

GLOBAL DYNAMICS OF MERGERS AND ACQUISITIONS AND THE ROLE OF DIGITAL SECTORS: EMPIRICAL EVIDENCE FROM SOFTWARE AND IT CONSULTING

Sorin Adrian ACHIM⁵

“Babes-Bolyai” University, Faculty of Economics and Business Administration

Diana Aderina MOISUC⁶

“Babes-Bolyai” University, Faculty of Economics and Business Administration

ABSTRACT: *Mergers and acquisitions have become increasingly connected to the expansion of digital technologies and the growing strategic importance of software and IT-related activities. This paper investigates the relationship between global M&A activity and transactions in the software and IT consulting & services sectors using monthly data covering the 2018–2025 period. The empirical analysis relies on an ARDL framework combined with co-integration techniques, error correction modeling, and several diagnostic and causality tests. The findings reveal a stable long-run association between worldwide M&A activity and the digital sector analyzed, with IT consulting & services showing the strongest impact on global transaction dynamics. The inclusion of a COVID-19 dummy variable improves the model specification and confirms the disruptive effect of the pandemic on merger and acquisition activity. The study highlights the growing relevance of digital sectors in explaining changes in the global M&A environment and emphasizes the importance of technological capabilities in contemporary corporate restructuring strategies.*

Keywords: *Mergers and Acquisitions; Global M&A; Digital Economy; Software Industry; IT consulting; ARDL model; cointegration*

JEL Classification: *G34, L86, O33, C32, F23*

1. INTRODUCTION

Mergers and acquisitions (M&A) transactions are widely used by firms seeking rapid expansion, access to strategic assets, and organizational restructuring opportunities. Through these transactions, companies can access new markets, acquire financial and technological resources, integrate specialized competencies, and strengthen their competitive position within a shorter timeframe than would be possible through organic growth. For this reason, global M&A activity is closely linked to investment dynamics, the evolution of financial markets, and the processes of globalization and value chain reorganization.

The increasing integration of digital technologies into business activity has altered the strategic motivations behind many acquisition decisions. Digital assets such as software, IT services, data infrastructure, and technological capabilities have become strategic elements in

⁵ Assoc. Prof., PhD, sorin.achim@econ.ubbcluj.ro

⁶ Asst. Prof., PhD, diana.moisuc@econ.ubbcluj.ro

corporate decision-making processes. In this context, M&A transactions no longer aim exclusively at expanding market share, but also at rapidly acquiring technologies, human capital, and know-how necessary for adaptation to the digital economy. Recent literature highlights that digitalization can influence both the frequency of M&A transactions and the value created or destroyed through these operations (Tang, Fang și Jiang 2022), (Jiang, și alții 2023), (Maisenhelder, și alții 2025), (Shi, și alții 2026).

Against this background, the article analyzes the relationship between global mergers and acquisitions activity and the dynamics of transactions in two digital-intensive sectors: software and IT consulting & services. The study is based on the premise that these sectors are not only components of the digital economy, but also relevant indicators of companies' strategic orientation toward digital transformation.

The main contribution of the study consists in the empirical analysis of this relationship using monthly data for the 2018–2025 period, as well as in assessing the impact of a major exogenous shock represented by the COVID-19 pandemic. The methodology employed allows for the identification of co-integration, causality, and long-run adjustment relationships among the analyzed variables.

2. MERGERS AND ACQUISITIONS IN THE CONTEXT OF THE DIGITAL ECONOMY

The transformations generated by digitalization have changed not only the way the economy functions, but also the strategic behavior of companies. In this context, mergers and acquisitions represent an essential instrument through which firms adapt their structure, strengthen their market position, and gain access to technological and organizational resources.

Analyzing the relationship between global M&A activity and the digital economy requires an integrated approach that includes both the traditional determinants of transactions and the role of digital sectors. In this regard, the present section outlines the main directions in the literature concerning M&A dynamics, the digital economy, and the specific characteristics of transactions in technology-related sectors.

2.1. Global Mergers and Acquisitions Activity

Mergers and acquisitions activity is characterized by a cyclical evolution, influenced by macroeconomic factors, financing conditions, and capital market dynamics. Periods of economic growth, financial stability, and high liquidity are generally associated with an intensification of transactions, as companies benefit from easier access to financing and display a greater tolerance for risk. Conversely, periods marked by economic uncertainty, financial volatility, or external shocks lead to a decline in M&A activity, as investors and companies become more cautious regarding expansion and investment decisions. The specialized literature shows that the evolution of M&A activity is closely linked to global economic cycles, being influenced both by monetary conditions and interest rate levels, as well as by investor confidence and expectations regarding economic growth.

In addition to these traditional determinants, recent literature highlights that mergers and acquisitions represent an essential mechanism for adapting to the structural transformations of the global economy. In the context of globalization and accelerating technological progress, companies use M&A transactions to reorganize activities, strengthen competitive advantages, and gain rapid access to strategic resources, technologies, and new competencies. M&A transactions enable firms to enter international markets, optimize value chains, and respond more efficiently to competitive pressures generated by the digital economy (Keenan și Wójcik 2023). At the same time, in recent years, digitalization has become an important factor driving the intensification of transactions, as numerous companies pursue acquisitions to obtain digital

capabilities and access to technologies based on artificial intelligence, big data, or digital platforms (Hao 2025).

From this perspective, mergers and acquisitions are no longer viewed exclusively as instruments of economic growth or market share expansion, but also as means through which companies accelerate their digital transformation and innovation processes. The literature shows that firms increasingly resort to acquisitions to integrate innovative technologies, digital resources, and specialized human capital, since the internal development of such capabilities may involve high costs and a longer time horizon. In this context, M&A transactions contribute to increasing competitiveness and facilitating companies' adaptation to the new conditions of the global digital economy (Maisenhelder, și alții 2025).

Mergers and acquisitions can also be analyzed from a spatial perspective, as they redistribute corporate control and reshape international economic relations through cross-border capital flows. M&A activity is unevenly distributed across sectors and regions, with technology and digital services accounting for an increasing share of global transactions.

Recent literature increasingly highlights the importance of non-financial factors in M&A success. Besides financial considerations, sustainability, corporate governance, cultural integration, and technological compatibility can strongly influence post-merger performance. In cross-border transactions, regulation, data protection, and compliance standards also play a key role in determining transaction success (González-Torres, et al. 2020), (Feng, Li and Nie 2024).

2.2. The Digital Economy and the Role of the Software and IT Consulting Sectors

The emergence of the digital economy has increased the importance of data, software infrastructure, and technological capabilities in corporate value creation. At the same time, the expansion of technologies such as artificial intelligence, cloud computing, big data, and digital platforms has significantly transformed both organizational structures and business processes. In this context, digitalization has evolved beyond a purely technological phenomenon and has become a strategic factor influencing competitiveness and firms' long-term adaptability (Ren, Liu și Hao 2024).

The software and IT consulting & services sectors play a central role in this process, as they provide the infrastructure and expertise necessary for implementing digital solutions. These sectors contribute to the development of software applications, digital platforms, and consulting services that enable process automation, activity optimization, and the integration of digital technologies into corporate strategies. The literature highlights that firms increasingly use investments and M&A transactions to rapidly acquire digital capabilities, access to innovative technologies, and specialized human resources, particularly in the software and IT services fields (Hao 2025).

Empirical research shows that digitalization can reduce financing constraints and improve informational transparency, thereby contributing to greater market efficiency. By improving reporting processes and information transmission, digital transformation reduces information asymmetry between firms and investors, facilitating companies' access to capital and lowering financing costs. At the same time, digitalization contributes to improving the quality of information available on the market and increasing investor confidence in corporate activity (Guo, și alții 2024), (Cheng, Li și Zhao 2024).

Moreover, the development of digital infrastructure contributes to reducing information costs and facilitating coordination among firms, which may stimulate mergers and acquisitions activity. The expansion of broadband infrastructure and the development of digital ecosystems enable faster information flow and reduce geographical constraints in investment processes. Therefore, digitalization influences not only firm performance, but also the dynamics of

corporate transactions and the process of economic reorganization within the global economy (Sun, Kong și Tao 2023).

2.3. Mergers and Acquisitions in Digital Sectors

Transactions in digital sectors display distinct characteristics compared to traditional ones, being primarily driven by access to technology, data, and specialized human capital. In the digital economy, mergers and acquisitions are used not only for market share expansion, but also for the rapid acquisition of technological capabilities that can support innovation and firms' digital transformation. Thus, M&A has become a strategic instrument through which companies respond to competitive pressures and the acceleration of technological change.

Companies use these transactions to quickly integrate innovative technologies, digital platforms, and specialized human resources, since the internal development of such capabilities may involve high costs and a slower adaptation process. In particular, the software and IT consulting & services sectors are characterized by a high level of dynamism and innovation, making them attractive fields for investors and corporate consolidation strategies. The literature highlights that, in the digital economy, firms pursue through M&A access to technologies based on artificial intelligence, cloud computing, big data, and integrated digital ecosystems (Hao 2025).

The specialized literature shows that digital acquisitions can generate positive effects on market value and company performance, especially when they allow the efficient integration of technological resources and the development of competitive advantages. However, transaction outcomes largely depend on the strategic compatibility between firms, post-acquisition integration capacity, and the effective use of the human and technological capital acquired through the transaction. Cultural differences, organizational integration difficulties, and technological incompatibility may reduce transaction efficiency and negatively affect long-term performance (Tang, Fang și Jiang 2022), (Maisenhelder, și alții 2025).

Furthermore, the development of digital finance and the process of digital transformation may stimulate M&A activity by reducing financing constraints and improving access to information. The literature emphasizes that digitalization contributes to reducing information asymmetry and increasing transparency, thereby facilitating firms' access to capital and supporting investment and innovation processes. In this context, digital transformation influences not only firm performance, but also the intensity and structure of corporate transactions within digital sectors (Jiang, și alții 2023), (Shi, și alții 2026), (Xu, și alții 2025).

Within the FinTech and RegTech sectors, the literature indicates the existence of specific valuation models influenced by transaction characteristics and the nature of the digital assets involved. Transactions in these fields are evaluated not only through the lens of traditional financial assets, but also according to the value of technologies, digital platforms, data, and innovation capacity. These particularities highlight the need for a differentiated approach to mergers and acquisitions in the digital economy, especially in sectors characterized by rapid innovation and high technological intensity (Seitanidis, Aggelopoulos și Grypeos 2026).

3. CASE STUDY: EMPIRICAL ANALYSIS OF M&A ACTIVITY

The findings highlighted in the specialized literature require empirical validation in order to analyze the relationships between global mergers and acquisitions activity and digital sectors. For this purpose, the research hypotheses are defined, the dataset used is described, and the econometric methodology is presented, followed by the analysis and interpretation of the obtained results.

3.1. Research Objectives and Hypotheses

Building on the literature concerning digital transformation, technological infrastructure, and acquisitions in digital sectors, the empirical analysis aims to investigate the relationship between global mergers and acquisitions activity and the dynamics of transactions in the software and IT consulting & services sectors. In this context, the following research hypotheses are formulated:

H1: There is a positive long-run relationship between the global value of M&A transactions and the value of transactions in the IT consulting & services sector.

H2: There is a positive long-run relationship between the global value of M&A transactions and the value of transactions in the software sector.

H3: The COVID-19 pandemic shock had a negative and significant effect on the global value of M&A transactions during the March 2020 – December 2020 period.

3.2. Data Sources and Description of Variables

The empirical analysis uses data provided by the Institute for Mergers, Acquisitions and Alliances (IMAA 2026) regarding the value of M&A transactions at global and industry levels. Three monthly series were used: the global value of M&A transactions (WW_Value), the value of M&A transactions in the software sector (Software_Value), and the value of M&A transactions in the IT consulting & services sector (IT_Value). The analyzed period covers January 2018 – December 2025, resulting in 96 observations for each series.

Table 1. Model Variables Regarding Mergers and Acquisitions in Digital Sectors

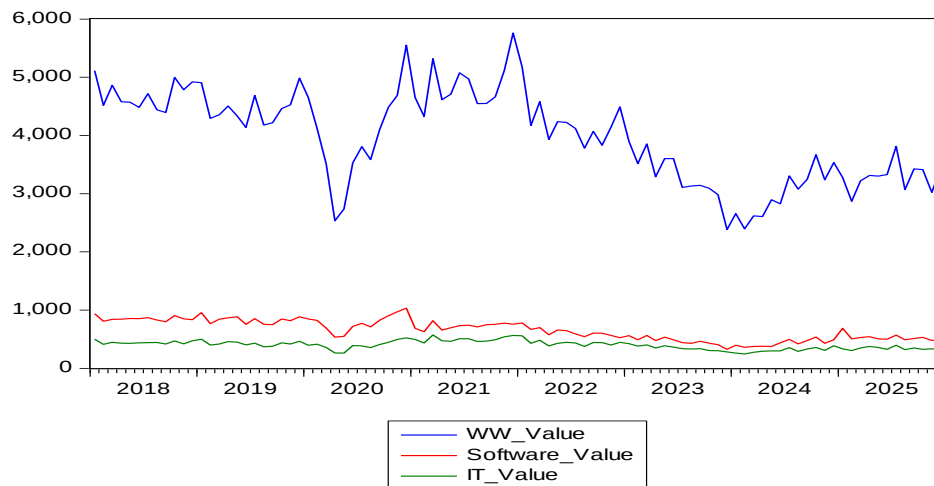
Variable	Description	Unit of Measurement	Role in the Model
WW_Value	Value of global M&A transactions	billion USD	Dependent variable
Software_Value	Value of M&A transactions in the software sector	billion USD	Explanatory variable
IT_Value	Value of M&A transactions in the IT consulting & services sector	billion USD	Explanatory variable
COVID	Dummy variable for March 2020 – December 2020	0/1	Control variable

Source: author's own processing based on (IMAA 2026)

To highlight the evolution over time of mergers and acquisitions activity and to observe the dynamics of the relationship between global transactions and those in digital sectors, the analyzed series were graphically represented. Visual representation allows for the identification of general trends, fluctuations, and possible structural changes associated with the economic context and the digitalization process.

It can be observed that the WW_Value series records the highest values and significantly greater volatility compared to the sectoral series, reflecting the sensitivity of global M&A activity to international economic and financial changes. At the same time, the Software_Value and IT_Value series exhibit lower fluctuations, suggesting a relatively more stable evolution of transactions within the digital sectors.

Figure 1. Evolution of the Real Series WW_Value, Software_Value, and IT_Value

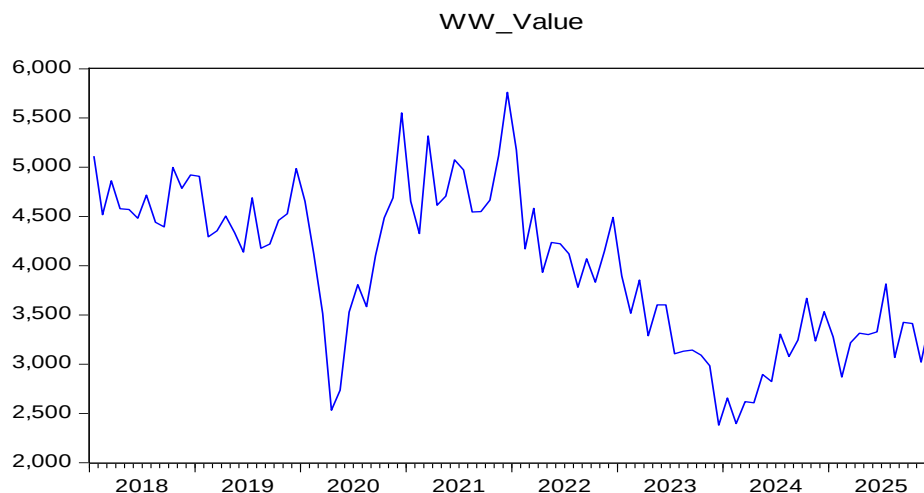


The graph indicates a pronounced decline in transaction values around 2020, associated with the effects generated by the COVID-19 pandemic and the increase in global economic uncertainty. Subsequently, a period of recovery and adjustment in M&A activity can be observed, both at the global level and within the software and IT consulting sectors. At the same time, the evolution of the series suggests the existence of a relationship between the dynamics of global transactions and those of transactions in digital fields, which justifies the inclusion of the Software_Value and IT_Value variables in the empirical model.

It can also be noted that the software sector records higher values than the IT consulting & services sector throughout the entire period analyzed, which may reflect the growing importance of software solutions and digital technologies in global mergers and acquisitions strategies.

To capture more clearly the dynamics of the dependent variable, the evolution of the global value of M&A transactions (WW_Value) was analyzed separately.

Figure 2. Evolution of the Global Value of M&A Transactions (WW_Value))

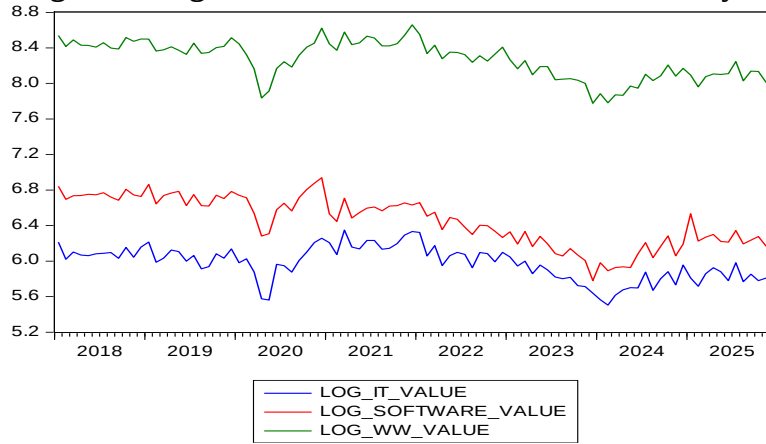


The graphical analysis highlights a sharp decline in March 2020, associated with the outbreak of the COVID-19 pandemic, suggesting the existence of a possible structural break. For a comparative perspective, the real series of the variables used in the model are also represented.

3.3. Data Processing and Testing of Statistical Properties

Since the analyzed series are expressed in monetary values and may present significant scale differences, the variables were logarithmically transformed. The logarithmic transformation facilitates the interpretation of coefficients as elasticities and reduces the effect of extreme values. Before estimating the model, the stationarity of the series was tested using the Augmented Dickey-Fuller (ADF) test. For the WW_Value and Software_Value series, both trend and intercept components were included, as the graphical representations indicate a slight downward trend. For the IT_Value series, the model with intercept was used.

Figure 3. Log-Transformed Series Used in the Analysis



The ADF test results indicate that WW_Value and Software_Value are trend-stationary, while IT_Value becomes stationary after first-order differencing. This combination of I(0) and I(1) variables justifies the use of the ARDL methodology, provided that none of the series is integrated of order two.

3.4. Model Estimation and the Co-integration Relationship

The ARDL (Auto Regressive Distributed Lags) approach was selected because it allows the estimation of long-run relationships in models combining variables integrated at different orders, while also remaining appropriate for limited sample sizes.

In the first stage, an ARDL model with a deterministic trend was estimated, in the following form:

$$\text{LOG_WW_VALUE} = C(1)*\text{LOG_WW_VALUE}(-1) + C(2)*\text{LOG_IT_VALUE} + C(3)*\text{LOG_SOFTWARE_VALUE} + C(4)*\text{LOG_SOFTWARE_VALUE}(-1) + C(5) + C(6)*\text{@TREND}$$

Subsequently, the co-integration relationship was tested using the F-bounds test

Figure 4. Results of the F-bounds Test for the ARDL Model

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic k	31.83951 2	10%	3.38	4.02
		5%	3.88	4.61
		2.5%	4.37	5.16
		1%	4.99	5.85

When the calculated F-statistic is higher than the upper critical bound associated with I(1) variables, the null hypothesis of no long-run relationship is rejected, supporting the use of the VECM specification. In the present analysis, the F-statistic exceeds the upper bound value, confirming the existence of a co-integration relationship between the variables.

Figure 5. Estimation of the Co-integration Relationship (VECM)

Levels Equation Case 4: Unrestricted Constant and Restricted Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_IT_VALUE	0.819114	0.060218	13.60249	0.0000
LOG_SOFTWARE_VALUE	0.183534	0.062561	2.933696	0.0043
@TREND	-0.000315	0.000450	-0.700704	0.4853
EC = LOG_WW_VALUE - (0.8191*LOG_IT_VALUE + 0.1835 *LOG_SOFTWARE_VALUE -0.0003*@TREND)				

The model equation is:

$$EC = LOG_WW_VALUE - (0.8191*LOG_IT_VALUE + 0.1835 \\ *LOG_SOFTWARE_VALUE -0.0003*@TREND)$$

A 1% increase in IT_Value leads to a 0.81% increase in WW_Value. A 1% increase in Software_Value leads to a 0.18% increase in WW_Value. The deterministic trend was initially included in the model, considering that two of the three series exhibit trend-stationary characteristics. Although the trend coefficient is not statistically significant, its inclusion may contribute to a more appropriate model specification. Both coefficients are significant (p-value < 5%), indicating the existence of a significant long-run effect on the dependent variable.

Next, the error correction form is analyzed. According to the results presented in the figure below, the coefficient associated with the CointEq(-1) term is negative and significant, which means that there is long-run causality. At the same time, it measures the speed of adjustment from any disequilibrium toward the long-run equilibrium state. In our case, the adjustment speed is 75.5%, which represents a high value.

Figure 6. Error Correction Form for the Initial Model

ECM Regression Case 4: Unrestricted Constant and Restricted Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.666059	0.145254	11.46994	0.0000
D(LOG_SOFTWARE_...	0.251133	0.049923	5.030371	0.0000
CointEq(-1)*	-0.755271	0.065825	-11.47393	0.0000
R-squared	0.821952	Mean dependent var	-0.004170	
Adjusted R-squared	0.818082	S.D. dependent var	0.106758	
S.E. of regression	0.045534	Akaike info criterion	-3.309627	
Sum squared resid	0.190751	Schwarz criterion	-3.228978	
Log likelihood	160.2073	Hannan-Quinn criter.	-3.277038	
F-statistic	212.3575	Durbin-Watson stat	1.963507	
Prob(F-statistic)	0.000000			

* p-value incompatible with t-Bounds distribution.

3.5. Extended Model with the COVID-19 Variable

In order to capture the effect of the pandemic, a dummy variable (COVID) was introduced, equal to 1 during the March–December 2020 period and 0 otherwise. The ARDL model without trend indicates the existence of a co-integration relationship, and a VECM model was subsequently estimated. The results highlight that a 1% increase in IT_Value leads to an approximately 0.71% increase in WW_Value, while for Software_Value the effect is 0.28%. The coefficient of the COVID variable is negative and statistically significant, indicating an average reduction of approximately 6.45% in the global value of M&A transactions during the analyzed period.

Figure 7. Estimation of the ARDL Model with the COVID Variable

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_SOFTWARE_VA...	0.285913	0.034778	8.221085	0.0000
LOG_IT_VALUE	0.711483	0.050337	14.13435	0.0000
COVID	-0.064462	0.019033	-3.386933	0.0010
C	2.180609	0.169783	12.84353	0.0000
EC = LOG_WW_VALUE - (0.2859*LOG_SOFTWARE_VALUE + 0.7115 *LOG_IT_VALUE -0.0645*COVID + 2.1806)				
F-Bounds Test Null Hypothesis: No levels relationship				
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	91.08727	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Next, the error correction form is analyzed. The results presented in Figure 8 indicate that the coefficient of CointEq(-1) is negative and significant, which means that there is long-run causality. At the same time, it measures the speed of adjustment from any disequilibrium toward the long-run equilibrium state. In our case, the adjustment speed is 88.9%, which represents a high value. Compared to the initial model, the model including the COVID variable exhibits a higher adjustment speed, a higher R-squared, and a lower AIC criterion. Therefore, the model with the COVID variable is considered preferable.

Figure 8. Error Correction Form for the Final Model

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.889693	0.040793	-21.81004	0.0000
R-squared	0.834740	Mean dependent var		-0.004170
Adjusted R-squared	0.834740	S.D. dependent var		0.106758
S.E. of regression	0.043400	Akaike info criterion		-3.426265
Sum squared resid	0.177051	Schwarz criterion		-3.399382
Log likelihood	163.7476	Hannan-Quinn criter.		-3.415402
Durbin-Watson stat	2.002072			

* p-value incompatible with t-Bounds distribution.

3.6. Additional Analyses and Evaluation of Result Robustness

To validate the existence of a structural break, the Chow test was applied. The selected month was March 2020, the month in which the pandemic was officially declared at the global level. The null hypothesis is rejected ($p\text{-value} < 0.05$), indicating the existence of a structural break in the selected month. The test result confirms the initial observation based on the graphical analysis, according to which the pandemic generated a structural break in the evolution of the WW_Value variable.

Figure 9. Chow Test for Structural Break (March 2020)

Chow Breakpoint Test: 2020M03			
Null Hypothesis: No breaks at specified breakpoints			
Varying regressors: All equation variables			
Equation Sample: 2018M01 2025M12			
F-statistic	7.638918	Prob. F(3,90)	0.0001
Log likelihood ratio	21.77675	Prob. Chi-Square(3)	0.0001
Wald Statistic	22.91675	Prob. Chi-Square(3)	0.0000

To investigate the causal relationships between the variables, the Granger test is applied. The null hypotheses are presented below, and the results highlight the existence of a causal relationship running from SOFTWARE_VALUE to WW_Value, as well as from WW_Value to IT_Value.

Figure 10. Results of the Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LOG_SOFTWARE_VALUE does not Granger Cause LOG_IT_VALUE	94	1.82400	0.1674
LOG_IT_VALUE does not Granger Cause LOG_SOFTWARE_VALUE		1.59008	0.2096
LOG_WW_VALUE does not Granger Cause LOG_IT_VALUE	94	4.84489	0.0101
LOG_IT_VALUE does not Granger Cause LOG_WW_VALUE		0.35571	0.7017
LOG_WW_VALUE does not Granger Cause LOG_SOFTWARE_VALUE	94	0.91319	0.4050
LOG_SOFTWARE_VALUE does not Granger Cause LOG_WW_VALUE		3.31585	0.0408

The results of the Granger test highlight the existence of both bidirectional and unidirectional causal relationships. To verify the existence of short-run causality, the Wald test was applied to the model coefficients. The results indicate the rejection of the null hypothesis, confirming the existence of a short-run causal relationship.

Figure 11. Wald Test for Short-Run Causality

Figure 11: Wald Test for Short Run Causality

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	242.9151	(4, 89)	0.0000
Chi-square	971.6604	4	0.0000

Null Hypothesis: C(1)=C(2)=C(3)=C(4)=0
Null Hypothesis Summary:

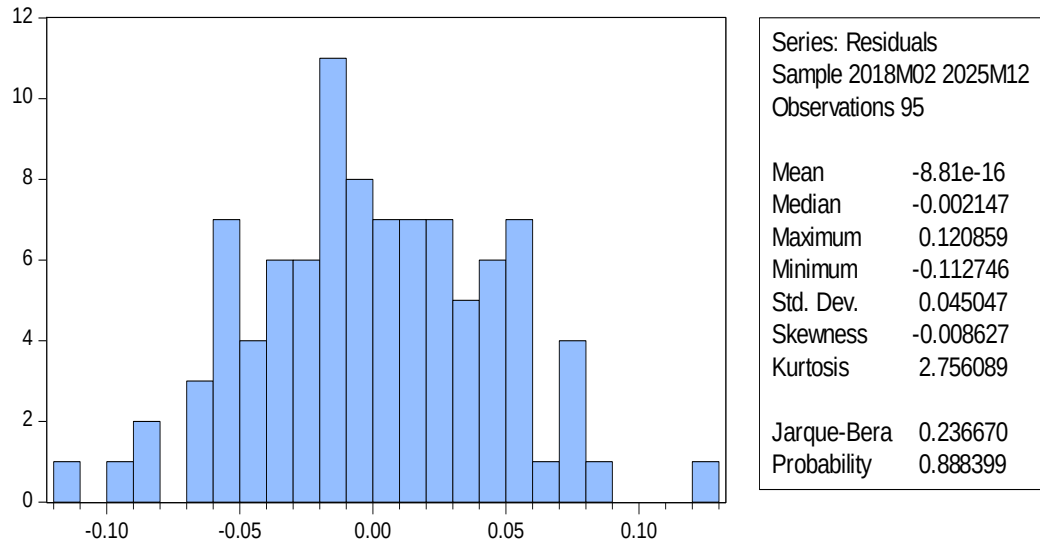
Normalized Restriction (= 0)	Value	Std. Err.
C(1)	0.244729	0.069658
C(2)	0.618652	0.062928
C(3)	0.251133	0.058240
C(4)	-0.112515	0.063103

Restrictions are linear in coefficients.

3.7. Diagnostic and Stability Tests

To verify the normality assumption of the residuals, the Jarque-Bera test was used. The results indicate that the null hypothesis cannot be rejected, suggesting that the residuals are normally distributed. This finding supports the validity of the statistical inferences made within the model.

Figure 12. Jarque-Bera Test for Residual Normality



H0: There is no serial correlation among the residuals.

Figure 13. Residual Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.375736	Prob. F(2,87)	0.6879
Obs*R-squared	0.813545	Prob. Chi-Square(2)	0.6658

H0: The residuals are homoscedastic (have constant variance)

Figure 14. Residual Heteroskedasticity Test

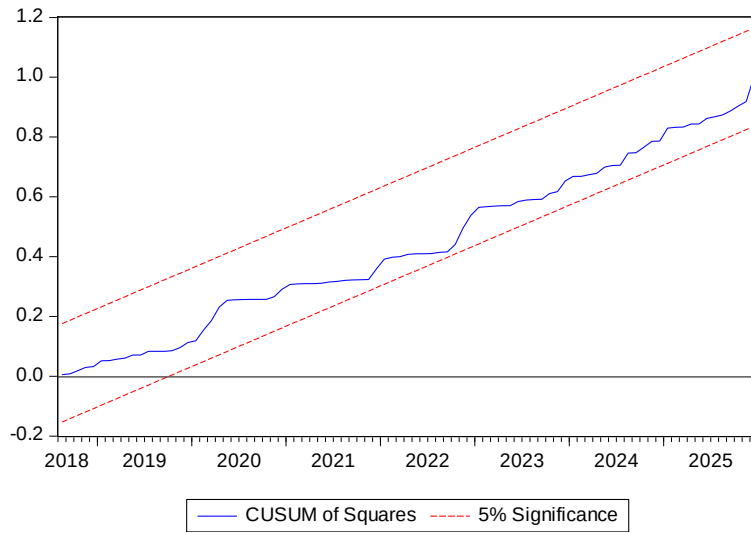
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.018744	Prob. F(5,89)	0.0836
Obs*R-squared	9.676731	Prob. Chi-Square(5)	0.0849
Scaled explained SS	7.457238	Prob. Chi-Square(5)	0.1888

The results presented in the figures above indicate that the residuals are homoscedastic and that there is no serial correlation among them.

To verify the stability of the estimates, the CUSUM of Squares test was applied. Model stability is confirmed when the trajectory of the test statistic remains within the interval bounded by the confidence lines.

Figure 15. CUSUM of Squares Test



In conclusion, the results of the residual and stability analyses indicate that the IT_Value and Software_Value variables exert a positive effect on WW_Value, both in the short run and in the long run. The introduction of the variable associated with the pandemic highlights the role of a relevant external factor, the omission of which could have led to different coefficient estimates. Although their sign would likely have remained unchanged, the inclusion of the COVID variable results in a more appropriate model specification. The study is limited by the relatively small number of included variables and the sample size, aspects that may influence the interpretation and the degree of generalization of the results.

3.8. Interpretation of Results and Implications

The obtained results are consistent with the literature supporting the strategic role of digitalization in the dynamics of corporate transactions. The positive relationship between IT consulting, software, and global M&A activity suggests that digital sectors function as relevant indicators of the strategic direction of the market. In an economy where digital technologies influence productivity, innovation, and business models, transactions in software and IT consulting may reflect both the need for digital transformation and the competition for access to technological resources.

The higher coefficient of the IT_Value variable, compared to Software_Value, may be interpreted through the transversal role of IT consulting & services. These services facilitate the implementation of digital solutions, system integration, process transformation, and organizational adaptation. In contrast, the software sector may have a more specialized, yet still significant, effect on the global value of M&A transactions.

The negative effect of the pandemic confirms that external shocks can temporarily alter the dynamics of the M&A market. During the March–December 2020 period, global uncertainty, mobility restrictions, valuation difficulties, and investor caution affected transaction values. However, the rapid adjustment toward long-run equilibrium suggests that the M&A market had a relatively high recovery capacity, particularly through its orientation toward digital sectors.

4. CONCLUSIONS

The study examined the relationship between global mergers and acquisitions activity and transactions in the software and IT consulting & services sectors using monthly data covering the 2018–2025 period. The empirical findings indicate the existence of a positive and statistically significant long-run association between worldwide M&A activity and the analyzed digital sectors.

The extended ARDL model that incorporates the COVID-19 dummy variable provides a more appropriate specification than the initial version, as it captures the disruptive impact of the pandemic on global M&A dynamics and improves the overall performance of the model. The positive coefficients associated with the software and IT consulting & services sectors suggest that these industries are strongly connected to the evolution of the global M&A market. Moreover, the stronger coefficient estimated for IT consulting & services points to the growing strategic relevance of specialized digital services in corporate consolidation processes.

From a theoretical standpoint, the results reinforce the view that digital transformation is reshaping the motivations underlying mergers and acquisitions. Contemporary M&A strategies are increasingly oriented toward acquiring technological capabilities, digital expertise, and specialized human capital, rather than focusing exclusively on geographical expansion or market share growth. From a practical perspective, developments in the software and IT consulting sectors may serve as useful indicators for understanding broader tendencies in the international M&A environment.

Several limitations should nevertheless be acknowledged, including the relatively small number of variables included in the model, the restricted time horizon, and the use of aggregated global data. Future research could broaden the analysis by incorporating additional macroeconomic indicators, such as inflation, interest rates, stock market developments, or measures of economic uncertainty. Further comparative studies across regions or digital subsectors may also provide a more detailed understanding of the differences between developed and emerging economies.s.

REFERENCES

1. Cheng, Weixuan, Cheng Li, and Tianjiao Zhao. 2024. "The stages of enterprise digital transformation and its impact on internal control: Evidence from China." *International Review of Financial Analysis* 92: 103079. <https://doi.org/10.1016/j.irfa.2024.103079>.
2. Feng, Hongxia, Bowen Yang, and Pratikshya Bhandari. 2024. "The influence of CSR on cross-border mergers and acquisitions." *Finance Research Letters* 70 (2024) 106273. <https://doi.org/10.1016/j.frl.2024.106273>.
3. Feng, Yuan, Ying Li, and Changfei Nie. 2024. "Digital technology innovation and synergy of pollution control and carbon reduction: empirical evidence from digital patents in Chinese cities." *Economic Change and Restructuring* 57: 1-29. <https://doi.org/10.1007/s10644-024-09813-8>.
4. González-Torres, Thais, Jose-Luis Rodríguez-Sánchez, Eva Pelechano-Barahona, and Fernando-E. García-Muiña. 2020. "A Systematic Review of Research on Sustainability in Mergers and Acquisitions." *Sustainability* 12 (513): 1-18. <https://doi.org/10.3390/su12020513>.
5. Guo, Lei, Luying Xu, Junyi Wang, and Jingwen Li. 2024. "Digital transformation and financing constraints of SMEs: evidence from China." *Asia-Pacific Journal of Accounting & Economics* 31: 966–986. <https://doi.org/10.1080/16081625.2023.2257235>.

6. Hao, Anni. 2025. "Mergers and Acquisitions Models and Trends of Technology Enterprises in the Digital Economy Era." *Strategic Management Insights* 2 (1): 1-8. <https://soapubs.com/index.php/SMI>.
7. IMAA. 2026. *M&A Statistics*. Accessed 03 15, 2026. <https://imaa-institute.org/mergers-and-acquisitions-statistics/>.
8. Jiang, Ziyu, Xihao Sun, Yan Song, and Guojian Ma. 2023. "Digital finance and M&As: An empirical study and mechanism analysis." *PLOS ONE* 1-18. <https://doi.org/10.1371/journal.pone.0289845>.
9. Keenan, Liam , and Dariusz Wójcik. 2023. "The economic geographies of mergers and acquisitions (M&As)." *Economy and Space* 55 (6): 1618-1627. <https://doi.org/10.1177/0308518X231190091>.
10. Lu, Caimei , and Ruodan Li. 2026. "The integration of digital and real economy technologies and corporate value creation efficiency: Evidence from Chinese enterprise patent information." *Economic Analysis and Policy* 91: 967-986. <https://doi.org/10.1016/j.eap.2026.04.007>.
11. Maisenhelder, Fabian , Christian Baccarella, Lukas Maier, Julian M. Müller, and Kai-Ingo Voigt. 2025. "Digital mergers and acquisitions: Creating or destructing value?" *European Management Journal*. <https://doi.org/10.1016/j.emj.2025.08.002>.
12. Ren, Lijun, Jiajia Liu, and Qianyi Hao. 2024. "How digital transformation affects the cost of equity capital: the role of information disclosure quality and stock liquidity." *Industrial and Corporate Change* 33: 1098–1122. <https://doi.org/10.1093/icc/dtad053>.
13. Rohrer, Fabio E. G., Lebogang Mateane, and Christian R. Proaño. 2025. "The Perverse Valuation Effect on Mergers and Acquisitions in Europe." *Economic Modelling* 142: 105082. <https://doi.org/10.1016/j.econmod.2024.105082>.
14. Seitanidis, Panagiotis , Eleftherios Aggelopoulos, and Dimitrios Grypeos. 2026. "Mergers and Acquisitions: Analyzing Global FinTech and RegTech Trends over the Period 2008–2025." *FinTech* 5 (33). <https://doi.org/10.3390/fintech5020033>.
15. Shi, Mengyu , Qiong Xu, Yu Shi, and Jiamin Yan. 2026. "Digital transformation and enterprise mergers and acquisitions: Mechanism tests and empirical evidence." *Economic Modelling* 158: 107528. <https://doi.org/10.1016/j.econmod.2026.107528>.
16. Sun, Nan, Dongmin Kong, and Yunqing Tao. 2023. "Does broadband infrastructure affect corporate mergers and acquisitions? Quasi-natural experimental evidence from China." *International Review of Financial Analysis* 85: 102461. <https://doi.org/10.1016/j.irfa.2022.102461>.
17. Tang, Haodan , Senhui Fang, and Dianchun Jiang. 2022. "The market value effect of digital mergers and acquisitions: Evidence from China." *Economic Modelling* 116. <https://doi.org/10.1016/j.econmod.2022.106006>.
18. Xu, Jinhua , Xinran Xiong, Xiaoxia Li, and Shanmin Li. 2025. "Digital merger & acquisition and corporate innovation: Evidence from China." *Pacific-Basin Finance Journal* 102723. <https://doi.org/10.1016/j.pacfin.2025.102723>.