International Journal of Financial Management
12 (2) 2022, 52-64
http://publishingindia.com/ijfm/

Submitted: 16 February, 2022
Accepted: 12 May, 2022

Impact of Growth in the Indian Economy and Financial Markets on M&A Deals during the Last Decade

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Abstract

The research aims to evaluate the impact of economic and financial markets' growth on mergers and acquisitions (M&As) during the last decade in India, i.e., from Q-1 of the calendar year 2011 until Q-1 of the calendar year 2021. In recent years, the M&A space has witnessed considerable activity, owing to economic reforms and preference of M&A route by promoters of Indian companies for expansion or bail-out. External data (secondary research) with respect to the growth of financial markets, economy and M&A deals in India has been collected from Bloomberg, IMAA, and NSE. Statistical tools, like the t-test will be used to analyse the impact of independent variables (growth of financial markets and economy) on the dependent variable, viz. M&A deals, over the last decade. Results of the study are expected to validate the positive correlation between economy/financial markets and M&A deals. The results would also help in developing a better understanding of the M&A scenario in India, and how certain changes in the economic and market environment influence it. The paper attempts to determine the degree of impact of GDP growth and financial markets on M&A deals. It would also seek to organise the theoretical context clearly, recognising any new patterns, while essentially being based on the existing important academic theories.

Keywords: Mergers, Acquisitions, M&A Deals, Economy, GDP Growth, Financial Markets

Introduction

The present study aims to assess the impact of mergers and acquisitions in India in the last decade, i.e., from Q1 of the calendar year 2011 until Q1 of the calendar year 2021, and its possible correlation with the economic growth numbers of the Indian economy and Indian markets. It is important to observe and analyse the implications of recent changes in the social, political, and economic environment in different sectors of the economy. Of late, M&A deals have become a common event as they highly depend on new government reforms, policies, and political factors, which, in turn, prompt and influence the approach of Indian companies in the adoption of mergers or acquisitions as a possible route to help them in expansion. In recent years, the M&A space has seen considerable growth and activity not only in developed markets, but in emerging economies as well.

In every economy, there are good times and bad, but mergers and acquisitions work in both of these scenarios. M&A deals have become much more common in the present times, owing to the growing number of companies, domestic and foreign investor interests, institutional factors and economic forces, mature equity and debt markets, tax breaks, leveraging opportunities, and so on. They are a dominant strategy for corporates that are looking to enhance value creation and establish a competitive advantage over their rivals. Now, more than ever, there is an urgent need for cost-cutting in the corporate world, partly because of the ongoing coronavirus pandemic, but also, at all times, corporates are always striving to access global markets, take advantage of economies of scale, increase value through technological advancements, expand both organically and inorganically, leverage synergies with prospective partners, and have an upper hand in developing innovative capabilities which would mitigate the risks associated with new product development, all with the ultimate objective of boosting the shareholder value. It is evident that the M&A route, whether in India or any other part of the world, looks

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at some or all of these perspectives while venturing into acquiring domestic or cross-border companies and gaining entry into other markets.

According to Bloomberg, total merger and acquisition deals in India, both inbound and outbound, crossed USD70 billion in aggregate value in 2019. In addition, this year was faced by global tensions surrounding the markets, the public market woes in India, and various other challenges, with the result that the quantum of deals was lower by 39% from the previous year, 2018. The key focus of the transaction activity was on the leveraged buyout, network acquisitions, distressed asset acquisition opportunities, and continued attractiveness in the technology field. As per the data collected from the Bloomberg database, between 2010 and 2020, 2018 saw the biggest jump in the number of merger deals, as well as the total value of acquisitions, recording deals worth over USD121.9 billion (including private equity investments) in a total of 1,921 deals which were driven by government policy liberalisation, sale of distressed assets, and relative macroeconomic stability. In 2019, the value of total deals in India dropped to USD73 billion in a total of 1,523 deals. There was a decline compared to the previous year. The billion-dollar bets in 2019 were less than the billion-dollar bets in 2018, which witnessed 25 such mega-deals compared to the following year, which recorded only 11 such deals. This was primarily because of the global slowdown in 2019 that created a cautious approach in the minds of the investors. According to the estimates, in 2020 and 2021, due to the ongoing COVID-19 pandemic, the numbers would have possibly dipped further, despite some attractive opportunities cropping up, owing to the less positive sentiment in the market. However, all things considered, mergers and acquisitions hold a strong foundation in the Indian market and will have a positive impact in the years to come. Moreover, India as a country appears resilient enough to demonstrate signs of stable deals in this sphere.

Historically, the Indian market has been led by private acquisition transactions. Public merger and acquisition transactions have gained momentum in recent times and accelerated in 2018 over the previous year by nearly 45%. According to Grant Thornton, PwC reports, and the disclosed data, in 2019, Arcelor Mittal and Nippon Steel Corporation purchased Essar Steel India for a whopping USD6 billion, under the Insolvency Resolution process, making it the biggest deal by value in that year and one of the most notable transactions in India. This is one of the examples that highlight the positive effect of the revised insolvency regime in India, and other legislations and policy reform measures that would have a positive impact on investor trust, especially on distressed assets. In addition, in the first half of 2020, Facebook's stake purchase in Reliance Industries' Jio Platform was the biggest India-involved transaction so far. Quoting Grant Thornton's deal report, this raised India's inbound M&A operations in the first half of 2020 to USD17.3 billion, up 1.6% from the first half of the previous year.

Talking about the economy and the GDP growth in India, the 2010-2020 decade would be one of the most prominent in history. It has had its mix of ups and downs, in terms of economic growth numbers. The Gross Domestic Product (GDP) is defined as a measure representing the monetary value of all products and services produced by the economy in any particular year, and the real GDP is an inflation-adjusted GDP indicator. According to the Bloomberg data, when looking at the real GDP, India's growth rate had peaked in March 2010, when it hit an all-time high of 13.3%. At that time, the nominal GDP stood at around 16.1%. In September 2019, the nominal GDP stood at 6.3%. Since then, the downward trend was evident, considering the impact of the coronavirus pandemic that hit the entire world. The GDP in India contracted by an all-time low of (−) 23.9% (y-o-y) in the June 2020 quarter, which was preceded by a modest growth of 3.1% in the previous quarter. The services sector contributed 45.4% to the GDP in 2010 and its contribution increased marginally to 48.5% in 2019. The agriculture sector contributed 17% in 2010 and the number dropped to 15.6% in 2019. The same was the case with the industry sector, the contribution of which saw a decline from 30.2% to 26.5% over the same period (comparative study, India Economic Survey Data).

Real GDP growth y-o-y data in India is updated on a quarterly basis. However, there is a point of consideration that even with such crests and troughs in the chart, the average growth rate of India in this period was a decent 5.5%, especially keeping in mind the COVID-19 pandemic influence on the entire world from the first quarter of 2020.

The country's economic policies are a driving force for organisations to generate an impetus for technological improvements, diversification, and growth. To achieve increased efficiency, cost-effectiveness, and so on, many companies consider it advisable to combine with other companies or even subsidiaries, not only in usual

scenarios, but even during troubled circumstances, such as the ongoing coronavirus pandemic. In reality, M&A transactions are now projected to take place at a far greater rate than at any time in the past, with the rise in rivalry and further globalisation. If we look at the industry-wide pattern of acquisitions and mergers from 2010 to 2020, we find that oil, natural resources, and the manufacturing sector top the list with the highest value of transactions, and the most voluminous deals are bagged by the ITeS (Information Technology and Services) sector and the tech-based start-ups, (Institute for Mergers, Acquisitions & Alliances Data, 2020).

This study analyses acquisition announcements and country's economic and market impact through event study methodology, by making use of secondary research of the financial markets, economic growth data, and market index data. The usefulness of such a study can be gauged from the idea that, given market rationality, the impacts of an occurrence or an event will be promptly reflected in prices (MacKinlay, 1997). As a result, using prices recorded over time, a gauge of the event's impact (both economic and market) can be created.

There is a high expectation in terms of impact on the performance of an organisation whenever such a firm undertakes an M&A deal, and there are conflicting pieces of evidence, both in favour of and against the implications of such acquisitions, be it a hostile or a friendly buyout, on the firm's performance. The ability to tell something important about the viability and expediency of M&As relies heavily on faith in the methods and measures from which insights are obtained (Bruner, 2004).

This theoretical paper reflects on the M&A space from the perspective of the current methods used to assess the output of M&As and measures how mergers and acquisitions are influenced by economic and market variables. It seeks to organise the theoretical context clearly, recognising any new patterns, while essentially being based on the existing important academic theories.

Including this introduction section, this research paper consists of nine sections. The second portion highlights the segment of the literature review. The third section involves research gap and uniqueness of the study. The fourth component pertains to the methodology used and explains the design of the study. The fifth section explores the results and analysis. The sixth section includes comments and discussions concomitant to the research. Conclusion, limitations, and directions for future research are included in the subsequent sections, followed by the references at the end.

Literature Review

Even though there are numerous researches regarding the merger and acquisitions performance in the developed markets, some of the issues continue to remain unsolved. When it comes to the performance of merged firms and impacts on this performance due to the strategic factors, there is very little published paper researches from the Indian industry's point of view. One study talks about the firms that are merged having a greater operating performance when compared to their pre-merger performance and their peers. In the long run, merging firms from unrelated industries appear to do better and have a better impact on the economic development than merging firms from related industries. This attests to our underlying hypothesis that M&A activities might have a positive impact on the overall economy as well (Ramakrishnan, 2010).

Owing to the fact of a smaller number of published papers in the stated domain, some researches give us a fair idea of the corporate performance and overall impact of mergers and acquisitions. In many of the mergers, the acquiring organisations are able to realise long-term synergies, such as cost reductions, greater business, higher cash flow, diversification, and the like (Kumar & Bansal, 2008). In this research, the conclusion that follows is the firms undergoing mergers perform better than the industry, in terms of their profitability. However, the management senses the synergies in various approaches and what matters is whether the management and the company realise that potential synergy or not.

As discussed, the M&As are a feature for better value creation and gaining an edge over rivals; it is also prevalent in both domestic and international foreign direct investment. Another study which impacted our study was the one by Soni, Chandra and Varma, who talk about the merger impacts, particularly on the employment in the Indian Information Technology industry, of which India, the country in the picture, has been a big contributor, in both domestic and cross-border mergers. It also strengthens our already established idea that merger activities play an important role in having a positive effect on the economy or vice versa, by emphasising the

importance of job creation, source of income, and growth (Soni, Chandra & Varma, 2020).

While our study does not particularly focus on select organisations in the country, but rather the whole economy and the financial markets, one study which also distinctly impacted our research talked about the effects of mergers and acquisitions on the financial efficiency of select Indian financial institutions. While there had been a major change in shareholder earnings, there had been no major change in the liquidity situation of the companies. The findings of the study showed that Indian merger deals have a strong link between merger deals and financial success in the long term, and that the purchasing entities can generate value (Sinha, 2010).

In addition, since the applicability of our study needed to be verified, we consulted the cited study to understand the economic influence on the corporate performance in the Indian context. With differenced data, the regression analysis revealed a considerable relationship between the economy and the firm performance, but the influence was more visible on revenue stream and income aspects than the profit before or after tax, or the bottom-line (Chattopadhyay, Das & Pattanayak, 2017). Since our focus is not only limited to the corporate performance, but is on the whole sphere of economy and financial markets with respect to the acquisitions, more research needs to be carried out to solidify our hypothesis and arrive at a conclusion, by performing the necessary statistical tests.

Coming to the next part of our study, which focuses on financial markets and its impact on the merger and acquisition deals in the country, one study gave us a fair idea behind the M&A activities and its impact on markets in the context of Central and Eastern European countries (CEE), and strengthened our point of positive correlation between both the market variable and the merger deals. It reflected on the fact that the takeover announcements create value, both for acquirers and bidders, in the long run (Zaremba & Plotnicki, 2016), and contrary to popular belief, M&As do not destroy the acquirer's value in the long run, after accounting for size and regional value, as was believed by researchers across the United States.

Similar to the previous study, it was found that with the evolution of the number of mergers and acquisitions and their impact on the economy, the influence can be attributed to the economic, political, and social circumstances in the country- in this study, the European markets (Chiriac, 2021). This also suggested that economic and market factors are highly correlated to the development in the acquisition space.

A significant influence on this research was the study of economic conditions on acquisition activities in the international markets, for which six years' data was taken, from 2009 to 2015, and the conclusion which followed stated that the average GDP growth and economic freedom have a direct linkage with the merger activities, with a focus over Asia and the Caribbean and Latin America as the foreign markets, where economic liberty is found to be a key promoter of merger activities (Dang, 2016), thereby insulating our idea behind the study that the merger deals have a positive impact on the economic growth and financial markets of the country.

Additionally, since our study can have a ripple effect for the merger and acquisition deals taking place in the country, there is a slight probability that the actual impact could be reflected at a later stage as well. One finding reveals that, on GDP per capita and domestic investment, the effect of cross-border M&As, being one year lagged, have a beneficial impact, which implies that causal or ripple effect from such an investment should not materialise for at least a year following the M&A (Zvezdanović Lobanova, Kračun & Kavkler, 2018). A study to test our hypothesis is done in the latter part of this paper and this basis of rationale, which suggests that the deals might create a lagged effect is also taken into account, considering the Indian context.

Research Gap and Uniqueness of the Study

Mergers and acquisitions have become a frequent occurrence in today's world, and consequently, these events have rightly received widespread attention from analysts and researchers from all over the world. The M&A route has become the first option for companies looking for ways to expand the business, be it a domestic or a cross-country merger. The main rationale behind M&A deals is that they help in creating synergy, whereby one plus one is more than two, and this route is found to be especially attractive during difficult economic conditions. The study undertaken for this research also examines the impact of acquisitions and merger activities on corporate performance, employability, and economic

influence on the country, in the context of India. Even though numerous acquisition deals take place, mergers of small enterprises do not have any significant impact on the country's economy, compared to the big players in the market. The failure or success of firms undertaking such deals can be assessed based on a few key determinants, like profitability and growth ratios, market share, cash flows, correlation with the country's GDP growth data, and so on, for comparison and measurement after the acquisition period.

The general principle is that the variable which is independent would have a positive correlation with, or is directly proportional to, the dependent one, i.e., the GDP and the Indian financial markets would have a significant positive relationship with the M&A deal values taking place in the country.

The hypothesis considered in this paper also assumes that merger and acquisition deals are positively influenced by the growth of the economic and financial market in the country. Or, conversely, the M&A deals would have a favourable effect on India's overall GDP growth rate and financial markets.

This research paper would focus more on the amount and number of deals that took place, both inbound and outbound, in India, in each quarter in the last decade, i.e., 2011-2021. It is imperative to observe and mention the effect of recent changes in the social, political, and economic environment in different sectors of the economy, and correlate the results obtained from one variable with the other.

RESEARCH METHODOLOGY

Method of Data Collection and Analysis

This paper focuses on the empirical data of the quarterly total USD value of completed merger and acquisition transactions from the first quarter of 2011 to the first quarter of 2021, and compares it with two independent variables: i) the country's quarterly GDP in terms of value in billion USD for the same period and ii) the country's market data (NIFTY 100 index) value calculated for each quarter from the first quarter of 2011 to the first quarter of 2021. The values of M&A transactions and their numbers are from the Institute for Mergers, Acquisitions and Alliances (IMAA), which offers the latest and accurate data for M&A deals taking place all over the world. The source of data for the GDP growth is the Bloomberg Terminal Database, which has reliable economic and financial data of almost all countries in the world. The country's NIFTY 100 market index data for each quarter-end is gathered from the official website of the National Stock Exchange (NSE), India.

M&A Data (Dependent Variable)

The data covers completed transactions of mergers and acquisitions that have taken place in the given time frame. The target country is India in our personalised gathered data and the acquirer is either domestic or any foreign entity. The activity of M&A is measured using the value of transactions instead of the number or frequency of transactions taking place. This is because the variable for the number of transactions would hold equal weightage for any value of transactions, be it a billion dollars or a hundred thousand dollars. The academic community has also discussed this aspect for a long time. After careful consideration, this paper takes the value of M&A transactions (ignoring the number of transactions) as the dependent variable, as we believe that economic data and financial markets are distinctly independent irrespective of the M&As happening, and both these variables can create a direct impact on the merger and acquisition deals occurring in the country.

GDP Data (Independent Variable)

This study takes quarterly GDP data from 2011 to 2021 in billion USD, instead of yearly data, for our research to be more granular and accurate. We have taken nominal GDP for each quarter for the said period. This empirical application does not use real GDP growth, since real GDP growth compares current GDP to base year GDP, whereas we compared the current value of the M&A deals at the time of transaction here in this study, which is aptly comparable to nominal GDP numbers (Dang, 2016).

Market Index (Independent Variable)

The market index as an independent variable used in this study is the NIFTY 100, which is a diversified index of 100 stocks on the NSE platform, representing the top 100 companies based on market capitalisation. As discussed, the economic data and the financial markets data are supposed to be independent in our focus of the study irrespective of the deals happening in the country, which we believe will, in turn, affect the dependent variable or the M&A deals. The gathered data includes observations

of the quarter-end *closing prices*, and this index represents the performance of large companies based on market capitalisation from all the major sectors of the economy.

The observed values are tabulated in Table 1.

Table 1

Quarter-Year	*Nominal GDP (USD Bn)*	*NIFTY 100 Quarter-End Closing Value*	*M&A Deals during the Quarter (USD Bn)*
Q1-2011	534.23	5471.34	15.16
Q2-2011	458.59	5503.80	5.63
Q3-2011	414.46	5153.25	4.10
Q4-2011	422.72	4821.08	2.86
Q1-2012	474.73	5080.67	18.86
Q2-2012	416.61	4991.39	3.18
Q3-2012	445.93	5218.05	4.51
Q4-2012	465.12	5653.40	5.93
Q1-2013	500.23	5823.95	3.33
Q2-2013	430.18	5778.46	9.05
Q3-2013	428.73	5630.46	4.23
Q4-2013	472.24	6042.70	3.37
Q1-2014	511.07	6165.17	5.96
Q2-2014	485.37	7071.46	15.11
Q3-2014	493.25	7782.71	6.29
Q4-2014	503.74	8193.47	12.02
Q1-2015	531.97	8642.40	26.61
Q2-2015	509.89	8391.15	9.25
Q3-2015	512.13	8341.86	8.66
Q4-2015	524.91	8074.54	9.84
Q1-2016	558.72	7529.14	9.60
Q2-2016	539.01	8068.09	10.14
Q3-2016	563.42	8841.64	29.52
Q4-2016	570.05	8564.65	18.63
Q1-2017	635.6	9021.06	24.89
Q2-2017	620.38	9752.74	9.28
Q3-2017	636.15	10262.73	11.82
Q4-2017	679.58	10670.15	32.80
Q1-2018	703.82	10917.67	21.05
Q2-2018	666.75	10976.43	39.03
Q3-2018	641.38	11521.69	13.71
Q4-2018	698.48	10808.11	17.34
Q1-2019	692.48	11151.03	19.74
Q2-2019	726.02	11804.58	13.21
Q3-2019	699.45	11337.69	15.19
Q4-2019	727.7	11975.39	22.72
Q1-2020	692.66	11319.07	21.11

Quarter-Year	Nominal GDP (USD Bn)	NIFTY 100 Quarter-End Closing Value	M&A Deals during the Quarter (USD Bn)
Q2-2020	515.29	9673.22	14.70
Q3-2020	643.98	11316.32	18.65
Q4-2020	746.89	12741.70	11.55
Q1-2021	725.76	14818.94	5.98

Source of Data: Bloomberg, NSE, IMAA.

Statistical Tool: We have employed a linear regression model for the comparison of the M&A deals in value with the GDP and market index numbers. In our approach to correlate, M&A transaction value is the dependent variable, and GDP and NIFTY 100 quarterly data are the two independent variables believed to affect the dependent variable. We have used t-tests to assess the effect two independent variables create on the dependent one, for testing the hypotheses, and gaining insight into the relationship between the independent variables and the dependent variable.

Data Analysis and Findings

We have formed two different hypotheses to determine if any correlation exists between the two independent variables and the dependent variable. In other words, we determined whether the Indian economy and the Indian markets, each of them being the independent variable, have a significant impact on the mergers and acquisitions transactions in India, which is the dependent variable.

M&A vs. GDP Growth

First, we have framed a linear regression model for the GDP of the country and M&A deals taking place in the country. As stated, the dependent variable is the value of M&A deals and the GDP growth is the independent variable, expected to affect the dependent variable.

$$MA = \beta_0 + \beta 1 * GDP$$

Where, MA shows the value of the deals of M&As that took place between the first quarter of 2011 to the first quarter of 2021. The variable GDP represents India's nominal GDP during the same period. β_0 represents the regression model constant and β1 is the change in the M&A value when one unit of GDP change takes place. The observed values are summarised in Table 2.

Table 2

Variable	Obsv.	Mean	Std. Dev.	Min.	Max.
M&A (in Billion USD)	41	13.53	8.582896	2.86	39.03
GDP (in Billion USD)	41	566.3334	103.1896	414.46	746.89

We have employed a t-test run on SPSS software for data analysis, to test if mergers and acquisitions significantly respond to the changes in GDP. Econometricians usually use a t-test to test the hypothesis about individual regression slope coefficients.

$$t = \frac{\beta k}{SE(\beta k)}$$

Where, βk represents the estimated coefficient of the independent variable, i.e., GDP numbers, and the standard error (SE) of the coefficient of the independent variable is represented by SE(βk). The null hypothesis and the alternate hypothesis of the conducted t-tests are:

$$H0: \beta k = 0$$

$$HA: \beta k \neq 0$$

Null Hypothesis: GDP growth has no impact on M&A deals and activities in the country.

Alternate Hypothesis: India's GDP growth has an impact on M&A activities in the country.

If |t| exceeds the critical value of t, reject the null hypothesis:

$$|t| > t_{\alpha/2,\, n-1}$$

This indicates that a significant relationship exists between both the dependent variable and the independent variable. That would mean that the GDP growth variable has a significant correlation with the value of the M&A transactions.

Accept the null hypothesis if |t| is less in value than the critical value of t.

$$|t| < t_{\alpha/2,\, n-1}$$

Meaning that no significant relationship exists between the dependent variable and the independent variable. This would indicate that the GDP growth variable has no substantial relationship with M&A transactions.

Results – (M&A vs. GDP Growth)

Table 3

Summary Output	
Regression Statistics	
Multiple R	0.55947237
R Square	0.313009332
Adjusted R Square	0.295394187
Standard Error	7.294052638
Observations	41

ANOVA					
	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	945.3852938	945.3852938	17.76933013	0.000143068
Residual	39	2074.924951	53.20320388		
Total	40	3020.310245			

Table 4: Coefficients

Model		*Unstandardised Coefficients*		*Standardised Coefficients*	*t*	*Sig.*	*Correlations*		
		B	*Std. Error*	*Beta*			*Zero-Order*	*Partial*	*Part*
1	(Constant)	−12.827	6.355		−2.018	.050			
	GDP ($B)	.047	.011	.559	4.215	.000	.559	.559	.559

a. Dependent Variable: M&A Value ($B).

$MA = \beta_0 + \beta_1 * GDP$

$\Rightarrow MA = -12.827 + 0.047 * GDP$

β_0 equals −12.827 and β_1 is equal to 0.047. This means the model above shows a positive significant correlation between GDP and M&A. With an increase in one unit of the GDP, the value of M&A deals will show an increase by 0.047 units.

Table 4 gives us the t-value of the GDP. By using the t-test, we would check if any significant relationship exists between M&A and GDP.

The number of parameters here is two and the sample size (observations) is 41. Therefore, from the critical values of the table of t-distribution, the critical value is equal to 2.021. As Table 4 shows, |t| equals 4.215; it exceeds the critical value of 2.021. Therefore, reject the null hypothesis and accept the alternate hypothesis.

It implies that GDP is significantly positively related to the value of the M&A deals.

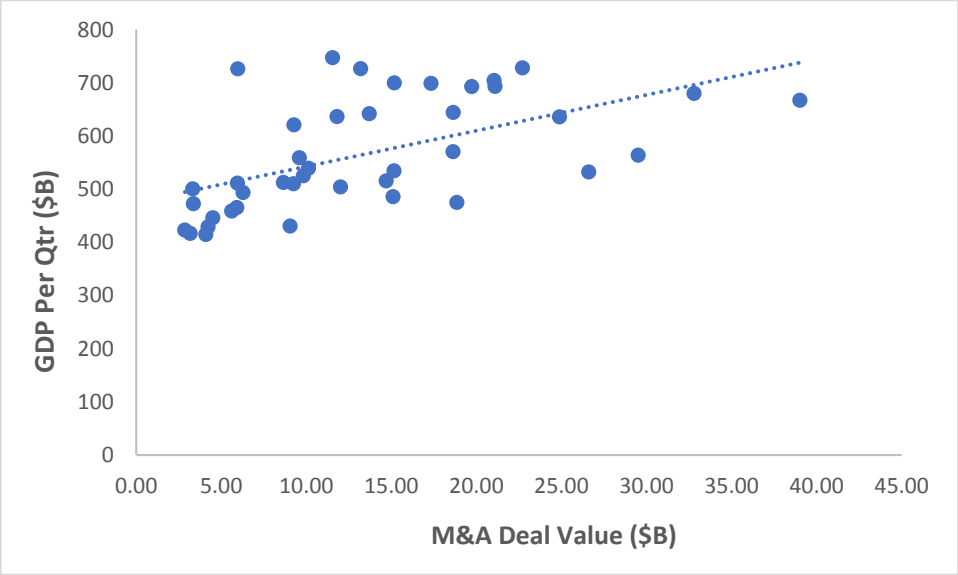

Fig. 1

M&A vs. NIFTY 100 (Indian Financial Markets)

Now, we would frame another linear regression model for the country's financial markets using NIFTY 100 data and M&A deal value. As stated, the dependent variable is the value of M&A deals taking place for the given period and NIFTY 100 quarter-end closing values will be the independent variable, expected to affect the dependent one.

$$MA = \beta_0 + \beta_1 * nifty$$

Where, MA is the M&A deal values that took place during the first quarter of 2011 to the first quarter of 2021. The variable nifty represents the NIFTY 100 market index, which has diversified 100 stocks showcasing major sectors in the Indian economy. It represents 100 top companies in the list, on the basis of total market capitalisation, from NIFTY 500. This index is designed to track the performance and value of companies with a large market capitalisation. β_0 represents the constant of the regression model and β_1 represents the change of M&A in volume when one unit of NIFTY 100 change takes place. The observed values are summarised in Table 5.

Table 5

Variable	*Obsv.*	*Mean*	*Std. Dev.*	*Min.*	*Max.*
M&A (in Billion USD)	41	13.53	8.582896	2.86	39.03
NIFTY 100 Quarter-end Closing value	41	8558.618	2582.299	4821.078	14818.94

On a similar note, we employed a t-test run on SPSS software for data analysis to test if M&As have a significantly positive correlation with NIFTY 100, reflecting the financial markets in India.

$$t = \frac{\beta k}{SE(\beta k)}$$

Where, βk represents the estimated coefficient of the independent variable, i.e., NIFTY 100 index, and the standard error (SE) of the coefficient of the independent variable is represented by SE(βk). The null hypothesis and the alternate hypothesis of the conducted t-test are:

$$H0: \beta k = 0$$

$$HA: \beta k \neq 0$$

Null Hypothesis: Indian financial markets (using NIFTY 100 index data) have no impact on M&A deals and activities in the country.

Alternate Hypothesis: Financial markets have an impact on merger activities in the country.

If |t| exceeds the critical value of t, reject the null hypothesis:

$$|t| > t_{\alpha/2,\, n-1}$$

This indicates that a significant relationship exists between both the dependent variable and the independent variable, implying that the M&A transactions variable has a strong relationship with the Indian financial markets (NIFTY 100 index data).

Accept the null hypothesis if |t| is less than the critical value of t.

$$|t| < t_{\alpha/2,\, n-1}$$

Meaning that no significant relationship exists between the dependent variable and the independent variable, thereby suggesting that the M&A transactions data has no substantial relationship with the financial markets of India.

Results – (M&A vs. NIFTY 100)

Table 6: Summary Output

Regression Statistics	
Multiple R	0.495144649
R Square	0.245168223
Adjusted R Square	0.225813563
Standard Error	7.645723035
Observations	41

ANOVA					
	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	740.4840971	740.4840971	12.66714122	0.000997216
Residual	39	2279.826148	58.45708072		
Total	40	3020.310245			

Table 7: Coefficients

Model		*Unstandardised Coefficients*		*Standardised Coefficients*	*t*	*Sig.*	*Correlations*		
		B	*Std. Error*	*Beta*			*Zero-order*	*Partial*	*Part*
1	(Constant)	−.558	4.134		−.135	.893			
	NIFTY 100 Index	.002	.000	.495	3.559	.001	.495	.495	.495

a. Dependent Variable: M&A Value ($B)

$$MA = \beta_0 + \beta_1 * nifty$$

$$MA = -0.558 + 0.002 * nifty$$

β_0 equals −0.558 and β_1 is equal to 0.002. This means that the model shows a positive relationship between financial markets and M&A deals. With an increase in one unit of the NIFTY 100 index, the value of M&A deals will rise by 0.002 units.

Table 7 gives us the t-value of nifty. By using the t-test, we would assess if any relationship exists between financial markets (here, NIFTY 100 index) and M&A deals.

As Table 7 shows, |t| equals 3.559; it exceeds the critical value of 2.021. Therefore, reject the null hypothesis.

According to the test results, it implies that the financial markets are significantly positively related to the value of the M&A deals.

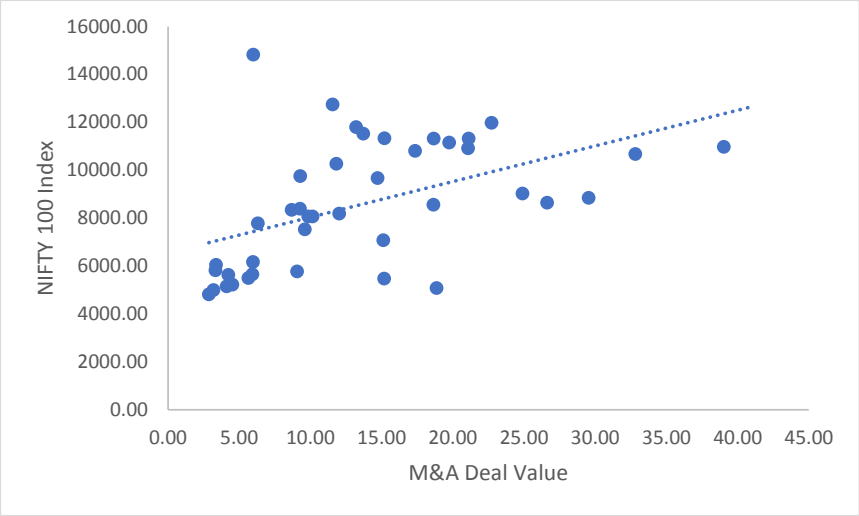

Fig. 2

Comments and Discussion

From both the results, it is clear that M&A transactions value is positively correlated to the country's GDP (gross domestic product) and its financial markets. It implies that with the growth in the economy, enterprises are more likely to invest, get involved in mergers and acquisitions, and expand their businesses when the economy is booming. As discussed earlier in the literature review section, the results also show that with a positive sentiment in the market and when markets are rallying at a higher pace, companies like to partake in acquisitions, considering the thriving and strong markets (Kumar & Bansal, 2008). However, when the economy and markets are in a slowdown stage, companies are less willing to exploit the possible synergies emanating from mergers, and are more disposed to stick to their core business and not expanding inorganically. Moreover, it also reflects that the companies are in a better position to take risks and challenges, and are much more confident of the business prospects in a flourishing economy if markets and economic conditions are showing advancement and upswing. A theory on similar lines is attested by Soni, Chandra and Varma (2020) as explained in the literature review. Besides, the investment effect is beneficial for the markets, generating an ascending slope, which is possible by maintaining a favourable and approving climate for business development.

Conclusion

Given the empirical research that we conducted, it is found that both economic growth, as well as buoyancy in financial markets, have a positive influence on the values of mergers and acquisitions taking place in the country. During 2011-2021, with an increase in one unit of GDP, the mergers and acquisitions deal value showed an increase by 0.047 units. It simply means that with the growth in India's economy or when the Indian economy is booming, many companies engage in mergers and acquisition activities. However, when the economy is in a slowdown or a depressed state, firms are less willing to take challenges and get involved in mergers. We also concluded that with an increase in one unit of NIFTY 100, which is the representative index we used for the state of financial markets in the country, the value of M&As increased by 0.002 units, which also suggests that with growth in the financial markets of the country, firms are more willing to participate in M&A activities, and invest and expand their business horizon, while the opposite also holds true, similar to the effect that GDP numbers have on merger and acquisition values in the country.

Further, we have compared the change in the dependent variable (M&A deals value) with the change in independent variables in the same quarter. Logically, there could be a lag effect in achieving the change in

the dependent variable. When we carried out the tests for change in the dependent variable in a quarter with the change in the independent variables in the previous quarter, the results were as follows (Table 8), which further support our conclusions.

Results

Table 8

	Model	*Unstandardised Coefficients*		*t*
	B	*Std. Error*		
1	(Constant)	−10.767	6.868	−1.567
	GDP ($B)	**.043**	.012	3.588

	Model	*Unstandardised Coefficients*		*t*
	B	*Std. Error*		
1	(Constant)	−2.419	4.337	−0.557
	NIFTY 100 Index ($B)	**.001**	.000	3.815

The results in Table 8 attest to the underlying fact that the M&A values have a direct positive effect on the independent variables, i.e., GDP quarterly values and NIFTY 100 index representing the Indian financial markets. Considering the lag effect, which showcases that merger deals might show a lag relative to GDP growth rate and financial market progress, or in other terms, the economy and Indian markets' progress or regress is reflected in the merger and acquisition deals a bit later, it gives similar results and supports our conclusions.

Limitations

The sample data taken may not be large enough. We could have analysed the data right from 1991-92, when India's economy opened up, to more accurately predict and forecast the comparison and correlation between the two sets of variables.

For future research, we can also study whether the quantum of M&A deals can have any significant impact on the two independent variables in this study, i.e., growth of the economy and financial markets. We could check how vertical, horizontal, concentric, and conglomerate mergers would affect the markets and economic freedom. We could dig a bit deeper to segregate the M&As based on transaction values and check if only large value mergers have an impact on the economic and financial growth of the country and vice versa. To measure the growth of the economy, we could also take other indicators, like consumer confidence index, consumer price index, producer price index, industrial production, and so on. We could also group the M&As based on strategic transactions and cross-border mergers, or based on a bid of controlling interest, like based on friendly or hostile takeovers or bailouts, and observe the findings.

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