ESSEC BUSINESS SCHOOL

RESEARCH METHOD

Event study: How does the announcement of an acquisition impact the share price of the acquirer?

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1 - Context & Objectives

I. Context of our research question

We conducted an event study to examine acquirers' short-term abnormal stock returns around acquisition announcements. We then used cross-sectional regressions to identify which deal-specific and acquirer-specific characteristics help explain the variations in these market reactions.

This research addresses a central question in corporate finance : does M&A create value? More specifically, it examines how financial markets assess acquisitions from the acquirer's perspective, and whether market reactions reflect expected synergies or concerns about overpayment.

II. Objectives of our research question

The objective of this project is then to analyze the impact of M&A announcements on the acquirer's share price by examining stock price behavior days before and after the announcement date.

Part I : How does the market react to M&A announcements on average for acquirers?

Part II: What drives differences in market reactions?

2 – Hypothesis & Expected Results

H1 : Mean acquirer CAR* around announcements is ≤ 0

H2 : Large cap acquirers see a smaller reaction compared to small and mid caps (more analyst coverage, less financing risk, smaller relative deal size)

H3 : Larger relative deal size leads to more negative CAR (overpayment risk)

H4 : Acquiring a public target leads to more negative CAR (higher premiums, competition)

Financial Theory : The analysis tests the semi-strong form of market efficiency, which states that new public information is rapidly incorporated into stock prices.

Target Firm Reaction : Target stock prices are expected to increase by +20% to +40% immediately following the acquisition announcement, reflecting the acquisition premium.

Acquirer Firm Reaction : Acquirer stock prices are expected to remain stable or experience a slight decline of approximately 0.5% to 1.5% immediately after the announcement.

Heterogeneity of Outcomes : Market reactions are expected to vary depending on deal characteristics such as deal size, payment method, and whether the transaction is domestic or cross-border.

*Cumulative Abnormal Returns

3 – Data used for the regressions

Number of companies in the sample

Data Sources : Capital IQ, LSEG

Sample Scope : Europen firms (acquirer) → **804 071**

Acquisition announcements : Between 08/01/2024 and 07/08/2024 → **7 005**

Companies types : Public companies (Buyers/Investors) → **943**

Share prices : expressed in USD

Financial ratios : expressed in percentages

Units & variable definitions : expressed in USD million (default)

Data Cleaning & Adjustments :

Observations dropped when transaction price was not disclosed (≈ half of initial sample)

Observations dropped for data inconsistencies (e.g., share price equal to zero; very limited cases)

Observations also dropped due to cancelled acquisitions

Log for market cap

Number of observations (acquisitions) in the main regression: → **498**

4 – Methodology (1/2)

Methodological Choices

Companies financial results are based on the latest fiscal year ending (LTM) before 01/01/2024, with the STOXX 600 used as the common benchmark.

Announcements made on non-trading days are assigned t = 0 on the next trading day, and all event windows are defined in trading days rather than calendar days.

Part I – Measurement

An event study methodology is used to compute Cumulative Abnormal Returns (CAR) over a [–1; +1] trading day window, complemented by descriptive statistics.

The short window isolates the announcement effect and limits contamination from concurrent information releases, in line with standard empirical M&A practice.

4 – Methodology (2/2)

Part II – Explanation

Model framework: Cross-sectional OLS regression explaining CAR [–1; +1] using deal- and firm-specific characteristics.

Dependent Variable: CAR [–1; +1], with abnormal return computed relative to STOXX 600 daily returns

Key Independent Variables:
- Target type: public vs private (dummy)
- Payment method: share of cash (%)
- Relative deal size: deal value / acquirer market cap
- Cross-border deal: domestic vs cross-border (dummy)

Control Variables:
- Industry fixed effects
- Acquirer size: log market capitalization
- Financial controls: Leverage (Net Debt / EBITDA), Profitability (EBITDA margin), Liquidity (Cash / Total Assets), Valuation (Price-to-Book)

Robustness Checks: Re-estimation using CAR [–2; +2] to account for information leakage/delayed market reactions*

*robustness checks confirmed all of our findings for each regression

5 – Results and Interpretation (1/3)

Summary Statistics

Average deal size = around $200m
Median Deal size / market cap of acquirer = around 4%
Public/private: only around 3% of targets are public
Average cash used for acquisition = around 93%
Around 60% of deals are cross-border
(where target HQ =/= buyer HQ)
Market cap samples (33%/33%/33%):
Small: average mcap = around $42m
Mid: average mcap = around $680m
Large: average mcap = around $20,000m

CAR -1/+1 day mean/median for the 3 different sub samples as follows :

```
df_small['car_1'].mean()
-0.12662956619792987
df_small['car_1'].median()
-0.3968454353707739
df_mid['car_1'].mean()
-0.11256257471908601
```

```
df_mid['car_1'].median()
-0.07271082592832356
df_large['car_1'].mean()
-0.023097126019198194
df_large['car_1'].median()
-0.10024204362302391
```

The results show that the mean and median CAR (−1,+1) are negative across all three subsamples, indicating that acquisition announcements are, on average, associated with a negative market reaction for acquirers. However, this effect is less pronounced for large-cap acquirers, whose CARs are closer to zero compared to small- and mid-cap firms, suggesting a weaker market reaction for larger firms. This **confirms H1 and H2**.

5 – Results and Interpretation (2/3)

OLS Regression Results

Dep. Variable:	car_1	R-squared:	0.023
Model:	OLS	Adj. R-squared:	0.006
Method:	Least Squares	F-statistic:	1.432
Date:	Tue, 30 Dec 2025	Prob (F-statistic):	0.201
Time:	01:03:49	Log-Likelihood:	-781.84
No. Observations:	355	AIC:	1578.
Df Residuals:	348	BIC:	1605.
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	-0.3574	0.525	-0.681	0.496	-1.385	0.671
cash_payment_pct	0.0028	0.006	0.483	0.629	-0.009	0.014
deal_mcap	-0.0015	0.001	-1.712	0.087	-0.003	0.000
cross_border	0.4760	0.278	1.711	0.087	-0.069	1.021
mcap_log	-0.0283	0.076	-0.372	0.710	-0.177	0.121
pb_ratio	8.229e-05	0.000	0.294	0.768	-0.000	0.001
debt_ebitda	-6.606e-05	0.000	-0.444	0.657	-0.000	0.000

Omnibus:	372.998	Durbin-Watson:	1.514
Prob(Omnibus):	0.000	Jarque-Bera (JB):	28562.515
Skew:	4.270	Prob(JB):	0.00
Kurtosis:	46.105	Cond. No.	5.16e+03

OLS Regression Results

Dep. Variable:	car_1	R-squared:	0.071
Model:	OLS	Adj. R-squared:	0.012
Method:	Least Squares	F-statistic:	0.5313
Date:	Tue, 30 Dec 2025	Prob (F-statistic):	0.783
Time:	01:03:49	Log-Likelihood:	-253.38
No. Observations:	102	AIC:	520.8
Df Residuals:	95	BIC:	539.1
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	-0.5689	1.087	-0.523	0.601	-2.700	1.562
cash_payment_pct	0.0104	0.011	0.987	0.323	-0.010	0.031
deal_mcap	-0.0019	0.002	-1.153	0.249	-0.005	0.001
cross_border	0.9214	0.714	1.291	0.197	-0.478	2.321
mcap_log	-0.1397	0.304	-0.459	0.646	-0.736	0.457
pb_ratio	-0.0012	0.003	-0.382	0.702	-0.007	0.005
debt_ebitda	-0.0005	0.001	-0.757	0.449	-0.002	0.001

Omnibus:	152.178	Durbin-Watson:	1.818
Prob(Omnibus):	0.000	Jarque-Bera (JB):	7793.493
Skew:	5.321	Prob(JB):	0.00
Kurtosis:	44.479	Cond. No.	3.65e+03

We run 4 models. The left table (Table 1) presents results for the entire sample. The right table (Table 2) presents the small cap subsample.
Relative deal size is statistically significant and negatively correlated with CAR for the entire sample, **confirming H3.**
Explanatory power is low for all 4 models, with R-squared values ranging between 2.3% and 9.7%. Most coefficients are statistically insignificant.
Overall, these results suggest that observable firm- and deal-level variables explain only a small portion of the variation in acquirers' CAR (−1,+1).
This is consistent with literature and highlights the difficulty of predicting market reactions to acquisition announcements.

5 – Results and Interpretation (3/3)

OLS Regression Results

Dep. Variable:	car_1	R-squared:	0.097
Model:	OLS	Adj. R-squared:	0.053
Method:	Least Squares	F-statistic:	11.10
Date:	Tue, 30 Dec 2025	Prob (F-statistic):	7.24e-10
Time:	01:03:50	Log-Likelihood:	-258.05
No. Observations:	130	AIC:	530.1
Df Residuals:	123	BIC:	550.2
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	-0.8186	1.849	-0.443	0.658	-4.442	2.805
cash_payment_pct	-0.0006	0.008	-0.072	0.942	-0.017	0.015
deal_mcap	-0.0229	0.008	-2.932	0.003	-0.038	-0.008
cross_border	0.5106	0.315	1.620	0.105	-0.107	1.128
mcap_log	0.0711	0.301	0.236	0.813	-0.519	0.662
pb_ratio	0.0012	0.000	3.408	0.001	0.001	0.002
debt_ebitda	-2.64e-05	0.000	-0.121	0.903	-0.000	0.000

Omnibus:	68.189	Durbin-Watson:	1.749
Prob(Omnibus):	0.000	Jarque-Bera (JB):	453.002
Skew:	1.664	Prob(JB):	4.28e-99
Kurtosis:	11.518	Cond. No.	1.52e+04

OLS Regression Results

Dep. Variable:	car_1	R-squared:	0.036
Model:	OLS	Adj. R-squared:	-0.013
Method:	Least Squares	F-statistic:	0.7947
Date:	Tue, 30 Dec 2025	Prob (F-statistic):	0.576
Time:	01:03:51	Log-Likelihood:	-239.64
No. Observations:	123	AIC:	493.3
Df Residuals:	116	BIC:	513.0
Df Model:	6		
Covariance Type:	HC3		

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	0.4189	1.677	0.250	0.803	-2.867	3.705
cash_payment_pct	-0.0035	0.011	-0.328	0.743	-0.025	0.018
deal_mcap	0.0039	0.013	0.294	0.769	-0.022	0.030
cross_border	0.0959	0.390	0.246	0.806	-0.668	0.860
mcap_log	-0.0320	0.145	-0.220	0.826	-0.317	0.253
pb_ratio	-6.866e-05	0.000	-0.180	0.857	-0.001	0.001
debt_ebitda	0.0009	0.000	1.853	0.064	-5.16e-05	0.002

Omnibus:	0.478	Durbin-Watson:	1.404
Prob(Omnibus):	0.787	Jarque-Bera (JB):	0.621
Skew:	0.050	Prob(JB):	0.733
Kurtosis:	2.666	Cond. No.	5.24e+03

The left table (Table 3) presents results for the mid caps subsample; the right table (Table 4) presents the large caps subsample.
Consistent with previous findings, relative deal size is negatively correlated and significant at the 1% level for mid caps (Table 3). Surprisingly, price-to-book ratio is also positive and significant for mid caps, indicating that premium or “growth” stocks experience a better market reaction to M&A announcements.
All variables are notably less significant for the large caps subsample, **confirming H4**.

7 - Limitations & Recommendations

Main Limitations

Earnings release may impact stock prices when they happen during the window of a deal announcement. We did not control for that.

Ideas for future research

1 - Run an analysis of the target stock price during announcement: How does the market value acquisition premium?

2 - Do synergies actually happen down the line? Run a post-merger integration study 6-12 months after acquisition? Does M&A destroy value due to over-paying or does it create value in the long run?