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The Effect of Merger and Aquisition on Firm Performance after 2008 Global Financial Crisis: Empirical Evidence from United Kingdom[1,2]

Prof.Dr.Levent ÇITAK, Asst. Prof. Dr. Fatih KONAK
ErciyesUniversityFEAS Business Administration, Kayseri- Turkey
Hitit University FEAS Business Administration, Çorum- Turkey
Corresponding Author: Asst. Prof.Dr.Fatih KONAK

ABSTRACT: *In historical perspective, companies that fallow any development and change can be more successful in long run than any firms which are the conservative resistance to change. In this concern, the growth of companies' in mergers and acquisitions way can be seen a crucial expanding technique and opportunity. These techniques can be defined as follow two or more firms come together under the roof of one company which have independent legal structure and combined resource of these firms. In the perspective of the prominent finance theory namely Efficient Markets Hypothesis, the main aim of the research is to identify the effect of 485 merger and acquisition on market performance of English firms that are listed in FTSE 100 Index after 2008 Financial Crisis by employing event study methodology. According to event study approach that used to test semi-strong efficiency of markets in general, we determined [-20, -250] 'Estimation window and [-20, +20] 'Event window' so as to avoid any factors that can be effect market price of companies. In addition, Average Abnormal Returns- AAR and Cumulative Average Abnormal Returns - CAAR are found to examine the possible impact of M&A in different days and event windows respectively. Although the outcomes of research demonstrate the significant negative and positive AAR values, any trend has not been figured out. However, in the context of CAAR, we observed overwhelmingly negative cumulative findings. Under the acceptance of limitations of methodology and sample, it can be claimed that FTSE 100 is not efficient in semi-strong form. It may also be noted that value creating impact of mergers and acquisitions is not found.*

Keywords:*M&A, Efficient Market Hypothesis, FTSE 100*
Jel Classification: *G10, G14, G15*

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I. Introduction

Having purposes of companies like developing, self-improvement and continuation the activities more efficiently by creating synergy is the condition of adaptation to competitive markets based on the role of multinational companies in global economy increasing day by day. This new environment that is generated by globalization process obligates companies to renew, reduce the costs, follow the technology and work with more competent staffs for maintaining their own life.

Staying of companies in the same position in advanced markets shortens the lifetime of the companies. As a matter of course, taking the sustained changing and development steps contributes for the company to reach success in the long run (Öncer, 2012). In this context, the companies can go upsizing as organic (endogenously) or inorganic (exogenous). Endogenously growth target means uniting a longer time, labor and different factors together with endogenously mechanisms while preferred by small companies in general. On the other hand, the strategy of exogenous growth takes chance to companies for achieving the goal faster. There could be thought that companies go this type of growth path in parallel with purposes like getting into new markets, enhancing the managerial abilities, technologic modernization, reducing the risk via diversification and receiving benefit from scale economies. The companies can run to horizontal, vertical and mixed growth strategies within this scope.

Merging or acquisition is a process that two or more companies continue their activities as a new company by combining all sources provided that change their legal structures or being included in the incorporated company in the acquired firm (Dinçer, 2003: 220-221; Zincirlioğlu, 2014). The descriptions like 'merger' in recent years are strategic teaming up movements done within amalgamation of business (Koçel, 2001: 427).Merger or acquisition operations are important in terms of positive contributions perspective like providing companies are managed more effective and active, utilizing from scale economies and synergy. In

[1]This paper has been derived from Fatih Konak's unpublished Phd thesis.
[2]This paper is the revised version of paper presented at ICOMEP 2016 held in Istanbul-Turkey.

spite of all these purposes are clear, most of company merging or acquisitions do not contribute much and fail by reasons like not to satisfy the financial expectations and cultural differences (Arslan, 2004: 46).

II. Literature Review

Kıymaz and Kılıç (2004) analyzed 155 international purchasing and merging that were realized between 1986-2000 by case study method. Case window is specified as 30 days before and after the case, prediction window is specified as 180 days. In conclusion, determined that market price of acquired firm increases while buyer companies price decreases.

Yörük and Ban (2006) investigated the effects of company mergers in the food sector in İMKB (İstanbul Stock Exchange) in 1997-2004 period on company performance in terms of share price. In conclusion, the result is obtained that abnormal yields could not be obtained by investments before merging, just could be succeeded only by investing in the short term [-5, +5] before and after merging. Also, Çukur and Eryiğit (2006) analyzed the effects of 5 merging operations in banking sector between 2004-2005 on share earnings in their research. The analysis was made for 10 days [-10, +10] belong to before and after of merging announcement. In conclusion, observed a statistically significant abnormal revenue in the period after the announcement date.

Healy; Palepu and Ruback (1992) made both activity performance measurement and case study for 5 years period after merging announcement for the biggest 50 merging in ABD between 1979-1984. Important differences between share earnings of acquirer firm and Offeree Company are observed in case study method. In 50 merges that analyzed, approximately 50% of acquirer firms earn positive, 92% of offeree companies earn positive as well. Moreover, Kyle; Stricland and Fayissa (1992) examined 24 merging in aviation sector between the years 1978-1989 by the case study method. Prediction window is specified as 120 days and case window is specified as 90 days before the case and 90 days [-90,+90] after the case. The results show that abnormal revenue revealed in short while ago and disappeared immediately.

Agrawal; Jeffrey and Mandelker (1992) analyzed 937 merging and acquisition operations in 1955-1987 by using long-term case study method. Merging performance is measured for 5 years period after merging. According to the findings, acquirer firms earn at a rate of-10.26% for 5 years period following the merging. Underlined the negative effects of merging and acquisitions. Additionally, Sorensen (2000) evaluated the offeree company and buyer companies separately by considering merging and purchasing processes. 22 different financial ratio calculations are made for 268 offeree companies, 232 buyer companies and 217 companies which are not buying and merging.Determined in the result of analyses that the companies in the type of buyers earn more than the companies which are not buying and merging.

Siems (1996) analyzed 24 large scaled bank merging in America in 1995 by case study method. In conclusion, observed in 1% significance level that offeree company’s stock value increased at the rate of 13,04% after the merging announcement while buyer company’s stock value decreased at the rate of 1,96%. Furthermore, Kirchmaier (2003) reviewed 52 English companies and 31 German companies which merged and acquisition by survey method. There is seen in conclusion that 60% of English and 40% of German companies have a positive effect on stocks of offeree companies in merging and acquisition operations. Moreover, mentioned about the size factor has an effect on performance to reach these conclusions.

Jakobsen and Voetmann (2003), made a research of the long and short term effects of acquisitions and merging on company performance through 157 firms in 1993-1997 in Denmark. Both CAR and BHAR methods were used in research within the frame of the case study. Case window is specified in the range of [-15,+15] days before and after the case, prediction window is specified as 15 days also [-31,-15]. As a consequence determined that purchasing provides positive ordinary income in the short term, but this situation is not observed in long term either.

III. Metodology

"EventWindow" is defined as "-20, +20" based on thedate of mergerandacquisitionannouncementand "CalculationPeriod" is defined as "-20, -270" in the main logic of theeventstudy in orderto minimize theeffects of othereventsthatmayoccur.Wecalculated "AbnormalReturns (AR) andAverageAbnormalReturns (AAR)" foreachannouncementandreviewinterval in ourstudy. Also, "CumulativeAverageAbnormalReturns (CAAR)" has beendetectedsothatthemovements in differentwindows can be revealed.

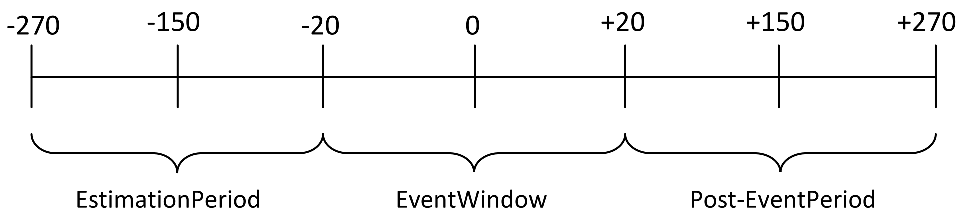

Figure 1. PeriodsCoveredbyEventStudy

Analysis byeventstudymethod can be performed in general termsbyfollowingthestepsshownbelow (Tong, 2010):

1. Step

Thecompanyperformingthemergerandacquisitionprocessandthenaturallogarithmsthatcalculatethelogarithmicreturns of thecurrentindexareprovided, whichprovide an integratedmathematicalbasisfor model calculationsandpreventnegativereturnsfrommodeledstockprices.

.

$$R_{it}=\text{Ln}\ (P_{it}/\ P_{it-1}) \qquad (1)$$

R_{it} = Logarithmicreturn of stock in t period
P_{it} = Price of stock in period t
P_{it-1} = Representstheprice of thestock in theperiod t-1

1. Step

Theregression model shownbelowwasusedtoestimatethe α and β neededtocalculatetheexpectedreturnforstocks, andeachstockwasreplicatedforthestockandfortheevent;

$$E_{it} = \alpha_i + \beta_i{*}R_{mt} + \varepsilon_t \qquad (2)$$

Accordingtothis;
α_i = Itmeasurestheaveragereturn of any i stock in theperiod of the market, which can not be explainedbythe market,
β_i = Any i stockmeasuresitssensitivityto market movements / fluctuations,
R_{mt} = Representstheday-to-dayreturn of the market index,
ε_t= Representstheerrorterm.

2. Step

Afterdetectingtheexpectedreturnsforeacheventandeachstock, theabnormalreturns (AR) arecalculated. Abnormalreturnsaredetermined as;

$$AR_{it} = R_{it} - E(r)_{it} \qquad (3)$$

Accordingtothis;
AR_{it} = Theabnormalreturn of anystock at time t,
R_{it}= Theactualreturn of anystock at time t,
$E(r)_{it}$ = Expressestheexpectedreturn of anystock at time t.

3. Step

At thisstage, theAverageAbnormalReturns (AAR) is calculated as:

$$AAR_t = AR_{1t}+ AR_{2t}+\ldots.+AR_{it}+\ldots AR_{nt}\ /\ n \qquad (4)$$

Accordingtothis;
AAR_t = Theaverageabnormalreturns,
n = Itreferstothenumber of stocksexamined.

4. Step

Inthelast step, theCumulativeAverageAbnormalReturns (CAAR) is calculatedusingthefollowingformula;

$$CAAR_{(-t,\ -t-1,.)} = AAR_t + AAR_{t-1} +\ldots..AAR_n \qquad (5)$$

Accordingtothis;
$CAAR_t$= Representsthecumulativeaverageabnormalreturns.
Thecumulativeaverageabnormalreturn (CAAR) estimate is the final step of theEventStudymethod. Theaveragecumulativeabnormalreturnsareestimated at the time whentheeventoccurredanalyzedtrendsthatindicateabnormalreturns.

1.1. ResearchHypothesis

Inthisresearch, thehypothesestakenintoaccount in theanalysis of theeffect of mergersandacquisitions on firmperformanceare as follows:

H_0 : Inthe 20-day periodaroundtheannouncementdate of themerger, theaverageabnormalreturnlevel of theacquiringcompaniesequalszero.

H_1 : Inthe 20-day periodaroundtheannouncementdate of themergertransaction, theaverageabnormalreturnlevel of theacquiringcompanies is differentfromzero.

Thenullhypothesisandthealternativehypothesistakenintoaccount in theanalysis of cumulativeaverageabnormalreturns:

H_0 : Thedifferencebetweenthecumulativeaverageabnormalreturnprovidedduringperiod T-1 andthecumulativeaverageabnormalreturnsduringperiod T1 equalszero.

H_1 : Thedifferencebetweenthecumulativeaverageabnormalreturnprovidedduringperiod T-1 andthecumulativeaverageabnormalreturnsduringperiod T1 is differentfromzero.

Fortherejection of the H0 hypothesis, statisticallysignificantvaluesaresought in theconfidenceinterval of 1%, 5% and 10%.

IV. Analysis andFindings

FTSE 100 Index is taken as the benchmark index for England. Average Abnormal Revenues (AAR) in the range of [-20,+20] based on methodology, then Cumulative Average Abnormal Revenuer (CAAR) for different reviewing ranges are analyzed in turn while considering the merging and acquisitions of companies after 2008 financial crisis.

The days when 485 subjected merging or acquisitions were realized and average abnormal revenues around [-20,+20] are shown in Table 1. In the light of the information of Table 1, the whole of the abnormal revenues are statistically significant only before and after the announcement. There is occurred negative AAR in two days before merging and acquisition (-1st and -2nd days) while the AAR values are positive statistically significant in respectively 1%, 1% and 5% in two days in announcement day and after it. Furthermore, almost more than half of AAR values determined in a whole reviewing range are negative.

Additionally, found 7 negative AAR's in 20 days period before the announcement of merging and acquisition while 9 of 20 AAR values after the case are negative. On the other hand, revealed that both AAR values realized in farthermost reviewing days before and after of the announcement day are positive and statistically significant in 10% and 5% levels respectively.

Table 1: Average Abnormal Returns Around Announcement Day of Mergers and Acquisitions

	Std. Dev.	AAR	T-Stat	P- Value	Number of Neg. AAR	Neg. AAR %
-20	0.014	0.001	0.074	0.058*	239	49%
-19	0.014	0.000	-0.001	0.000***	262	54%
-18	0.015	-0.001	-0.058	0.046**	239	49%
-17	0.019	-0.001	-0.042	0.033**	247	51%
-16	0.017	-0.001	-0.033	0.026**	245	51%
-15	0.019	0.000	0.023	0.018**	244	50%
-14	0.016	0.000	-0.031	0.024**	242	50%
-13	0.013	0.000	0.003	0.002***	239	49%
-12	0.015	-0.001	-0.078	0.062*	256	53%
-11	0.016	0.000	0.009	0.006***	247	51%
-10	0.020	0.002	0.081	0.064*	230	47%
-9	0.016	0.000	0.006	0.005***	237	49%
-8	0.016	0.000	-0.013	0.010**	245	51%
-7	0.027	0.000	-0.011	0.008***	253	52%
-6	0.013	0.000	-0.005	0.004***	230	47%
-5	0.116	-0.005	-0.046	0.037**	235	48%
-4	0.070	0.004	0.054	0.043**	227	47%
-3	0.056	0.002	0.031	0.024**	269	55%
-2	0.017	-0.001	-0.060	0.047**	245	51%
-1	0.013	-0.002	-0.132	0.105	275	57%
0	***0.014***	***0.000***	***0.002***	***0.001****	***255***	***53%***
1	0.011	0.000	-0.006	0.004***	249	51%
2	0.017	0.001	0.040	0.031**	234	48%
3	0.014	-0.001	-0.057	0.045**	243	50%
4	0.122	-0.005	-0.045	0.035**	237	49%
5	0.020	0.000	-0.016	0.012**	255	53%
6	0.016	0.000	0.008	0.006***	231	48%
7	0.110	0.004	0.034	0.0269**	262	54%
8	0.014	0.000	-0.028	0.022**	238	49%
9	0.168	-0.008	-0.048	0.037**	254	52%
10	0.133	-0.007	-0.050	0.040**	257	53%
11	0.063	0.003	0.047	0.037**	243	50%
12	0.033	-0.002	-0.058	0.046**	241	50%
13	0.015	-0.001	-0.042	0.033**	237	49%
14	0.027	-0.002	-0.082	0.065**	246	51%
15	0.013	0.000	-0.013	0.010**	252	52%
16	0.028	0.001	0.036	0.028**	259	53%
17	0.017	0.000	-0.005	0.003***	252	52%
18	0.025	-0.002	-0.062	0.049**	250	52%
19	0.018	-0.001	-0.047	0.037**	259	53%
20	0.016	0.001	0.035	0.027**	236	49%

* ,** and *** represent the significance level at %10, %5 and %1 respectively

There are cumulative average abnormal revenues (CAAR) in reviewing ranges in Table 2. Seen that whole of CAAR values in selected reviewing windows are statistically significant. It is important that almost all CAAR values are negative in the analysis made in different windows in the period of merging and acquisition. Besides, the CAAR value in [0, 2] range which means the earliest reaction of the market after merging and acquisition is positive and significant at 5% level.

In addition to these, the negative CAAR values found in 13 reviewing windows of 14 placed in the range of 52% and 61%. And all, the CAAR value is negative and significant at 10% level which is determined in [-20, 20] range shows the whole announcement period of merging and acquisition.

Table 2: Cumulative Average Abnormal Returns in Different Periods

	Std. Dev.	AAR	T-Stat	P- Value	Number of Neg. AAR	Neg. AAR %
[-20,20]	0.278	-0.024	-0.086	0.068*	294	61%
[-15,15]	0.292	-0.022	-0.074	0.059*	284	59%
[-10,10]	0.296	-0.019	-0.063	0.050*	269	55%
[-5,5]	0.109	-0.009	-0.079	0.062*	263	54%
[-1,1]	0.022	-0.002	-0.080	0.063*	252	52%
[-20,0]	0.093	-0.004	-0.040	0.032**	270	56%
[-15,0]	0.074	-0.003	-0.034	0.027**	267	55%
[-10,0]	0.063	-0.001	-0.024	0.019**	259	53%
[-5,0]	0.036	-0.003	-0.073	0.057*	264	54%
[0,2]	0.025	0.001	0.026	0.0208**	247	51%
[0,5]	0.111	-0.006	-0.053	0.042**	266	55%
[0,10]	0.299	-0.017	-0.057	0.045**	266	55%
[0,15]	0.292	-0.019	-0.066	0.052*	274	56%
[0,20]	0.269	-0.020	-0.074	0.059*	287	59%

* ,** and *** represent the significance level at %10, %5 and %1 respectively

V. Conclusion

In this study, emphasized on researching the financial value of company merging and acquisitions for firms besides mentioned how perceiving this kind of activities in capital markets. According to Efficient Markets Hypothesis, it is impossible to get the abnormal revenue more than average under the existence of the efficient market. But according to behavioral finance approach, estimated that missing or extreme reactions can occur on prices because of market participants do not behave rationally in the cause of intuitional and mental illusions. In other words, determining the existence of a predictable tendency and price movement provides to get the revenue better than average for market participants. In the view of such information, discussed in our research about both creating predictable price movement fact and creative financial effect of merging and acquisition.

The effect of merging and acquisition after 2008 global financial crisis on firms which are listed in FTSE 100 is analyzed by using Event Study. It could be suggested that the market is not effective in semi-powerful form, in other saying the Efficient Markets Hypothesis lost validity within the frame of market data of companies emerged and acquisition in England and searching period. Thereby, there is possibility for getting revenue better than average for market participants who want to make the investment decision with the similar information. There is not found a positive or negative trend in CAAR values likewise the research made in America. By contrast with, the negative trend (except only [0, 2] window) in CAAR values obtained from different windows shows itself. Accordingly, approaching warily of investors to companies who have merging and acquisition expectation in perspective of a method and used data set is accepted as a good choice in short term.

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