The effect of capital structure on financial performance

Abubkr Ahmed Elhadi Abdelraheem[a*]

[a]Department of Accounting, College of Business Administration Hotat Bani Tamim, Prince Sattam Bin Abdulaziz University, Saudi Arabia

A B S T R A C T

The study aimed to measure the effect of using loans and equity in the capital structure on evaluating financial performance, whether in terms of profits or liquidity, in banks in the city of Al-Kharj through the descriptive analytical approach. Data was collected from the study population through a questionnaire, where 200 questionnaires were distributed, of which 187 were collected, and 183 were valid for analysis. Data were analyzed using PLS-SEM software. The validity and reliability of the data were confirmed. The results of hypothesis testing showed a weak positive effect of using equity on the financial performance (profits and liquidity) of banks in Al-Kharj city. It also turned out that there was a strong positive effect of using loans on financial performance (profits) in banks in the city of Al-Kharj, and there was no effect of using loans on financial performance (liquidity). In banks in Al-Kharj city. The researcher recommended conducting more studies on the effect of capital structure on the financial performance of banks in other regions in the Kingdom of Saudi Arabia to confirm the validity of the current study results.

1. Introduction

Financial performance is the starting point and the endpoint for any project. The true beginning of any project lies in transforming a specific idea (the project idea) from imagination to reality; this can only be achieved by providing a suitable source or sources for financing it and good management of those sources. It is also the endpoint of any project characterized by its poor financial performance, which leads to its bankruptcy and exit from the market over time. Thus, the project's good financial performance is the dynamo that drives it, without which there is no project. The success of companies has been the focus of researchers' interest in evaluating their financial performance (Majtán et al., 2017). The success of companies has been the focus of researchers' attention in evaluating their financial performance. Most researchers have also been interested in learning about performance indicators in companies and methods for evaluating financial performance (Suhadak et al., 2018; Margaritis & Psillaki, 2010; Le Thi Kim et al., 2021). Studies regarding capital structure and financial performance evaluation have focused on the accounting data contained in the financial statements and using methods such as financial ratio analysis. It is known that accounting data is not accurate, and this leads to the trend towards market data, which is difficult to obtain (Hamann & Schiemann, 2021; Micheli & Muctor, 2021; Rajan & Zingales, 1995). Accordingly, the researcher turned to the questionnaire to obtain Information from investors and management in banks at Al-Kharj city to obtain data to solve the study problem: Does capital structure affect the evaluation of financial performance? The study aimed to identify the effect of capital structure components on performance evaluation by studying the opinions of managers and investors in banks at Al-Kharj city, using the descriptive analytical approach to describe the theoretical aspect of capital structure, evaluate financial performance, and test the study hypotheses.

* Corresponding author Tel: +966 508138873
E-mail address bico1979@gmail.com (A. A. E. Abdelraheem)

2. Theoretical background and hypothesis development

Performance evaluation is the procedure that aims to evaluate the achievements of individuals and institutions through objective and specific formulas to judge the extent to which departments, divisions, and individuals contribute to completing the work entrusted to them. According to Suhadak et al. (2018), Barbosa and Louri (2005) and Egbunike and Okerekeoti (2018), the concept of financial performance is achieving returns on assets and shareholders' equity. Return, as defined by Tulsian (2014), means highlighting companies' financial and operational performance and efficiency; the concept of financial performance in terms of profits and returns is not agreed upon among researchers. (Guidry & Patten, 2010)pointed out that financial performance is represented by share price, while Babalola (2012) refers to financial performance measured by profit after tax (Selcuk & Kiymaz, 2017; Resmi et al., 2018; Menezes, 2019; Kanwal et al., 2013) that financial performance is measured by return on assets, and some of them referred to return on equity as a measure of financial performance (Han et al., 2016). According to Akeem et al. (2014), the capital structure is long-term financing sources, including common stocks and long-term debt. One of the main goals of organizations is to maximize profitability. To achieve this, organization management must balance equity and debt in the capital structure (Goyal et al., 2013; Nassar, 2019) conducted on industrial companies in Turkey from 2005-2012 revealed and confirmed a negative relationship between capital structure and financial performance. Vătavu (2015) indicated the inverse relationship between debts in the capital structure and financial performance in Romanian companies, as reliance on debts negatively affects profitability; conversely, reliance on stocks in the capital structure positively affects profitability. (Ahmed et al., 2018) also concluded that debt in the capital structure negatively affects owners' returns. Further, Abor (2005) indicated a positive relationship between the ratio of debt to returns on equity. Abor (2005) found that corporate profits on the Ghana Stock Exchange are positively affected using debt in the capital structure, as measured by return on equity and gross profit margin. Cai and Zhang (2006) used return on assets to measure the effect of capital structure on the company's financial performance, as these studies indicated that profitability is negatively affected by using debt in the capital structure. Khan et al. (2020) studied the effect between capital structure and financial performance and arrived at a positive effect of equity on financial performance. These studies did not address the characteristics that must characterize the Information in the income and financial position report: stability and reliability (Abdelraheem et al., 2021; Abdelraheem, 2024). Alanazi et al. (2011) reported a negative effect of subscription to shares on return on assets and equity. Muturi and Njeru (2019) also explained that the financial performance of small and medium-sized companies in Kenya is affected by the capital structure that relies on ownership financing more than debt.

Based on the theoretical background, the researcher noted:

1 -Accounting studies such as Jasra et al. (2011) disagree on the effect of capital structure (debts and shares) on financial performance measured by return and profit. Some studies have found a positive effect of shares and debts on financial performance. In contrast, some have indicated a positive effect of shares and debts on financial performance. Based on this, it can be Formulate the following hypotheses:

H₁: *Loans in the capital structure affect corporate profits.*

H₂: *Equity in the capital structure affects corporate profits.*

2 -Most accounting studies focus only on profits and returns to measure financial performance. Demirgüneş (2016) believe that liquidity is also considered a dimension of financial performance, according to (Bhunia & Khan, 2011; Bhunia et al., 2011; Khan, 2015; Datar et al., 1998; Rosdiana et al., 2023) liquidity refers to paying short-term debts when they are due. Accordingly, the paper assumes the following:

H₃: *Loans in the capital structure affect the liquidity of companies.*

H₄: *Equity in the capital structure affects the liquidity of companies.*

3. Method

The study variables are loans and equity shares (capital structure) as independent variables and liquidity and profits (financial performance) as dependent variables. The study sample includes (managers and shareholders at banks in Alkharj city). 200 questionnaires were distributed, of which 187 were collected and 183 were suitable for analysis. The descriptive and analytical approach was relied upon to describe and follow the theoretical framework and previous studies and test the study hypotheses. The researcher used the PLS-SEM to analyze the data and test the hypotheses.

4. Result & Discussion

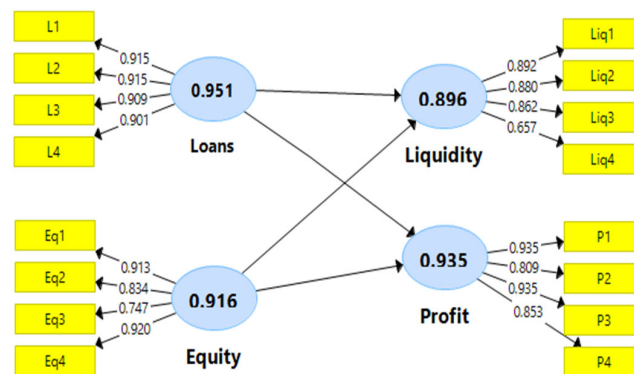### 4.1. Assessing Measurement Model

Evaluating the measurement model requires passing through two stages of analysis, the first of which is measuring the consistency reliability of the factor structure of each latent variable, and then comes the stage of calculating the validity of the factor structure of the variable (Sarstedt et al., 2014; F. Hair Jr et al., 2014; Cronbach, 1951; Hair Jr, Joe F. et al., 2017; Gefen et al., 2000; Jöreskog, 1971) indicated that consistency reliability is measured by calculating Cronbach's alpha (CA) and composite reliability (CR), and their value must exceed 70%. From the results of Table 1 and Figure 1, Cronbach's alpha (CA)

and composite reliability (CR) coefficients reached above 70%, indicating the model's internal consistency. The second stage is to measure the internal validity of the items; in this regard, (Sarstedt et al., 2014), (Hair et al., 2019) indicated that measuring the internal validity is done using the loadings of the items on the latent variables, the loading rates must be greater than 0.708, and they are acceptable if they exceed 0.50. The average variance extracted (AVE) must also be used and greater than 0.50; in Table 1 and Fig 1, we notice that values of loading and (AVE) are greater than 0.50, confirming acceptable convergent validity. Finally, discriminant validity must be measured, as the correlation of the latent variable with itself must be higher than the correlation with other variables. It must range between 0.60 and 0.95 as a maximum (Voorhees et al., 2016), (Fornell & Larcker, 1981), (Henseler et al., 2015); this is shown in Table 2 that each latent variable correlates with itself at a higher rate than its correlation with other variables.

Table 1
Assessing Measurement Model

Variables	Dimensions	Items	loading	AVE	CA	CR
Capital Structure	Equity	Eq1	0.913	0.733	0.891	0.916
		Eq2	0.834			
		Eq3	0.747			
		Eq4	0.920			
	Loans	L1	0.915	0.686	0.857	0.896
		L2	0.915			
		L3	0.909			
		L4	0.901			
Financial Performance	Liquidity	Liq1	0.892	0.828	0.931	0.951
		Liq2	0.880			
		Liq3	0.862			
		Liq4	0.657			
	Profit	P1	0.935	0.783	0.908	0.935
		P2	0.809			
		P3	0.935			
		P4	0.853			

Fig. 1. Assessing Measurement Model

Table 2
Assessing Discriminant Validity

Constructs	Equity	Liquidity	Loans	Profit
Equity	0.856			
Liquidity	0.345	0.828		
Loans	0.246	0.216	0.910	
Profit	0.302	0.412	0.444	0.885

4.2. Assessing structural model

According to (Bollen, 2011), the PLS-SEM structural model can be evaluated using the coefficient of determination (R^2) and the effect size (F^2). (R^2) where the coefficient of determination indicates the independent variable's explanation of the variance in the dependent variable (Elliott & Woodward, 2007; Hair Jr, Joseph F. et al., 2010) indicates the independent variable explains the independent variable's variance. Table 3 specifies the model quality criteria (coefficient of determination) according to (Hair Jr, Joseph F., 2006) through the results, it became clear that the independent variables (Equity, Loans) explain 0.153 of the dependent variables (Liquidity) and 0.265 of the dependent variables (Profit); comparing these results with what is stated in Table 2, the coefficient of determination is week but acceptable. As for the effect size (F^2) of independent variables on dependent, indicated, as in Table 3 to F^2 standards (Chin, 1998). From the results, we note that the effect of equity

on liquidity is small, reaching 0.105; the effect of loans on liquidity is small, reaching 0.021; the effect of equity on profit is medium, reaching 0.051; and the effect of loans on profit is large, reaching 0.191.

Table 3

Structural Model Assessment Criteria

| R²	Result	F²	Result
≥ 0.67	Strong	≥ 0.35	Larg Effect
0.33 - 0.67	Moderate	0.15- 0.35	Medium Effect
0.19 – 0.33	Week	0.02- 0.15	Small Effect
≥ 0.10	Acceptable	≤ 0.02	No Effect

4.3. Hypothesis Testing:

According to the data in Table 4 and Fig 2 extracted from the PLS-SEM, for testing the effects of the independent variables on the dependent variables, it was revealed that there is a small effect at a 0.001 significance level of equity in the capital structure on the profits of banks at Al-Kharj city, as the effect rate reached 0.310, which indicates the acceptance the H1. There is a small effect at a 0.05 significance level of equity in the capital structure on the liquidity in banks at Al-Kharj city, as the effect rate reached 0.205, which indicates the acceptance of the H2. The loans variable showed a strong effect on profit at a significant level of 0.001 of banks at Al-Kharj city, as the effect rate reached 0.394, which indicates the acceptance of the H3. It also showed no effect on liquidity at a significance level of 0.05 of banks at Al-Kharj city, as the effect rate reached 0.139, which indicates the acceptance of the H4.

Table 4

Hypothesis Testing

Hypothesis		Beta	T Value	P Values	Decision
Equity → Liquidity	(H1)	0.310	4.192	0.000	Accepted***
Equity → Profit	(H2)	0.205	2.389	0.017	Accepted*
Loans → Liquidity	(H3)	0.139	1.611	0.108	Rejected
Loans → Profit	(H4)	0.394	5.575	0.000	Accepted***

Significant at P***<0.001, P**<0.01, p*<0.05
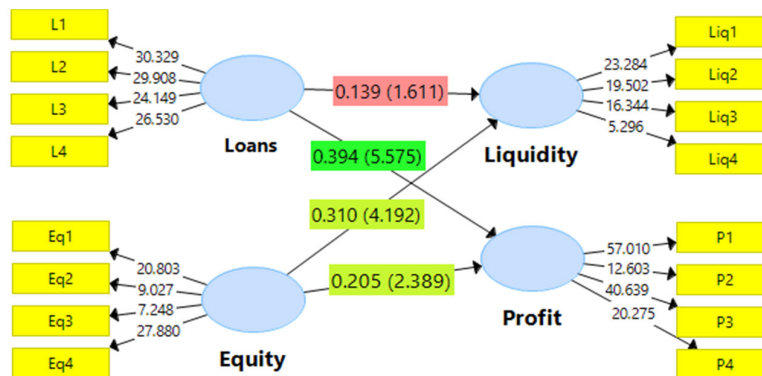
Fig. 2. PLS-Structural Equation Model

5. Conclusion

The paper explored the effect of capital structure represented by loans and ownership rights as independent variables on financial performance represented by profits and liquidity. The theoretical framework dealt with the effect of capital structure and financial performance evaluation, which relied on quantitative data to study this effect. The results of the studies varied in this regard. In particular, some of them confirmed the positive effect of loans and property rights on profits and liquidity, while some found a negative effect. Performance evaluation is the procedure that aims to evaluate the achievements of individuals and institutions through formulas objective and specific to judge the extent to which departments, sections and individuals contribute to completing the work entrusted to them.

The results of the statistical analysis using the BLS program in the discussion of the results demonstrated a strong effect of the loan variable on the profits variable in banks at Al-Kharj city, and that it does not affect the liquidity variable. There is a small effect of the ownership variable on the profits and liquidity variables in banks at Al-Kharj city. There are several limitations to the study that may make its results inaccurate and require other studies to verify the validity of the results obtained; these limitations relate to the study sample and the method of collecting data; the data was collected from managers and investors in banks in a specific geographical area (Al-Kharj city), so the results may differ if the study was conducted in another area.

Acknowledgment

References

Abdelraheem, A. (2024). The effect of corporate social responsibility dimensions on accounting information quality: Empirical study in Saudia Arabia. *Uncertain Supply Chain Management, 12*(2), 685-694, http://dx.doi.org/10.5267/j.uscm.2024.1.016.

Abdelraheem, A., Hussaien, A., Mohammed, M., & Elbokhari, Y. (2021). The effect of information technology on the quality of accounting information. *Accounting, 7*(1), 191-196, http://dx.doi.org/10.5267/j.ac.2020.9.017

Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *The Journal of Risk Finance, 6*(5), 438-445, http://dx.doi.org/10.1108/15265940510633505

Ahmed, H. U., Ningi, S. I., & Dalhat, B. S. (2018). Capital structure and performance of deposit money banks in Nigeria. *NDIC Quarterly, 33*(3), 49-76.

Babalola, Y. A. (2012). The determinants of bank's profitability in Nigeria. *Journal of Money, Investment and Banking, 24*(1), 6-16, http://dx.doi.org/10.4236/ti.2011.23023.

Barbosa, N., & Louri, H. (2005). Corporate performance: Does ownership matter? A comparison of foreign-and domestic-owned firms in Greece and Portugal. *Review of Industrial Organization, 27*, 73-102.

Bhunia, A., & Khan, I. U. (2011). Liquidity management efficiency of Indian steel companies (a case study). *Far East Journal of Psychology and Business, 3*(3), 3-13.

Bhunia, A., Khan, I., & MuKhuti, S. (2011). A study of managing liquidity. *Journal of Management Research, 3*(2), 1, https://doi.org/10.5296/jmr.v3i2.574.

Bollen, K. A. (2011). Evaluating effect, composite, and causal indicators in structural equation models. *Mis Quarterly, 35*(2), 359-372, http://dx.doi.org/10.2307/23044047.

Cai, J., & Zhang, Z. (2006). Capital structure dynamics and stock returns, http://dx.doi.org/10.2139/ssrn.685462

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research, 295*(2), 295-336.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334, http://dx.doi.org/10.1007/BF02310555.

Datar, V. T., Naik, N. Y., & Radcliffe, R. (1998). Liquidity and stock returns: An alternative test. *Journal of Financial Markets, 1*(2), 203-219, http://dx.doi.org/10.1016/S1386-4181(97)00004-9.

Demirgüneş, K. (2016). The effect of liquidity on financial performance: Evidence from Turkish retail industry. *International Journal of Economics and Finance, 8*(4), 63-79, http://dx.doi.org/10.5539/ijef.v8n4p63.

Egbunike, C. F., & Okerekeoti, C. U. (2018). Macroeconomic factors, firm characteristics and financial performance: A study of selected quoted manufacturing firms in Nigeria. *Asian Journal of Accounting Research, 3*(2), 142-168, http://dx.doi.org/10.1108/AJAR-09-2018-0029.

Elliott, A. C., & Woodward, W. A. (2007). *Statistical analysis quick reference guidebook: With SPSS examples*. Sage, http://dx.doi.org/10.4135/9781412985949.

F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review, 26*(2), 106-121, https://doi.org/10.1108/EBR-10-2013-0128.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50, http://dx.doi.org/10.2307/3151312.

Gefen, D., Straub, D., & Boudreau, M. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems, 4*(1), 7, http://dx.doi.org/10.17705/1CAIS.00407.

Goyal, P., Rahman, Z., & Kazmi, A. A. (2013). Corporate sustainability performance and firm performance research: Literature review and future research agenda. *Management Decision, 51*(2), 361-379, http://dx.doi.org/10.1108/00251741311301867.

Guidry, R. P., & Patten, D. M. (2010). Newsweek's measure of corporate environmental reputation and the 'financial halo effect'. *Social and Environmental Accountability Journal, 30*(1), 4-12, http://dx.doi.org/10.1080/0969160X.2010.9651817.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis, 1*(2), 107-123, https://doi.org/10.1504/IJMDA.2017.087624.

Hair Jr, J. F. (2006). Successful strategies for teaching multivariate statistics. Paper presented at the *Proceedings of the 7th International Conference On,* 1-5.

Hair Jr, J. F., Babin, B. J., & Anderson, R. E. (2010). A global p-erspect-ivie. *Kennesaw: Kennesaw State University,*

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24, https://doi.org/10.1108/EBR-11-2018-0203.

Hamann, P. M., & Schiemann, F. (2021). Organizational performance as a set of four dimensions: An empirical analysis. *Journal of Business Research, 127*, 45-65, http://dx.doi.org/10.1016/j.jbusres.2021.01.012.

Han, J., Kim, H. J., & Yu, J. (2016). Empirical study on relationship between corporate social responsibility and financial performance in Korea. *Asian Journal of Sustainability and Social Responsibility, 1*, 61-76, http://dx.doi.org/10.1186/s41180-016-0002-3.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*, 115-135, http://dx.doi.org/10.1007/s11747-014-0403-8.

Jasra, J., Hunjra, A. I., Rehman, A. U., Azam, R. I., & Khan, M. A. (2011). Determinants of business success of small and medium enterprises. *International Journal of Business and Social Science, 2*(20)

Jöreskog, K. G. (1971). Statistical analysis of sets of congeneric tests. *Psychometrika, 36*(2), 109-133, http://dx.doi.org/10.1007/BF02291393.

Kanwal, M., Khanam, F., Nasreen, S., & Hameed, S. (2013). Impact of corporate social responsibility on the firm's financial performance. *IOSR Journal of Business and Management, 14*(5), 67-74.

Khan, M. J., Kamran, M., & Imran, M. (2020). Impact of ownership structure and board composition on firm performance in banking sector of Pakistan. *Journal of Banking and Finance, 3*(1), 1-11, https://doi.org/10.22259/2642-9144.0301005.

Khan, Q. U. (2015). The Impact of Liquidity Management on Firm Profitability, an Empirical Analysis of Pakistani Cement Companies Listed On Karachi Stock Exchange in Pakistan. *Journal of Poverty, Investment and Development, 18*(0), 77.

Le Thi Kim, N., Duvernay, D., & Le Thanh, H. (2021). Determinants of financial performance of listed firms manufacturing food products in Vietnam: regression analysis and Blinder–Oaxaca decomposition analysis. *Journal of Economics and Development, 23*(3), 267-283, https://doi.org/10.1108/JED-09-2020-0130.

Majtán, Š., Hojdik, V., & Slosar, R. (2017). Financial performance of automotive companies and its impact on concentration of automotive industry in Slovak Republic. Paper presented at the *Finance and Performance of Firms in Science, Education and Practice: Proceedings of the 8th International Scientific Conference,* 617-627.

Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance, 34*(3), 621-632, http://dx.doi.org/10.1016/j.jbankfin.2009.08.023.

Menezes, G. (2019). Impact of CSR Spending on firm's financial performance. *International Journal of Advance Research, Ideas and Innovations in Technology, 5*(2), 613-617.

Micheli, P., & Muctor, G. (2021). The roles of performance measurement and management in the development and implementation of business ecosystem strategies. *International Journal of Operations & Production Management, 41*(11), 1761-1784, http://dx.doi.org/10.1108/IJOPM-05-2021-0317.

Muturi, W., & Njeru, A. (2019). Effect of equity finance on financial performance of small and medium enterprises in Kenya. *International Journal of Business and Social Science, 10*(5), 60-75, https://doi.org/10.30845/ijbss.v10n5p7.

Nassar, S. (2019). The influence of intellectual capital on corporate performance of the Turkish wholesale and retail trade companies, *IUGJEPS, 27*(3), 2919, 91 -14, https://doi.org/10.2139/ssrn.3700356.

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance, 50*(5), 1421-1460, http://dx.doi.org/10.1111/j.1540-6261.1995.tb05184.x.

Resmi, S. I., Begum, N. N., & Hassan, M. M. (2018). Impact of CSR on firm's financial performance: a study on some selected agribusiness industries of Bangladesh. *American Journal of Economics, Finance and Management, 4*(3), 74-85.

Rosdiana, R., Karyatun, S., & Sari, C. A. S. (2023). The Influence of Profitability, Liquidity, Assets Structure, Company Size and Risk on Capital Structure: Study on Food and Beverage Companies on Indonesia Stock Exchange. *International Journal of Economics, Management, Business, and Social Science (Ijembis), 3*(3), 1089-1100, https://doi.org/10.59889/ijembis.v3i3.263.

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair Jr, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy, 5*(1), 105-115, https://doi.org/10.1016/j.jfbs.2014.01.002.

Selcuk, E. A., & Kiymaz, H. (2017). Corporate social responsibility and firm performance: Evidence from an emerging market. *Accounting and Finance Research, 6*(4), 42, https://doi.org/10.5430/afr.v6n4p42.

Suhadak, S., Kurniaty, K., Handayani, S. R., & Rahayu, S. M. (2018). Stock return and financial performance as moderation variable in influence of good corporate governance towards corporate value. *Asian Journal of Accounting Research, 4*(1), 18-34, http://dx.doi.org/10.1108/AJAR-07-2018-0021.

Tulsian, M. (2014). Profitability Analysis (A comparative study of SAIL & TATA Steel). *IOSR Journal of Economics and Finance, 3*(2), 19-22, https://doi.org/10.9790/5933-03211922.

Vătavu, S. (2015). The impact of capital structure on financial performance in Romanian listed companies. *Procedia Economics and Finance, 32*, 1314-1322, https://doi.org/10.1016/S2212-5671(15)01508-7.

Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science, 44*, 119-134, https://doi.org/10.1007/s11747-015-0455-4.