

## Information Effects from Hostile Takeovers ?

*Hai-Yen Chang, Fu-Ju Yang, Yi-Hsien Wang and Yi-Cheng Lien*

Chinese Culture University

### Abstract

Mergers and acquisitions(M&A) are a means of achieving globalization, inorganic growth, accessing the newest technologies, and enhancing capitalization. Glueck [12] indicated M&A is a way that firm pursuit external growth. There are many studies on the abnormal returns and announcement effects of mergers and acquisitions, but few papers focus on hostile takeovers. This paper applies the event study method to examine hostile takeovers in the electronic industry around the world and delve into the abnormal returns of the acquirers and the targets. The data on hostile takeovers in 1981-2016 are sourced from Security Data Company (SDC). The historical share prices are obtained from DataStream. The purpose is to validate the presence of significant abnormal returns on acquirers and targets and compare the abnormal returns between the acquirers and the targets, as well as between non-electronic industry companies and electronic industry companies in hostile takeovers.

*Keywords:* M&A, hostile Takeovers, abnormal return, event study.

### 1. Introduction

Business activities have been accelerating along with the advancement of technology, the faster pace of market liberalization, and regional economic blocs. The rise of globalization has eliminated the boundary between nations, with companies no longer restricted by their domestic markets when looking for growth. Many large firms seek expansion via merger and acquisition (M&A), and in fact, M&A is an important corporate strategy. As companies are tasked to maximize shareholders' wealth, M&A is one way to access capital, technology, or growth, and it is a quick strategy for achieving inorganic growth. In the past, most M&A activities were horizontal, with the main purpose of expanding operations and capitalization scale. However, technology is the name of the game, as companies purchase firms with technological advantages or enter new industries via acquisitions. In fact, M&A can also reduce the risks of diversifying into new industries. These factors set the scene for an increasing number of hostile takeovers.

The efficient market hypothesis developed by Fama [11] assumes investors are rational. The share price of the acquiring company on the date of announcement should, in theory, reflect the expected net present value of the acquisition. Sudarsanam, Holl,

and Salami [19] indicate that managers decide on mergers and acquisitions to increase shareholders' wealth. Empirical studies suggest abnormal returns are available to the shareholders of target companies upon announcements. Chakraborty [5] believe that these abnormal returns are significantly negative; while Sudarsanam et al. [19] and Tse, Soufani, and Swanstrom [21] posit that the abnormal returns are significantly positive. Datta, Pinches, and Narayanan [8] think that there are positive returns on acquirers, but Limmack [16] argue for negative wealth effects for acquirers. In Europe, the shareholders of acquiring companies enjoy positive and significant abnormal returns, while the shareholders of target companies suffer negative (albeit not significant) abnormal returns. Campa and Hernando [4] and Anand and Singh [2] find significant and positive abnormal returns for both targets and acquirers. The empirical study by Liu, Shu, and Sinclair [18] indicates that acquisitions are good news to the shareholders of acquirers, but not so to the shareholders of targets. In contrast, Alexandridis, Petmezas, and Travlos [1] observes positive abnormal returns on the target companies and slightly negative returns on the acquiring companies before and after the announcement dates.

In sum, there are no consistent conclusions regarding the impact of M&A announcements on shareholder wealth effects. The research findings in the literature often vary as a result of different geographies, time periods, industries, and M&A methods. Few studies explore the presence of abnormal returns in response to hostile takeovers. Hence, this paper focuses on hostile takeovers in the global electronic industry by applying an event study on the overall sample and observing the abnormal returns on acquirers and targets. This is followed by segmenting the sample into groups, such as successful versus failed acquisitions and acquisitions in the same industry versus those in a different industry. A comparison is then made on the abnormal returns of acquirers and targets in the different sub-groups. Below is an illustration of the research structure. Section 2 describes the data descriptions and research methodology. Next, Section 3 details the empirical analysis, and Section 4 presents the conclusions.

## 2. Sample Descriptions and Methodology

### 2.1. Data sources and collection

This paper samples hostile takeovers around the globe from January 1, 1981 through October 31, 2016. The data on mergers and acquisitions are sourced from Security Data Company (SDC), and the historical share prices and index performances are obtained from Datastream. The study samples a total of 124 listed companies all over the world, including 62 electronic companies that have made acquisitions. The target companies are divided into two groups: 21 in the electronic industry and 41 in the non-electronic industry. The acquisitions are also classified into two groups: 30 successful ones and 32 failed ones (Table 1). This paper deletes 8 companies from the sampling pool due to missing data; hence 116 listed companies are sampled for this study. Panel A shows descriptive statistics of hostile takeover data. Panel B shows the country where these firms located, and those concluding U.S.(73), U.K.(28), Canada(4), France(3), Switzerland(2), Japan(1), Spain(1), Norway(1), Germany(1), Netherlands(1), Sweden(1).

Table 1: Descriptive statistics of sample.

<i>Panel A. Descriptive Statistics</i>			
	Successes	Failures	Total
Acquirers	28	30	58
Targets	28	30	58
	Same Industries	Different Industries	Total
Acquirers	58	0	58
Targets	19	39	58
<i>Panel B. Distribution by Country</i>			
Country	Acquirer	Target	
U.S.	34	39	
U.K.	17	11	
Japan	1	0	
France	2	1	
Canada	1	3	
Netherlands	1	0	
Sweden	1	0	
Germany	1	0	
Norway	0	1	
Spain	0	1	
Switzerland	0	2	

## 2.2. Event Study Methodology

We used event study approach that based on market model. That was first designed by Fama, Fisher, Jensen and Roll [10]. We collected some M&A related study with event study approach (Danbolt and Maciver, [7]; Du and Boateng, [9]; Kyriazopoulos and Drymbetas, [13]; Lee and Chung, [15]; Asimakopoulos and Athanasoglou, [3]; Chakraborty, [5]; Anand and Singh, [2]; Lin, Cheng, Lin, and Wang [17]). The market model assumes a linear relationship between the returns of individual securities and the returns of the market (Chuang, and Wang [6]; Lee, Wang, Lin, and Lin [14]; Wang, Yang, and Chen [22]). The equation for the expected returns of an individual security,  $r_{it}$ , is expressed as follows:

$$r_{it} = \alpha_i + \beta_i r_{mt} + u_{it} \quad (2.1)$$

Where  $R_{it}$  denotes the daily return of stock  $i$  on day  $t$ ,  $r_{mt}$  is the daily return of the market on day  $t$ ,  $\alpha_i$  is the intercept,  $\beta_i$  is the systematic risks,  $u_{it}$  is the error term. The daily returns of individual securities and the market during the estimation period are calculated and then analyzed with the least square method, which is a regression technique. The purpose is to derive the optimal estimates for  $\alpha_i$  and  $\beta_i$ , as well as the expected returns of individual securities during the observation period.

Abnormal returns are the delta between the expected returns (calculated for the estimation period in the market model) and the actual returns of the event period. The equation is as follows:

$$AR_{it} = r_{it} - (\hat{\alpha}_i + \hat{\beta}_i r_{mt}) \quad t = -15 \cdots +15 \quad (2.2)$$

The mean abnormal returns are calculated with each abnormal return, as follows:

$$AAR_t = \frac{1}{n} \sum_{i=1}^n AR_{it} \quad (2.3)$$

The sum of the mean abnormal returns throughout the event period is the cumulative abnormal returns. The equation is as follows:

$$CAR = \sum_{t=a}^b AAR_t \quad (2.4)$$

where “*a*” denotes the beginning of the window period, and “*b*” is the end of the window period.

### 3. Empirical Results and Analysis

Table 2 shows the analysis on abnormal returns and cumulative abnormal returns of the acquirers and targets in the overall sample of hostile takeovers. The results suggest significant and positive abnormal returns on the acquirers on the 4th day before the event, with significant and negative abnormal returns on the 2nd day before the event. The target companies report significantly positive abnormal returns on the 7th day before the event. Both the acquirers and the targets experience high abnormal returns on the event date and the following day. It is worth noting that the targets exhibit higher volatility than the acquirers in abnormal returns (Figure 1).

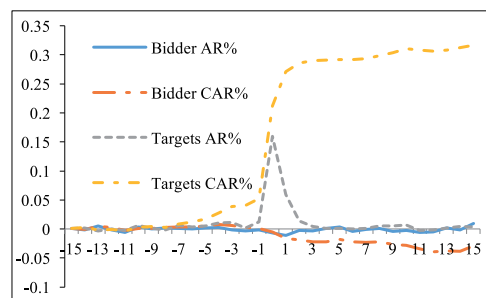


Figure 1: AR and CAR of the acquirer and target.

The cumulative abnormal returns on the acquirers before the announcement are positive, but turn negative, upon the announcement. The abnormal returns on the targets

Table 2: Analysis on ARs and CARs of the acquirers and targets.

Period	Acquirers		Targets	
	AR	CAR	AR	CAR
-15	0.0012	0.0012	0.0006	0.0006
-14	-0.0020	-0.0008	0.0016	0.0023
-13	0.0055	0.0048	-0.0035	-0.0013
-12	-0.0018	0.0030	0.0005	-0.0008
-11	-0.0058	-0.0028	-0.0023	-0.0031
-10	0.0038	0.0010	0.0061	0.0030
-9	0.0000	0.0010	0.0011	0.0041
-8	0.0020	0.0029	-0.0014	0.0026
-7	0.0007	0.0036	0.0060*	0.0087
-6	-0.0003	0.0033	0.0037	0.0124
-5	0.0019	0.0052	0.0051	0.0175
-4	0.0028*	0.0080	0.0102*	0.0277
-3	-0.0016	0.0063	0.0110**	0.0387
-2	-0.0036*	0.0028	0.0016	0.0404
-1	-0.0014	0.0013	0.0123*	0.0527
0	-0.0066**	-0.0053	0.1596***	0.2123
1	-0.0111***	-0.0164	0.0593***	0.2716
2	-0.0024	-0.0187	0.0142	0.2858
3	-0.0037	-0.0225	0.0041	0.2899
4	0.0006	-0.0219	0.0010	0.2909
5	0.0038	-0.0180	0.0009	0.2919
6	-0.0040	-0.0221	0.0002	0.2920
7	-0.0010	-0.0231	0.0012	0.2933
8	0.0010	-0.0221	0.0053	0.2985
9	-0.0040**	-0.0261	0.0056	0.3041
10	-0.0022	-0.0283	0.0066	0.3107
11	-0.0063**	-0.0346	-0.0026	0.3081
12	-0.0051*	-0.0397	-0.0014	0.3067
13	0.0021	-0.0376	0.0015	0.3082
14	-0.0014	-0.0389	0.0044	0.3127
15	0.0099	-0.0290	0.0039	0.3165

\*represent significance at the 10 percentage level.

\*\*represent significance at the 5 percentage level.

\*\*\*represent significance at the 1 percentage level.

are positive starting from the 10th day before the announcement. Table 2 indicates significantly negative abnormal returns on all the sampled acquirers, but the results are completely the opposite for the target companies. This implies that shareholders of

Table 3: ARs and CARs of successes and failures cases (Acquirers).

Period	Successes		Failures	
	AR	CAR	AR	CAR
-15	0.0007	0.0007	0.0017	0.0017
-14	0.0004	0.0011	-0.0042**	-0.0025
-13	0.0042	0.0053	0.0068	0.0043
-12	-0.0011	0.0042	-0.0025	0.0018
-11	-0.0092	-0.0051	-0.0025	-0.0007
-10	0.0076	0.0025	0.0002	-0.0005
-9	0.0047	0.0072	-0.0045	-0.0049
-8	-0.0059	0.0014	0.0093*	0.0044
-7	-0.0016	-0.0002	0.0028	0.0072
-6	0.0014	0.0012	-0.0020	0.0052
-5	0.0074*	0.0086	-0.0032	0.0020
-4	0.0031	0.0117	0.0026	0.0045
-3	-0.0053	0.0064	0.0018	0.0063
-2	-0.0021	0.0043	-0.0050**	0.0014
-1	-0.0003	0.0040	-0.0025	-0.0011
0	-0.0012	0.0027	-0.0116***	-0.0128
1	-0.0086**	-0.0059	-0.0135**	-0.0262
2	-0.0052	-0.0111	0.0004	-0.0259
3	-0.0039	-0.0150	-0.0036	-0.0294
4	0.0043	-0.0108	-0.0029	-0.0323
5	0.0051	-0.0057	0.0026	-0.0297
6	-0.0007	-0.0064	-0.0071*	-0.0368
7	0.0042	-0.0022	-0.0059***	-0.0427
8	0.0041	0.0019	-0.0019	-0.0446
9	-0.0063**	-0.0044	-0.0018	-0.0464
10	-0.0020	-0.0064	-0.0025*	-0.0488
11	-0.0096*	-0.0160	-0.0033	-0.0521
12	-0.0035	-0.0194	-0.0066	-0.0587
13	-0.0003	-0.0197	0.0044	-0.0543
14	-0.0012	-0.0210	-0.0015	-0.0558
15	0.0023	-0.0187	0.0171	-0.0387

\*represent significance at the 10 percentage level.

\*\*represent significance at the 5 percentage level.

\*\*\*represent significance at the 1 percentage level.

the acquirers view hostile takeovers as bad news, while the shareholders of the targets consider them good news.

Table 3 divides the sampled hostile takeovers into the successful sub-group and the

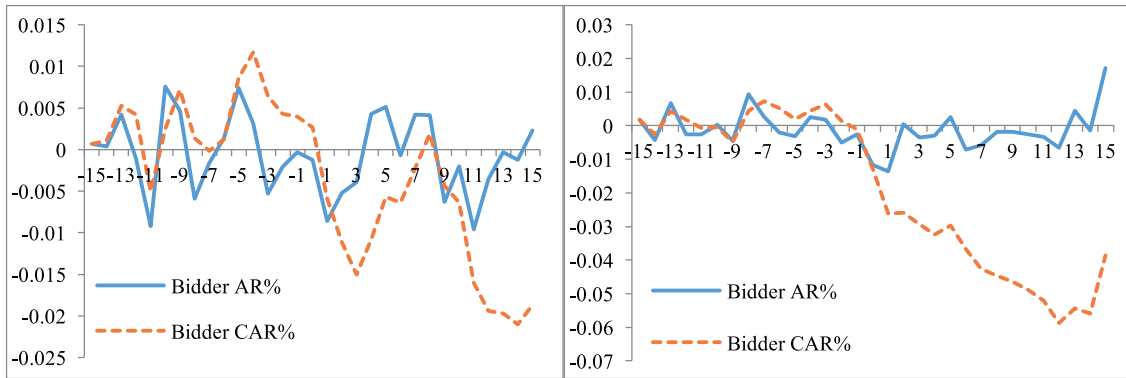


Figure 2: AR & CAR of successes cases (acquirers). Figure 3: AR & CAR of failures cases (acquirers).

failed sub-group. Successful takeovers result in significantly negative abnormal returns on the 1st, 9th, and 11th days, but positive (albeit not significant) returns between the 1st and the 9th days after the event (with the share prices bouncing back during this period). Failed takeovers report significantly negative abnormal returns on the 14th day before the event, upon the announcement, and on the following day. It is worth mentioning that the negative abnormal returns for takeover failures are more significant than those for takeover successes. The results are consistent with successful takeovers, failed takeovers, and the overall sample, but there are variances on the announcement date and the day following after announcement (Table 3). The peak of cumulative abnormal returns for successful takeovers is -0.0210 and that for failed takeovers is -0.0587. This indicates a stronger wealth effect for the shareholders in relation with the takeover failures.

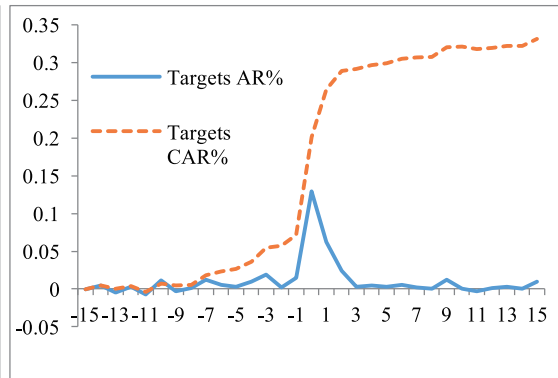
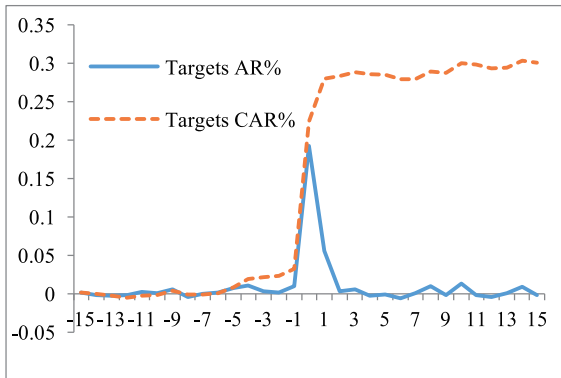


Figure 4: AR & CAR of successes cases (targets). Figure 5: AR & CAR of failures cases (targets).

Table 4 analyzes the target companies in two sub-groups: those in successful takeovers and those in failed takeovers. Both sub-groups exhibit significantly positive returns on the announcement date and the next day. Figures 4 and 5 present the same trend for abnormal returns and cumulative abnormal returns in the two-subgroups and the overall sample. This suggests no variances for the target companies no matter whether the proposed takeovers succeed or not. It is good news for the shareholders.

Table 4: ARs and CARs of successes and failures cases (Targets).

Period	Successes		Failures	
	AR	CAR	AR	CAR
-15	0.0014	0.0014	-0.0001	-0.0001
-14	-0.0018	-0.0004	0.0048	0.0048
-13	-0.0026	-0.0030	-0.0044	0.0003
-12	-0.0023	-0.0052	0.0031	0.0034
-11	0.0025	-0.0027	-0.0069	-0.0035
-10	0.0007	-0.0020	0.0111**	0.0076
-9	0.0056	0.0036	-0.0031	0.0045
-8	-0.0044	-0.0009	0.0014	0.0059
-7	-0.0003	-0.0011	0.0120**	0.0179
-6	0.0014	0.0003	0.0057	0.0237
-5	0.0074	0.0077	0.0030	0.0266
-4	0.0108**	0.0185	0.0097	0.0363
-3	0.0029	0.0214	0.0187**	0.0550
-2	0.0012	0.0226	0.0020	0.0570
-1	0.0094	0.0320	0.0150	0.0720
0	0.1918***	0.2238	0.1294***	0.2014
1	0.0557**	0.2795	0.0627***	0.2642
2	0.0034	0.2829	0.0243	0.2885
3	0.0052	0.2882	0.0030	0.2915
4	-0.0028	0.2854	0.0046	0.2961
5	-0.0009	0.2845	0.0026	0.2987
6	-0.0059	0.2786	0.0059*	0.3046
7	0.0001	0.2787	0.0023	0.3069
8	0.0100	0.2887	0.0008	0.3077
9	-0.0018	0.2870	0.0125*	0.3202
10	0.0132*	0.3001	0.0005	0.3207
11	-0.0024	0.2978	-0.0028	0.3178
12	-0.0044*	0.2934	0.0014	0.3193
13	0.0003	0.2937	0.0026	0.3218
14	0.0092*	0.3029	0.0000	0.3218
15	-0.0023	0.3006	0.0096	0.3314

\*represent significance at the 10 percentage level.

\*\*represent significance at the 5 percentage level.

\*\*\*represent significance at the 1 percentage level.

Table 5 divides the sampled acquirers in terms of their proposed takeovers of the companies in the same industry (i.e. the electronic industry) or in different industries. The results indicate significantly negative returns on the intra-industry acquisitions only



for the 6th and 14th days and on the extra-industry acquisitions for the 3rd day before the event. There is no specific point in time in terms of strong statistical significance for the intra-industry acquisitions. In contrast, there is a high level of negative significance on the event day and the following day for the extra-industry acquisitions and the overall sample.

Shareholders see negative cumulative abnormal returns for both the intra-industry and the extra-industry acquisitions. However, the returns are lower for the extra-industry acquisitions (with the highest point at -0.0536) than the intra-industry acquisitions (with the highest point of -0.0284).

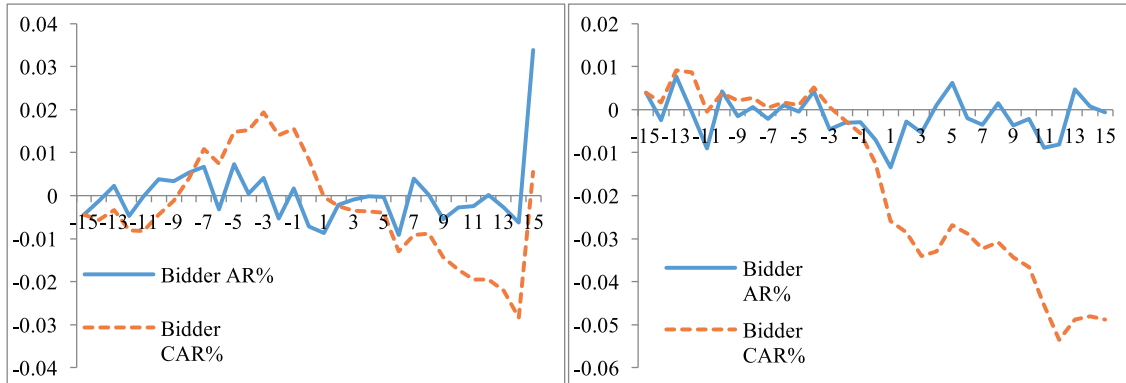


Figure 6: AR&CAR of same industries (acquirer). Figure 7: AR&CAR of different industries (acquirer).

Table 6 analyzes the abnormal returns on target companies in the same industry and from different industries. Both sub-groups witness significantly positive returns on the event date, with limited variances. Figures indicate the same trend for higher positive abnormal returns on the extra-industry acquisitions than on the same-industry acquisitions. The results are consistent with the overall sample and suggest good news for the shareholders of target companies.

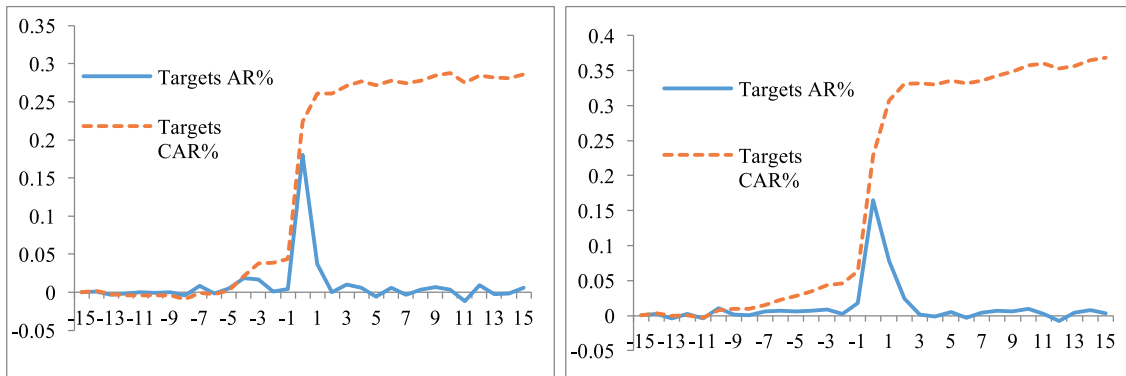


Figure 8: AR&CAR of same industries (target). Figure 9: AR&CAR of different industries (target).

Table 5: ARs and CARs of same and different industries cases (Acquirers).

Period	Same Industries		Different Industries	
	AR	CAR	AR	CAR
-15	-0.0044	-0.0044	0.0040	0.0040
-14	-0.0013	-0.0057	-0.0025	0.0016
-13	0.0023	-0.0034	0.0077	0.0092
-12	-0.0047	-0.0081	-0.0006	0.0086
-11	-0.0002	-0.0083	-0.0091	-0.0005
-10	0.0038	-0.0045	0.0042	0.0038
-9	0.0033	-0.0012	-0.0016	0.0021
-8	0.0053	0.0040	0.0006	0.0027
-7	0.0067**	0.0108	-0.0022	0.0005
-6	-0.0032	0.0075	0.0010	0.0016
-5	0.0073	0.0148	-0.0005	0.0011
-4	0.0005	0.0153	0.0042*	0.0052
-3	0.0041	0.0194	-0.0046*	0.0006
-2	-0.0053	0.0140	-0.0031	-0.0024
-1	0.0016	0.0156	-0.0030*	-0.0055
0	-0.0072	0.0084	-0.0070**	-0.0125
1	-0.0087	-0.0003	-0.0134***	-0.0259
2	-0.0022	-0.0024	-0.0027	-0.0286
3	-0.0010	-0.0035	-0.0054*	-0.0340
4	-0.0002	-0.0036	0.0010	-0.0330
5	-0.0003	-0.0039	0.0062	-0.0268
6	-0.0091**	-0.0130	-0.0020	-0.0288
7	0.0039	-0.0091	-0.0035	-0.0323
8	0.0002	-0.0089	0.0015	-0.0308
9	-0.0055	-0.0144	-0.0037	-0.0344
10	-0.0028	-0.0172	-0.0022	-0.0366
11	-0.0025	-0.0196	-0.0088**	-0.0455
12	0.0001	-0.0195	-0.0081**	-0.0536
13	-0.0027	-0.0222	0.0047	-0.0489
14	-0.0062**	-0.0284	0.0008	-0.0481
15	0.0339	0.0055	-0.0007	-0.0488

\*represent significance at the 10 percentage level.

\*\*represent significance at the 5 percentage level.

\*\*\*represent significance at the 1 percentage level.

#### 4. Conclusion

Mergers and acquisitions have increasingly become a strategic tool for companies

Table 6: ARs and CARs of same and different industries cases (Targets).

Period	Same Industries		Different Industries	
	AR	CAR	AR	CAR
-15	0.0002	0.0002	0.0009	0.0009
-14	0.0013	0.0015	0.0020	0.0029
-13	-0.0036	-0.0021	-0.0039	-0.0009
-12	-0.0018	-0.0039	0.0019	0.0009
-11	-0.0001	-0.0041	-0.0038	-0.0029
-10	-0.0005	-0.0045	0.0104**	0.0075
-9	0.0001	-0.0045	0.0018	0.0093
-8	-0.0044	-0.0088	0.0001	0.0094
-7	0.0081	-0.0008	0.0056	0.0150
-6	-0.0014	-0.0022	0.0070	0.0220
-5	0.0049	0.0027	0.0058	0.0278
-4	0.0182	0.0208	0.0068	0.0346
-3	0.0166	0.0374	0.0090**	0.0437
-2	0.0012	0.0386	0.0021	0.0457
-1	0.0046	0.0433	0.0180*	0.0637
0	0.1805***	0.2237	0.1650***	0.2287
1	0.0371	0.2608	0.0783***	0.3071
2	0.0002	0.2610	0.0238	0.3308
3	0.0101*	0.2711	0.0011	0.3319
4	0.0058	0.2769	-0.0016	0.3303
5	-0.0057	0.2713	0.0048**	0.3351
6	0.0060	0.2773	-0.0031	0.3320
7	-0.0033	0.2740	0.0039	0.3359
8	0.0037	0.2777	0.0067	0.3426
9	0.0064	0.2841	0.0058	0.3484
10	0.0032	0.2873	0.0093	0.3576
11	-0.0120*	0.2752	0.0025	0.3601
12	0.0093	0.2846	-0.0076**	0.3525
13	-0.0027	0.2819	0.0040	0.3565
14	-0.0014	0.2805	0.0082	0.3647
15	0.0056	0.2861	0.0033	0.3680

\*represent significance at the 10 percentage level.

\*\*represent significance at the 5 percentage level.

\*\*\*represent significance at the 1 percentage level.

to quickly access technologies, capitalization, and expand operations. This paper samples from Security Data Company (SDC) on hostile takeovers in the global electronic industry in 1981-2016. This is followed with an analysis and comparison of the abnor-

mal returns and cumulative abnormal returns on acquirers and targets. The empirical findings suggest significantly negative abnormal returns and cumulative abnormal returns on acquiring companies. In fact, statistical significance is particularly pronounced with extra-industry takeovers and in terms of immediate effects of the announcements. The results for the target companies are positive and significant, particularly with successful takeovers and extra-industry acquisitions. The immediate effects are also highly significant (same with acquirers).

In sum, hostile takeovers are bad news for the shareholders of acquirers as they are detrimental to shareholders' wealth. In contrast, they are good news for the shareholders of targets. Both acquirers and targets witness highly abnormal returns for extra-industry acquisitions. Finally, the wealth effects are completely the opposite for acquirers and targets, as reflected by the difference in abnormal returns. The announcement effects, however, both appear immediately on the announcement dates.

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Department of Banking and Finance, Chinese Culture University, Taiwan.

E-mail: irischang1014@gmail.com

Major area(s): Financial management, financial statement analysis, financial markets.

Department of Banking and Finance, Chinese Culture University, Taiwan.

E-mail: fuju@faculty.pccu.edu.tw

Major area(s): Corporate governance, investment strategy, corporate social responsibility.

Department of Banking and Finance, Chinese Culture University, Taiwan.

E-mail: wyx12@faculty.pccu.edu.tw

Major area(s): Decision science, applied economics, financial management, time series.

MS student of Graduate Institute of Banking and Finance, Chinese Culture University, Taiwan.

E-mail: shioulie3892@gmail.com

Major area(s): Merger and acquisition with event study.

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