussed. Second, previous papers reviewing the role of relative deal size during (fintech) M&A will be examined. Fourth, a distinction between cross-border and domestic takeovers will be made. Finally, past research on pure stock and cash financed M&A deals will be reviewed. Within these subsections, five hypotheses assumed relevant will be formulated.

2.1 Mergers and Acquisitions

In general, past research indicates that M&A often does not create the value for acquirors that is initially expected. According to Mallikarjunappa and Nayak (2007), bidders tend to overestimate the target's value when bidding competitively and expected synergies will not be achieved as expected. Similarly, Nandy and Baag (2009) mention that acquirors neglecting the problem of adverse selection often leads to failure of mergers to create value for the acquiring company's shareholders. Furthermore, Bradley, Kim and Desai (1988) find that target stockholders realize greater gains after a merger at the expense of the shareholders of acquiring firms. Opposed to the beforementioned literature stating that M&A creates value only for the target, it is important to highlight that M&A also results in positive CAR's for the acquiring stockholders in multiple other cases. According to Langford and Brown (2004), substantial value can be created for acquiror's shareholders, when certain fundamental rules are followed.

2.1.1 Classification of target firm as fintech

Since fintech has witnessed a rapid development only in the past decade, limited past research is available that focusses on what effect fintech M&A has on the performance of the acquirors. Even though a paper by Desyllas & Hughes (2010) states that cautiousness by investors may lead to lower positive CAR's around fintech deal announcements, most past research has portrayed opposing conclusions. Past literature by Kohers and Kohers (2000) has shown that fintech M&A creates positive abnormal returns in the short term due to the

technological benefits that they can profit from. Another paper by Dranev et al. (2019) builds upon this by stating that they have discovered significant positive acquirors abnormal returns in the short-term after the acquisition of a fintech company. Due to the majority of past research making similar conclusions, the first hypothesis is as follows:

H1: Fintech M&A will lead to higher positive cumulative abnormal returns for the acquiror's stockholders compared to regular M&A.

2.1.2 Acquiring company's size

When the size of the acquiring company's is taken into account, past research has shown that the firm size of the acquiror has a negative correlation with the acquiror's stock returns. Moeller, Schlingemann and Stulz (2004) have found that shareholders of small acquirors earn systematically more when acquisitions are announced. Furthermore, Bajaj and Vijh (1995) argue that smaller firms acquiring fintech firms experience stronger market reactions compared to larger ones. In line with this are the findings described in the paper by Moeller et al. (2004), where a similar result for smaller acquirors is found. From this past literature it can be concluded that smaller acquiring firms are expected to experience greater value creation, since the innovation of the fintech firms will have a greater impact on them. As aforementioned, small banks may experience even higher cumulative abnormal returns considering the effect that innovation can have on their traditional structure. These findings have led to the second hypothesis:

H2: Acquiring firm's asset size has a positive relationship with cumulative abnormal returns.

2.1.3 Size of the M&A deal

Regarding the size of the deal, multiple papers suggest that more value is created by mergers or acquisitions smaller in size. Alexandridis, Fuller, Terhaar and Travlos (2013) argue that larger deals usually create less value than the acquisitions of smaller targets. Unobserved complexity of large deals is given as an explanation. Besides that, Healy & Palepu (1992) also mention that acquisitions of relatively larger sized firms show worse performance. They conclude that the firms acquiring relatively larger firms have more difficulties in digesting those firms and implementing their operations in their own. In line with this, the third hypothesis is as follows:

H3: The relative size of a fintech acquisition will be negatively correlated with the cumulative abnormal returns of the acquiring firm's shareholders

2.1.4 Cross-border vs domestic

Furthermore, another characteristic of an M&A deal being researched in this paper is whether a cross-border acquisition causes different returns compared to a domestic one. It is argued that lower value is created for cross-border M&A. For strongly regulated industries in particular, cross-border M&A will be highly unbeneficial due to the existence of obstacles such as cultural, legal or transaction barriers (Campa & Hernando, 2004). In line with the findings by Campa & Hernando (2004), Moeller & Schlingemann (2005) find that US firms who acquire cross-border targets relative to those that acquire domestic targets experience significantly lower stock returns of approximately 1%. Furthermore, a previous paper by Lusyana and Sherif (2016) has found higher positive abnormal returns for domestic fintech deals compared to cross-border ones. Finally, the paper by Zhang and He (2014) confirms this and argues that institutional barriers and cultural differences are reasons for cross-border fintech deals underperforming. Based on this previous research we may assume that investors are more likely to prefer domestic acquisitions, and this results in the third hypothesis:

H4: Domestic fintech acquisitions cause higher positive market reactions than cross-border deals.

2.1.5 Cash vs stock payment

Finally, the effect of a deal's payment method will be investigated. This discussion will be limited to only 'strategic buyers' since 'financial buyers', such as private equity firms, typically use cash to acquire their targets.

Usually, due to information symmetry theory, stock deals provide a signal to the shareholders that the acquiror's managers assume their stock to be overvalued. Consistent with this view is the paper by Yook et al. (2014). They find that stock takeovers typically lead to more negative abnormal returns than cash takeovers.

Other papers also provide further evidence in support of this view. For example, Chang (1998) mentions in this research that stock offers most frequently lead to negative abnormal returns when the target is publicly traded. Furthermore, Adra & Barbapoulos

(2018) state that overvalued acquirors using stock as their payment method experience significant negative announcement period abnormal returns. On top of that, Alexandridis et al. (2010) also mention that US acquirors that pay in stock lead to significant losses whereas cash transactions outperform stock deals and yield positive returns. Due to the corresponding results laid out in the previously named papers the fifth and final hypothesis is as follows:

H5: Takeovers paid entirely in stock lead to worse cumulative abnormal returns than those paid entirely in cash.

2.1.6 Control variables

In this section, four control variables will be discussed being relevant for the analysis. Whereas the first two address a specific deal characteristic, the other two address characteristics of acquirors.

2.1.6.1 Number of shares acquired (%)

When a company finances the takeover with stock, the number of shares acquired in a takeover is not always 100%. For several reasons, companies sometimes choose or have no other option than to buy only 50% of shares, for example. In line with a paper by Peltola (2021), you may assume that acquirors have more power in implementing profitable changes in their favor, which therefore also leads to higher positive market reactions. This paper only assumes takeovers where 50% or more of the target's shares are bought, so the percentage ranges from 50 till 100. This paper controls for different percentages of shares bought in fintech and non-fintech acquisitions.

2.1.6.2 Friendly vs hostile takeover

Another deal characteristic that will be controlled for in the research is the attitude of a takeover. The main difference between a friendly and hostile takeover finds itself in the attitude (approve/oppose) of the target's management and board of directors towards a takeover. Since previous papers, such as Chakrabarti et al. (2009), find significant higher stock market reactions for friendly takeovers, this paper will take into account this specific deal characteristic.

2.1.6.3 Leverage ratio

A firm characteristic that also will need to be controlled for is the leverage ratio of the acquiring firm. Previous research by Myers and Majluf (1984) find that increased leverage has a positive effect on post-acquisition performance. They mention that the danger of financial distress, due to higher leverage, incentivizes the acquiror's management to better a company's performance. Therefore, this paper will include leverage of the acquiror in its analysis.

2.1.6.4 Tobin's Q

The final control variable considered in this paper is Tobin's Q. This economic ratio provides a measure that is calculated by dividing the total market value by the total assets of the acquiror. Higher Q indicates that a company has positive investment opportunities in the future (Mestdagh, 2017). This goes hand in hand with an increase in shareholder wealth, since good investments may impact the stock price positively. In a paper by Lang et al. (1989), the results indicated that acquirors with a higher Q performed better when pursuing M&A; higher Tobin's Q led to higher positive cumulative abnormal returns. For this reason, this variable is also taken into account.

3. Methodology & Data

In the data section, an extensive overview of the steps regarding sample selection will be given; the chronological order of different databases that have been used to gather the required data will be discussed in detail. Also, several criteria have been applied to the data set to ensure a representative sample that can be used to perform the required regressions. Furthermore, the methodology section will elaborate on both the event study and regression methodology that has been applied.

3.1 Data

This thesis uses a data sample that is acquired as follows. Different databases are used to attract the relevant data, which is later merged, creating a well-ordered Stata-dataset. This is then used to perform event study methodology and multiple regressions.

First of all, the ThomsonOne database has been consulted to collect all mergers or acquisitions of both fintech and non-fintech deals between 1980 and 2020. In line with the paper written by Dranev et al. (2019), target tech firms are identified as firms that consist of 1 of the following Target Primary SIC codes:

- *Computer programming services* *(7371)*
- *Pre-packaged Software* *(7372)*
- *Computer integrated systems design* *(7373)*
- *Data processing services* *(7374)*

Besides that, a criterion for acquiring firms is added to make sure that only financial acquirors are included in the Fintech-classification sample. SIC codes 60-67 and 87-89 are considered financial acquirors (Dranev et al., 2019). A full list of these different SIC codes, including definitions, is given in Appendix A.

The combination of those acquiror and target SIC codes address all relevant fintech companies. Examples of companies included are companies that specialize in providing online credit data access and develop digital payment software.

On top of that several other criteria were selected to make sure only deals that are valued over $1,000,000, that own the status ‘completed’ and where a majority of the shares were acquired in the transaction are included in the sample. Finally, the following deal types have been excluded from the sample:

- *Minority Stake Purchases*
- *Acquisitions of Remaining Interest*

- *Privatizations*
- *Leveraged Buyouts*
- *Spinoffs*
- *Recapitalizations*
- *Self-Tenders*
- *Exchange Offers*
- *Repurchases*

All in all, this resulted in a total number of 260,096 non-fintech and 12,359 fintech deals.

Since this paper investigates M&A activity, it has been decided to only take the S&P 1500 super composite into account. Globally, the USA is ranked first in M&A deal activity and thus a broad index is chosen representing this geographical area. The S&P 1500 covers 90% of the U.S. stock market capitalization and consists of three separate indexes: The S&P 500, S&P 600 and S&P 400. After extracting all the companies that had been included in the S&P 1500 between 1980 and 2020, those companies' identifying cusips were merged with the ThomsonOne deals adding up to a total of 16,836 non-fintech and 1,328 fintech deals. These numbers represent the number of (non-)fintech acquisitions performed by S&P 1500 companies over the period 1980-2020.

The next step in the data gathering process consisted of retrieving the relevant company financials from Compustat – Capital IQ. Compustat covers annually and quarterly reported data of listed companies, and enables you to select the relevant variables, such as total assets, that are relevant for further researching the relationship between acquiring firm's asset size and cumulative abnormal returns, for example.

After, using the U.S. Daily Event Study option, provided by Wharton Research Data Services, CAR's were retrieved for the relevant fintech and non-fintech deals. Hereafter, all different datasets were merged in the Stata program to provide a well-arranged dataset.

3.1.1 Variable creation

Finally, adjustments have been made to variables so that relevant descriptive statistics can be extracted, and regressions can be performed. In this thesis, the descriptive statistics provide a quantitative overview of the sample's mean, standard deviation, median, minimum and maximum values. This section will lay out how independent and control variables are determined, and in some cases, transformed to enable perfect usage in the further analysis of

this paper. In section 3.1.2 the summary statistics for both the full- and fintech sample will be given in two separate tables.

3.1.1.1 Independent variables

For the independent variables used in hypotheses 1-5 the following adjustments are applied. The acquiror's asset size is transformed to a logarithmic variable and relative deal size is created to determine an acquisitions' size relative to the acquiring company's total asset size. This led to more reliable data, being less prone to outliers and better suiting the regressions later performed. For the variables fintech, crossborder, cash payment and stock payment, dummy variables are created displaying 1 if applicable and 0 otherwise.

3.1.1.2 Control variables

As for the control variables, first a dummy variable Friendly is created displaying 1 if a deal's attitude is friendly and 0 if a deal is hostile. Furthermore, the leverage ratio is calculated based on company financials retrieved from Compustat. Interest-bearing debt is calculated by adding up the total long-term debt with the debt in current liabilities. Hereafter, it is divided by the company's total assets to retrieve the leverage variable that has been used in this research (Masulis et al., 2007). Finally, Tobin's Q is calculated by adding total assets to the difference between a company's market- and book value of its equity. Dividing this number by the total assets gives Tobin's Q. This variable is also transformed into a logarithmic variable to make it less prone to outliers.

3.1.2 Summary statistics

Table 1. Summary statistics for all variables used in the full sample analysis

Variables	Mean	Std. Dev.	Median	Min	Max
CAR (-1,1)	0.0049	0.07	0.0020	-0.75	3.64
CAR (-2,2)	0.0051	0.07	0.0025	-0.86	3.65
CAR (-3,3)	0.0046	0.08	0.0021	-0.89	3.66
CAR (-10,10)	0.0033	0.12	0.0015	-1.23	3.53
Acquiring company's size (ln)	7.89	1.78	7.78	1.81	14.78
RelativeDealSize	0.10	0.26	0.04	0.00	15.64
CrossBorder	0.19	0.39	0.00	0.00	1.00
Cashonly	0.47	0.50	0.00	0.00	1.00
Stockonly	0.10	0.30	0.00	0.00	1.00
% Shares acquired	98.62	7.03	100.00	50.00	100.00

Friendly	0.99	0.09	1.00	0.00	1.00
Leverage ratio	0.24	0.18	0.23	0.00	1.00
Tobin's Q (ln)	0.59	0.52	0.49	-0.98	4.06
Number of observations	11914	11914	11914	11914	11914

Note. Missing values for some observations have resulted in a lower number of observations than initially collected.

Table 2. Summary statistics for all variables used in the fintech sample analysis

Variables	**Mean**	**Std. Dev.**	**Median**	**Min**	**Max**
CAR (-1,1)	0.0013	0.04	-0.0006	-0.16	0.12
CAR (-2,2)	0.0039	0.07	-0.0070	-0.14	0.23
CAR (-3,3)	0.0024	0.07	-0.0125	-0.14	0.25
CAR (-10,10)	0.0033	0.10	-0.0059	-0.13	0.34
Acquiring company’s size (ln)	8.94	2.83	8.43	3.74	14.26
RelativeDealSize	0.06	0.13	0.01	0.00	0.68
CrossBorder	0.15	0.36	0.00	0.00	1.00
Cashonly	0.49	0.51	0.00	0.00	1.00
Stockonly	0.11	0.31	0.00	0.00	1.00
% Shares acquired	99.17	5.66	100.00	61.2	100.00
Friendly	1.00	0.00	1.00	1.00	1.00
Leverage ratio	0.25	0.20	0.24	0.00	0.80
Tobin's Q (ln)	0.65	0.54	0.53	0.04	2.18
Number of observations	47	47	47	47	47

Note. Missing values for some observations have resulted in a lower number of observations than initially collected.

3.2 Methodology

According to economic theory, the so-called efficient market hypothesis assumes that all public information is reflected in a firm's stock price. Given this assumption, we enable ourselves to test what impact certain announcements can have on a company's stock price. This paper uses event study methodology to reflect what impact announcements of (fintech) takeovers can have on a company's stock price. The following section will further lay out the event study methodology based on its different components. First, the choice for the event date and different event- and estimation windows will be discussed. Afterwards an explanation will be given elaborating on how normal and abnormal returns are calculated using the market model.

3.2.1 Event study methodology

3.2.1.1 Event date and window

Assuming new public information available to investors is directly incorporated in a company's stock price due to the efficient market hypothesis, we should carefully look at what event date is used to perform an event study. Since a takeover or merger deal is most often announced officially to the public, the announcement date will be taken as the actual event date.

The event window includes the event date and may differ in total length. The stock prices of the firm are examined during this period. In line with the paper by Krivin et al. (2003), on the one hand you could argue that a short event window, such as (-1,1), limits the possible influence of irrelevant abnormal returns that are not related to the event date news. On the other hand, you could advocate that a longer event window, such as (-10,10), takes into consideration more relevant days on which there could still be abnormal returns that have not been incorporated in the stock price directly.

For this reason, this paper incorporates 4 different event window lengths in its research. The windows (-1,1), (-2,2), (-3,3) and (-10,10) are used to perform the event study.

3.2.1.2 Estimation window

For the estimation window, a period of 100 days has been chosen, ending 50 days before the event date. In line with Cowan (1992) and Liargovas (2011), the 100-day 'clean' period is used to determine the relationship between the firm's stock and the market index during a period that is uncorrelated to the news of the takeover or merger. A 100-day interval not only

minimizes the possibility of other news impacting the stock price over this period, but also represents the market fairly well, accounting for a hundred trading days.

3.2.1.3 Market model and abnormal returns

To capture the economic impact that M&A announcements have on a company's stock price we need to know the abnormal returns it creates. Abnormal returns are calculated by deducting the estimated normal returns from the actual returns observed over the event window. The normal returns can be estimated in different ways by using different expected return models. In this paper the market model is applied since this model minimizes the variance of the abnormal return by excluding the part of the return that is related to the variation in the market's return (MacKinlay,1997). The market model assumes a linear relationship between the market return and the firm's stock return:

$$E(R_{it}) = \alpha + \beta_i(R_{mt}) + \varepsilon_{it}$$

Then, the Abnormal returns are calculated as follows:

$$AR_{it} = R_{it} - E(R_{it})$$

Hereafter, the cumulative abnormal return (CAR) will be determined for the 4 different event windows. The abnormal returns for the event window days should be added up to determine the total effect that it can have on a company's performance. A negative CAR result will indicate that the news destructs shareholder wealth for the company and a positive CAR result will indicate that the news creates shareholder wealth. The CAR is calculated as follows:

$$CAR_{i(\tau 1,\tau 2)} = \sum_{\tau=\tau 1}^{\tau 2} AR_{it}$$

Finally, multiple one-sided t-test will be performed to test whether the CAR's are significantly different from zero. This parametric test is given below:

$$t_{CAR} = \frac{CAR_{it}}{\sigma(CAR_{it})/\sqrt{n}}$$

3.2.2 Regressions

Besides determining whether the CAR's differ significantly from zero for both the full- and fintech sample, several OLS regressions will be performed in Stata. To test our first and main hypothesis, the relationship between the announcement of a fintech-M&A deal and the cumulative abnormal returns will need to be analyzed. In line with Kohers & Kohers (2000) and Dranev (2019) it is expected that fintech deals do indeed create positive returns in the short-term. Assuming the variable 'fintech' as our independent variable and including the deal- and firm-characteristic variables 'AcquirorSize', 'RelativeDealsize', 'crossborder', 'cash payment', 'stock payment', '% shares acquired', 'Friendly', 'Leverage ratio' and 'Tobin's Q' to control for these different effects, we attempt to find out what effect fintech deals have on the different CAR's. i.year and i.industry represent the fixed effects that have been accounted for in all regressions. The equation below illustrates the mathematical model that has been applied. *i* represents the individual stocks.

$$(1)\ CAR_i = \beta_0 + \beta_1 Fintech_i + \beta_2 AcquirorSize_i + \beta_3 RelativeDealsize_i + \beta_4 Crossborder_i + \beta_5 Cash_i + \beta_6 Stock_i + \beta_7 SharesAcq_i + \beta_8 Friendly_i + \beta_9 Leverage_i + \beta_{10} TobinQ_i + i.year + i.industry + \varepsilon_i$$

Furthermore, this paper examines hypotheses 2 until 5 by investigating whether the highlighted deal and firm characteristics lead to higher or lower cumulative abnormal returns within the *fintech deal sample*. The other variables from the equation above are again added as control variables. The following regression is thus set up, examining only the abnormal returns related to fintech deals:

$$(2)\ CAR_i = \beta_0 + \beta_1 AcquirorSize_i + \beta_2 RelativeDealsize_i + \beta_3 Crossborder_i + \beta_4 Cash_i + \beta_5 Stock_i + \beta_6 SharesAcq_i + \beta_7 Friendly_i + \beta_8 Leverage_i + \beta_9 TobinQ_i + i.year + i.industry + \varepsilon_i$$

Finally, two more regressions are performed in favor of robustness. To make the variables 'AcquirorSize' and 'RelativeDealsize' more robust to outliers, they have been transformed from continuous variables into discrete variables (decTA/decRelativeDealsize) independently. This is done by splitting the sample in two deciles (dec) and hereafter creating dummy variables using 1 and 0 as the higher and lower deciles representatively for both acquiror size and relative deal size. These formulas will be as follows:

$$(3)\ CAR_i = \beta_0 + \beta_1 decAcquirorSize_i + \beta_2 RelativeDealsize_i + \beta_3 Crossborder_i + \beta_4 Cash_i + \beta_5 Stock_i + \beta_6 SharesAcq_i + \beta_7 Friendly_i + \beta_8 Leverage_i + \beta_9 TobinQ_i + i.year + i.industry + \varepsilon_i$$

$$(4)\ CAR_i = \beta_0 + \beta_1 AcquirorSize_i + \beta_2 decRelativeDealsize_i + \beta_3 Crossborder_i + \beta_4 Cash_i + \beta_5 Stock_i\ \beta_6 SharesAcq_i + \beta_7 Friendly_i + \beta_8 Leverage_i + \beta_9 TobinQ_i + i.year + i.industry + \varepsilon_i$$

4 Results

In this section, the findings of several short-term performance event studies and different Ordinary Least Squares (OLS) regressions will be analysed and compared. After applying the methodology to a well-ordered data set in the Stata program, results will be highlighted and dived deeper upon. This section will first display the results of different t-tests that were performed. Later on, the outcome of two different OLS regressions are given. The first of those will apply mainly to hypothesis 1. Whereas the second shows results that are linked to hypotheses 2 until 5. Finally, a robustness check is performed to correct for potential outliers in two of the independent variables. As described in the methodology section, the relative deal size and the total asset's size of the acquiror are transformed into dummy variables to analyse the possible effect that outliers could have on these variables' coefficients.

4.1 One and two sample t-tests

In table 3 the means for the three different samples "Full sample", "non-Fintech" and "Fintech" are portrayed. For all different event windows, the cumulative abnormal returns are positive for both Fintech and non-Fintech deals. A one-sample t-test has been performed to indicate whether CAR's for first three columns differ significantly from 0. *, ** and *** indicate significance assuming different significant levels. Remarkably, the fintech column indicates a positive cumulative abnormal return that is lower for all four event windows, compared to the non-fintech takeovers. Similar to a study by Aalbers & McCarthy (2015), the previous observation can be linked to investors regarding a fintech takeover as relatively risky. As mentioned by Desyllas & Hughes (2010), fintech deals more often lead to

disappointments and failures. Due to the innovative nature of fintech companies, complications are more likely to occur when implementing or integrating such a company. In the fourth column, Fintech deals are compared with non-Fintech deals through a two-sample t-test. No significantly different CAR's are observed for this final column.

Table 3. Results displaying and comparing means for all variables considering different samples

Variables	**Full sample**	**non-Fintech**	**Fintech**	**Difference two samples**
CAR (-1,1)	0.0049***	0.0049***	0.0013	0.0062
CAR (-2,2)	0.0051***	0.0051***	0.0039	0.0012
CAR (-3,3)	0.0046***	0.0046***	0.0024	0.0022
CAR (-10,10)	0.0033***	0.0033***	0.0033	0.0000
Acquiring company's size (ln)	7.89	7.89	8.94	
RelativeDealSize	0.10	0.10	0.06	
CrossBorder	0.19	0.19	0.15	
Cashonly	0.47	0.47	0.49	
Stockonly	0.10	0.10	0.11	
% Shares acquired	98.62	98.62	99.17	
Friendly	0.99	0.99	1.00	
Leverage ratio	0.24	0.24	0.25	
Tobin's Q (ln)	0.59	0.59	0.65	
Number of observations	11914	11,867	47	

Note. T-statistics are in parentheses; * p < 0.1, ** p <0.05, *** p < 0.01

4.2 Multivariate OLS regressions

To determine relationships between the dependent variable "cumulative abnormal returns" and multiple independent variables, regressions are performed. Through looking at which causes variation in observations, regressions enable us to identify different relationships between variables and provide an insight in how these impact each other. By consulting the program Stata, the merged data was used as input to perform different multivariate ordinary least squares regressions. In table 4 the coefficients for the main independent variable 'fintech' and nine control variables are given. As previously described, the four different event windows are taking into consideration. In between brackets, clustered standard errors on firm level are given. These are used to control for autocorrelation on firm level due to one single company performing multiple takeovers in the sample. All regressions in this table are

robust to year and industry fixed effects. While year fixed effects control for factors that change each year common to all deals, industry fixed effects control for different risk levels and performance across industries. In line with the previous section, it is again evident that the results indicate lower cumulative abnormal returns for fintech takeovers. Similar to the previous t-test results, the negative coefficients for the independent variable 'fintech' indicate a negative effect on acquiror's abnormal returns. Even though the fintech coefficients are not significant and thus no conclusions can be based upon them, they at least give an indication that fintech acquisitions are less favourable compared to regular acquisitions.

Table 4. OLS regression full sample results for the relationship between fintech and CAR's

	Event window			
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-3,3)**	**CAR (-10,10)**
Fintech (classification)	-0.0036	-0.0003	-0.0025	-0.0009
	(0.0056)	(0.0089)	(0.0092)	(0.0121)
Acquiring company's size (ln)	-0.0034***	-0.0035***	-0.0033***	-0.0038***
	(0.0004)	(0.0005)	(0.0005)	(0.0008)
RelativeDealSize	-0.0123*	-0.0158*	-0.0173**	-0.0136*
	(0.0076)	(0.0085)	(0.0080)	(0.0070)
CrossBorder	-0.0018	-0.0017	-0.0005	-0.0017
	(0.0015)	(0.0018)	(0.0019)	(0.0028)
CashOnly	0.0000	0.0006	0.0004	0.0001
	(0.0014)	(0.0016)	(0.0017)	(0.0024)
StockOnly	-0.0094***	-0.0093**	-0.0111***	-0.0202***
	(0.0031)	(0.0035)	(0.0040)	(0.0062)
% Shares acquired	-0.00004	-0.00007	-0.0001*	-0.0001
	(0.00006)	(0.00007)	(0.00008)	(0.0001)
Friendly	-0.0113*	-0.0092*	-0.0090	-0.0097
	(0.0060)	(0.0066)	(0.0075)	(0.0106)
Leverage ratio	0.0183***	0.0229***	0.0198***	0.0073
	(0.0059)	(0.0065)	(0.0068)	(0.0089)
Tobin's Q (ln)	0.0053***	0.0065***	0.0057***	0.0055
	(0.0016)	(0.0019)	(0.0019)	(0.0034)
Fixed effects	Year, industry	Year, industry	Year, industry	Year, industry
Observations	10,794	10,794	10,794	10,794
R-squared	0.0226	0.0216	0.0197	0.0173

Note. T-statistics are in parentheses; * p < 0.1, ** p <0.05, *** p < 0.01. Clustered standard errors; firm level

In line with previous papers, this paper analyzes another sample including only M&A deals that took place from 2008 onwards. Dranev (2019) and Peltola (2021) mention that fintech has arisen due to the need of old-fashioned banks to innovate, shown by the economic crisis around 2008. To determine possible different outcomes, this has also been accounted for in this paper. The results in table 9, which can be found in appendix B, indicate no significant difference to the full 1980-2020 sample. The independent variable "fintech deal" does have similar negative coefficients for this narrowed sample.

While the results show a moderately positive effect of fintech takeovers on S&P company's cumulative abnormal returns, this paper also investigates the effect that five independent variables can have on acquisition returns. As the number of observations in table 5 demonstrates, the effect of several deal characteristics *within* the fintech sample is analyzed.

First, the results portray a negative relationship between an acquiring company's asset size and cumulative abnormal returns. A significant negative coefficient is found for all four event windows. These findings thus add to past literature stating that smaller acquirors experience lower cumulative abnormal returns (Moeller, Schlingemann and Stulz, 2004; Bajaj and Vijh, 1995).

Second, the results display significant negative coefficients for the variable RelativeDealSize on the 3-day, 5-day and 7-day event windows. This would indicate a negative relationship between the size of a fintech deal and cumulative abnormal returns due to the announcement. As discussed by Alexandridis et al. (2013), this could be due to the unobserved complexity that large deals come with.

Finally, coefficients for the crossborder/domestic and payment method variables are altogether insignificant. Nevertheless, interesting observations can still be made. In line with previous literature, a positive relationship between takeovers in cash and a negative relationship between takeovers in stock is observed. This adds to previous literature by Yook et al. (2014) where the information asymmetry theory is mentioned as a reason; when a deal is paid in stock, investors interpret this as a signal by the acquiror's managers that their stock is overvalued.

Table 5. OLS regression fintech sample results for the relationship between deal/firm characteristics and CAR's

	Event window			
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-3,3)**	**CAR (-10,10)**
Acquiring company's size (ln)	-0.0005*	-0.0062**	-0.0105*	-0.0129*
	(0.0100)	(0.0190)	(0.0149)	(0.0116)
RelativeDealSize	-0.0679*	-0.0119*	-0.0166*	0.1207
	(0.0897)	(0.01564)	(0.1348)	(0.1238)
CrossBorder	0.0340	-0.0612*	0.0255	0.0097
	(0.0217)	(0.0349)	(0.0300)	(0.0248)
CashOnly	0.0011	0.0113	0.0381	-0.0646
	(0.0171)	(0.0325)	(0.0326)	(0.0495)
StockOnly	-0.0233	-0.0895	-0.0292	-0.0013
	(0.0609)	(0.1116)	(0.0845)	(0.0695)
% Shares acquired	-0.0012	-0.0054*	-0.0035	-0.0023
	(0.0009)	(0.0017)	(0.0015)	(0.0014)
Friendly	0.0000	0.0001	0.0002	0.0003
	(0.00002)	(0.00003)	(0.00001)	(0.00003)
Leverage ratio	0.0089	-0.1006	-0.1223	-0.1203
	(0.0435)	(0.0850)	(0.0660)	(0.0831)
Tobin's Q (ln)	0.0030	0.0326	0.0518	0.0302
	(0.0235)	(0.0477)	(0.0342)	(0.0323)
Fixed effects	Year, industry	Year, industry	Year, industry	Year, industry
Observations	47	47	47	47
R-squared	0.9284	0.8692	0.9181	0.9224

Note. T-statistics are in parentheses; * p < 0.1, ** p <0.05, *** p < 0.01. Clustered standard errors; firm

4.3 Robustness checks

In line with previous research by Dranev et al. (2019), this paper has also looked at regression outcomes for the market-adjusted and mean-adjusted model. Results for both models are given on 2 different event windows (3-day & 7-day) in table 6.

Table 6. OLS regression full sample results for the relationship between fintech and CAR's

	Market-adjusted		Mean-adjusted	
Variable	**CAR (-1,1)**	**CAR (-3,3)**	**CAR (-1,1)**	**CAR (-3,3)**
Fintech (classification)	-0.0101	-0.0075	0.0145	-0.0267
	(0.0151)	(0.0123)	(0.0133)	(0.0167)
Acquiring company's size (ln)	-0.0145*	-0.0067*	0.0245*	-0.0223**
	(0.0024)	(0.0016)	(0.0056)	(0.0026)
RelativeDealSize	-0.0183*	-0.0078	-0.0089	-0.0052*
	(0.0144)	(0.0213)	(0.0199)	(0.0369)
CrossBorder	0.0046	-0.0065	0.0035	-0.0118
	(0.0026)	(0.0036)	(0.0067)	(0.0098)
CashOnly	0.0005	0.0010	0.0008	0.0003
	(0.0025)	(0.0023)	(0.0167)	(0.0161)
StockOnly	-0.0135*	-0.0147**	-0.0267*	0.0381*
	(0.0056)	(0.0156)	(0.0367)	(0.0142)
% Shares acquired	-0.0005	0.0003	-0.0002	0.0008
	(0.0001)	(0.00009)	(0.0001)	(0.0003)
Friendly	0.0256	-0.0292*	-0.0215	-0.0581
	(0.0111)	(0.0156)	(0.0289)	(0.0284)
Leverage ratio	0.0089*	0.0111*	0.0376*	0.0486
	(0.0134)	(0.0125)	(0.0245)	(0.0152)
Tobin's Q (ln)	0.0022*	0.0154**	0.0137**	0.0328*
	(0.0077)	(0.0059)	(0.0152)	(0.0143)
Fixed effects	Year, industry	Year, industry	Year, industry	Year, industry
Observations	9,743	9,743	3,267	3,267
R-squared	0.0435	0.0378	0.0295	0.0228

Note. T-statistics are in parentheses; * p < 0.1, ** p <0.05, *** p < 0.01. Clustered standard errors; firm

As an extra robustness check, this paper has looked at interpreting the data of two independent variables specifically. Summarizing the in-depth data transformation described in the methodology section; The variables ‘Acquiring company’s size’ and ‘RelativeDealSize’ are split up in two deciles and hereafter dummy variables are created to filter out disrupting outliers that could influence the regressed coefficient. The results show no notable differences to the regression using the original variables.

Table 7. OLS regression fintech sample results robust to outliers Acquiring company's size

	Event window			
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-3,3)**	**CAR (-10,10)**
decTotalAssets	-0.0010***	-0.0031***	-0.1129***	-0.0773
	(0.0127)	(0.0221)	(0.0233)	(0.0863)
RelativeDealSize	-0.0101	-0.0043*	-0.0902*	0.2191**
	(0.0554)	(0.0842)	(0.0695)	(0.1083)
CrossBorder	0.0080**	-0.0210***	0.0398*	0.0264
	(0.0160)	(0.0226)	(0.0138)	(0.0565)
CashOnly	0.0021	0.0249	0.0143	-0.0495
	(0.0144)	(0.0233)	(0.0361)	(0.0991)
StockOnly	0.0143	-0.0145	-0.0249	-0.0047
	(0.0290)	(0.0548)	(0.0170)	(0.0182)
% Shares acquired	-0.0009	-0.0024***	-0.0042***	-0.0031***
	(0.0008)	(0.0015)	(0.0009)	(0.0010)
Friendly	0.0000	0.0000	0.0001	0.0004
	(0.00001)	(0.0000)	(0.00001)	(0.00005)
Leverage ratio	0.0086	-0.0089*	-0.1189**	-0.1369
	(0.0284)	(0.0518)	(0.0393)	(0.0964)
Tobin's Q (ln)	-0.0013	0.0145	0.0360	0.0244
	(0.0222)	(0.0399)	(0.0248)	(0.0380)
Fixed effects	Year, industry	Year, industry	Year, industry	Year, industry
Observations	47	47	47	47
R-squared	0.9478	0.9016	0.9554	0.9283

Note. T-statistics are in parentheses; decTotalAssets accounts for the dummy variable after having split the variable acquiring company's size in two; p < 0.1, ** p <0.05, *** p < 0.01

Table 8. OLS regression fintech sample results robust to outliers in relative deal size

	Event window			
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-3,3)**	**CAR (-10,10)**
Acquiring company's size (ln)	-0.0021*	-0.0043**	-0.0060*	-0.0157*
	(0.0156)	(0.0296)	(0.0165)	(0.0110)
decRelativeDealSize	-0.0139*	-0.0040**	-0.0172*	0.0114
	(0.4091)	(0.0806)	(0.0458)	(0.0274)
CrossBorder	0.0333	-0.0630*	0.0289	0.0051
	(0.0169)	(0.0335)	(0.0260)	(0.0293)
CashOnly	0.0003	0.0105	0.0371	0.0503
	(0.0480)	(0.0871)	(0.0317)	(0.0503)
StockOnly	-0.0123	-0.0955	-0.0353	0.0264
	(0.0197)	(0.0310)	(0.0584)	(0.0520)
% Shares acquired	-0.0008*	-0.0055*	-0.0035**	-0.0015
	(0.0005)	(0.0011)	(0.0007)	(0.0009)

Friendly	0.0000	0.0001	0.0002	0.0002
	(0.00002)	(0.00001)	(0.0000)	(0.00001)
Leverage ratio	0.0036	-0.1072	-0.1396*	-0.1145
	(0.0579)	(0.1102)	(0.0687)	(0.0784)
Tobin's Q (ln)	0.0086	0.0337	0.0576	0.0360
	(0.0309)	(0.0605)	(0.0355)	(0.0290)
Fixed effects	Year, industry	Year, industry	Year, industry	Year, industry
Observations	47	47	47	47
R-squared	0.9290	0.8693	0.9211	0.9201

Note. T-statistics are in parentheses; decRelativeDealSize accounts for the dummy variable after having split the variable relative deal size in two; * p < 0.1, ** p <0.05, *** p < 0.01

5 Conclusion & Discussion

This paper has examined a total of 16,836 M&A deals carried out by S&P 1500 companies to investigate what impact deals, classified as fintech, have on the acquiror's stock price. Through event studies, the cumulative abnormal returns around the announcement date are calculated for fintech and non-fintech takeovers. Furthermore, this paper looks at multiple deal characteristics and its effect on fintech deal cumulative abnormal returns. Built on past literature, hypotheses were formed. This paper's research tests those hypotheses through statistical analysis and regressions, so that conclusions can be drawn upon these.

This paper's first hypothesis states that fintech M&A will lead to relatively higher cumulative abnormal returns compared to regular M&A activity. The empirical results indicate that this is not the case. After analyzing both fintech and non-fintech CAR's and 'fintech' regression coefficients, this paper concludes that fintech does lead to positive but relatively lower market reactions for the acquiring company. Thus, the first hypothesis is rejected. Due to obstacles and complications related to the implementation of innovating financial technology companies, fintech takeovers often end up as disappointments. Acknowledging these potential dangers in taking over fintech targets, investors seem to be rather cautious with their investing behavior after a fintech takeover is announced.

For the second and third hypothesis, this paper has researched the effect of acquiror size and relative deal size on the cumulative abnormal returns caused by fintech takeovers. Past literature has led to the first hypothesis stating that smaller firms that acquire fintech targets have relatively higher positive cumulative abnormal returns. This paper confirms this

based on its findings. For the third hypothesis, this paper also confirms previous findings. The analysis indicates a lower cumulative abnormal return around the announcement of larger fintech M&A deals. Significant negative coefficients for both acquiring company's size and relative deal size have led to the acceptance of the second and third hypothesis.

Finally, this paper has looked at the impact of crossborder against domestic takeovers and the payment in cash against stock for hypothesis four and five respectively. Unfortunately, insignificant results for these variables have resulted in no definite conclusions to be drawn for the two final hypotheses, thus nor rejecting or accepting both. However, in line with hypothesis 5, the empirical results display positive coefficients for cash payments and negative coefficients for stock payments. This would be in line with the information asymmetry theory. Once again, since these coefficients are generally not significant, one should be very cautious interpreting these and drawing conclusions upon it.

To conclude, this paper can answer the research question, "*What effect do fintech takeover announcements have on the acquiror's short-term stock performance*", by stating that fintech M&A does not lead to higher cumulative abnormal returns. Even though, on average, positive abnormal returns have been found for fintech takeovers, investors seem to be more cautious when these are announced.

5.1 Limitations & Future research

When interpreting the analysis' results and concluding remarks, limitations should be considered. Firstly, since economists have not yet fully defined financial technology, this paper assumes a rather narrow definition of fintech. Although this led to a more accurate sample, this also meant that the fintech sample consisted of only 47 observations, making it hard to draw significant conclusions upon the results. Secondly, this paper disregards takeovers in other geographical areas besides Northern America. In this paper, S&P 1500 companies are examined. The S&P 1500 companies account for 90% of the US stock market capitalization, excluding all global (fintech) deals.

Therefore, possible suggestions for future research can be found in including other worldwide areas in its analysis. Behind Northern America, the continents Europe and Asia are second and third on the list of most M&A activity worldwide, which could be relevant incorporating in future research. Also, when a general definition of fintech is accepted by many economists, this will make future research more precise on what companies are included in its samples. This would be favorable for scientific significance.

References

Aalbers, H. L., McCarthy, K. J., & McCarthy, K. (2016). Marktreacties op de aankondiging van een technologische acquisitie.

Adra, S., & Barbopoulos, L. G. (2018). The valuation effects of investor attention in stock-financed acquisitions. *Journal of Empirical Finance*, *45*, 108-125.

Alexandridis, G., Fuller, K. P., Terhaar, L. & Travlos, N. G. (2013). Deal size, acquisition premia and shareholder gains, *Journal of Corporate Finance, 20*, 1-13.

Alexandridis, G., Petmezas, D., & Travlos, N. G. (2010). Gains from mergers and acquisitions around the world: New evidence. *Financial Management, 39*(4), 1671-1695.

Aliyu, A. A. & Tasmin, R. B. H. (2012). The impact of information and communication technology on banks' performance and customer service delivery in the banking industry. *International Journal of Latest Trends in Finance and Economic Sciences, 2*(1), 80-90.

Bajaj, M., & Vijh, A. M. (1995). Trading behavior and the unbiasedness of the market reaction to dividend announcements. *The Journal of Finance, 50*(1), 255-279.

Betlem, R., Groot, G., & Leupen, J. (2020). Hoe ING zich verslikte in blinde fintech-ambities. *Financieel Dagblad.*

Bradley, M., Kim, E. H. & Desai, A. (1988). Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms. *Journal of Financial Economics, 21*(1), 3-40.

Callen-Naviglia, J., & James, J. (2018). FINTECH, REGTECH AND THE IMPORTANCE OF CYBERSECURITY. *Issues in Information Systems, 19*(3).

Campa, J. M. & Hernando, I. (2004). Shareholder Value Creation in European M&A's. *European Financial Management, 10*(1), 47-81.

Capron, L. & Shen, J. (2007). Acquisitions of private vs. public firms: Private information, target selection, and acquirer returns. *Journal of Strategic Management, 28*(9), 891-911.

Chakrabarti, R., Gupta-Mukherjee, S., & Jayaraman, N. (2009). Mars–Venus marriages: Culture and cross-border M&A. *Journal of International Business Studies, 40*(2), 216-236.

Chang, S. (1998). Takeovers of privately held targets, methods of payment, and bidder returns. *The Journal of Finance, 53*(2), 773-784.

Cowan, A. R. (1992). Nonparametric event study tests. *Review of Quantitative Finance and accounting*, *2*(4), 343-358.

Desyllas, P., & Hughes, A. (2010). Do high technology acquirers become more innovative?. *Research Policy*, *39*(8), 1105-1121.

Dranev, Y., Frolova, K. & Ochirova, E. (2019). The impact of fintech M&A on stock returns. *Research in International Business and Finance, 48,* 353-364.

Faccio, M., McConnell, J. J. & Stolin, D. (2006). Returns to Acquirers of Listed and Unlisted Targets. *Journal of Financial and Quantitative Analysis, 41*(1), 197-220.

Healy, P. M., Palepu, K. G., & Ruback, R. S. (1992). Does corporate performance improve after mergers?. *Journal of financial economics*, *31*(2), 135-175.

Kohers, N. & Kohers, T. (2000). The value creation potential of high-tech mergers. *Financial Analysts Journal 53,* 40–48.

Krivin, D., Patton, R., Rose, E., & Tabak, D. (2003). Determination of the appropriate event window length in individual stock event studies. *Available at SSRN 466161*.

Langford, R. & Brown, C. (2004). Making M&A pay: lessons from the world's most successful acquirers. *Strategy & Leadership, 32*(1), 5-14.

Liargovas, P., & Repousis, S. (2011). The impact of mergers and acquisitions on the performance of the Greek banking sector: An event study approach. *International Journal of Economics and Finance*, *3*(2), 89-100.

Lusyana, D. & Sherif, M. 2016. Do mergers create value for high-tech firms? The hounds of dotcom bubble. *Journal of High Technology Management Research 27*(2), 196–213.

MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of economic literature*, *35*(1), 13-39.

Mallikarjunappa, T. & Nayak, P. (2007). Why Do Mergers and Acquisitions Quite Often Fail? *AIMS International, 1*(1), 53-69.

Masulis, R. W., Wang, C., & Xie, F. (2007). Corporate governance and acquirer returns. *The Journal of Finance, 62(4),* 1851-1889.

Mestdagh, J. V. (2017). The effect of board structure on M&A performance of acquiring companies: A study investigating the change of Corporate Governance landscape in the European Union

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004). Firm size and the gains from acquisitions. *Journal of Financial Economics, 73*(2), 201-228.

Moeller, S. B., & Schlingemann, F. P. (2005). Global diversification and bidder gains: A

comparison between cross-border and domestic acquisitions. Journal of Banking & Finance, 29(3), 533-564.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, *13*(2), 187-221.

Nandy, D. & Baag, P. (2009) MERGERS AND ACQUISITIONS. *Vidyasagar University Journal of Commerce, 14*, 51-66.

Neely, W. P. (1984). Banking Acquisitions: Acquirer and Target Shareholder Returns. *Financial Management, 16*(4), 66-74.

Peltola, S. (2021). Disruptive innovation or complementarity? *The impact of FinTech M&A announcements on acquirers' and their peers' stock returns.*

Pollari, I. (2016). The rise of fintech: Opportunities and challenges. *AJAF*, (3), 15.

Sahi, H. (2017). Studying market reactions to Fintech companies-Acquisitions and initial public offerings in OECD Countries.

Spindler, G. (2019). Fintech, digitalization, and the law applicable to proprietary effects of transactions in securities (tokens): A European perspective. *Uniform Law Review, 24*(4), 724-737.

Tanjung, A. S., Lemmen, J. J. G., & van den Hauwe, S. (2020). Studying Market Reactions to Fintech Acquisitions in North America and Europe: The Impact of Fintech Classificiation of Target Firms on the Acquirers' Cumulative Abnormal Returns.

Yook, K. C., Gangopadhyay, P., & McCabe, G. M. (1999). Information asymmetry, management control, and method of payment in acquisitions. *Journal of Financial Research*, *22*(4), 413-427.

Zhang, J. & He, X. (2014). Economic nationalism and foreign acquisition completion: the case of China. *International Business Review 23* (1), 212–227.

Appendix A

Acquiror primary US SIC code	Description
60	Depository Institutions
61	Nondepository Credit Institutions
62	Security & Commodity Brokers, Dealers, Exchanges & Services
63	Insurance Carriers
64	Insurance Agents, Brokers & Service
65	Real Estate
66	Activities Auxiliary to Financial Services and Insurance activities
67	Holding and Other Investment Offices
87	Engineering, Accounting, Research, Management and Related Services
88	Private Households
89	Miscellaneous Services

Appendix B

Table 9. OLS regression 2008- sample results for the relationship between fintech and CAR's

	Event window			
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-3,3)**	**CAR (-10,10)**
Fintech (classification)	-0.0039	-0.0011	-0.0036	-0.00021
	(0.0079)	(0.0056)	(0.0098)	(0.0145)
Acquiring company's size (ln)	-0.0028***	-0.0050***	-0.0022***	-0.0031***
	(0.0012)	(0.0007)	(0.0006)	(0.0006)
RelativeDealSize	-0.0111*	-0.0080	-0.0211	-0.0131
	(0.0085)	(0.0100)	(0.0085)	(0.0046)
CrossBorder	-0.0015	-0.0019	-0.0004	-0.0024
	(0.0030)	(0.0006)	(0.0021)	(0.0021)
CashOnly	0.0001	0.0008	0.0003	0.0001
	(0.0018)	(0.0040)	(0.0023)	(0.0012)
StockOnly	-0.0060*	-0.0080*	-0.0143*	-0.0123
	(0.0041)	(0.0045)	(0.0045)	(0.0033)
% Shares acquired	-0.00002	-0.00003	-0.0001*	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.00007)
Friendly	-0.0145	-0.0099	-0.0087	-0.0088
	(0.0067)	(0.0061)	(0.0047)	(0.0134)
Leverage ratio	0.0142**	0.0189**	0.0154**	0.0070*
	(0.0045)	(0.0061)	(0.0059)	(0.0066)
Tobin's Q (ln)	0.0020	0.0100	0.0052	0.0048
	(0.0028)	(0.0013)	(0.0018)	(0.0028)
Fixed effects	Year, industry	Year, industry	Year, industry	Year, industry
Observations	4,298	4,298	4,298	4,298
R-squared	0.0234	0.0236	0.0199	0.0176

Note. T-statistics are in parentheses; * p < 0.1, ** p <0.05, *** p < 0.01. Clustered standard errors; firm level