Capital Adequacy and Bank Profitability: the Moderating Effect of Macroeconomic Variables

H. Humta[a], İ.E. Şahin[a], H.Ghafourzay[b]
[a] Institute of Social Science, Selçuk University, Konya, Turkey;
[b] Kabul University, Kabul, Afghanistan

ABSTRACT

Based on earlier research, two primary categories of characteristics influence bank profitability. First, each bank has a unique set of profitability drivers that are often the direct outcome of management choices (quality, size, capitalization, efficiency, asset structure, and revenue divergence). The second group of determinants consists of elements like industry concentration, economic growth, inflation, and interest rates related to the profitability of the industry formation and the macroeconomic environment in which the banking system conducts. Capital adequacy may be defined as the ratio of the institution's main capital to its assets, including loans and investments, to gauge a financial institution's stability and strength. This paper examines the correlation between capital adequacy and banks' profitability through the moderating impact of macroeconomic variables like inflation, interest rates, and exchange rates in the banking sectors of Malaysia, Indonesia, and Turkey. To this end, panel data were gathered from the OIC statistics database concerning 2010 and 2021. The study's regression analysis exposed that although inflation has a significant negative influence on banks' profitability, while the capital adequacy ratio, exchange rate, and interest rate have positive and significant impacts. Regarding the moderating effect, both inflation and interest rates have a significant positive and negative impact on the relationship between banks' profitability and capital adequacy, respectively. Additionally, macroeconomic variable interactions with capital adequacy are not statistically significant.
Keywords: Capital Adequacy; Profitability; Macroeconomic Variables; Interest Rate; PLS Regression Method; OIC; Inflation; Moderating Effect

INTRODUCTION

Banking and other financial intermediaries facilitate the transfer of savings to investors. Banks in today's market do this by skillfully balancing risk-taking with risk management. Lenders and borrowers are in a state of information asymmetry since no one knows the "real" risk associated with a borrower's investment project. Banks may address knowledge asymmetries by including various restrictions in their lending contracts. According to Bester (1985), collateral may be used as a signaling technique, allowing borrowers to convey their actual riskiness through the amount of collateral they are ready to supply. Devices like collateral can only work if rules outlining the nature of collateral connections and sufficient enforcement mechanisms exist. Better collat-

eral rules and arrangements may lead to more collateral being used to counteract knowledge asymmetry and lower risk. Borrowers in countries with weak legal protections may place several loans against the same asset or refuse to give it up in the event of failure. According to this belief, there will be more lending and a higher readiness to employ collateralized loans under an improved institutional framework. This aligns with findings in the law and finance literature that point to a favorable correlation between substantial creditor rights and the expansion of loan markets [1].

Risk-based capital requirements are vital to the new Basel II regulatory framework. The capital requirements for a particular exposure under the so-called IRB (internal-ratings-based) method are based on the projected credit risk

of that exposure. This leads us to believe that the four factors of estimated credit risk — probability of default (PD), loss given default (LGD), exposure at default (EAD), and maturity (M)—are predefined. The "advanced" version of the IRB method requires banks to use their models to determine all four characteristics. The Basel Committee will externally determine the other three parameters; the only bank operating under the "Foundation" variation of the IRB method will be liable for the PD parameter. The many possible advantages of risk-based capital requirements are evident. Suppose risk-based capital requirements successfully reduce price distortions across loan categories and the incentives for banks to engage in regulatory capital arbitrage. In that case, they will improve the original Basel-I framework's "one-size-fits-all" approach. However, several things could be improved about this novel method of capital control. Many are worried that increased capital norms would worsen business-cycle variations, yet this worry has received little official research. Or it simply can be stated as a bank's capital base is likely to dwindle due to loan losses during an economic downturn, the applicable credit-risk models will downgrade the bank's existing (non-defaulted) debtors, causing it to keep additional capital against its loan portfolio. If the bank is unable or unwilling to acquire new external capital during challenging economic circumstances, it will reduce lending activities, aggravating the original recession [2].

The minimum capital requirement refers to the amount of money banks must have to comply with financial regulators. The provision of loans and advances to different industries exposes banks to various sorts of risk. Maintaining enough capital is critical for banks to weather any storms that may hit their operations. Financial systems are more stable and efficient when banks have sufficient capital to safeguard their depositors against unexpected events. Banks are safeguarded against bankruptcy, excessive leverage, and other

financial difficulties by maintaining a sufficient capital adequacy ratio [3].

CAR = Tier I + Tier II + Tier III capital (Capital Funds)/ Risk Weighted Assets (RWA)

Tier I Capital: paid-up capital (ordinary shares), statutory reserves, disclosed free reserves, Innovative Perpetual Debt Instruments (IPDI), and capital reserves, which represent the surplus from asset sales are the components of Tier I capital. These components are subject to laws that are in force occasionally. Tier I capital, commonly called "core capital," allows a bank to weather losses without closing its doors, giving depositors more security.

Tier II Capital: Unseen funds, funds set aside for revaluation, funds for general provisions and losses, hybrid capital instruments, subordinated debt, and investment reserve accounts are all components of Tier II capital. Its supplemental capital is what absorbs losses in the case of winding up, giving its depositors less overall protection. Tier II items might be considered regulatory capital if they can help mitigate losses caused by the bank's operations.

Tier III Capital: This is set up to compensate for some of the risks associated with the market, such as fluctuations in interest rates, currency rates, stock prices, commodity prices, etc. A bank's Tier III capital is defined as its unsecured subordinated assets with a minimum maturity of two years and a maximum ceiling of 250% of its Tier I capital.

Several factors may influence bank profitability, some of these factors include the bank's size, degree of diversification, owners' and managers' risk tolerance, ownership structure, and the intensity of external competition [4]. Companies must know the micro and macroeconomic elements influencing their performance to mitigate their effects on future cash flows and profitability. Organizations can anticipate and control microeconomic factors like demand and production, but they have no say over macroeconomic variables like unemployment and corporation tax rates. As a result, companies must try to forecast the varied impacts of these

macroeconomic variables (interest rates, inflation rate, balance of payments, employment rate, corruption index, gross domestic product, deficit/surplus rate, tax rate and borrowing rate) on their future performance. Economic and business cycles have growth, contraction, and recession periods. The expansion begins once again after the recession. Recent crises in Latin America, East Asia, Russia, and the global financial crisis in 2007 show that none of the models and theories developed by economists and finance professionals worldwide have been able to eliminate the economic and business cycle or even significantly mitigate its effects [5].

The financial segment is acting an essential starring role in keeping the economy running smoothly. There is a growing body of work highlighting the importance of the banking industry, and along with it comes a more significant push to quantify its performance and isolate its factors [6]. There are a lot of techniques to measure how well banks are doing. According to Makkar and Singh (2013), Return on assets, return on equity, and net interest margin are the main indicators of a bank's profitability. By comparison, some banks are more profitable than others [7]. To prepare for the steady and long-term expansion of the banking sector, policymakers and management could benefit from information about the variables impacting banks'' profitability, which is the main issue [8]. A bank must have sufficient capital to avoid going bankrupt and maintain depositors'' confidence. Capital is necessary to preserve depositors'' trust and strengthen the worldwide financial system. Capital adequacy assesses the soundness of a bank's finances and ability to come across the need for more capital. The aforementioned correspondingly shows that the bank has sufficient capital to weather unpredicted losses. Banks' leverage may be seen via capital adequacy ratios [9]. Governments, bankers' groups, central banks, other financial regulators, and bank management have a vested interest in knowing how capital adequately impacts financial

sector profitability. We conducted this research because we are concerned about extrapolating our results to other countries where this is a significant problem. Our findings will fill any gaps in the literature, mutually theoretical and practical.

LITERATURE REVIEW

Rendering to the literature, internal and external variables impact bank profitability. A bank's internal determinants of profitability are the specific internal variables that influence the bank's bottom line. Contrarily, outer factors are not within the control of bank management but instead imitate macroeconomic and industry trends that affect the banking industry as a whole. Both internal and external factors affected the banks' profitability and earnings. More reliable evidence is needed to support the results of the literature. According to the literature review, a better capital ratio, higher inflation rates, better interest margins, operational efficiency, and non-interest income contribute to a bank's profitability. Conversely, increased credit risk negatively affects banks' profitability and capital costs [10].

To examine the effects of bank capital on risk and profitability, Lee and Hsieh (2013) uses the Generalized Method of Moments for dynamic panels using data collected from 42 Asian nations' banks between 1994 and 2008. The current research gives a clearer picture of the effect of bank capital on profitability (risk) when affecting variables are ignored. Still, three clear findings emerge when these factors are included. Before anything else, it's important to note that the capital impact on profitability is lowest for investment banks and greatest for commercial banks, in contrast to the reverse capital effect on risk, which results from a shift in the categories of banks. Another interesting finding is that the capital impact on profitability is greatest for banks in low-income nations, lowest for banks in high-income countries, and highest for banks in lower-middle-income countries. Thirdly, the capital impact on profit-

ability is the biggest and most positively skewed by banks in Middle Eastern nations. The reverse capital impact on risk is greatest in Central and Far Eastern Asian banks, while it is lowest in Middle Eastern nations. Lastly, our findings demonstrate that various profitability determinants significantly impact profit persistence, whereas all risk variables exhibit persistence from one year to the next [11].

Ramadhanti and Hidayati's (2019) research examines the connections between profitability and capital adequacy, liquidity, and credit risk for 27 banking corporations registered on the Indonesia Stock Exchange in relation to 2015 and 2017. The findings validate that liquidity and the capital adequacy ratio positively influence profitability, but credit risk significantly outweighs them [12].

Nguyen (2020), based on the Basel II Accord, examines the effect of capital adequacy on the profitability of Vietnamese banks. Findings reveal a positive relationship between profitability metrics and banks' capital adequacy measurements (net interest margin and non-interest revenue). However, the credit risk indicator metric and state ownership hurt bank profitability [13].

Taking capital adequacy into account as a moderating variable, Adiatmayani and Panji (2021) analyze the influence of operational and credit risks on profitability. According to the results, revenue was negatively and significantly affected by operational and credit concerns. However, there was no discernible correlation stuck between credit risk and capital adequacy. Capital adequacy contributes positively to profitability. However, operational risk significantly reduces it. When there is enough capital on hand, operational and credit risks have less of an impact on profitability [14].

Using data from 2016–2020, Arseto (2022) determines how liquidity and the capital adequacy ratio affect the profitability of Indonesia's Islamic commercial banks. According to the finding and conclusions, the equation Y = 2.108 + 1.380 CAR + 0.158 CR may represent the connection between the variables. The formula determines profitability based on CAR and liquidity. According to the results [8], additional variables may explain the remaining 59% of the variance in the profitability variable, whereas the CAR and liquidity factors account for 41% [8].

Biswas and Mondal (2023) investigated the influence of the capital adequacy ratio (CAR) on the profitability of Islamic banks in Bangladesh. The analysis used a panel data set spanning from 2005 to 2018, which included five Islamic banks operating in Bangladesh. The research results revealed that CAR (capital adequacy ratio) had a

Table 1

Description of Variables

Variables Name	Description	Resource
Capital Adequacy Ratio (CAR)	Total equity of shareholders/Amount vulnerable to credit, market, and operational risks	(Polat & Al-khalaf, 2014)
Profitability (ROA)	Net Income / average total assets	(Polat & Al-khalaf, 2014)
Exchange Rate	(1) US dollars' worth at the end of the year, measured in national currency units	International Financial Statistics (IFS)
Inflation	The annual% change in the consumer price index at the conclusion of a certain period compared to the same time in the previous year.	SESRIC calculations
Interest Rate	The monetary authorization intends to affect the development of the primary economic variables via the yearly interest rate. The additional interest rate, as a percentage, that commercial banks pay to borrow money from the central bank.	(IMF)

Source: compiled by authors.

noteworthy positive influence, but inflation and domestic credit to GDP had an adverse impact on the profitability of Islamic banks in Bangladesh.

RESEARCH METHODOLOGY

This study tests the link between capital adequacy and bank profitability in OIC-upper middle-income (Indonesia, Malaysia and Turkey) countries. It uses balanced panel statistics from the OIC Statistics Database for 2010–2021. It also looks at how macroeconomic factors affect this relationship. Multiple varieties of panel analytic models (robust, dynamic panel, and covariance structure) may include models with constant coefficients, fixed and random effect models [10]. All the coefficients (slopes, intercepts, and others) are fixed with a pooled regression model. The pooled ordinary least squares (POLS) standardized regression model was employed to examine the combined data. According to the Fixed Effect model, there is a difference in the variance of the regression model's constant term, which stands for the

Table 2

Descriptive Statistics

Mean	PROF	CAR	EXR	INF	INR
	1.925833	**10.34694**	**4166.384**	**6.220000**	**5.767500**
Median	1.745000	10.25500	4.235000	3.560000	4.875000
Maximum	3.040000	14.62000	14481.00	36.08000	22.50000
Minimum	1.070000	7.180000	1.540000	−1.390000	1.630000
Std. Dev.	0.565450	1.797597	6082.424	6.787278	4.159416
Skewness	0.565587	0.445187	0.810785	2.674130	2.259337
Kurtosis	2.132976	2.271917	1.766373	11.77679	8.975780
Jarque-Bera	3.046929	1.984307	6.226986	158.4540	84.19256
Probability	0.217955	0.370777	0.044445	0.000000	0.000000
Sum	69.33000	372.4900	149989.8	223.9200	207.6300
Sum Sq. Dev.	11.19068	113.0974	1.29E+09	1612.350	605.5259
Observations	36	36	36	36	36

Source: compiled by authors.

Table 3

Correlation Matrix

	PROF	CAR	EXR	INF	INR
PROF	1.000000	0.292402	0.575377	0.051158	0.077556
CAR	0.292402	1.000000	0.469009	−0.100312	0.060234
EXR	0.575377	0.469009	1.000000	−0.227908	−0.027096
INF	0.051158	−0.100312	−0.227908	1.000000	0.750551
INR	0.077556	0.060234	−0.027096	0.750551	1.000000

Source: compiled by authors.

changes between the various cross-sectional units. Here in model, the intercept term represents the ongoing influence on the bank. Contrariwise, the random-effect model shows that people's impacts are spread out throughout the many units under investigation. The regression model incorporates an intercept term with a consistent value across all units to capture these unique effects. First, the POLS effect model was run through EViews 12 to determine which regressions model should be used in this research. Then, the Lagrange Multiplier Tests for Random Effects test was used to run the POLS model instead of the fixed or random effect models. The results showed that the effects were statistically significant, rejecting the null hypothesis that no effects existed. Relying on the

Table 4

Ordinary Least Square Regression (POLS-R)

Dependent Variable: PROF					
Method: Panel Least Squares					
Date: 01/20/24 Time: 11:40					
Sample: 2010 2021					
Periods included: 12					
Cross-sections included: 3					
Total panel (balanced) observations: 36					
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**Sig**
C	−1.948085	1.586188	−1.228156	0.2300	
CAR	0.351498	0.163872	2.144951	0.0411	**
EXR	0.000216	0.000104	2.080962	0.0471	**
INF	−0.252222	0.132638	−1.901579	0.0679	*
INR	0.802358	0.364751	2.199740	0.0366	**
(CAR*EXR)	−1.58E-05	9.61E-06	−1.640208	0.1126	
(CAR*INF)	0.028174	0.015416	1.827605	0.0787	*
(CAR*INR)	−0.079980	0.033286	−2.402778	0.0234	**
(CAR*EXR*INF*INR)	5.71E-08	5.71E-08	0.999203	0.3266	
Root MSE	0.270889	R-squared		0.763937	
Mean dependent var	1.925833	Adjusted R-squared		0.693992	
S.D. dependent var	0.565450	S.E. of regression		0.312795	
Akaike info criterion	0.725783	Sum squared resid		2.641705	
Schwarz criterion	1.121662	Log likelihood		−4.064088	
Hannan-Quinn criter.	0.863955	F-statistic		10.92203	
Durbin-Watson stat	1.538555	Prob(F-statistic)		0.000001	***

Source: compiled by authors.

Note: The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

study's fixed and random effect models becomes unnecessary when the null hypothesis is rejected.

STUDY'S VARIABLE

The *Table 1* some explanations considered in relation to the variables of research.

Research Hypothesis

This is what the research hypotheses include:

H1: CAR is positively and significantly correlated with banks' profitability.

H2: There is a reverse association between exchange rate and banks profitability.

H3: Does inflation act as a moderator that boosts the correlation concerning capital adequacy and banks' profitability?

RESULTS AND FINDING

Descriptive and Correlation Matrix Analysis

The descriptive statistics of the study's variables are displayed in *Table 2*. Based on analysis the average profitability of a bank is 1.92, with a standard deviation of 0.56. The banks' profitability also varies insignificantly, ranging from a minimum of 1.07 to a high of 3.04. There are significant variations in CAR among the banks, with values ranging from 7.1 to 14.62.

Table 3 showings the correlation matrix of the study's variables concerning PROF, CAR, EXR, INF, and INR. *Table 3* shows that banks' profitability is positively connected with exchange rates and adversely correlated with inflation and interest rates. There is a positive association between profitability, exchange rate, and interest rate and a negative correlation between capital adequacy and inflation.

MODEL SPECIFICATION

Based on the argument, the explanatory variables of our study are CAR, exchange rate, inflation, and interest rate. Therefore, we have predicted the following equation to notice the effect

Table 5

Coefficient Confidence Intervals (CCIs)

Sample: 2010 2021							
Included observations: 36							
		90% Coefficient Intervals		95% Coefficient Intervals		99% Coefficient Intervals	
Variable	Coefficient	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
C	−1.948085	−4.649820	0.753650	−5.202673	1.306503	−6.342908	2.446738
CAR	0.351498	0.072376	0.630620	0.015260	0.687737	−0.102540	0.805537
EXR	0.000216	3.93E-05	0.000394	3.03E-06	0.000430	−7.17E-05	0.000505
INF	−0.252222	−0.478142	−0.026301	−0.524372	0.019929	−0.619720	0.115276
INR	0.802358	0.181081	1.423634	0.053950	1.550765	−0.208252	1.812967
(CAR*EXR)	−1.58E-05	−3.21E-05	6.06E-07	−3.55E-05	3.96E-06	−4.24E-05	1.09E-05
(CAR*INF)	0.028174	0.001916	0.054432	−0.003457	0.059805	−0.014539	0.070887
(CAR*INR)	−0.079980	−0.136676	−0.023283	−0.148277	−0.011682	−0.172205	0.012246
(CAR*EXR*INF*INR)	5.71E-08	−4.02E-08	1.54E-07	−6.01E-08	1.74E-07	−1.01E-07	2.15E-07

Source: compiled by authors

Table 6

Lagrange Multiplier Tests for Random Effects (LMTf RE)

	Null hypotheses: No effects		
	Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives		
	Test Hypothesis		
	Cross-section	**Time**	**Both**
Breusch-Pagan	1.570994	6.768918	8.339913
P-Value	(0.2101)	(0.0093)	(0.0039)
Honda	−1.253393	2.601714	0.953407
P-Value	(0.8950)	(0.0046)	(0.1702)
King-Wu	−1.253393	2.601714	−0.132478
P-Value	(0.8950)	(0.0046)	(0.5527)
Standardized Honda	−0.252374	2.666313	−1.652744
P-Value	(0.5996)	(0.0038)	(0.9508)
Standardized King-Wu	−0.252374	2.666313	−3.412602
P-Value	(0.5996)	(0.0038)	(0.9997)
Gourieroux, et al.*	–	–	6.768918
P-Value			(0.0131)

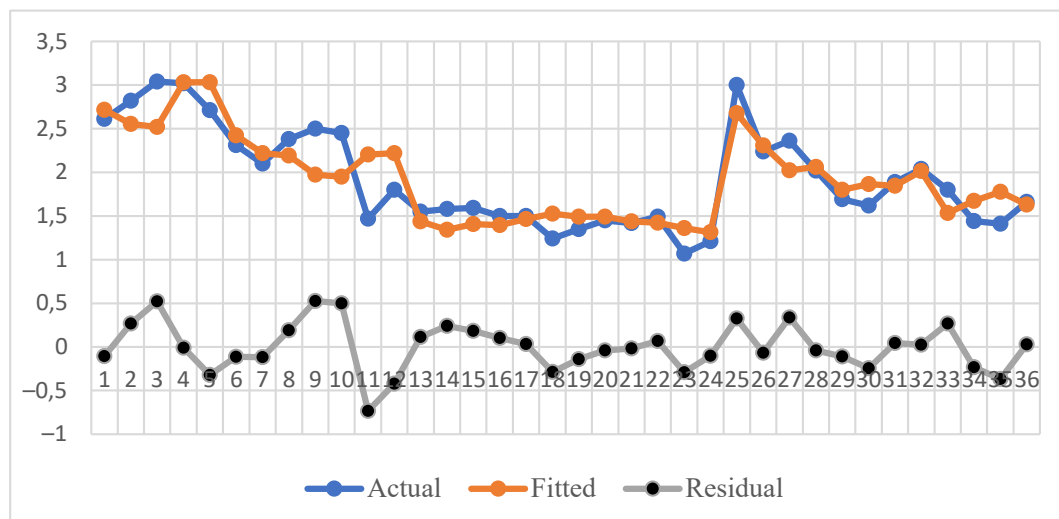*Source:* compiled by authors.

Fig. **Residuals of the model**

Source: compiled by the authors.

Table 7

Testing the Research Hypothesis

Hypothesis	Standard Error	t- Statistics	P- Value	Status
H1: A direct correlation exists between the profitability of banks and their capital adequacy ratio.	0.1638	2.144	0.04	Accepted
H2: There is a reverse link between exchange rate and banks profitability.	0.0001	2.080	0.04	Rejected
H3: Inflation as moderator strengthens the relationship between banks' profitability and capital adequacy.	0.015	1.827	0.07	Accepted

Source: compiled by authors.

of CAR upon profitability of banks of OIC: upper middle income selected countries.

$$PROF = f(CAR, EXR, INF, INR), \quad (1)$$

Based on equation (1), Profit is the function of capital adequacy ratio, exchange rate, inflation, and interest rate.

$$PROF_{it} = \beta_0 + \beta_1 * CAR_{it} + \beta_2 * EXR_{it} + \beta_3 * INF_{it} + \beta_4 * INR_{it} +$$
$$+ \beta_5 * (CAR_{it} * EXR_{it}) + \beta_6 * (CAR_{it} * INF_{it}) + \beta_7 * (CAR_{it} *$$
$$* INR_{it} + \beta_8 * (CAR_{it} * EXR_{it} * INF_{it} * INR_{it}) + \varepsilon_{it}, \quad (2)$$

where: β_0 – Intercept of the equation; CAR_{it} — Capital adequacy ratio; EXR_{it} – Exchange rate; INF_{it} – Inflation; INR_{it} – Interest rate; $(CAR_{it} * EXR_{it})$ – Interaction form of capital adequacy ratio with exchange rate; $(CAR_{it} * INF_{it})$ – Interaction form of capital adequacy ratio with inflation; $(CAR_{it} * INR_{it})$— Interaction form of capital adequacy ratio and interest rate; $(CAR_{it} * EXR_{it} * INF_{it} * INR_{it})$ – Interaction form of capital adequacy ratio, exchange rate, inflation, and interest rate;$(\beta_1, \beta_2, \beta_3, ... \beta_n)$ — Coefficients of the variables; and ε_{it} –Error term.

The model relies on the assumptions of the intercept and slope coefficients for parameter estimation. Panel data allows for time- and individual-specific intercept and slope coefficients. Common effect or pooled regression, fixed effects,

and random effects models may all have a place in the study of penal data. The common form of the panel data regression model is given by the below equation no. (3).

$$Y_t = \alpha_t + \sum_{j=1}^{k} \beta_{jit} X_{jit} + U_{it}, \quad (3)$$

where: Y_t— is response variable of the (i) individual and t time period; α_t — is constant value/intercept of the (*i*) individual and t time period; β_{jit}(β_{1it}, β_{2it}, ... β_{kit}) — are coefficients of (K) independent variables; X_{jit}— is the independent variables value of (i) individual and t time period; U_{it} — is the error of (*i*) individual and t — time period, and (*i* and *t*) — are the number of individual (*i; 1, 2, 3..., N*) and time period (*t;1,2,3..., T*), respectively.

Pooled regression (CEM Model) implies that the intercepts and slope coefficients for all individuals and time periods have the same value. This model does not consider both individual dimensions and time. Equation (1) illustrates the common effect model:

$$Y_t = \alpha + \sum_{j=1}^{k} \beta_j X_{jit} + U_{it}. \quad (4)$$

The EViews 12 common effect model was used. Bank profitability is positively correlated with CAR, interest rate, and exchange rate and negatively

correlated with inflation regarding capital adequacy. When considering the moderating impact of macroeconomic variables on this correlation, inflation strengthens, and interest rates weaken the relationship in the middle of capital adequacy and bank profitability in the selected Organization of Islamic Cooperation (OIC) countries [16]. As seen in *Table 4*.

The coefficient confidence intervals at 10%, 5%, and 1% significance levels are shown in *Table 5*, along with the values of each variable at minimum and maximum levels and the study's interaction forms.

To use Lagrange multiplier tests for random effects to see if the common effect model is the best way to choose the study's results. If the probability or (P) value is greater than 0.005, the variables significantly affect each other. However, the test's alternative hypothesis will be accepted, and the null hypothesis will be rejected (*Table 6*).

There is no need to conduct the fixed effect or random effect approach in this circumstance, given the Breusch-Pagan tests investigate a (*P*) value greater than 0.005. The model's validity and accuracy are shown below in (*Figure*), where the actual and fitted lines of the model coincide.

Two hypotheses were accepted, and one was rejected according to the pooled ordinary panel regression model. That is, as seen in *Table 7*.

RESULT AND CONCLUSIONS

A bank's profitability provides insight into its management's worth in making a profit. An excellent indicator of a bank's health is its profitability, which contributes significantly to a country's economic development [1]. Banks should keep a substantial and sufficient amount of capital to prevent bank failures and increase depositors' trust, as research (Kosmidou, 2008; Irshad & Zaman, 2011) states that a bank's capital sufficiency impacts profitability. To ensure that all banks maintain an appropriate amount of capital commensurate with their size and risk exposure, the minimum capital requirement for deposited funds should be reviewed continuously [5, 16]. This analysis confirms the positive and substantial link between capital adequacy and bank profitability, which is in line with earlier research (Adiatmayani & Panji, 2021; Arseto, 2022; Biswas & Mondal, 2023; Nguyen, 2020; Ramadhanti & Hidayati, 2019). This study was examined to draw broad conclusions about the same outcome in other regions, particularly Islamic nations [12–15].

Current research has a limited number of drawbacks. To begin with, the study encompasses just three member nations of the Organization of Islamic Cooperation (OIC). In addition, the study tested the impact of CAR, currency rate, inflation, and interest rate on profitability, treating them as independent variables. The R^2 figures indicate that 76.39% of the bank profitability variations can be attributed to these variables, while other factors may be attributed to the remaining changes. There is potential for performing more research on this issue by expanding the scope to include more OIC member nations and including other variables to assess the influence on profitability within the framework of both commercial and Islamic banks.

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ABOUT THE AUTHORS

Humayun Humta — Phd, Candidate, accounting and finance department, Institute of Social Science, Selçuk University, Konya, Turkey
https://orcid.org/0000-0002-2921-6265
Corrtsponding author:
h.humta@gmail.com

İbrahim E. Şahin — Phd, Associate Professor, accounting and finance department, Selçuk University, Konya, Turkey
https://orcid.org/0000-0002-0442-8499
eremsahin@selcuk.edu.tr

Hamayoun Ghafourzay — Phd, Assistant Professor, accounting department, Kabul University, Kabul, Afghanistan
https://orcid.org/0000-0001-8156-9407
hamayoun.ghafourzay@yahoo.com