

Mutual influences and trends of Global Economic Growth and Global Mergers and Acquisitions

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Abstract—The paper is to analyze the relationship between Global Economic Growth and Global Mergers and Acquisitions. After applying empirical analysis, conclude that Global Economic Growth and Global Mergers and Acquisitions have mutual influences on each other in the long-term period. In the short-term period, the results show the same trend. But in some short certain periods like rapid economic recessions, the trend shows the other way around. The paper also analyzes the economic intuitions of the mutual influences.

1 INTRODUCTION

The mergers and acquisitions are critical parts of the business world. On the microscope, there are lots of case studies and research shows that the mergers and acquisitions the enterprises' financial status and operation efficiency of the enterprises every year, which generally increases the outputs of enterprise indeed. And Surely, mergers and acquisitions influence the Global economic growth, on the macroscope level. This paper examines the relationship between Global Economic Growth and Global Mergers and Acquisitions, Analytical methods contains qualitative analysis and quantitative analysis, and empirical analysis.

2 LITERATURE REVIEW

Doytch & Cakan (2011) examined the impact of acquisitions sales and mergers (M&A) activities on economic [1], they use Generalized Method of Moments (GMM) estimator, concluded that financial and non-financial domestic services M&A have a positive effect on services growth, and it may contribute the global economic growth.

Wang & Wang (2011) found a stable long-term relationship between economic growth and enterprise mergers and acquisition [2]. In their study, they proposed the Vector Auto-Regression model that estimates the influence of macroeconomic indicators on the mergers and acquisitions.

Caldwell & Smith (2011) introduced the interaction effects of the perspectives of enterprise [3], and how these interaction effects actually impact the output of the enterprise.

Li (2011) conducted an empirical study based on mergers and acquisitions theories to analyze the influence of macroeconomic indicators on the perspective of mergers and acquisitions [4], there are connections between business cycle and acquisitions sales and mergers (M&A) activities.

3 DATA

Three types of data were selected and presented in this study. Among these data, the “global merger and acquisition” is represented by the global total number of M&As cases and the total value of the global M&As value (billion USD); and, the global economic growth is represented by the global economic growth.

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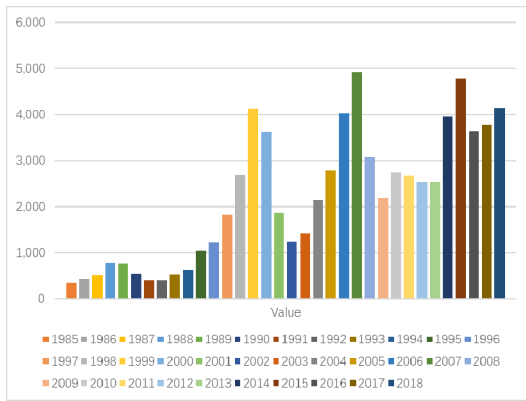


Fig. 1 Total Number of Merger and Acquisition Cases

As shown in Figure 1, the total numbers and corresponding values of M&As cases have been keeping growing in the past decades (see Figure 1 & 2). The most significant points were observed in 1999 and 2007 when the financial crisis happened. The data description is as follows.

TABLE I. DATA DESCRIPTION OF TOTAL NUMBER OF MERGER AND ACQUISITION CASES

	<i>Average</i>	<i>Midian</i>	<i>Midian</i>
Tot. Qty. of M&As	0130.82	32000	15462.21

Source: Author's estimation

TABLE II. DATA DESCRIPTION OF TOTAL NUMBER OF MERGER AND ACQUISITION CASES

	<i>min.</i>	<i>max.</i>	<i>obs.</i>
Tot. Qty. of M&As	2676	53302	34

Source: Author's estimation

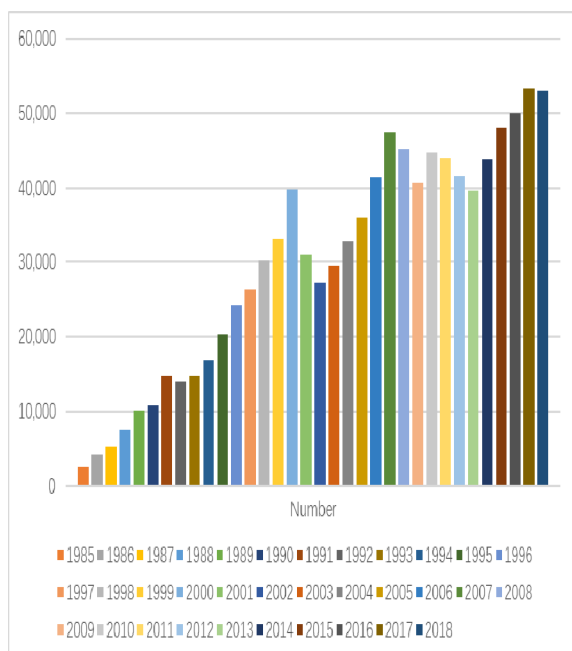


Fig. 2 Total Volume of Merger and Acquisition Cases

As shown in Figure 2, the numbers of M&As activities reached 4,116 and 4,920 with corresponding growth in the total volume of 39,783 billion USD and

47,455 respectively. In 2014, the increase in oil prices led to the new economic recession that caused millions of corporates world-wide to suffer from bankruptcy. This economic recession stimulated the growth of M&As activities which reached 53,302 billion USD by the total volume of the M&As activities. The data description is as follows.

TABLE III. DATA TOTAL VOLUME OF MERGER AND ACQUISITION CASES

	<i>Average</i>	<i>Midian</i>	<i>Midian</i>
Tot. Vol. of M&As	2183.61	2166	1443.5

Source: Author's estimation

TABLE IV. DATA DESCRIPTION OF TOTAL VOLUME OF MERGER AND ACQUISITION CASES

	<i>min.</i>	<i>max.</i>	<i>obs.</i>
TTot. Vol. of M&As	347	4920	34

Source: Author's estimation

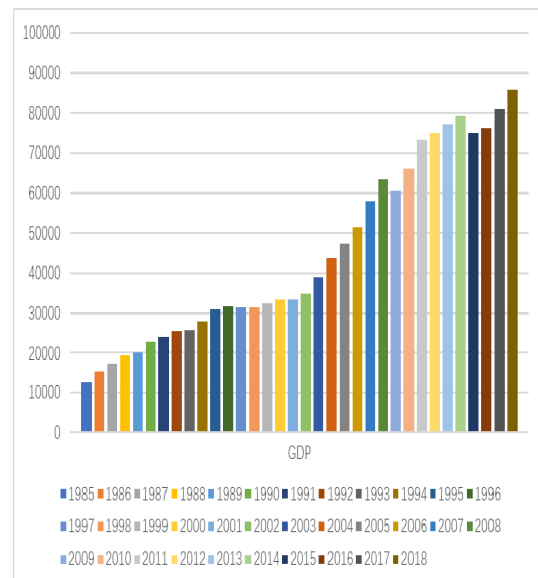


Fig. 3 Total Volume of Merger and Acquisition Cases

As shown in Figure 3, the global economic growth is keeping growing, it increases relatively fastly between 2001 to 2008 and 2011 to 2014. The data description is as follows.

TABLE V. DATA DESCRIPTION OF THE GLOBAL ECONOMIC GROWTH (BILLION USD)

	<i>Average</i>	<i>Midian</i>	<i>Midian</i>
Global GDP	44752.56	34125	22881.94

Source: Author's estimation

TABLE VI. DATA DESCRIPTION OF TOTAL VOLUME OF THE GLOBAL ECONOMIC GROWTH (BILLION USD)

	<i>min.</i>	<i>max.</i>	<i>obs.</i>
Global GDP	12786	85804	34

Source: Author's estimation

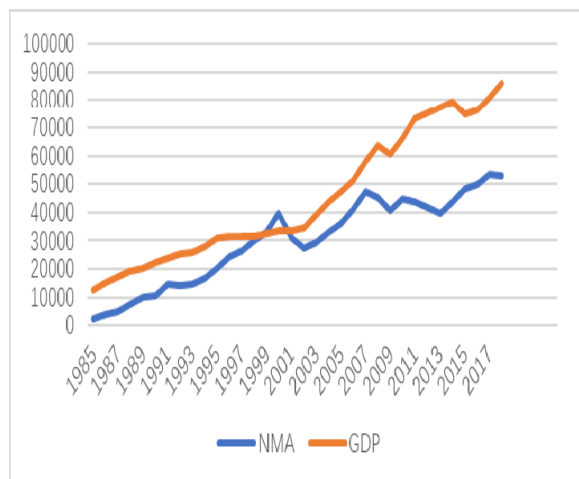


Fig. 4 Total Number of Merger and Acquisition Cases (billion USD) and Global Economic Growth (billion USD)

As shown in Figure 4, the total numbers and corresponding values of M&As cases have been keeping growing in the past decades (see Figure 1 & 2). The most significant points were observed in 1999 and 2007 when the financial crisis happened. The numbers of M&As activities reached 4,116 and 4,920 with corresponding growth in the total volume of 39,783 billion USD and 47,455 respectively. In 2014, the increase in oil prices led to the new economic recession that caused millions of corporates worldwide to suffer from bankruptcy. This economic recession stimulated the growth of M&As activities which reached 53,302 billion USD by the total volume of the M&As activities.

4 MODEL & ESTIMATION RESULTS

The estimated regression model was tested in RStudio, which is given as below:

Model 1:

$$\text{Model: } \log(Y) = \beta_0 + \beta_1 \cdot \text{Global GDP} + \beta_2 \cdot \log(X_1)$$

Model 2:

$$\text{Model: } \log(Y) = \beta_0 + \beta_1 \cdot \text{Global GDP} + \beta_2 \cdot \log(X_2)$$

TABLE VII. DATA DESCRIPTION OF TOTAL VOLUME OF MERGER AND ACQUISITION CASES

β	Estimate	P-Value	Significance
β_0 (Intercept)	4.1	0.561	Yes
β_1 (Tot. Qty. of M&As)	0.64	0.05	Yes

Source: Author's estimation

TABLE VIII. DATA DESCRIPTION OF TOTAL VOLUME OF MERGER AND ACQUISITION CASES

β	Estimate	P-Value	Significance
β_0 (Intercept)	6.57	0.44	Yes

β	Estimate	P-Value	Significance
β_1 (Tot. Qty. of M&As)	0.54	0.06	Yes

Source: Author's estimation

The summarized significance test (T-test) results for Model 1 and Model 2 are presented in Table 7 and Table 8 above. The estimated result of Model 1 shows that other variables remain unchanged, every 1 percent increase in the Total Number of M&As Cases, the global economic growth increases by 0.64 percent. The estimated result of Model 2 indicates that every 1 percent increase in the Total Volume of M&As Cases, the global economic growth increases by 0.54 percent. The R-squared for both models significantly illustrate the high accuracies of our statistical estimation. The estimated models were examined and approved statistically meaningful by the autocorrelation test and heteroscedasticity test.

5 CONCLUSION

In the long-term period, the general trend is that the merger and acquisition and global economic growth positively influence each other. Similarly, there are some microscope effects supporting this clear trend as follows, which are examined by the industries.

According to the observations, we also found that there are some certain short-term periods presented negative correlations between the merger and acquisition (M&As) and global economic growth. However, once the rapid economic recession, i.e., financial crises, occurs, the merger and acquisition (M&As) and global economic growth show the negative correlation, because the corporates may face bankruptcies during the recession, so the unstable company might start the merger and acquisition processes.

The cost synergies exist in several aspects, for example, operations, administration, and marketing. In the perspective of operation, when cost synergies increase purchasing power and eliminate the manufacturing and distribution redundancies. In regard to administration, the cost synergies may eliminate the overlapping part of the administration of companies, the excess of room expense of administration and other redundancy. In terms of marketing, it combines the sale channels and markets. Revenue synergies could offer incremental growth in four ways, depending on the mix of new and current markets and relevant involved products. Accumulation of these effects will lead to the economic growth.

6 APPENDIX

Year	Total Number of Merger and Acquisition	Total Number of Merger and Acquisition	The Global economic growth
1985	2676	347	12786.869
1986	4228	435	15109.518
1987	5279	506	17186.317
1988	7440	777	19226.665
1989	10135	758	20068.921

1990	10814	540	22603.206
1991	14722	397	23942.385
1992	14102	400	25425.855
1993	14772	516	25838.198
1994	16816	624	27753.091
1995	20278	1039	30865.108
1996	24310	1217	31549.409
1997	26227	1824	31435.986
1998	30218	2678	31367.309
1999	33132	4116	32529.37
2000	39783	3623	33581.572
2001	31047	1866	33382.422
2002	27201	1242	34669.305
2003	29573	1411	38899.897
2004	32953	2145	43811.772
2005	36025	2794	47459.061
2006	41407	4023	51442.676
2007	47455	4920	57968.742
2008	45173	3075	63616.066
2009	40710	2187	60340.071
2010	44844	2750	66036.932
2011	43976	2668	73357.42
2012	41480	2533	75045.654
2013	39568	2536	77189.608
2014	43847	3960	79296.108
2015	48052	4779	75003.074
2016	49991	3646	76102.831
2017	53302	3777	80891.341
2018	52912	4134	85804.391

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