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Examining the Link Between Financial Flexibility and Efficiency: Evidence from Iraqi Banks

Sanaa Hasan Hilo
Department of Materials Management Techniques, Institute of Administration, Rusafa, Middle Technical University, Baghdad, Iraq.
Email: sanahasn75@mtu.edu.iq

This study examines the nexus between financial flexibility and financial efficiency within the Iraqi banking sector, focusing on institutions listed on the Iraq Stock Exchange, namely the Commercial Bank of Iraq, Iraqi Investment Bank, Iraqi Credit Bank, Gulf Commercial Bank, and Iraqi Union Bank, over the period 2011–2020. To quantify these relationships, three panel regression approaches—ordinary least squares (OLS), fixed effects, and random effects—were employed, providing robust analysis of both cross-sectional and temporal variations. Financial efficiency was measured using the cost-to-income ratio, return on assets, and return on equity, while financial flexibility was captured through the debt-to-equity ratio, interest coverage ratio, and liquidity ratio. The findings reveal that the debt-to-equity ratio exerts a significant positive effect on the cost-to-income ratio across all models, whereas the interest coverage ratio demonstrates a consistently significant negative impact on the same metric. No meaningful association was detected between the debt-to-equity ratio and return on assets. Conversely, higher interest coverage ratios are associated with enhanced asset-based efficiency, while, when evaluating return on equity, the interest coverage ratio positively influences financial efficiency and the liquidity ratio exerts a significant negative effect. These results provide critical insights for the formulation of comprehensive financial strategies within the banking sector.

Keywords: Banking Efficiency, Financial Flexibility, Panel Models, Banking Firms, Iraq.

Introduction

The banking sector plays a pivotal role in shaping a nation's economic development, particularly within emerging economies, as its effective functioning contributes to enhanced economic growth. Recent research has increasingly concentrated on corporate efficiency and its association with various factors, including firm size, asset valuation, economies of scale, corporate governance, profitability, stock performance, operating cash flows, decision-making effectiveness, banking services, performance improvement, and financial leverage (Alarussi, 2021). A comparative analysis of bank cost efficiency across ten Southeast European countries revealed that, on average, European Union banking systems exhibit greater cost efficiency than their non-EU counterparts (Nurboja & Košak, 2017).

Moreover, capital adequacy requirements have been found to enhance bank cost efficiency, thereby contributing positively to overall bank performance (Pessarossi & Weill, 2013). Conversely, stricter regulatory restrictions on banking operations have a detrimental effect on efficiency, whereas reinforcing supervisory authority is associated with improved bank performance (Barth et al., 2013). Financial flexibility is typically conceptualised as untapped borrowing capacity, reflecting lower levels of financial leverage. Firms maintaining substantial cash reserves and minimal leverage are generally more resilient to financial shocks (Islam, Haque, & Moutushi, 2022). Additionally, the availability of unused debt capacity allows firms to manage dividend distributions more effectively (Fliers, 2019).

This study seeks to examine the effect of financial flexibility on financial efficiency for Iraqi banks over the period 2011 to 2020. The findings offer important insights into the relationships among the variables under investigation. To structure the analysis, the study is organised into five sections. Section one provides a review of the relevant literature, section two outlines the methodology, section three describes the data and variable selection, section four presents the empirical analysis and results, and section five concludes the study.

Literature Review

Banking Efficiency

Numerous empirical studies have explored the efficiency of banks in relation to various determinants. Kablan (2009) investigated the association between banking efficiency and financial development, focusing on banks in sub-Saharan Africa. The study sought to assess the level of efficiency and identify the factors contributing to inefficiencies. Findings suggested that banks were generally cost-efficient in delivering their primary outputs, and improvements in the credit environment could enhance overall efficiency. Similarly, a prior study analysed the determinants of banking efficiency within the Czech banking sector. Factors such as capitalisation, liquidity risk, and portfolio risk were found to positively influence efficiency, whereas return on assets, interest rates, and gross domestic product exhibited negative effects. Further research examined the interplay between bank-specific and macroeconomic factors and efficiency. For instance, Adjei-Frimpong, Gan, & Hu (2014) reported that banks in Ghana displayed inefficiency, with bank size exerting no significant effect on cost efficiency. Similarly, loan loss provisions did not impact efficiency, while GDP growth negatively affected bank costs. In terms of corporate governance, Agnihotri & Gupta (2019)

identified a close association between bank performance and governance practices, including ethical leadership, noting that smaller boards were generally more efficient. Studies focusing on rural and community banks in Ghana, using a sample of 20 institutions, indicated that both size and profitability influenced technical efficiency; larger banks tended to have lower efficiency, whereas higher profitability improved efficiency (Adusei, 2016). In contrast, Akin, Kiliç, & Zaďm (2009) investigated variations in efficiency over six years based on size, ownership type, nationality, and public sector involvement. The study found that state-owned banks were generally less efficient than private banks, foreign-owned banks outperformed local counterparts, and banks listed on financial markets demonstrated higher efficiency than unlisted institutions. Salim, Arjomandi, & Dakpo (2017) examined the role of credit risk in monitoring bank efficiency through credit quality, noting that regulatory changes influenced credit risk. Fiordelisi, Marqués-Ibáñez, & Molyneux (2010) investigated European banks and reported that declines in cost and revenue efficiency increased future risks, whereas enhanced efficiency strengthened capital positions. In cooperative and savings banks, prior literature assessed efficiency levels, and confirmed that efficient banks incurred lower costs relative to total income and utilised resources more effectively. Fung, Pessarossi, & Weill (2012) explored the relationship between banking competition and efficiency, finding no statistically significant correlation; improvements in cost efficiency did not correspond with heightened competition.

Financial Flexibility

Financial flexibility is characterised as an organisation's capacity to acquire and deploy financial resources at the appropriate time to respond effectively to a dynamic and evolving environment, capitalise on investment opportunities, and maximise project value (Yang, 2019). It is similarly defined as the ability to access financial resources when required or respond to unforeseen cash flow events in order to enhance the firm's overall value (Al-Slehat, 2021). Greater financial flexibility enhances a firm's debt capacity, which can be employed during periods of constrained external financing to support profitable investments and mitigate investment shortfalls (Islam et al., 2020). Global economic challenges have highlighted the importance of adopting rigorous and realistic financial analysis methods that enable firms to anticipate potential risks and determine whether their financial position lies within a safe zone or a zone of financial distress, which could ultimately lead to bankruptcy (Hilo & Mkalaf, 2022). Firms with higher financial flexibility can more readily access external capital markets to satisfy their needs and meet stakeholder expectations, thereby strengthening stakeholder relationships and enhancing profitability (Guo, Hou, & Li, 2020).

Examining financial flexibility also improves understanding of a firm's resilience to environmental risks, particularly uncertainty, by ensuring timely access to financial resources that support sustainable operations and investment opportunities. Consequently, firms are encouraged to maintain an appropriate degree of financial flexibility while managing liquidity risks effectively (Chang & Wu, 2021). Financial flexibility enables firms to avoid financial distress and sustain the ability to undertake projects with positive net present values (Harris, 2015), thereby mitigating adverse effects associated with economic downturns and market volatility (Yunica & Rokhim, 2023). Research analysing the spatial impact of financial flexibility on investment indicates that higher flexibility enhances regional investment levels, demonstrating both a direct positive effect on investment and an indirect effect on regional dispersion (Liu et al., 2020). Firms may improve their financial flexibility through strategies such as maintaining substantial cash reserves, utilising commercial paper, and securing bank credit lines (James, 2016).

Furthermore, firms can preserve or restore financial flexibility by refining financial decision-making processes, for instance by expanding borrowing capacity or engaging in outsourcing agreements to create greater scope for value-generating internal investments. Firms that successfully enhance financial flexibility are better positioned to withstand economic uncertainties and future recessions (Hegde, Panda, & Masuna, 2022). Managers often pursue financial flexibility to maintain low leverage in the present while preserving borrowing capacity for potential future shocks requiring financing (Lambrinoudakis, Skiadopoulos, & Gkionis, 2019). Key determinants influencing decisions regarding minimal leverage include growth opportunities, profitability, business risk, and cash holdings. Smaller firms tend to be less profitable and face higher risk, and macroeconomic conditions exert less influence on debt policy decisions than firm-specific characteristics.

Methodology

Investor confidence in the banking sector is closely linked to the effective management of both financial efficiency and financial flexibility, as these factors enhance banks' financial performance and their capacity to mobilise resources in response to future uncertainties. Banks possessing greater financial flexibility can access external financing at lower costs when required, enabling them to address unexpected income shortfalls or capitalise on sudden investment opportunities. This capability helps prevent scenarios that could result in suboptimal investments and, consequently, diminished financial performance. In the present study, financial flexibility and financial efficiency are assessed using financial ratios and other indicators derived from financial statements. Table 1 presents a detailed description of the variables employed. Each construct is measured using three specific indicators. Financial efficiency is evaluated through the cost-to-income ratio, return on assets, and return on equity, while financial flexibility is captured using the interest coverage ratio, debt ratio, and liquidity ratio. Data for these variables were obtained from official web sources, as well as online and published reports of the selected banks.

Table 1: Measurement and Description of the Variables.

Name of the Variable	Nature	Measurement
Financial Efficiency	Dependent Variable	1. CIR = (Operating Expenses / Operating Income) * 100 2. ROA = Net Income / Total Assets 3. ROE = Net Income / Shareholders' Equity
Financial Flexibility	Independent Variable	1. Debt Ratio = Total Debt / Total Assets 2. ICR = Earnings Before Interest and Taxes (EBIT) / Interest Expenses 3. Liquidity Ratio = Liquid Assets / Short-Term Liabilities

The equations corresponding to the study models are presented below. The analysis begins with the first measure of financial efficiency.

Simple OLS Model

$$CIR=\alpha+\beta1\text{Debt Ratio}+\beta2ICR+\beta3\text{Liquidity Ratio}+\varepsilon \quad (1)$$

Fixed Effect Model

$$CIR_{it}=\alpha i+\beta1\text{Debt Ratio}_{it}+\beta2ICR_{it}+\beta3\text{Liquidity Ratio}_{it}+\varepsilon_{it} \quad (2)$$

Random Effects Model

$$CIR_{it}=\alpha+\beta1\text{Debt Ratio}_{it}+\beta2ICR_{it}+\beta3\text{Liquidity Ratio}_{it}+ui+\varepsilon_{it} \quad (3)$$

The analysis then proceeds with the second measure of financial efficiency.

$$ROA=\alpha+\beta1\text{Debt Ratio}+\beta2ICR+\beta3\text{Liquidity Ratio}+\varepsilon \quad (4)$$

Fixed Effect Model

$$ROA_{it}=\alpha i+\beta1\text{Debt Ratio}_{it}+\beta2ICR_{it}+\beta3\text{Liquidity Ratio}_{it}+\varepsilon_{it} \quad (5)$$

Random Effects Model

$$ROA_{it}=\alpha+\beta1\text{Debt Ratio}_{it}+\beta2ICR_{it}+\beta3\text{Liquidity Ratio}_{it}+ui+\varepsilon_{it} \quad (6)$$

Subsequently, the third measure of financial efficiency is employed in the analysis.

$$ROE=\alpha+\beta1\text{Debt Ratio}+\beta2ICR+\beta3\text{Liquidity Ratio}+\varepsilon \quad (7)$$

Fixed Effect Model

$$ROE_{it}=\alpha i+\beta1\text{Debt Ratio}_{it}+\beta2ICR_{it}+\beta3\text{Liquidity Ratio}_{it}+\varepsilon_{it} \quad (8)$$

Random Effects Model

$$ROE_{it}=\alpha+\beta1\text{Debt Ratio}_{it}+\beta2ICR_{it}+\beta3\text{Liquidity Ratio}_{it}+ui+\varepsilon_{it} \quad (9)$$

In the equations above, the variables are defined as follows: D/E represents the debt-to-equity ratio, ICR denotes the interest coverage ratio, LIR corresponds to the liquidity ratio, CIR refers to the cost-to-income ratio, ROA indicates return on assets, and ROE represents return on equity.

Results and Discussion

Using advanced measures of banking efficiency and financial flexibility, this section reports the results from panel regressions OLS, fixed effects, and random effects. Table 2 summarises the estimates for the first dependent variable, cost-to-income ratio (CIR), with OLS results in the first column and fixed and random effects in the subsequent columns. The debt-to-equity (D/E) ratio exhibits a significant positive effect on CIR across all models, with significance levels of 10% for OLS and 5% for both fixed and random effects. Controlling for other factors, a one percent increase in D/E corresponds to rises of 0.264, 0.289, and 0.281 in CIR for OLS, fixed, and random effects, respectively, suggesting that higher leverage contributes positively to operational efficiency as captured by CIR.

The second measure of financial flexibility, the interest coverage ratio (ICR), exhibits a highly significant negative effect. Specifically, a one percent increase in ICR results in a decrease of 0.787 under OLS, 0.981 under fixed effects, and 0.920 under random effects estimators, with all coefficients significant at the 1% level (p-value = 0.000). This negative relationship indicates that an improvement in a bank's ability to cover interest obligations corresponds to enhanced operational efficiency, as reflected in a lower CIR. A higher ICR demonstrates that the bank can meet interest payments comfortably using operating profits, reducing financial pressure and enabling more effective cost control, which ultimately lowers the CIR. The third indicator, the liquidity ratio (LIR), shows no statistically significant effect on CIR, suggesting no meaningful relationship between liquidity and banking efficiency in terms of the cost-to-income measure. This lack of significance may be attributed to the current liquidity positions of the selected Iraqi banks, which do not appear to directly influence operational efficiency as measured through CIR. The overall explanatory power of the models is also reported in Table 2. Under OLS, changes in CIR are explained by 0.5825 through all three measures of financial flexibility, while the fixed effects model accounts for 0.408, and the random effects model explains 0.347 of the variation in CIR. Additionally, the Hausman test was applied to compare fixed and random effects models. The highly significant p-value at 1% indicates that the fixed effects estimator provides more robust insights for policy recommendations and practical implications than either the OLS or random effects models. The findings are displayed in Figure 1.

Table 2: Panel Estimations for the CIR.

Details	(1)	(2)	(3)
VARIABLES	Model 1	Model 2	Model 3
D/E	0.264*	0.2089**	0.281**
Standard Error	(0.132)	(0.131)	(0.127)
ICR	-0.787***	-0.981***	-0.920***
Standard Error	(0.136)	(0.146)	(0.138)
LIR	-0.0156	-0.0337	-0.0274
Standard Error	(0.120)	(0.131)	(0.123)
Constant	0.347***	0.334**	0.338**
Standard Error	(0.128)	(0.135)	(0.140)
Observations	50	50	50
R-Squared	0.582	0.408	0.347
Number of ID	5	5	5
Hausman Test-Porb. Value		0.000***	

D/E: Debt to Equity Ratio, ICR: Interest Coverage Ratio, LIR: Liquidity Ratio, Standard Errors in Parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Figure 1: Graphical Presentation of the Findings for all Three Models (1= OLS, 2= Fixed Effect, 3= Random Effect).

Table 3 presents the impact of the three financial flexibility indicators on ROA. The D/E ratio exhibits inconsistent effects across models, with small coefficients and high standard errors, indicating no statistically significant relationship. In contrast, the ICR exhibits a consistently positive and highly significant effect on ROA across all models (β = 0.184, 0.178, 0.127), indicating that effective debt management enhances asset utilisation and returns. By minimising unnecessary debt payments, banks can allocate resources to higher-yielding assets, thereby improving net income and overall ROA. These findings highlight the critical role of managing ICR to strengthen financial performance in the Iraqi banking sector. Conversely, the LIR exhibits no statistically significant relationship with ROA in any of the three models, indicating that liquidity levels do not substantially influence asset-based efficiency among the selected banks. The explanatory power of the models, as measured by R-squared, is relatively low, with values of 0.135, 0.125, and 0.117 for OLS, fixed effects, and random effects, respectively. The Hausman test results favour the random effects model, suggesting that it provides the most appropriate estimates for policy and practical recommendations. The results are visually summarised in Figure 2 using bar charts.

Table 3: Panel Findings for ROA.

Details	(1)	(2)	(3)
VARIABLES	Model 1	Model 2	Model 3
D/E	0.0352	-0.00726	0.0352
Standard Error	(0.149)	(0.144)	(0.149)
ICR	0.184***	0.178***	0.127**
Standard Error	(0.054)	(0.020)	(0.054)
LIR	0.0378	0.0694	0.0378
Standard Error	(0.136)	(0.144)	(0.136)
Constant	0.556***	0.558***	0.651***
Standard Error	(0.144)	(0.149)	(0.134)
Number of ID	50	50	50
R-Squared	0.135	0.127	0.117
Hausman Test-Porb. Value		0.124	

Figure 2: Graphical Presentation of the Findings for all Three Models (1= OLS, 2= Fixed Effect, 3= Random Effect).

The impact of the three measures of financial flexibility on banking sector efficiency, as assessed through ROE, is presented in Table 4. The analysis indicates that the effect of the D/E ratio on ROE is negative but statistically insignificant across all models. Although the coefficients are negative, their relatively high standard errors result in non-significant p-values, indicating that D/E does not have a meaningful effect on ROE for the selected banks. In contrast, the ICR emerges as a significant and positive determinant of financial efficiency when measured by ROE. The coefficients for ICR are 0.160, 0.195, and 0.137 across the models, reflecting a consistent positive relationship. These findings suggest that banks with higher capacity to meet interest obligations from operating income experience enhanced profitability and efficiency, as evidenced by improved ROE. A higher ICR indicates more effective debt management, reducing the financial burden associated with interest payments and allowing banks to retain greater earnings. Among the models, Model 2 displays the strongest coefficient (0.195), indicating that better interest coverage is associated with a more pronounced increase in ROE and overall profitability.

Conversely, the LIR demonstrates a significant negative effect on ROE across all models, with coefficients of -0.173, -0.214, and -0.115. This indicates that higher investment in liquid assets, while improving short-term financial stability, is detrimental to profitability and financial efficiency. A higher liquidity ratio implies that a larger share of assets is held in cash or government securities, which are generally low-risk but yield lower returns. While this strategy reduces financial risk and enhances the ability to meet short-term obligations, it simultaneously limits the potential for generating higher returns from alternative investments, thereby lowering ROE. The negative impact is most pronounced in Model 2, suggesting that the reduction in financial efficiency due to higher liquidity is more significant under certain circumstances, whereas Model 3 shows a smaller negative effect, reflecting contextual variations in the influence of liquidity on efficiency. The explanatory power of the models, as indicated by R-squared values, ranges from 0.197 to 0.291. The Hausman test results are significant, confirming the fixed effects estimator as the most appropriate model for policy and practical recommendations. The results are illustrated graphically in Figure 3 using bar charts.

Table 4: Panel Findings for ROE.

Details	(1)	(2)	(3)
Variables	Model 1	Model 2	Model 3
D/E	-0.201	-0.160	-0.201
Standard Error	(0.147)	(0.146)	(0.147)
ICR	0.160***	0.195***	0.137***
Standard Error	(0.051)	(0.062)	(0.032)
LIR	-0.173***	-0.214***	-0.115***
Standard Error	(0.034)	(0.046)	(0.007)
Constant	0.845***	0.812***	0.751***
Standard Error	(0.144)	(0.149)	(0.127)
Observations	50	50	50
R-Squared	0.231	0.291	0.197
No. Of IDs	5	5	5
Hausman Test-Porb. Value		0.000***	

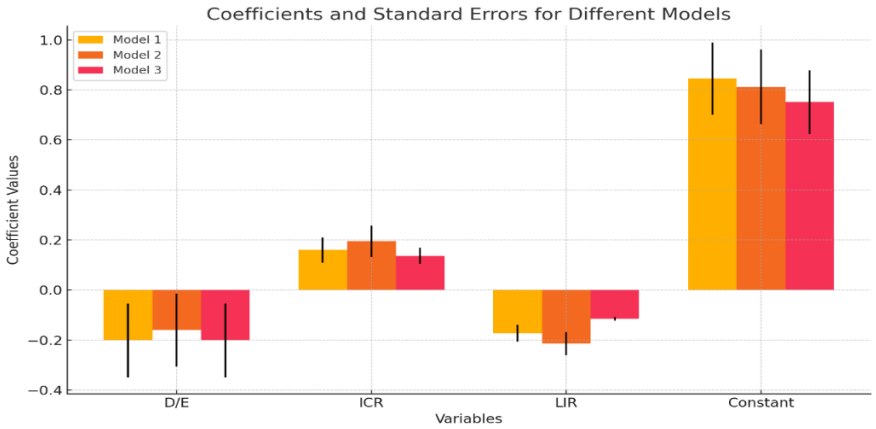

Figure 3: Graphical Presentation of the Findings for all Three Models (1= OLS, 2= Fixed Effect, 3= Random Effect).

Conclusion

The analysis using panel regression estimators provides critical insights into the interrelationship between financial flexibility and banking efficiency. The results reveal variations in the outcomes, reflecting the complex and dynamic nature of the banking sector, and the impact of these factors on the efficiency of the selected sample of banks. The findings from OLS, fixed effects, and random effects models, applied to CIR, ROA, and ROE, demonstrate several notable patterns:

- The D/E ratio exhibits a positive effect on CIR and ROE across the models, while its impact on ROA is statistically insignificant. This suggests that an

elevated D/E ratio may enhance operational efficiency and profitability, although its influence on asset-based efficiency remains limited.

- The ICR shows a pronounced negative association with CIR and a significant positive effect on ROA, emphasising the importance of effective debt management. A higher ICR indicates greater capacity to service debt from operating income, which, in turn, supports improved financial efficiency among the selected banks.
- The LIR does not display a consistent effect across any of the dependent variables, indicating that the role of liquidity in driving financial efficiency may vary depending on each bank's operational context. This highlights the necessity for careful liquidity management to evaluate its influence on efficiency outcomes.

Overall, the findings underscore the critical role of rigorous financial analysis, with particular attention to capital structure, debt management, and liquidity, in enhancing banking efficiency and performance. Banks are encouraged to continually evaluate and refine their financial strategies to maintain competitiveness and ensure sustainable long-term success in a dynamic banking environment. From a policy perspective, the study offers several recommendations. Banking sector management should aim to optimise the D/E ratio, achieving an appropriate balance between debt and equity and reducing excessive liabilities, thereby improving financial efficiency. Given the significant negative impact of ICR on CIR, banks should strengthen their capacity to meet fixed debt obligations, which will contribute to a more efficient operational framework. Furthermore, prioritising sustainable growth through long-term investment strategies while maintaining adequate short-term liquidity can enhance financial flexibility and support long-term market competitiveness.

References

Adjei-Frimpong, K., Gan, C., & Hu, B. (2014). Cost Efficiency of Ghana's Banking Industry: A Panel Data Analysis. *The International Journal of Business and Finance Research, 8*(2), 69-86. Retrieved from https://hdl.handle.net/10182/7344

Adusei, M. (2016). Determinants of bank technical efficiency: Evidence from rural and community banks in Ghana. *Cogent Business & Management, 3*(1), 0. doi: https://doi.org/10.1080/23311975.2016.1199519

Agnihotri, A., & Gupta, S. (2019). Relationship of Corporate Governance and Efficiency of Selected Public and Private Sector Banks in India. *Business Ethics and Leadership, 3*(1), 109-117. doi: https://doi.org/10.21272/bel.2(1).109-117.2019

Akin, A., Kiliç, M., & Zađm, S. (2009). Determinants of Bank Efficiency in Turkey: A Two Stage Data Envelopment Analysis. In *International Symposium on Suistainable Development* (pp. 32-41). Retrieved from https://omeka.ibu.edu.ba/items/show/3210

Al-Slehat, Z. A. F. (2021). The Impact of the Financial Flexibility on the Performance: An Empirical Study on a Sample of Jordanian Services Sector Firms in Period (2010-2017). *International Journal of Business and Management, 14*(6), 1-11. doi: https://doi.org/10.5539/ijbm.v14n6p1

Alarussi, A. S. A. (2021). Financial ratios and efficiency in Malaysian listed companies. *Asian Journal of Economics and Banking, 5*(2), 116-135. doi: https://doi.org/10.1108/AJEB-06-2020-0014

Barth, J. R., Lin, C., Ma, Y., Seade, J., & Song, F. M. (2013). Do bank regulation, supervision and monitoring enhance or impede bank efficiency? *Journal of Banking & Finance, 37*(8), 2879-2892. doi: https://doi.org/10.1016/j.jbankfin.2013.04.030

Chang, B.-G., & Wu, K.-S. (2021). The Nonlinear Relationship between Financial Flexibility and Enterprise Risk-taking during the COVID-19 Pandemic in Taiwan's Semiconductor Industry. *Oeconomia Copernicana, 12*(2), 307-333. doi: https://doi.org/10.24136/oc.2021.011

Fiordelisi, F., Marqués-Ibáñez, D., & Molyneux, P. (2010). *Efficiency and risk in european banking* (ECB Working Paper No. 1211). European Central Bank (ECB), Frankfurt a. M. Retrieved from https://hdl.handle.net/10419/153645

Fliers, P. T. (2019). What is the relation between financial flexibility and dividend smoothing? *Journal of International Money and Finance, 92*, 98-111. doi: https://doi.org/10.1016/j.jimonfin.2018.12.009

Fung, Z., Pessarossi, P., & Weill, L. (2012). *Is bank competition detrimental to efficiency? Evidence from China* (BOFIT Discussion Papers No. 31/2012). Bank of Finland, Institute for Economies in Transition (BOFIT), Helsinki. Retrieved from https://nbn-resolving.de/urn:nbn:fi:bof-201408072092

Guo, Z., Hou, S., & Li, Q. (2020). Corporate Social Responsibility and Firm Value: The Moderating Effects of Financial Flexibility and R&D Investment. *Sustainability, 12*(20), 8452. doi: https://doi.org/10.3390/su12208452

Harris, C. (2015). Trade Credit and Financial Flexibility. *Banking & Finance Review, 7*(1), 47-57. Retrieved from https://www.proquest.com/openview/cfa4cf77e36f6b28e9fc239e7f7d8956

Hegde, A. A., Panda, A. K., & Masuna, V. (2022). Does companies' financial flexibility drive their leverage dynamics? New evidence. *Managerial Finance, 49*(2), 270-290. doi: https://doi.org/10.1108/MF-07-2022-0317

Hilo, S., & Mkalaf, K. (2022). Bankruptcy Prediction: Evidence-Based Experiences in the Banks. In *Proceedings of 2nd International Multi-Disciplinary Conference Theme: Integrated Sciences and Technologies*. EAI. doi: https://doi.org/10.4108/eai.7-9-2021.2314783

Islam, M. R., Hossain, M. A., Uddin, M. S., & Bahta, D. T. (2020). Does Financial Flexibility foster Investment Efficiency? Evidence from an Emerging Market. *Asian Business Review, 10*(2), 121-136. doi: https://doi.org/10.18034/abr.v10i2.476

Islam, R., Haque, Z., & Moutushi, R. H. (2022). Earnings quality and financial flexibility: A moderating

role of corporate governance. *Cogent Business & Management, 9*(1), 2097620. doi: https://doi.org/10.1080/23311975.2022.2097620

James, M. (2016). Financial Flexibility and the Impact of the 2007/2008 Global Financial Crisis: Evidence from African Firms. *Research Journal of Finance and Accounting, 7*(8), 85-92. Retrieved from https://www.iiste.org/Journals/index.php/RJFA/article/view/29961

Kablan, S. (2009). Banking efficiency and financial development in sub-Saharan Africa (SSA). *African Finance Journal, 11*(2), 28-50. Retrieved from https://hdl.handle.net/10520/EJC33745

Lambrinoudakis, C., Skiadopoulos, G., & Gkionis, K. (2019). Capital structure and financial flexibility: Expectations of future shocks. *Journal of Banking & Finance, 104*, 1-18. doi: https://doi.org/10.1016/j.jbankfin.2019.03.016

Liu, X., Yu, L., Zhang, Y., & Chao, Y. (2020). Spatial Spillover Effect of Financial Flexibility on Investment in China's Convention and Exhibition Listed Companies. *Mathematical Problems in Engineering, 2020*(1), 3926747. doi: https://doi.org/10.1155/2020/3926747

Nurboja, B., & Košak, M. (2017). Banking efficiency in South East Europe: Evidence for financial crises and the gap between new EU members and candidate countries. *Economic Systems, 41*(1), 122-138. doi: https://doi.org/10.1016/j.ecosys.2016.05.006

Pessarossi, P., & Weill, L. (2013). *Do Capital Requirements Affect Bank Efficiency? Evidence From China* (BOFIT Discussion Papers 28/2013). Bank of Finland, Institute for Economies in Transition (BOFIT), Helsinki. Retrieved from https://urn.fi/URN:NBN:fi:bof-201408071977

Salim, R., Arjomandi, A., & Dakpo, K. H. (2017). Banks' Efficiency and Credit Risk Analysis Using by-Production Approach: The Case of Iranian Banks. *Applied Economics, 49*(30), 2974-2988. doi: https://doi.org/10.1080/00036846.2016.1251567

Yang, P. (2019). Environmental Dynamics, Financial Flexibility and Enterprise Strategic Change. *American Journal of Industrial and Business Management, 9*(1), 124-138. doi: https://doi.org/10.4236/ajibm.2019.91010

Yunica, A. S., & Rokhim, R. (2023). Unveiling the Hidden Power: How ESG Enhanced Indonesian Companies' Financial Flexibility. *Jurnal Siasat Bisnis, 27*(2), 171-187. doi: https://doi.org/10.20885/jsb.vol27.iss2.art4