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Stock Assessment of Industrial Sector long-term Non-Financial Horizontal Mergers and Acquisitions in Nigeria

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Abstract

Stock assessment of Industrial Group long-term Non-Financial Horizontal Mergers and Acquisitions in Nigeria. Regression of the listed stock prices with the Nigeria stock market returns in establishing stock performance. Mann Whitney U-test, a non-parametric test applied in testing the significance of the results for the bidder, target and non-merging firms. The stock performance results of the bidder companies' non-financial horizontal Industrial sector showed an improvement after 3 years of M&A activities, but when tested not significant. A non-significant decline result in stock performance was obtained also for the Target firm. The non-merging firms' stock performance three years after M&A improved after M&A but was not significant when tested. This implies that shareholders in the industrial sector did not realize any significant improvement in stock performance value, after M&A activity. Secondly, M&A in the Industrial sector was not beneficial to the merging firms' shareholders in the long–term in Nigeria. The policy implication is that M&A agencies and supervisory bodies need a total overhaul or review of M&A activities on a long-term procedure in Nigeria. This is because from the literature horizontal M&As are where expected synergistic improvement should come from, but the reverse is the case in Nigeria. The paper investigated the scarcely studied non-financial horizontal Voluntary Industrial Stock performance after M&As that has been existing in Nigeria. Significantly considering the non-merging companies to be able to compare the performance of the bidder and the non-merged companies.

Keywords: Stock Performance, Industrial sector, Non-financial M&As, long-term study, Nigeria

Introduction

In Nigeria, different studies have been carried out concerning the industrial sector from deference angles, mostly on a financial-related institutional basis while the non-financial aspect is scanty. Thus, most Mergers and acquisitions (M&As) studies are in the financial-related sector but scanty in the non-financial-related areas in the literature. A merger occurs when two establishments freely agree to work together with each other by joining their available assets, liabilities, and cultural values on an equal basis across different businesses and industries. Acquisition happens when one business purchases the bulk shares in another and takes over the operations of another organization, this may not be to the mutual agreement of all parties involved (Teti & Tului 2020). M&As are strategically planned transactions whereby the bidder and target companies jointly create a new entity to gain a competitive advantage in the marketplace (Korica, Barac and Jelavic, 2014). Target firms are those organizations that would be purchased by another company called the bidder, also referred to as the buying organization. The non-merging (also called control or matching) firms are those not involved in the M&A transactions but are used as a benchmark to evaluate the performance of the bidder company as if there was no merger (Han, Nando & Selveri, 2016).

For any valuation after M&As, if the post-merger value is not greater than the pre-merger value, then the M&A activities have destroyed the company's value. However, if the post-merger value is greater than the pre-merger, it implies that value has been created for the shareholders after the deal. This is because the positive difference gives the fundamental companies much value after M&As having accounted for both the cost of equity and the cost of debt. An M&A long-term period takes between 3 and 5 years after the activity, medium-term is 2 years while short–the term is 1 year (Zollo & Meier, 2007; Sudarsanam, 2010). The benchmarking issue in an M&A activity is the determination of a suitable timescale for evaluating the fundamental company value if any benefit (destruction) has been created to the shareholder's investment. In this regard, Ramakrishna (2008) investigated long-term post-merger evaluation of companies in India's operating performance and efficiency utilized 3 years before and after mergers. Others that utilized 3 years before and after M&As in investigating operating performance include, Ghosh (2001) in the United States and Sharma and Ho (2002) in Australia. Based on these positions, is the suitability of 3 years as an appropriate time interval in evaluating long-term industrial group companies' stock performance in Nigeria.

Horizontal M&As occur between competing companies, in the same sector, producing products or similar products or services, which are indistinguishable or similar (Khanal, Mishra & Mottaleb, 2015). When amalgamation reduces marginal costs and prices, a merger can raise or improve consumer welfare. The qualities of horizontal M&As include achievement of economies of scope and scale, reduction in production cost, increase in market share and increase in synergies. When a company achieves these advantages, it can diversify its services

and products, sell those products and services to a larger market, and reduce external competitors. On the other hand, the disadvantages include issues of antitrust and legalities, flexibility, reduction and the likely potential of destroying value rather than creating it. Voluntary M&As are observed within the non-financial sector of the economy, while involuntary M&As are mostly noticed in the financial-related sector. These mostly occur in the non-financial sector of the economy. The law that controls M&A activities in Nigeria is predominantly the Investment and Securities Act 2007 (ISA), in collaboration with the rules and regulations of the Security and Exchange Commission (SEC Rules) but now the Federal competition and consumer protection commission (FCCPC Rules). In respect of all operations, all companies are subject to the expert's opinion of the Corporate Affairs Commission (CAC) and the Federal Inland Revenue Services (FIRS) with respect to taxation. In Nigeria, before May 2019, the Security and Exchange Commission (SEC) was the main supervising and regulatory body for all M&A activities, but effective May 2019 SEC's role in all M&A activities, as directed by the federal government, was taken over by the Federal 18 Competition and Consumer Protection Commission (FCCPC). Therefore, FCCPC now reviews, monitors and approves all M&As in Nigeria.

M&As are considered as having the potential to achieve synergies by creating new growth opportunities, new capabilities, resources, new products and markets if properly consummated (Sudarsanam, 2010). Thus, the management of companies in many economies frequently requires synergistic improvements from the M&A deal in order to increase the prosperity of the shareholders of merging companies. The creation of the anticipated synergy is predominantly in the horizontal acquisition of rivals (Gupta, 2012). This could be a result of improved production efficiency, the elimination of overlapping facilities, the realization of economies of scale and the exploitation of market power. M&As involving bigger companies seek to increase the greater concentration of the corresponding industry, as it would show considerable market power in the larger company that could meaningfully hinder effective rivalry. In developing nations, M&As help their economies grow and develop quickly (Khanal, Mishra & Mottaleb, 2015). The classification of companies into financial and non-financial sectors is carried out by the Nigerian stock exchange (NSE). According to the classification, consumer, industrial, oil and gas, healthcare and services are under the non-financial sector. Therefore, M&A activity research involving these companies is classified as non-financial horizontal voluntary M&As in Nigeria. On the other hand, brokerage companies, mortgage banks, investment trusts, discount houses, insurance and banks are classified under the financial sector. These are mostly based on the regulatory authority's directive.

The criteria for making the 30-sample size, were for only M&As listed bidder and target companies, in a horizontal voluntary related business as classified by the Nigerian Stock Exchange (NSE). The 30 non-merging companies' criteria of selection were, being in the same related business, having a similar year of establishment with market capitalizations (MC) as applied by (Song, Alli &Pillay, (2005b); Guo, lin & Song, (2008)), and being a listed company. These were selected from the 170 listed companies on the Nigerian stock exchange (NSE). The Nigerian Stock Exchange (NSE) (2017) reported that 49 per cent of companies' not rendering returns on investment 5 years or more to investors voluntarily and involuntarily listed

companies on the exchange. Thus, raise practical serious, concerns about these companies' empirical Stock performance issues in the voluntary companies. Consequently, the motivation for this study, in order to examine the Stock performance, of the long-term performance of M&As on non-financial horizontal voluntary companies in Nigeria from 1995 to 2021. In Nigeria's M&A context, studies have primarily focused on how M&A operations influence bidder and target business share prices performance, primarily in the short-term performance assessment (for example, Onikoyi & Awolusi, 2014; Omoye & Aniefor, 2016). It does appear that little attention has been paid to long-term effect of M&As and the non-merging competing companies in Nigeria particularly the non-financial horizontal voluntary M&As. Short-term performance studies, according to Ramakrishnan (2008) are incapable of determining whether M&As lead to long-term economic benefits. One such short-term measure used in Nigeria is the accounting-based measures, which has been criticized for three reasons. First, accounting profits represent the narrowest measure of performance as they measure only the economic performance of the company; secondly, accountability measures have been accused of representing only a company's past performance; And finally, accounting data failed to evaluate the success of a specific acquisition as they provide aggregated data measuring the performance of the whole organization (Papadakis & Thanos, 2010). Furthermore, using an accounting measure for post-M&A performance evaluation involves a short-term economy measure and is characteristically imperfect, as is affected by the M&A deals accounting methods (pooling or purchase) as well as the payment method (cash, debt or equity or by combination). Accounting data, evaluate short-term economic analysis, it is inappropriate for assessing long-term economic performance. Therefore, findings obtained from such data for the merged company may be incomparable with other companies over time (Ramakrishnan, 2008).

On the other hand, Peyrache (2013) stated that the realization of the efficiency impact in an M&A activity is not a short-term evaluation issue, because it takes a longer time for efficiency to be realized. These references, therefore, highlight the importance of horizontal voluntary M&As investigation on a long-term basis. Based on these positions, it is argued in the present study that by investigating non-financial voluntary horizontal M&As over a relatively long period, the outcome of the merger stock performance can be better determined. M&As literature reveals that studies in Nigeria have focused mostly on the involuntary-related sector and returns on investment with mixed results (for example, Ebimbowei & Sophia, 2011; Achua & Ola, 2013; Aluko & Oyebode, 2014; Efereakeya & Alagba, 2015; Omoye & Aniefor, 2016). For instance, from the involuntary sector, Onikoyi and Awolusi (2014) found a direct positive impact of M&As on shareholders' wealth. While in a related involuntary study, Achua and Ola (2013) results indicated no significant improvement in all areas of earnings volatility, profitability, leverage and liquidity in Nigeria after M&As. For Yaghoubi, Yaghoubi, Locke, and Gibb (2016), M&As have both a positive impact on a stock price of bidder companies as well as a negative impact on a stock price of target companies. These confirmations show the inconsistency in empirical outcomes of available literature on M&As in Nigeria, thus, supporting the statement of mixed M&As performance results in the literature.

The knowledge gap with the previous mixed M&As performance results also revealed the different methods applied in the involuntary evaluation studies, while little is known and on record, this study is about the voluntary, non-financial companies' M&As industrial stock performance evaluation itself and based on considering before and after M&As companies' stock performance between 1991 to 2020 in Nigeria. Because the non-financial horizontal M&As have been in existence and increasing in volume and value since the 1990s. But seem unnoticed, with a significant stock trading activity value with its importance to companies as well as contributing to Nigeria's economy. Therefore, is a need to highlight research contributions in these areas, particularly in the voluntary, non-financial companies' industrial group in Nigeria. Put differently, studies on involuntary M&As that used different methods produced different findings that cannot be generalized. Consequently, an investigation into voluntary M&As in comparison with the non-merging companies is appropriate to ascertain the direction of the findings. Such investigation is important in this era where companies are seamlessly re-strategizing for sustainable and profitable operations.

Voluntary M&A activities are important for Nigerian companies for a number of reasons. It has been reported that listed companies, voluntary and involuntary in the Nigerian stock exchange (NSE) have not made returns for many years to investors and other stakeholders (NSE, 2017). This calls for companies to re-strategies for performance improvement. One way could be to consider voluntary M&As, which have been looked upon as a growth strategy for the organization. As studies on the effectiveness of this strategy to drive growth are limited, Nigerian companies, opting for such a strategy may do so at a more disadvantaged pace as there is little or no empirical evidence to support and guide their quest for growth via M&As. Secondly, for purposes of comparative analysis, studies on voluntary M&A activity are scarce in existing literature compared to involuntary M&As; this does not allow for an adequate understanding of which of these M&A activity is better for Nigerian companies. Therefore, a study on voluntary M&A stock deal performance is important for Nigerian companies to know if they could do better by inviting regulators to regulate their operations and formulate policies that will force them to go into M&As involuntarily like financial institutions, considering the industrial group. Other Stock performance sectors like services, oil and gas are to be considered in future studies. Furthermore, these voluntary M&A companies are among the highest capitalized in the Nigerian stock exchange compared to those not involved in merger and acquisition activities. The M&A stock trading activity's value at the NSE justifies another source of voluntary M&A importance. For example, from January to December 2018, NSE (2018) reported a total nonfinancial trading value of the exchange of 318.34 billion Naira. Out of this total value, the non-financial voluntary M&A trading value contribution was 282.58 billion Naira. The involuntary M&A activities are equally important in Nigeria, because of their economic role of stimulating the economic growth of any nation. This is because financial-related acts, as intermediaries by utilizing funds from the surplus sector and using a percentage, guided by the central bank rules, as loans in the needed deficit sector. In addition, the NSE (2018) reported, that trading activity from January to December in the financial sector was 448 billion Naira compared to 318 billion in the non-financial sector. Thus, the basis of investigating the industrial group non-financial sector stock performance in this study. Thus,

leaving the financial M&As for future research, that will take also into consideration accounting needs, with an acceptable methodology.

Mann Whitney U-test (MWU) also called the Wilcoxon rank-sum test, is an assessment explicitly used for the Kolmogorov-Smirnov (KS) to decide whether two independent samples come from corresponding populations. MWU is a non-parametric test for independent samples, but it works very differently. It first ranks the values according to its hierarchy (lowest to highest) before calculating a P assessment that depends on the difference between the mean ranks of the two groups. On the other hand, KS associates the collective distribution of the two data sets and calculates a p-value that depends on the largest difference between distributions. It is sensitive to any differences in the two distributions, the substantial differences in shape, as well as the spread or median result in a small p-value.

These M&A study lapses, accompanied by the practical issues in Nigeria have highlighted significantly, an urgent further research need of M&A stock performance of the bidder, target and non-merging companies before and after the activities. The organization of this paper is as follows: section 2.0 presents the literature review, and section 3.0 depicts the data and methodology adopted. Results and conclusions with policy implications are in section 4.0

Literature review

2.1 Current M&A-related studies in Nigeria

Akpan, Aye, Wong, Wanke, and Aaron (2022) examined the long-term impact of mergers and acquisitions (M&As) on the technical progress of non-financial firms in Nigeria. Technical progress is measured by Malmquist Productivity Index (MPI). The long-term impact assessed the significance of the productivity changes, through the Mann-Whitney U-test and Kruskal Wallis test. The result indicated that before M&A the target firms have the highest Malmquist index (MI), followed by one of the resulted in non-merging companies, the bidder firms had the lowest MI, although the latter two have a very small difference. A further result showed a long–term impact of M&A on the bidder firms, resulting in non-merging companies and target firms, as evidenced by the significant efficiency changes a few years of the M&A.

Tochukwu (2020) investigated domestic Mergers and acquisition in the Banking industry, considering three year pre and post M&A using selected financial ratios and t-test of seven banks listed on the Nigerian stock exchange (NSE). Omitted M&A event from comparisons as in extant studies (Leepsa & Mishra, 2013). Result showed that Nigerian banks were profitable post -M&A, but the wholistic performance was found to be poor.

Akpan, Aik and Wong (2019) investigated horizontal non-financial post mergers and acquisitions performance and spillover effect in Nigeria with 90 sampled entities. Using residual income valuation (RIV) for operating performance, non-parametric frontier analysis data envelopment analysis (DEA), and parametric model (stochastic frontier analysis, SFA) for efficiency and Malmquist productivity index for productivity. Outcome with robustness check showed realization of expected merging firms' improvement in cost efficiency after mergers

and acquisitions, but not on operating performance, technical and productivity efficiency. In addition, result indicated a positive spill-over effect after M&A on the non-merging firms' technical efficiency, and a short-term operating performance improvement one year after the activities.

Akpan and Akpan (2019) examined the effect of M&A on productivity and efficiency of companies in the oil and gas (O&G) and consumer sectors using quantitative research design with data drawn from financial reports of selected firms, analysis performed with DEA and Malmquist productivity index (MPI). The result showed no technical efficiency benefit for firms in both sectors after, but an improvement in productivity of merging firms in consumer sector.

Akpan, Aik,Wanke and Wong (2018) investigated the voluntary horizontal M&A shock on operating performance in Nigeria under different complimentary methods. The outcome showed a statistically significant improvement in the technical efficiency of merging companies, reduced efficiency levels of the bidder companies under DEA scores, reveals the specifics of the productive technology. Suggesting that resulting merged firms in Nigeria may have not even become too big in scale or even reach the most productive scale size, despite their almost monopolistic position in the sector. This happens because the scale size of the sector is small *per se*, implying that the investment necessary to achieve synergistic benefits have to be partially covered by price increases.

Urhoghide and Ojeme (2016) examined the effect of mergers and acquisitions on the determinants of dividend payout of financial quoted banks were examined in Nigeria. The period of study was dividend payment between 2007 and 2013 using panel data regression method. Determinant considered include; liquidity, growth, leverage, profitability (ROA &ROE), firm size and previous year dividends. Results showed a positive relationship between dividend paid and the following variables: return on asset (ROA), liquidity, firm size and previous year dividend. While, leverage, growth and return on equity (ROE) showed a negative relationship with dividend paid. The results were same for banks involved in merger and acquisition and those not involved. Based from above literature reviewed arise the need, investigating the stock performance of non-financial horizontal industrial sector, being rare on pre and post mergers and acquisition companies in Nigeria.

2.2 Review of Supporting Theories

The three basic documented M&A theory categories namely are: efficiency, agency problem and hubris hypothesis. Efficiency theory presents the fundamentals for M&A as value-maximizing decisions, while agency problem and hubris are managerial self-theories of non-value maximizing decisions. Thus, in an M&A aggravated by efficiency, the shareholders of both bidder and target companies are expected to gain from the expected economic benefits. On the other hand, M&A motivated by managerial self-interest, the bidder executive extracts value from their shareholders using the target companies and distributing this value with target company's shareholders. In most situations, M&A deal are not mutually restricted or

independent, thus, different theories may have similar explanations of the effect of M&A, but, interactively working to bring about a deal.

2.3: **Research hypothesis**

H0: There is no significant difference between before and after M&As bidder, target and non-merging firms' industrial sector stock performance, of non-financial horizontal voluntary companies' performance in Nigeria

H1: There is a significant difference between before and after M&As bidder, target and non-merging firms' industrial sector stock performance, of non-financial horizontal voluntary companies' performance in Nigeria

3.0 Sample, Data and Methodology

The sample for this study (see Table 3.1) comprise all the public listed non-financial companies that have initiated and completed a horizontal voluntary M&A in Nigeria with data from 1991 to 2020. This interval allowed for 3-year data pre-1995 M&As (1992 to 1994) and 3-year data post-2013 M&As (2014 to 2016) as no voluntary M&A took place between 2007 to 2020. This period of investigation covered recent M&As and also ensured that sufficient pre-and post-M&A sample data are available to evaluate the industrial sector stock performance of companies in the study. The criteria for selecting companies are stated as follows: (a) The bidder firm must be listed on the Nigerian stock exchange (NSE) and have acquired more than 60 percent voting rights of the target companies with the assumption that 60 percent is sufficient to give control as specified in section 313(1) of the reviewed Security and Exchange Commission Act of 2011. (b) The target companies are companies listed on the NSE. (c) The merger is restricted to the voluntary horizontal type of M&As that take place in the same industry between companies with the same or similar products, services, markets, and technologies. (d) Both the bidder and target companies are Nigerian domiciled, not foreign companies. (e) The mergers of businesses where acquirers had already acquired more than 60% stake or related companies are excluded. This is because such an arrangement or transaction does not show a firm's intention to seek external growth (Song Ali, Pillay, 2005b), which is the responsive focus of the study. Therefore, including them could amount to spurious research finding. Another two criteria were included. (f) The combination involving investment trust and financial institutions (banks and insurance companies), which are mostly involuntary with government interventions, are excluded because their accounting requirement needs to be treated separately, and (g) the firm must have three years pre-M&A and post-M&A financial data available for use, excluding the merger year.

Table 3.1: Summary of Sample Selection

	Bidder	Target	NSE(Non-Merging)
Initial Deal Identifies	270	270	170

Banking	72	41	25
Insurance	56	21	35
Mortgage bank	24	8	30
Investment trust	36	0	14
Discount Houses	22	0	16
Non-Financial (Not selected)	NA	NA	20
Involuntary Excluded	210	70	NA
Not listed on the Exchange	17	126	NA
Annual reports not separated 3 years after	8	9	NA
No Three years before/ after Data	5	35	NA
Total not listed Plus Involuntary	240	240	NA
Voluntary M&As (Listed with complete data)	30	30	NA
Same horizontal business	√	√	√
Comparable year established	√	NA	√
Cross-Border M&A	0	0	NA
NSE Non-Financial selected	NA	NA	30

Source: Security and Exchange Commission (SEC) and Nigerian Stock Exchange (NSE)

3.1 Data and Methodology: Upon payment, the stock prices and the market return data for all the listed companies at NSE, were obtained from the Nigerian stock Exchange for the needed period. Sorting into financial and non-financial companies done based on the classification by the NSE, also considering three years before and after M&A activities for the companies involved. The stock prices data regress against the market returns to obtained the respective stock performance data or the beta or risk of investment presented below in Table 3.2.

Table 3.2; Showing the beta values of the Bidder, Target and Non-merging non-financial horizontal M&As values before and after M&A

Bidder	Sector	Beta(3YBV)	Beta (3YAV)	Target	Beta(3YBV)	Beta(3YAV)	Non-merging	Beta(3YBV)	Beta(3YAV)
B1	CONSUMER	0.476	0.130	T1	-0.176	-0.218	C1	0.495	-0.281
	CONSUMER	0.167	0.190		-0.186	0.616		0.186	0.284
	CONSUMER	-0.036	0.574		-0.201	-0.421		-0.312	-0.623
B2	CONSUMER	-0.237	-0.117	T2	-0.111	-0.127	C2	0.06	0.222
	CONSUMER	0.208	-0.036		-0.100	0.034		-0.468	0.021
	CONSUMER	0.036	-0.106		-0.102	0.103		0.266	0.375
B3	CONSUMER	0.220	0.320	T3	-0.071	-0.059	C3	-0.17	0.021
	CONSUMER	-0.470	0.065		-0.049	0.189		0.22	0.375
	CONSUMER	-0.626	-0.104		-0.038	-0.454		-0.184	0.633
B4	HEALTHCARE	-0.100	-0.180	T4	0.019	0.048	C4	-0.084	0.542
	HEALTHCARE	-0.080	-0.060		0.026	-0.463		0.123	0.041
	HEALTHCARE	-0.424	-0.453		0.031	0.22		-0.331	0.732
B5	CONSUMER	-0.156	0.350	T5	0.250	0.35	C5	-0.065	0.316

	CONSUMER	0.369	-0.026		0.270	-0.314		-0.06	0.071
	CONSUMER	0.158	0.163		0.230	-0.37		-0.293	-0.104
B6	CONSUMER	-0.111	0.284	T6	0.180	0.18	C6	-0.316	0.205
	CONSUMER	-0.380	-0.623		0.200	0.197		-0.34	0.562
	CONSUMER	-0.306	-0.051		0.150	0.662		0.054	-0.291
B7	INDUSTRIAL	-0.050	-0.374	T7	-0.210	-0.019	C7	-0.22	0.015
	INDUSTRIAL	0.068	0.294		0.025	-0.169		0.036	-0.41
	INDUSTRIAL	0.431	-0.087		0.364	-0.444		-0.111	0.431
B8	INDUSTRIAL	-0.111	0.431	T8	0.546	0.08	C8	0.431	-0.087
	INDUSTRIAL	0.491	-0.446		0.125	-0.8		0.276	-0.297
	INDUSTRIAL	0.015	-0.319		-0.043	-0.294		-0.374	-0.47
B9	INDUSTRIAL	0.129	0.038	T9	-0.207	-0.215	C9	0.575	0.022
	INDUSTRIAL	-0.027	-0.162		0.291	0.227		-0.063	-0.436
	INDUSTRIAL	-0.206	-0.116		-0.073	-0.084		0.189	0.174
B10	OIL &GAS	0.078	-0.463	T10	0.045	0.438	C10	0.317	0.294
	OIL &GAS	-0.325	-0.465		0.094	-0.488		-0.217	-0.615
	OIL &GAS	-0.245	0.088		0.164	0.103		0.012	-0.084
B11	INDUSTRIAL	0.189	0.174	T11	-0.359	-0.072	C11	-0.209	-0.114
	INDUSTRIAL	-0.452	0.466		0.158	0.287		-0.25	0.588
	INDUSTRIAL	0.022	-0.098		0.123	-0.133		0.041	-0.386
B12	CONSUMER	-0.098	-0.084	T12	0.096	-0.123	C12	0.574	-0.029
	CONSUMER	-0.051	-0.286		-0.098	0.327		-0.292	-0.239
	CONSUMER	0.046	-0.103		0.650	-0.254		0.539	0.251
B13	OIL &GAS	-0.491	-0.433	T13	-0.084	-0.539	C13	-0.258	-0.056
	OIL &GAS	0.121	-0.290		0.359	0.303		0.003	0.311
	OIL &GAS	-0.459	0.166		-0.400	-0.581		-0.479	0.353
B14	INDUSTRIAL	-0.900	-0.094	T14	-0.065	0.475	C14	-0.165	-0.04
	INDUSTRIAL	0.153	-0.456		-0.083	0.152		-0.566	0.258
	INDUSTRIAL	-0.356	0.542		-0.076	-0.04		-0.386	0.228
B15	SERVICES	0.068	0.092	T15	0.096	-0.145	C15	-0.229	-0.085
	SERVICES	0.006	0.167		-0.098	-0.193		-0.085	0.088
	SERVICES	-0.156	-0.018		0.650	0.008		-0.056	0.102
B16	CONSUMER	-0.018	0.430	T16	0.008	0.22	C16	-0.151	0.104
	CONSUMER	-0.272	0.258		0.259	0.154		-0.221	0.09
	CONSUMER	0.352	0.385		-0.051	-0.188		0.078	0.452
B17	OIL &GAS	-0.290	0.063	T17	-0.084	0.496	C17	-0.047	-0.045
	OIL &GAS	0.166	0.167		0.359	0.447		0.119	-0.051
	OIL &GAS	-0.693	0.428		-0.400	0.336		0.05	-0.395
B18	SERVICES	-0.010	-0.156	T18	-0.065	-0.094	C18	0.28	0.492
	SERVICES	0.690	0.126		-0.083	-0.339		0.028	-0.66
	SERVICES	0.650	-0.310		-0.076	-0.089		0.16	-0.426
B19	INDUSTRIAL	0.196	0.097	T19	0.138	0.324	C19	0.233	-0.286
	INDUSTRIAL	-0.301	0.130		0.298	0.217		0.09	0.59
	INDUSTRIAL	0.306	0.090		0.418	0.543		-0.5	-0.446
B20	SERVICES	0.216	-0.109	T20	0.500	-0.241	C20	0.218	0.047
	SERVICES	-0.482	0.502		-0.214	-0.061		0.005	-0.333
	SERVICES	-0.282	-0.241		0.442	-0.753		0.379	0.07
B21	INDUSTRIAL	-0.152	-0.168	T21	-0.314	-0.003	C21	0.088	-0.286
	INDUSTRIAL	-0.523	0.166		-0.456	-0.457		-0.497	0.587
	INDUSTRIAL	0.222	-0.492		0.045	0.382		0.45	-0.446
B22	CONSUMER	0.040	-0.266	T22	-0.016	-0.231	C22	0.309	-0.429
	CONSUMER	-0.700	-0.798		0.211	-0.133		0.43	-0.448
	CONSUMER	-0.195	0.435		0.220	0.09		0.258	0.188
B23	INDUSTRIAL	-0.139	0.141	T23	0.456	-0.566	C23	-0.139	0.213

	INDUSTRIAL	-0.438	0.306		-0.068	0.186		-0.438	0.068
	INDUSTRIAL	0.468	0.279		0.589	-0.045		0.469	0.279
B24	CONSUMER	0.430	-0.448	T24	-0.980	-0.1	C24	-0.003	0.024
	CONSUMER	0.258	0.188		-0.920	0.138		-0.064	-0.407
	CONSUMER	-0.429	0.136		-0.080	0.037		-0.055	0.288
B25	CONSUMER	0.330	0.140	T25	-0.098	-0.16	C25	0.386	0.011
	CONSUMER	0.074	0.126		-0.450	-0.142		0.342	-0.091
	CONSUMER	0.104	0.575		0.583	-0.052		-0.088	0.295
B26	CONSUMER	0.333	0.140	T26	0.286	0.572	C26	0.386	0.011
	CONSUMER	0.074	0.126		0.711	0.303		0.342	-0.091
	CONSUMER	0.104	0.575		0.553	-0.045		-0.088	0.295
B27	SERVICES	-0.036	-0.036	T27	-0.678	-0.096	C27	0.051	0.043
	SERVICES	0.520	0.520		-0.561	-0.603		0.047	0.041
	SERVICES	0.492	0.492		-0.368	0.23		0.049	0.045
B28	SERVICES	-0.438	-0.257	T28	-0.456	0.231	C28	0.043	0.048
	SERVICES	-0.432	0.280		-0.993	0.015		0.041	0.050
	SERVICES	-0.238	0.383		-0.631	0.276		0.046	0.049
B29	CONSUMER	0.385	0.135	T29	-0.678	-0.093	C29	0.049	0.049
	CONSUMER	-0.429	0.347		-0.561	-0.332		0.047	0.047
	CONSUMER	-0.448	0.210		-0.368	0.356		0.039	0.039
B30	CONSUMER	0.074	0.126	T30	-0.712	0.469	C30	0.032	0.030
	CONSUMER	0.104	0.575		-0.923	-0.355		0.040	0.040
	CONSUMER	0.092	0.732		-0.651	0.275		0.410	0.042

Next on the data obtained, was selection of the Industrial sector data before and after M&A values only as presented in Table 3.3 below.

		Table 3.3; Bidder, Target and Non-Merging Beta data of Industrial sector							
		BB M&A	BA M&A		TB M&A	TA M&A		CB M&A	CA M&A
B7	INDUSTRIAL	-0.050	-0.374	T7	-0.210	-0.019	C7	-0.22	0.015
	INDUSTRIAL	0.068	0.294		0.025	-0.169		0.036	-0.41
	INDUSTRIAL	0.431	-0.087		0.364	-0.444		-0.111	0.431
B8	INDUSTRIAL	-0.111	0.431	T8	0.546	0.08	C8	0.431	-0.087
	INDUSTRIAL	0.491	-0.446		0.125	-0.8		0.276	-0.297
	INDUSTRIAL	0.015	-0.319		-0.043	-0.294		-0.374	-0.47
B9	INDUSTRIAL	0.129	0.038	T9	-0.207	-0.215	C9	0.575	0.022
	INDUSTRIAL	-0.027	-0.162		0.291	0.227		-0.063	-0.436
	INDUSTRIAL	-0.206	-0.116		-0.073	-0.084		0.189	0.174
B11	INDUSTRIAL	0.189	0.174	T11	-0.359	-0.072	C11	-0.209	-0.114
	INDUSTRIAL	-0.452	0.466		0.158	0.287		-0.25	0.588
	INDUSTRIAL	0.022	-0.098		0.123	-0.133		0.041	-0.386
B14	INDUSTRIAL	-0.900	-0.094	T14	-0.065	0.475	C14	-0.165	-0.04
	INDUSTRIAL	0.153	-0.456		-0.083	0.152		-0.566	0.258
	INDUSTRIAL	-0.356	0.542		-0.076	-0.04		-0.386	0.228
B19	INDUSTRIAL	0.196	0.097	T19	0.138	0.324	C19	0.233	-0.286
	INDUSTRIAL	-0.301	0.130		0.298	0.217		0.09	0.59

	INDUSTRIAL	0.306	0.090		0.418	0.543		-0.5	-0.446
B21	INDUSTRIAL	-0.152	-0.168	T21	-0.314	-0.003	C21	0.088	-0.286
	INDUSTRIAL	-0.523	0.166		-0.456	-0.457		-0.497	0.587
	INDUSTRIAL	0.222	-0.492		0.045	0.382		0.45	-0.446
B23	INDUSTRIAL	-0.139	0.141	T23	0.456	-0.566	C23	-0.139	0.213
	INDUSTRIAL	-0.438	0.306		-0.068	0.186		-0.438	0.068
	INDUSTRIAL	0.468	0.279		0.589	-0.045		0.469	0.279
	SUM	-0.965	0.342		1.622	-0.468		-0.468	-1.04

Note: BB M&A represent Bidder before M&A, BBA: bidder after M&A, TB M&A: Target before M&A. TA M&A: Target after M&A, CB: Non-Merging before M&A. CA M&A: Non-Merging after M&A.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of BB 3YB is the same across categories of tr.	Independent-Samples Mann-Whitney U Test	.695	Retain the null hypothesis.
2	The distribution of T3YB is the same across categories of tr.	Independent-Samples Mann-Whitney U Test	.470	Retain the null hypothesis.
3	The distribution of C3YB is the same across categories of tr.	Independent-Samples Mann-Whitney U Test	.789	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

3.2: Mann Whitney U-Test Methodology

In this study, the test of significance using the MWU test was based on the research design and data satisfying the MWU test assumptions (Singh, Roy & Tripathi, 2013; Levine, Stephan & Szabat, 2017). First, the independent variables should be measured at the continuous or ordinal level. This study stock score is measured at a continuous level. Second, the independent variables should consist of two independent groups. In this study, the pre-M&A data and post-M&As data were the two independent groups. Third, the independence of observations necessitates no relationship between the observations of the two groups, which means the pre- and post-M&A observations in this study were independent. Finally, it should be determined whether the distribution of scores for both groups of independent variables have a similar or a different shape. Because MWU is a non-parametric test, it does not require a special distribution of the dependent variable in the analysis and it is an appropriate test to compare groups when the dependent variable is not assumed normally distributed. MWU is used with two distributions having different shape to determine whether there are differences in the distributions of the two groups. If there is no difference in the distribution, MWU is used to determine whether there are differences in medians of the two groups (Singh, Roy & Tripathi, 2013).

The MWU null hypothesis is *Ho:* Median is not significantly different (if Median different p-values are more than alpha 0.05); *HA*: Median is significantly different (if Median different p-values are less than alpha 0.05).

$$\text{MWU (Z)} = \quad W = \frac{\frac{n1(n1+n2+1)}{2}}{\sqrt{\frac{n1n2(n1+n2+1)}{12}}} \qquad \ldots\ldots\ldots \qquad (3.1)$$

Where n1 is the number of observations from the first population, n2 is the number of observations from the second population, and W is the sum of the ranks of the first population. The study applied the median difference because it is not affected by extremely large or low values and can be calculated for ordinal-level data or higher. This is because ordinal-level data can be ranked from the least to highest (Lind, Marchal & Wathen, 2012), thus, making median score a more robust and valuable data location measure than mean parameter. Power is the likelihood of correctly rejecting the null hypothesis. It refers to the condition of noticing important evidence and thus rejecting the null result. Furthermore, Blair and Higgins (1980) established that the MWU test has higher power relative to the t-test, particularly under small sample circumstances. MWU allows drawing different conclusions about the data depending on the assumption made from the data distribution.

4.0 Results, Discussion, and Conclusions with Policy Implications

The stock performance results of the bidder companies' non-financial horizontal Industrial sector showed an improvement after 3years M&A activities, but when tested not significant. A non-significant decline result of stock performance was obtained also for the Target firm. The non-merging stock performance of firms three years after M&A improved after M&A but not significant when tested. This implies that shareholders in the industrial sector did not realize any significant improvement in stock performance value, after M&As activity. This implies that M&A in the Industrial sector was not beneficial to the merging firms' shareholders on a long–term in Nigeria. Policy implication is that M&As agency and supervisory bodies needs a total overhaul or review of M&As activities on a long-term and procedure in Nigeria. This is because from literature horizontal M&As is where expected synergistic improvement should come from, but reverse is the case in Nigeria. This implies that the general M&As procedures, in the non-financial group for the listed bidder and target firms' takeover has to be critically re-examined and proper due diligence followed. This is the only way shareholders in the sector can benefit in terms of stock performance improvement, as well as improvement in economic development in the country.

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