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## ASEAN Manufacturing Resilience: Financial Lessons from Geopolitical Crises

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### Abstract

*Geopolitical disruptions fundamentally challenge the financial stability of manufacturing firms in emerging economies, particularly those deeply embedded in global supply chains. This study examines how liquidity coverage ratio (LCR), debt-to-equity ratio (DER), total asset turnover ratio (TATO), and firm size (FS) influence the financial resilience of ASEAN manufacturing firms, measured by current ratio (CR) and net income (NI). Using a balanced panel of 391 publicly listed firms across Indonesia, Malaysia, the Philippines, Thailand, and Singapore over 2020-2024, a period marked by acute geopolitical volatility, we employ fixed-effects (FE) and random-effects (RE) panel regression as determined by the Hausman test. Our results reveal that LCR significantly enhances both CR and NI, affirming liquidity as the primary driver of resilience. DER positively affects CR but not NI, suggesting strategic short-term debt use bolsters short-term liquidity in emerging market contexts without proportionate profitability gains. TATO exerts no significant effect on either outcome, consistent with the view that asset efficiency loses relevance during operational disruptions. FS significantly enhances NI but not CR, highlighting scale advantages in sustaining profitability. These findings offer three contributions: they extend liquidity theory to ASEAN's export-driven context; challenge conventional capital structure assumptions in emerging markets; and provide a historical evidence base for managing the recent Iran-Israel conflict's disruptions. Practical implications are drawn for firm-level cash flow management and for policymakers designing credit support and regional trade integration frameworks.*

*Keywords: Financial Resilience; Geopolitical Crises; Liquidity Coverage Ratio; ASEAN Manufacturing*

### 1. Introduction

The intensification of geopolitical conflict has emerged as a defining structural risk for globally integrated manufacturing economies. The 2025 Iran-Israel conflict, with its demonstrated capacity to disrupt Strait of Hormuz shipping lanes, spike Brent crude prices, and generate broad-based financial market volatility, exemplifies the type of shock for which ASEAN manufacturing firms must build enduring financial capacity (Andari et al., 2025; Desalegn et al., 2022). ASEAN's manufacturing sector, accounting for a substantial share of the region's GDP and export earnings across Indonesia, Malaysia, the Philippines, Thailand, and Singapore, remains particularly susceptible to external disruptions given its deep integration into global supply chains and dependence on imported intermediate inputs (Iacob, 2023; Nedopil et al., 2023). The sector's vulnerability is not merely operational, supply chain interruptions translate rapidly into liquidity stress, compressed margins, and deteriorating balance sheet quality, rendering financial resilience a strategic priority rather than a passive outcome.

ASEAN manufacturing firms operate within a distinctive economic architecture that amplifies both the transmission and the consequences of geopolitical shocks. Unlike their counterparts in advanced economies, ASEAN manufacturers contend with relatively shallow domestic capital markets, significant reliance on short-term financing, and considerable exchange rate exposure arising from export-oriented production structures (Morelli et al., 2021; Zhu, 2022). This combination creates conditions under which liquidity shocks and profitability erosion can cascade rapidly across firms and subsectors. The 2020–2024 period, encompassing US-China trade tensions, the COVID-19 pandemic-induced supply chain collapse, and regional security instability, provides a rich empirical archive of how ASEAN manufacturers respond to compound geopolitical and economic stress, making it an ideal lens for generating lessons applicable to the current Iran-Israel conflict (Henrika et al., 2025; Irianto et al., 2025). Historical evidence from this period shows that firms with diversified supply chains and robust cash reserves significantly outperformed peers in maintaining operational continuity (Iacob, 2023; Kumar Rathore et al., 2024).

Financial risk management theory provides the foundational lens for understanding how firms survive external shocks, positing that resilience is determined by the quality and composition of the balance sheet, particularly liquidity position, leverage structure, and scale of operations (Pauly, 2024; Zaychenko, 2020). In crisis contexts, this framework predicts a hierarchy of resilience mechanisms: liquidity acts as the immediate buffer against operational disruption; capital structure determines the medium-term debt servicing burden; and firm size modulates access to resources that enable recovery and repositioning. Asset efficiency, while central to profitability in stable environments, is predicted to be endogenous to operational conditions and thus of limited independent effect during acute geopolitical shocks (Kose et al., 2022; Albin, 2025). Applied to ASEAN's manufacturing sector, characterized by export dependency, shallow capital markets, and commodity price exposure, these theoretical expectations acquire region-specific dimensions that existing literature has not yet systematically examined, creating a clear empirical gap that this study addresses.

Liquidity, operationalized through the liquidity coverage ratio (LCR), represents the most consistently supported determinant of financial resilience in crisis settings. Bossu et al. (2020) establish that firms maintaining high-quality liquid asset buffers can absorb the initial shock of supply chain interruptions without curtailing operations or triggering covenant breaches. Nazarenko et al. (2024) extend this argument, demonstrating that firms with superior LCR not only survive disruption but actively exploit distressed market conditions, acquiring inputs at discounted prices or capturing competitor market share, thereby simultaneously sustaining and expanding profitability. Daviesi & Gde Utam (2025) provide complementary evidence linking liquidity strength to stock market outperformance during political instability, suggesting that investor confidence channels amplify the direct operational benefits of high LCR. In ASEAN's context, where export-dependent firms face sudden revenue interruptions from trade route blockages or commodity price spikes, liquidity constitutes the critical bridge between disruption onset and operational recovery (Irianto et al., 2025; Widaryo et al., 2025).

Capital structure, measured by DER, presents a theoretically ambiguous but empirically tractable relationship with financial resilience, particularly in ASEAN's emerging market context. The conventional prediction, that higher leverage reduces resilience by diverting cash flows to debt servicing, is well-supported in stable or developed-market settings (Batyuk & Onegina, 2020). However, in ASEAN's manufacturing sector, where access to equity capital is limited and banking systems remain the dominant intermediary, firms frequently use short-term debt instruments strategically to bridge liquidity gaps during crisis periods (Zhu, 2022; Morelli et al., 2021). Irianto et al. (2025) document this mechanism in the context of Indonesia's manufacturing firms during COVID-19, finding that firms with access to revolving credit maintained operational stability despite revenue shocks. This positive liquidity channel of debt is expected to manifest in the CR relationship, while the net income impact remains theoretically uncertain given the offsetting drag of interest expenses.

Asset efficiency, proxied by TATO, and firm size, measured as the logarithm of total assets, represent two additional dimensions of resilience with contrasting theoretical profiles in crisis contexts. For TATO, financial risk management theory and extant empirical evidence converge on a crisis-specific suppression effect: when geopolitical disruptions interrupt supply chains or restrict market access, firms' ability to convert assets into revenue is constrained by factors external to managerial control, rendering TATO's contribution to resilience negligible in the short term (Kose et al., 2022; Albin, 2025). Desalegn et al. (2022) further observe that firms in crisis actively de-prioritize asset turnover optimization, redirecting working capital toward liquidity preservation. Firm size, by contrast, is predicted to exert a positive effect on profitability through economies of scale, resource diversification, and superior credit market access (Slätmo et al., 2025; Bi et al., 2025; Kesuma et al., 2025). However, its effect on short-term liquidity is theoretically ambiguous, while larger firms benefit from diversified cash generation, effective liquidity management is achievable by firms of all sizes through disciplined financial practices, as suggested by Devereux & Yu (2019).

Despite a growing body of literature on corporate financial resilience, significant gaps persist in the ASEAN context. Existing studies on liquidity's role in crisis survival, such as Bossu et al. (2020) and Nazarenko et al. (2024), are largely anchored in developed-market frameworks that assume robust capital market access and regulatory backstops unavailable in most ASEAN economies. The role of capital structure in shaping resilience remains empirically contested: standard theory predicts that higher leverage exacerbates financial fragility, yet ASEAN firms' reliance on short-term debt as a liquidity management instrument complicates this prediction (Batyuk & Onegina, 2020; Zhu, 2022). Furthermore, asset efficiency metrics such as TATO are seldom evaluated under crisis conditions, where operational constraints rather than managerial decisions determine throughput (Kose et al., 2022). Studies examining regional resilience, such as Sorokina & Lebedeva (2024), remain at the macro level and do not disaggregate firm-level financial determinants within ASEAN's diverse institutional landscape. The 2025 Iran-Israel conflict, moreover, has generated no region-specific empirical study of ASEAN

manufacturing firm resilience, leaving firms and policymakers without an evidence base derived from contextually analogous historical episodes (Misztal, 2021).

This study addresses these gaps by examining the impact of four firm-level financial variables, LCR, DER, TATO, and firm size, on current ratio and net income as dual dimensions of financial resilience, using a balanced panel of 391 publicly listed ASEAN manufacturing firms over 2020–2024. This study contributes to the literature in three ways. First, it extends the application of liquidity theory to ASEAN's export-dependent manufacturing context, where LCR's role as a resilience buffer has been underexplored relative to developed-market studies. Second, it challenges conventional capital structure theory by documenting a positive DER-CR relationship in ASEAN emerging markets, highlighting context-specific mechanisms of strategic debt deployment. Third, it generates an evidence-based historical framework that directly informs crisis management strategies for geopolitically disrupted supply chains, addressing a recognized gap in region-specific resilience analyses (Misztal, 2021).

## 2. Research Methods

This study uses secondary financial data from 391 publicly listed manufacturing firms operating across five ASEAN countries, Indonesia, Malaysia, the Philippines, Thailand, and Singapore, over the period 2020 to 2024, sourced from the Wall Street Journal financial database. Purposive sampling was applied to select firms with complete financial data across all five years, yielding a balanced panel of 1,955 firm-year observations. The sample encompasses diverse manufacturing subsectors, including electronics, automotive components, and textiles, providing representativeness across ASEAN's manufacturing landscape. Macroeconomic reference data are drawn from publicly available sources including national stock exchanges and the World Bank data portal. Data integrity was verified through cross-referencing with stock exchange filings, and extreme outliers were addressed using standard winsorization and case deletion procedures following Levin (2023).

Table 1 presents the operationalization of all variables used in this study. Each variable is selected on the basis of theoretical relevance and empirical precedent in the financial resilience and emerging markets literature.

Table 1. Variable's Measurements

Variable	Definition	Measurement	Reference
Current Ratio (CR)	Short-term liquidity adequacy	Current Assets / Current Liabilities	Pauly (2024)
Net Income (NI)	Operational profitability	Total Revenue – Total Expenses	Daviesi & Gde Utam (2025)
Liquidity Coverage Ratio (LCR)	Capacity to absorb short-term cash shocks	Liquid Assets / Short-term Liabilities	Bossu et al. (2020)
Debt-to-Equity Ratio (DER)	Capital structure and financial leverage	Total Debt / Total Equity	Irianto et al. (2025)
Total Asset Turnover (TATO)	Asset utilization efficiency	Sales / Total Assets	Kose et al. (2022)
Firm Size (FS)	Scale of operations	Ln(Total Assets)	Kesuma et al. (2025)

Source: Data Processed, 2026

The dependent variables are current ratio (CR), measured as current assets divided by current liabilities following Pauly (2024), and net income (NI), calculated as total revenue minus total expenses following Daviesi & Gde Utam (2025). These two indicators capture the dual dimensions of financial resilience, short-term liquidity adequacy and operational profitability, consistent with the financial risk management framework employed in this study. The primary independent variable is liquidity coverage ratio (LCR), measured as liquid assets divided by short-term liabilities following Bossu et al. (2020), capturing each firm's capacity to withstand immediate cash flow shocks. Capital structure is operationalized as debt-to-equity ratio (DER), calculated as total debt divided by total equity following Irianto et al. (2025). Asset efficiency is represented by total asset turnover ratio (TATO), measured as sales divided by total assets following Kose et al. (2022). Firm size (FS) is captured as the natural logarithm of total assets following Kesuma et al. (2025), consistent with established practice in panel data studies of emerging market firms.

Following Kesuma et al. (2025), this study employs panel data regression to examine financial resilience determinants, as the longitudinal and cross-sectional structure of the dataset, 391 firms across 5 years, is optimally suited to this approach. Panel regression enables control for unobserved firm-specific heterogeneities, such as

managerial quality or market positioning, that may confound cross-sectional estimates. Two empirical models are estimated, corresponding to the two dependent variables:

$$CR_{it} = \beta_0 + \beta_1 LCR_{it} + \beta_2 DER_{it} + \beta_3 TATO_{it} + \beta_4 FS_{it} + \epsilon_{it} \dots (1)$$

$$NI_{it} = \beta_0 + \beta_1 LCR_{it} + \beta_2 DER_{it} + \beta_3 TATO_{it} + \beta_4 FS_{it} + \epsilon_{it} \dots (2)$$

where *i* denotes the firm, *t* represents the year (2020–2024),  $\beta_0$  is the intercept,  $\beta_1$ – $\beta_4$  are the coefficients of the independent variables, and  $\epsilon_{it}$  is the idiosyncratic error term. The choice between fixed-effects (FE) and random-effects (RE) estimation is determined by the Hausman test. For CR, the Hausman test yields  $\chi^2 = 34.86$  ( $p = 0.000$ ), confirming the appropriateness of the fixed-effects model, which controls for time-invariant firm-specific factors. For NI, the test yields  $\chi^2 = 7.07$  ( $p = 0.1325$ ), supporting the random-effects model, which accounts for between-firm variation. The fixed-effects model for CR was estimated with robust standard errors to correct for detected heteroskedasticity, ensuring reliable coefficient estimates. Multicollinearity is assessed through the Variance Inflation Factor (VIF), with a mean VIF of 1.40 confirming no multicollinearity among predictors.

### 3. Results and Discussions

The sample comprises a balanced panel of 1,955 firm-year observations drawn from 391 publicly listed ASEAN manufacturing firms across Indonesia, Malaysia, the Philippines, Thailand, and Singapore for the period 2020–2024. Firms span diverse manufacturing subsectors, including electronics, automotive components, and textiles, ensuring cross-sector representativeness. LCR exhibits considerable variation across the sample, consistent with the heterogeneous liquidity management practices documented in ASEAN's manufacturing literature (Irianto et al., 2025). DER likewise shows substantial cross-firm and cross-country dispersion, reflecting the diversity of capital structures across ASEAN's institutional environments.

Table 2 presents the fixed-effects regression results for CR (Model 1), and Table 3 presents the random-effects regression results for NI (Model 2). The FE model for CR achieves an R-squared within of 0.724, indicating that 72.4% of within-firm variation in CR is explained by the four independent variables, a strong model fit that validates the explanatory framework. The overall model is jointly significant ( $F(4, 1560) = 1,023.23$ ,  $p = 0.000$ ). The RE model for NI records an R-squared overall of 0.065, reflecting that unmodeled factors, such as industry-specific demand shocks or supply chain configuration, account for a significant portion of profitability variation, a limitation acknowledged in Section 5. The Wald statistic ( $\chi^2(4) = 59.45$ ,  $p = 0.000$ ) confirms joint significance.

Table 2. Panel Regression Results for Current Ratio (CR), Fixed Effects

Variable	Coefficient	Std. Error	p-value
Liquidity Coverage Ratio (LCR)	1.4576***	0.0229	0.000
Debt-to-Equity Ratio (DER)	0.0681***	0.0142	0.000
Total Asset Turnover (TATO)	-0.0028	0.0033	0.397
Firm Size (FS)	0.0742	0.1045	0.479
Constant	-1.0793	1.1632	0.354
R <sup>2</sup> (Within)	0.724		
F-Statistic	F(4,1560) = 1,023.23		0.000
Hausman Test	$\chi^2 = 34.86$		0.000

Source: Data Processed, 2026

Table 3. Panel Regression Results for Net Income (NI), Random Effects

Variable	Coefficient	Std. Error	p-value
Liquidity Coverage Ratio (LCR)	0.4073***	0.0824	0.000
Debt-to-Equity Ratio (DER)	-0.0791	0.0638	0.214
Total Asset Turnover (TATO)	-0.0220	0.0157	0.163
Firm Size (FS)	0.4903***	0.0925	0.000
Constant	-1.9865*	1.0783	0.067
R <sup>2</sup> (Overall)	0.065		
Wald Statistic	$\chi^2(4) = 59.45$		0.000
Hausman Test	$\chi^2 = 7.07$		0.133

Source: Data Processed, 2026

The coefficient of LCR in the CR model is positive and statistically significant at the 1% level ( $\beta = 1.4576$ ,  $SE = 0.0229$ ,  $p < 0.001$ ), indicating that a one-unit increase in liquidity coverage is associated with a 1.4576-unit increase

in current ratio, holding other variables constant. This finding corroborates Bossu et al. (2020), who establish that high-quality liquid asset buffers enable firms to sustain short-term obligations during supply chain interruptions and market volatility. A plausible mechanism is that firms with robust LCR can draw on liquid reserves to secure alternative suppliers or bridge receivables gaps when trade route disruptions extend payment cycles, a dynamic directly applicable to the oil supply and shipping risks of the 2025 Iran-Israel conflict. Similarly, LCR positively and significantly affects NI ( $\beta = 0.4073$ ,  $SE = 0.0824$ ,  $p < 0.001$ ), consistent with Nazarenko et al. (2024), who demonstrate that liquidity-rich firms actively exploit crisis conditions by acquiring distressed inputs or expanding market share. This is consistent with Daviesi & Gde Utam (2025), who link superior liquidity to improved investor confidence and stock market performance during political instability. The dual significance of LCR across both resilience dimensions, liquidity and profitability, represents the most robust finding of this study, affirming financial risk management theory's core prediction that liquidity constitutes the primary buffer against external economic shocks (Zaychenko, 2020).

Table 2 shows that DER exerts a positive and statistically significant effect on CR ( $\beta = 0.0681$ ,  $SE = 0.0142$ ,  $p < 0.001$ ), a finding that initially appears counterintuitive given conventional capital structure theory's prediction of a leverage-fragility relationship (Batyuk & Onegina, 2020). This result, however, is consistent with Zhu (2022) and Morelli et al. (2021), who document that in ASEAN's emerging market context, short-term debt instruments function as liquidity amplifiers, firms draw on revolving credit facilities and trade finance lines to bridge cash flow gaps arising from export revenue volatility. During the 2020–2024 period of trade disruptions, ASEAN manufacturers that maintained access to short-term credit were better positioned to meet immediate payables obligations, sustaining CR without depleting operating reserves. A possible explanation is that the endogenous relationship between leverage and liquidity management is context-specific: in markets where equity financing is costly or inaccessible, firms optimize debt structure to enhance rather than erode short-term liquidity. The coefficient of DER in the NI model is negative and statistically insignificant ( $\beta = -0.0791$ ,  $SE = 0.0638$ ,  $p = 0.214$ ), indicating that debt use does not translate into profitability gains, consistent with the view that interest expenses offset any revenue benefits of leveraged liquidity. This divergence between DER's effect on CR and NI underscores the importance of distinguishing liquidity and profitability as separate dimensions of resilience.

The coefficient of TATO is negative and statistically insignificant in both the CR model ( $\beta = -0.0028$ ,  $SE = 0.0033$ ,  $p = 0.397$ ) and the NI model ( $\beta = -0.0220$ ,  $SE = 0.0157$ ,  $p = 0.163$ ), indicating that asset utilization efficiency does not significantly explain either dimension of financial resilience in crisis contexts. This finding is consistent with Kose et al. (2022), who demonstrate that geopolitical disruptions suppress firms' ability to convert assets into revenue by constraining supply chain throughput, a mechanism particularly acute in ASEAN's electronics and automotive subsectors, which depend on cross-border intermediate inputs. This result is in line with Albin (2025), who argues that crisis-period firms systematically prioritize liquidity management over asset optimization, redirecting working capital toward cash preservation rather than throughput maximization. Desalegn et al. (2022) offer a complementary explanation: when operational constraints are externally imposed, as occurs during shipping blockages or commodity supply disruptions, TATO's variation reflects external conditions rather than managerial decisions, rendering it an unreliable predictor of resilience within crisis windows. This finding highlights the need for crisis-specific frameworks that distinguish between determinants of resilience under stable versus disrupted operating conditions.

Firm size significantly and positively affects NI ( $\beta = 0.4903$ ,  $SE = 0.0925$ ,  $p < 0.001$ ), while its effect on CR is positive but statistically insignificant ( $\beta = 0.0742$ ,  $SE = 0.1045$ ,  $p = 0.479$ ). The profitability result is consistent with Slätmo et al. (2025) and Bi et al. (2025), who emphasize that large ASEAN manufacturers, particularly in Singapore and Malaysia, leverage diversified supply chain networks and financial reserves to sustain revenue streams during disruptions. During the 2020–2024 crises, multinational manufacturers maintained NI by reallocating production to geographically diversified facilities, a strategy unavailable to smaller competitors. The insignificance of FS for CR aligns with Devereux & Yu (2019), who suggest that liquidity adequacy is more strongly determined by financial management practice than by organizational scale, an encouraging finding for smaller ASEAN manufacturers, which can achieve comparable CR outcomes through disciplined LCR management and access to short-term credit facilities, as supported by Vergara (2024). Collectively, these results suggest that scale confers profitability resilience through resource diversification, while liquidity resilience remains a function of financial discipline rather than organizational size.

#### 4. Conclusion

This study examines the financial resilience of 391 publicly listed ASEAN manufacturing firms using panel data across 2020–2024, employing fixed-effects and random-effects regression to estimate the determinants of current ratio and net income. Our analysis documents that liquidity coverage ratio is the strongest and most consistent

driver of both resilience dimensions: LCR significantly enhances CR and NI, establishing liquidity as the primary financial buffer against geopolitical disruption. DER positively affects short-term liquidity but not profitability, reflecting the strategic deployment of short-term debt as a liquidity management tool in ASEAN's emerging market context. TATO exerts no significant effect on either outcome, consistent with the view that asset efficiency is suppressed by external operational constraints during geopolitical crises. Firm size significantly enhances profitability through scale-driven resource advantages, but does not significantly affect short-term liquidity, confirming that liquidity adequacy is achievable through disciplined financial management independent of organizational scale.

This study offers significant contributions to the empirical literature. First, it extends liquidity theory to ASEAN's export-driven manufacturing context, where LCR's role as a resilience buffer had been underexplored relative to developed-economy studies, demonstrating that liquidity's primacy in crisis management transcends institutional context. Second, by documenting the positive DER-CR relationship in five ASEAN emerging markets, this study challenges conventional capital structure theory and contributes to a growing body of evidence on context-specific leverage mechanisms in markets where equity financing is constrained. Third, by grounding the analysis in 2020–2024 historical crises, this study generates an empirically validated evidence base for navigating the 2025 Iran-Israel conflict, addressing a recognized gap in region-specific geopolitical resilience analyses. The use of Hausman-guided panel regression further enhances internal validity by controlling for unobserved firm heterogeneity.

For policymakers, the findings underscore the urgency of mechanisms that preserve firm-level liquidity during geopolitical disruptions. Credit guarantee programs, subsidized revolving credit facilities, and accelerated trade finance instruments, particularly for smaller manufacturers unable to self-fund liquidity buffers, should be prioritized in ASEAN's regional economic cooperation agenda. Regional supply chain integration initiatives, including the facilitation of intra-ASEAN intermediate goods trade, can reduce the vulnerability of manufacturing firms to single-origin supply disruptions of the type generated by the Iran-Israel conflict. For firm managers, these results provide direct guidance: maintaining high LCR through cash reserve policies and pre-arranged credit facilities should be treated as a strategic imperative rather than a passive treasury function, while short-term debt access should be cultivated before, not during, crisis onset to avoid adverse credit conditions.

The panel data approach used in this research provides robust within-firm estimates but has inherent limitations. The low R-squared for NI indicates that unmodeled factors, including supply chain configuration, technology intensity, and managerial adaptability, account for a substantial portion of profitability variation during geopolitical crises. Additionally, the focus on publicly listed firms limits the direct applicability of findings to the larger population of private and smaller ASEAN manufacturers, which may face qualitatively different financing constraints and crisis responses.

Future research should consider incorporating supply chain diversification indices and digital technology adoption as additional determinants of financial resilience to provide more insight into the operational channels through which geopolitical risk transmits to firm performance. Additionally, extending the analytical framework to include country-level institutional variables, such as capital market depth, exchange rate regime, and trade policy orientation, within ASEAN's diverse institutional landscape would enable more granular and actionable resilience strategies.

## References

1. Albin, I. N. (2025). National and Urban Economic Crises: Strategic Factors and Features in Emergency Periods. *Strategizing Theory and Practice*. <https://doi.org/10.21603/2782-2435-2025-2-144-165>
2. Andari, R. P., Navalino, D. A., & Prasetyo, H. (2025). Economic Implications of Defense Supply Chain Vulnerabilities in Geopolitical Crises. *International Journal of Humanities Education and Social Sciences (Ijhess)*. <https://doi.org/10.55227/ijhess.v4i4.1441>
3. Batyuk, L., & Onegina, V. (2020). Formation of Money Supply in World Economy and Modern Modification of Its Mechanizm. *Ukrainian Journal of Applied Economics*. <https://doi.org/10.36887/2415-8453-2020-3-5>
4. Bi, H., Foerster, A. T., & Traum, N. (2025). Asset Purchases in a Monetary Union With Default and Liquidity Risks. *Erwp*. <https://doi.org/10.24148/wp2025-10>
5. Bossu, W., Hillier, C., & Berghaler, W. (2020). Local Currency Bond Markets Law Reform. *Imf Working Paper*. <https://doi.org/10.5089/9781513561608.001>
6. Daviesi, S., & Gde Utam, A. A. (2025). Unveiling the Quantitative Impact of Capital Structure on Firm Value: A Study of Manufacturers of Food, Produce Companies in South Africa. *Accounting*. <https://doi.org/10.5267/j.ac.2025.5.002>
7. Desalegn, G., Tangl, A., & Fekete-Farkas, M. (2022). From Short-Term Risk to Long-Term Strategic Challenges: Reviewing the Consequences of Geopolitics and COVID-19 on Economic Performance. *Sustainability*. <https://doi.org/10.3390/su142114455>

8. Devereux, M. B., & Yu, C. (2019). International Financial Integration and Crisis Contagion. *The Review of Economic Studies*. <https://doi.org/10.1093/restud/rdz054>
9. Henrika, M., Ariswati, L. D., Kesuma, M. R., Widaryo, C. M., Irianto, E. D. O., & Aini, R. N. (2025). Trade wars and tech giants: The U.S.–China policy effect on American technology companies. *JEMBA: Jurnal Ekonomi Pembangunan, Manajemen & Bisnis, Akuntansi*, 5(1), 65–74. <https://doi.org/10.52300/jemba.v5i1.20277>
10. Hou, W. (2024). How to Deal With the Sovereign Debt Crisis in the Post-Epidemic Era. <https://doi.org/10.47260/jafb/1431>
11. Jacob, C.-G. (2023). Analysis of the Competitiveness of the European Union in the Current Global Geopolitical and Geoeconomic Context. <https://doi.org/10.36004/nier.cecg.i.2023.17.12>
12. Irianto, E. D. O., Kesuma, M. R., Henrika, M., Widaryo, C. M., Aini, R. N., & Ariswati, L. D. (2025). Liquidity and Financial Resilience: Lessons from Indonesia Amid COVID-19 Resurgence. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(2), 2749–2757.
13. Kesuma, M. R., Henrika, M., & Ariswati, L. D. (2025). The Impact Of Capital Intensity On Financial Stability Of Energy Sector Companies In Indonesia. *Journal of Financial Economics & Investment*, 5(2), 115–127.
14. Kesuma, M. R., Henrika S., M., Ariswati, L. D., Widaryo, C. M., Irianto, E. D. O., & Aini, R. N. (2025). Exploring Climate Risk Effects on Financial Performance in Energy Sector. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(2), 235–241. <https://doi.org/10.31004/riggs.v4i2.483>
15. Kesuma, M. R., Widaryo, C. M., Irianto, E. D. O., & Aini, R. N. (2025). Pengaruh Makroekonomi terhadap Kinerja Perusahaan Energi. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(1), 464–470. <https://doi.org/10.31004/riggs.v4i1.435>
16. Kose, M. A., Ohnsorge, F., & Sugawara, N. (2022). A Mountain of Debt: Navigating the Legacy of the Pandemic. *Journal of Globalization and Development*. <https://doi.org/10.1515/jgd-2021-0052>
17. Kumar Rathore, Mr. P., Mahesar, M. A., & Rathore, Miss. H. (2024). Pakistan and Global Economy. *Al-Nasr*. <https://doi.org/10.53762/alnasr.03.01.e06>
18. Misztal, P. (2021). Public Debt Management and the Country’s Financial Stability. *Studia Humana*. <https://doi.org/10.2478/sh-2021-0014>
19. Morelli, J., Ottonello, P., & Pérez, D. (2021). Global Banks and Systemic Debt Crises. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3861421>
20. Nazarenko, I., Gorobinska, I., & Nazarenko, M. (2024). Activation of the Banking System’s Role in State Economic Development in the Context of Sustainable Development. *Theoretical and Applied Issues of Economics*. <https://doi.org/10.17721/tpe.2024.49.4>
21. Nedopil, C., Yue, M., & Hughes, A. C. (2023). Are Debt-for-Nature Swaps Scalable: Which Nature, How Much Debt, and Who Pays? *Ambio*. <https://doi.org/10.1007/s13280-023-01914-4>
22. Pauly, L. W. (2024). 9. The Politics of Global Financial Stability. <https://doi.org/10.1093/hepl/9780192847553.003.0009>
23. Slätmo, E., Berlina, A., Bogason, À., Halldórsdóttir, T. K., Itänen, M., Tomren, L., & Tybjerg, J. K. (2025). Robust Civil Preparedness in the Nordic Region - A Study of How Nordic Regional Policy Can Contribute to Civil Preparedness. <https://doi.org/10.6027/pb2025:2.2001-3876>
24. Smit, T. (2024). Towards a More Strategic Civilian CSDP: Strengthening EU Civilian Crisis Management in a New Era of Geopolitics and Risk. <https://doi.org/10.55163/ppci8618>
25. Sorokina, A. O., & Lebedeva, L. (2024). Theoretical Framework of Economic Resilience and Methodology of Its Measurement. <https://doi.org/10.54929/monograph-06-2024-02-05>
26. Vergara, S. (2024). Industrial and Innovation Policies in Times of Crisis: A Widening Technological Divide? *International Journal of Development Issues*. <https://doi.org/10.1108/ijdi-04-2024-0116>
27. Widaryo, C. M., Henrika, M., Ariswati, L. D., Kesuma, M. R., & Irianto, E. D. O. (2025). Sustainable financial management practices and firm value: Evidence from environmentally responsible companies in Indonesia. *Jurnal Kolaboratif Sains*, 8(12), 7774–7793. <https://doi.org/10.56338/jks.v8i12.9520>
28. Zaychenko, V. (2020). Strategic Priorities to Ensure Technological Competitiveness of Ukraine’s Economy. *Regional Economy*. <https://doi.org/10.36818/1562-0905-2020-1-14>
29. Zhu, H. (2022). Study of the Global Economic Recession. *Highlights in Business Economics and Management*. <https://doi.org/10.54097/hbem.v1i.2318>