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ECONOMIC CONDITIONS AND BANK PERFORMANCE: EVIDENCE FROM PRE-WAR, TRANSITION AND POST-WAR ECONOMY IN IRAQ

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Abstract: Studies have shown that macroeconomic factors are key determinants of bank performance. However, in the case of war-torn Iraq the effect of economic conditions deems to have significant impact on bank performance. Thus, this study examines the relationship between macroeconomic variables and bank performance with the aim of establishing this relationship during pre-war, transition and the post-war periods in Iraq. This study used data of 32 banks for the periods 1993 to 2018. By applying the Augmented Dickey Fuller and Co-Integration testing, the findings showed a mixed effect of macroeconomic variables on bank performance among the periods. In the long run, Gross Domestic Product has positive effect on the bank performance during all periods, while interest rates have mixed effects on bank performance during the periods. However, exchange rate is insignificant to the performance of Iraqi banks. This study suggests that banks need to implement policies that would enable them to efficiently and effectively exploit the gains of macroeconomic variables to avert its effect on their performance.

Keywords: macroeconomic variables, bank performance, Iraqi banks, interest rates, inflation rates, GDP

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Introduction

The strength of financial institutions is very critical in stimulating economic development and growth, foreign and domestic investment poverty reduction and employment creation (Kyalo, 2002). Banks, which are the major player in the financial institutions are important to the economies globally through providing numerous functions to assist firms' capital formation and local and international trade. Valuable services are provided by modern banking systems and achieving economic

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development is based on the presence of a strong financial system to proffer both societal economic benefits (Bandlamudi & Taidala, 2017). As banks play important intermediate functions that spur economic activity, it is also benefit banks because they provide value to their shareholders, incentivizing the existing shareholders to increase their investment in the bank and attracting prospective investors to invest, and improve their capital base (Ongore & Kusa, 2013).

In addition, bank profitability is regarded as the difference accumulated between the profit amount generated from the assets and expense of the liabilities. Studies have shown that bank profitability are determined through micro and macro variables. These micro variables are the bank-specific variables that include the accounts in the income statement and balance sheet such as capital, size, expense management, risk management, non-performing loans and marketable securities (Güngör, 2007). In contrast, macro variables are not connected with the bank's internal process, but they have significant effect on the bank profitability; these include inflation, GDP growth, interest rate, tax rate and exchange rate. However, since banks are such critical entities in an economy the stability and success as going concerns is given a lot of attention by various stakeholders. The interrelation between macro variables and bank profitability has been a focal point of interest by scholars in the current phenomenon.

In the case of Inflation, it has been a chronic disease to many countries. Thus, it is a key issue to policymakers, though it has been controlled in most developing economies and shown flagging speed in most developed economies in recent years (Tinoco Zermeño et al., 2018). The developed economies have an average inflation rate of 11.9% as at 1981, but it has decreased drastically to 1.4% as at 2013; on the other hand, the average inflation rate in developing economies rose to 12.7% as at 1981, but as at 2013, at reduced to 4.6% (World Bank, 2014). As such, the growth of inflation rates have the influence to disrupt the effectiveness of all economic activities, which include the financial sector. Interest rate is also used to influence different economies. As high interest rates indicate a tight monetary policy and decrease demand, low interest rates stimulate demand (Lipsey & Chrystal, 2007). The fluctuations in interest rate are acknowledged globally as a vital cause of uncertainty and significant risk factor for firms because it determines the maturity match between assets and liabilities (Graham & Harvey, 2001). Interest rate is very important to financial institutions due to its sensitivity to the sector (Memmel, 2011; Kasman et al., 2011).

Moreover, GDP is regarded as the most significant macroeconomic indicator for any economy. Decrease in GDP can lead to economic recession and reduces the firms' profitability. During decrease in GDP, firms decrease investment to maintain a low

level of cost, which then reduces rate of return and profitability. However, increase in GDP increases rate of return and profitability because investors increases investments which simultaneously increases supply and demand of shares (Harris, 1997). Furthermore, due to the increase in capital movements and world trade, currency value has been one of the essential factors influencing firm profitability (Kim, 2003). Exchange rate fluctuations has effect on the values of firms because future cash flows change with the variations in currency values. Base on economic theory, exchange rates fluctuations will lead to change in firms' investment and their profitability. In this regard, this study aims to examine the impact of macroeconomic variables on the profitability of Iraqi banks.

The existence of Iraqi banking institution can be traced back to the mid-1930s. During that period, opening of branches of private Iraqi banks and foreign banks occurred, and the numbers increases as the economy expands. However, Iraq nationalized and consolidated the private banks into the largest state-owned bank known as the Rafidain bank in 1964. As of 1980s, Rafidain bank and Rashid bank were largely profitable from financing the budget deficits of the government. However, this success halt in 1990 due to imposition of economic sanctions by United Nation. Since that period till the removal of Saddam's regime, the focus of the state banks is towards solely underwriting the ruling party and the Iraqi party. Though, in early 1990s, local private banks have been allowed by the government to operate in the banking sector to promote business and assist in offsetting the effect of the sanctions (Hussain et al., 2020).

By March 2003, the Iraqi banking sector was completely in decay due to the two wars, sanctions and many decades of Ba'athist rule. Significantly worsening the circumstances was the damage perpetrated on the system all through the period of the immediate post-war. During that period, the Finance Ministry, the Iraqi Central Bank, the state-owned banks (Rafidain and Rashid), the twenty-one smaller state-owned and private banks and the Baghdad Stock Exchange were looted systematically. The condition was very grave that even after a year there was no suitable banking sector on ground. During that period, Iraq was still virtually completely a cash economy (Thaker et al., 2020).

To reconstruct the banking sector, a structure unlike that of several neighbouring economies is confronting the Coalition Provisional Authority (CPA). In different from many banks in the Gulf

Cooperation Council (GCC) countries, Iraqi banks that are recovering could not rely on liquidity-driven profits because very little liquidity is available. Furthermore, the Central of bank set a high rate of interest rates (i.e., 17%). As credit demand was high

as compared to other diversified non-interest incomes, the only major source of income to the banks is moneylending. As of March 2003, the assets of the banking sector had rose to US$2 billion equivalent, in which the two state banks own over 85-90 percent of it. These assets only represent about 8 percent of Iraqi's GDP, which is awfully low compare to international standards, and underscore the marginal function of the banking sector as a store for State savings and resource provider to the economy. In order to create a sustainable banking industry, on September 19, 2003, the CPA issued Order number 40, the Bank Law define the rules and regulation governing and establishing the Iraqi new banking system that provided basis for the future economic growth and development of Iraq. The Bank Law provisions were significantly modeled based on the western method to banking regulation. It granted the Central bank of Iraq (CBI) complete operational and legal authority; essentially, it provides the Iraqi banks with the authorities and powers as related to the modern day international banking operations.

Literature review

Many studies have focused on the effect of macroeconomic factors on bank profitability and found mixed results. Demirguc-Kunt and Huizinga (1999) examine the determinants of interest margins and profitability of banks in 80 countries applying linear regression. The findings showed that there is a positive insignificant effect of macroeconomic variables on the profitability of the banks. The determinants of profitability among ten Tunisian banks by using a balanced panel data for the period 1980 to 2000. The findings showed an insignificant effect inflation rate and annual growth rate on Tunisian banks. Similarly, Mamatzakis and Remoundos (2003) investigate the determinants of profitability of seventeen commercial banks in Greece for the period 1989 to 2000, using structure-conduct-performance framework on bank level data. The findings showed that there is no relationship between real interest rate with ROE and ROA of the banks. Furthermore, Staikouras and Wood (2004) examine the determinants of profitability of European banks for the period 1994 to 1998, applying ordinary least square method and fixed effects model. Their findings indicate that while interest rate has a positive significant effect on ROA, GDP growth has a negative significant effect on ROA. Also, Goddard et al. (2004) examine the profitability and growth dynamics of 583 European banks using cross sectional regression, and found that GDP has a positive significant effect on profitability of the banks. Macroeconomic determinants of profitability of Greek banks using GMM

estimator method. Their findings showed a positive significant impact of real interest rate and inflation the banks' profitability (Kliestikova et al., 2017).

Moreover, Tan and Floros (2012) investigate the GDP growth and profitability of banks in China. They found that a negative significant relationship exists between GDP growth and the banks' profitability. The effect of inflation on bank profitability, and found that inflation rates and exchange rate have significant effect on bank profitability. The effect of macroeconomic factors on profitability of Pakistani banks using POLS regression. Their findings showed that real interest rate has a robust positive significant relationship with bank profitability; while real GDP is insignificant with bank profitability. They concluded that macroeconomic factors used in their study does not have noticeable significant contribution on bank profitability, and suggest banks to improve their factors or focus extensively on other external factors to maximize the risk-adjusted returns. The effect of macroeconomic factors on Kenyan banks profitability. The findings show that real GDP, inflation, and exchange rate have insignificant influence Kenyan banks' profitability.

Osamwonyi and Michael (2014) examine the effect of macroeconomic variables on Nigerian bank profitability. The findings show that GDP growth and interest rate have significant effect on bank profitability, while inflation rate has insignificant effect on bank profitability. They suggested that the higher the macroeconomic factors the lower the bank profitability. They also recommended that banks should reduce their lending rate, diversifying their sources of deposits, and strategically reduce their operational cost of deposit. The impact of macroeconomic factors on bank profitability in Kenya for the period 2001 - 2012. The findings imply that real interest rates and exchange rate have negative and positive significant effect, respectively, with bank profitability. However, real GDP growth rate has insignificant effect on the banks profitability. In addition, the relationship between macroeconomic factors and bank profitability and found a positive significant relationship between GDP growth and bank profitability. The relationship between GDP and bank profitability using bivariate correlation and regression analyses. The findings showed that GDP has insignificant effect to the profitability of CIMB bank. The relationship between inflation and bank performance and found that inflation has insignificant impact on bank profitability. Milhem and Abadeh (2018) evaluate the effect of macroeconomic factors on the profitability of two Islamic banks and thirteen conventional banks in Jordan using t-test, f-test and regression analyses. The findings show that there is an insignificant effect of inflation on the profitability of conventional banks, while GDP has a positive significant effect on GDP on the profitability of conventional banks. However, inflation and GDP has an insignificant impact on Islamic banks' profitability. The macroeconomic determinants

of Georgian banks profitability for the period 2013 to 2017 using correlation and regression analyses. The findings show that the macroeconomic variables have weak relationship with bank profitability.

H1: Interest rate, GDP growth, inflation rate, exchange rate, bank size, capital adequacy, bank deposit, cost management, loan loss reserves, liquidity ratio and financial leverage have significant association with return on assets.

H2: Interest rate, GDP growth, inflation rate, exchange rate, bank size, capital adequacy, bank deposit, cost management, loan loss reserves, liquidity ratio and financial leverage have significant association with return on equity.

Materials and methods

This study used data of 32 banks established or operating in Iraq since 1992 (after the Gulf war of 1991). The macroeconomic and bank data are for the periods 1993 to 2018. The data are divided into three periods which include pre-war period (1993 – 2002), transition period (2003 – 2005), and post-war period (2006 – 2018). The data were retrieved from the DataStream, annual reports and World Bank database. The dependent variables used in this study as proxies for bank performance are return on assets (ROA) and return on equity (ROE) as adopted from previous studies (Bashir, 2003; Hassan & Bashir, 2003; Musa et al., 2020). The independent variables are interest rate, inflation rate, GDP growth and exchange rate as also used by previous research (Anbar & Alper, 2011; Kader & Leong, 2009; Khrawish & Al-Sa'di, 2011; Teng, et al., 2012; Samuelson, 1945). The control variables are the bank specific variables which include bank size, capital adequacy, bank deposits, cost management, loan loss reserves, liquidity ratio, and financial leverage (Dudchenko et al., 2020).

The models constructed for this study as follows:

$$ROA_{it} = \beta_o + \beta_1 INT_{it} + \beta_2 GDP_{it} + \beta_3 INF_{it} + \beta_4 EXC_{it} + \beta_5 SIZE_{it} + \beta_6 CAQ_{it} + \beta_7 DEP_{it} + \beta_8 COST_{it} + \beta_9 LLR_{it} + \beta_{10} LIQ_{it} + \beta_{11} LEV_{it} + V_{it} + \varepsilon_{it} \quad (1)$$

$$ROE_{it} = \beta_o + \beta_1 INT_{it} + \beta_2 GDP_{it} + \beta_3 INF_{it} + \beta_4 EXC_{it} + \beta_5 SIZE_{Sit} + \beta_6 CAQ_{it} + \beta_7 DEP_{it} + \beta_8 COST_{it} + \beta_9 LLR_{it} + \beta_{10} LIQ_{it} + \beta_{11} LEV_{it} + V_{it} + \varepsilon_{it} \quad (2)$$

The first equation (1) test the direct relationship between macroeconomic variables and return on assets (ROA). The second equation (2) test the direct relationship between

variables and return on equity (ROE). Where: ROA = Return on Assets; ROE = Return on Equity; INT = Interest Rate; GDP = GDP Growth; INF = Inflation rate; EXC = Exchange Rate; SIZE = Bank Size; CAQ = Capital Adequacy; DEP = Bank Deposit; COST = Cost Management; LLR = Loan Loss Reserves; LIQ = Liquidity Ratio; LEV = Financial Leverage; V = Unobserved firm effects (fixed effects); ε= idiosyncratic shocks; i = nth bank; t^{th} = t^{th} year.
Descriptive statistics, Augmented Dickey Fuller and Co-Integration testing was carried out in this study. This confirm the Long Run and Short Run relationship of the variables.

Results

The results of the present study show the descriptive statistics that exposed the ADF test for stationarity along with co-integration test. Finally, the results also include the investigation of short and long run nexus among the variables by using ARDL approach. Table 1 below showed the results of the ADF test.

Table 1. Augmented Dickey Fuller & Co-Integration testing

Periods		SIZE	CAQ	DEP	COST	LLR	LIQ	LEV	ROA	ROE	Residuals (ROA)	Residuals (ROE)
Pre-War	T-Stat	-9.68	-2.89	-8.05	-5.06	-7.51	-8.41	-6.14	-3.62	-12.3	-4.312	-4.471
	P-Value	0.00* I(0)	0.00** I(0)	0.00* I(1)	0.00* I(1)	0.00* I(0)	0.01* I(1)	0.00* I(0)	0.00* I(0)	0.00* I(0)	0.000	0.000

Transition	T-Stat	-3.29	-7.99	-5.82	-7.47	-3.96	-4.75	-5.09	-1.97	-4.55	-1.709	-1.816
	P-Value	0.00** I(0)	0.01* I(1)	0.00* I(1)	0.00* I(1)	0.00* I(0)	0.00* I(0)	0.00* I(0)	0.00* I(0)	0.00* I(0)	0.003	0.005
Post-War	T-Stat	-13.12	10.57	-8.71	-6.18	-8.49	-9.11	-6.43	-5.84	17.2	-8.114	-7.495
	P-Value	0.00* I(1)	0.00** I(1)	0.00* I(0)	0.00* I(0)	0.00* I(1)	0.00* I(0)	0.00* I(0)	0.00* I(0)	0.00* I(0)	0.006	0.000

DF & Co-Integration Tests for Macroeconomic Variables

										Residuals	**Residuals**

	INT	*GDP*	*INF*	*EXC*	(ROA)	(ROE)
T-Statistics	-12.72	-21.48	-10.86	-62.35	-6.58	-8.43
P-Value	0.00**	0.00**	0.00*	0.00*	0.00	0.00
	I(0)	I(0)	I(0)	I(0)		

Note: *** and **** shows 1% and 5% level of significance respectively. ***I (0) and I (1)*** show level and first difference respectively.

Based on Table 1 above, it showed that all the variables are either integrated of order zero, I (0*)* or integrated of order one, I (1). An instance, the first row in the upper part of the table summarizes the results for pre-war period. The results for SIZE, CAQ, LLR, LEV, ROA and ROE are integrated of order zero, I (0), while DEP, COST and LIQ are integrated of order one, I (1). In the same vain, for transition period, the results for SIZE, LLR, LIQ, LEV, ROA and ROE are also integrated of order zero I (0), while CAQ, DEP, and COST are integrated of order one, I (1). Also, result for post-war period showed that DEP, COST, LIQ, LEV, ROA, and ROE are integrated of order zero I (0), while SIZE, CAQ and LLR are integrated of order one I (0).

Thus, for all the periods, the variables seemed to be non-stationary, which necessitate a co-integration test. General to specific methodology is adopted to avoid missing variables bias. To avoid problem of spurious regression, it is necessary to verify the Long Run relation (using Co-integration) between variables. Also in Table 2, the last two columns indicate the results of co-integration test where the findings of residuals of the stationary series for ROA and ROE necessitate the next test. It confirms the existence of long run relationship between the variables. Therefore, the long run relationship between ROA and ROE and the independent variables is carried out.

Table 2 and Table 3 depicts the results of the long run relationship between the variables and bank performance. Table 2 represent the long run relationship between the independent variables and ROA, while Table 4 represent the long run relationship between the independent variables and ROE.

Table 2. Long Run Relationship between Independent Variables and ROA

Periods	**Statistics**	**INT**	**GDP**	**INF**	**EXC**	**SIZE**	**CAQ**	**DEP**	**COST**	**LLR**	**LIQ**	**LEV**
Pre-	T-Stat	-3.41	14.8	24.7	-52.4	2.37	-	11.9	-0.23	1.9	0.3	17.6

War			5	2	5		5.54	2		8	4	7
	P-Value	0.00	0.00	0.01	0.00	0.00	0.02	0.04	0.82	0.02	0.00	0.00
Transition	T-Stat	-0.13	4.74	15.04	-86.03	8.83	0.82	0.34	-0.41	2.79	0.62	4.47
	P-Value	0.46	0.00	0.00	0.24	0.64	0.06	0.00	0.03	0.00	0.91	0.25
Post-War	T-Stat	9.22	17.56	23.19	-95.42	7.49	1.43	7.36	-0.09	4.27	0.11	28.01
	P-Value	0.01	0.02	0.00	0.16	0.05	0.31	0.00	0.01	0.04	0.02	0.00

Table 2 above showed that ROA has a statistical significant long run relationship with interest rate (INT), GDP growth (GDP), inflation rate (INF), exchange rates (EXC), bank size (SIZE), capital adequacy (CAQ), bank deposit (DEP), loan loss reserves (LLR), liquidity ratio (LIQ), and financial leverage (LEV) during pre-war period; only cost management (COST) is found to be statistically insignificant. Moreover, in regards to transition period, ROA has a statistical significant long run relationship with GDP, INF, CAQ, DEP, COST, and LLR; but statistically insignificant with INT, EXC, SIZE, LIQ and LEV. In addition, for post-war period, ROA has a statistical significant long run relationship with INT, GDP, INF, SIZE, DEP, COST, LLR, LIQ, and LEV; but statistically insignificant with EXC and CAQ.

Table 3. Long Run Relationship between Independent Variables and ROE

Periods	**Statistics**	**INT**	**GDP**	**INF**	**EXC**	**SIZE**	**CAQ**	**DEP**	**COST**	**LLR**	**LIQ**	**LEV**
Pre-War	T-Stat	-2.37	10.51	12.86	-28.52	3.41	-2.11	9.23	-0.23	3.89	0.49	15.76

	P-Value	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.04	0.31	0.01	0.02
Transition	T-Stat	-0.94	2.46	7.48	43.36	6.59	-1.27	0.61	-0.92	3.93	0.29	2.07
	P-Value	0.12	0.03	0.00	0.32	0.04	0.01	0.10	0.00	0.00	0.43	0.04
Post-War	T-Stat	5.01	13.45	17.92	-57.12	4.25	0.94	5.24	-0.15	2.61	0.17	47.11
	P-Value	0.00	0.01	0.04	0.12	0.19	0.00	0.00	0.02	0.00	0.00	0.00

In Table 3 above it depicts that ROE has a statistical significant long run relationship with INT, GDP, EXC, SIZE, CAQ, DEP, COST, LIQ and LEV; but statistically insignificant with INF and LLR during pre-war period. Furthermore, in refer to transition period, ROE has a statistical significant long run relationship with GDP, INF, SIZE, CAQ, COST, LLR, and LEV; but statistically insignificant relationship with INT, EXC, CAQ and LIQ. Also, ROE has a statistical significant long run relationship with INT, GDP, INF, CAQ, DEP, COST, LLR, LIQ, and LEV; but insignificant with EXC and SIZE.

Base on the long run relationship as the focus is on the macroeconomic variables, interest rate (INT) showed a mixed result as it is statistically significant and negatively related to bank performance (ROA and ROE) under pre-war period but positively significant with bank performance under post-war period. However, insignificant during transition period. This implies that interest rate plays a significant role in generating banks' profitability during these periods (pre-war and post-war). The negative significant relationship under pre-war period suggests that the unexpected increases in interest rate during pre-war period dejects bank customers' borrowings, increases interest payments of borrowers and thus decreases their ability to repay and increases number of defaulters, which then reduces bank profitability. This finding is in line with some past studies such as Bildersee and Roberts (1981), Wadhwani (1986), Zeitun et al. (2007), and Lutf (2018). On the other hand, the positive significant relationship under post-war period suggests that the stable interest rates as adjusting for the anticipated inflation rate during post-war period encourages more customers'

borrowings which then increase banks' interest income and revenue and improve their profitability. This result is consistent with the findings of previous studies (e.g., Bashir, 2003; Staikouras & Wood, 2004) that found positive significant effect of interest rate on bank performance.

In addition, GDP growth has a statistical positive significant long run relationship with bank performance (ROA and ROE) under all periods. This indicates that rise in GDP growth, specifically during the pre-war and transition periods which coincidentally represent the economic boom periods due to the high level of GDP growth, increases the banks' profitability. This is consistent with the argument of past studies (e.g., Hassan & Bashir, 2003; Kosmidou et al., 2007) that found positive significant relationship between GDP growth and bank performance. Furthermore, inflation rate (INF) is found to have a statistical positive significant long run relationship with bank performance (ROA and ROE) under all periods except with ROE during pre-war period which is insignificant. This implies that inflation is effectively anticipated and provide the banks the opportunity to accordingly adjust their interest rates, which lead to high revenue and increase the banks' profitability for the periods. This finding is consistent with the findings of past studies (e.g., Bourke, 1989; Demirguc-Kunt & Huizinga, 1999; Kosmidou et al., 2007; Molyneux & Thornton, 1992). Moreover, exchange rate (EXC) has a statistical negative significant long run relationship with bank performance (ROA and ROE) under pre-war period only, but insignificant with bank performance under transition and post war periods. This implies that change in exchange rates throughout the periods had maximum effect on the banks' profitability. The increase in exchange rate due to the unstable economic condition and ineffective macroeconomic policy of Iraq led to foreign currency loss for the banks during these periods. This finding is in line with the findings of past studies (e.g., Babazadeh & Farrokhnejad, 2012; Bartram & Karolyi, 2006) that found negative effect of exchange rate on bank performance.

Table 4. Short Run Relationship between Independent Variables and ROA

Periods	Statistics	INT	GDP	INF	EXC	SIZE	CAQ	DEP	COST	LLR	LIQ	LEV
Pre-War	T-Stat	2.13	10.58	-16.57	-35.21	-0.48	-0.02	7.71	0.04	0.82	0.12	13.73
	P-	0.01	0.00	0.00		0.00	0.36	0.0	0.00	0.0	0.0	0.00

	Value				0.12			0		3	1	
Transition	T-Stat	3.58	8.17	12.41	43.17	-0.85	-0.04	0.52	0.18	0.97	0.25	1.44
	P-Value	0.02	0.00	0.11	0.45	0.04	0.02	0.00	0.92	0.00	0.39	0.05
Post-War	T-Stat	4.01	-5.04	-17.92	-29.24	0.91	-0.78	5.29	-0.44	2.72	0.64	14.20
	P-Value	0.00	0.16	0.00	0.04	0.00	0.02	0.35	0.00	0.01	0.00	0.01

Table 5. Short Run Relationship between Independent Variables and ROE

Periods	**Statistics**	**INT**	**GDP**	**INF**	**EXC**	**SIZE**	**CAQ**	**DEP**	**COST**	**LLR**	**LIQ**	**LEV**
Pre-War	T-Stat	-5.13	20.57	-37.21	-31.30	14.16	-9.04	23.25	-0.38	5.15	0.71	32.26
	P-Value	0.01	0.03	0.00	0.17	0.00	0.10	0.00	0.02	0.12	0.91	0.00
Transition	T-Stat	-1.31	6.74	-10.26	-67.38	10.45	0.92	0.74	-1.17	3.15	0.47	6.73
	P-Value	0.01	0.00	0.16	0.32	0.01	0.15	0.42	0.01	0.00	0.19	0.25
Post-War	T-Stat	-3.12	19.16	-13.81	-54.11	8.23	4.63	8.43	-0.30	5.28	0.21	58.27
	P-Value	0.00	0.02	0.01	0.33	0.00	0.82	0.00	0.00	0.02	0.52	0.04

The summary of the results of short run relation between ROA and independent variables is depicted in Table 5 and the results of short run relation between ROE and independent variables is depicted in Table 6. The results show that INT, GDP, INF influence bank ROA in the short run in the pre-war period. INT and GDP influence bank ROA in the short run in the transition period. INT, GDP and EXC influence bank ROA in the short run in the post-war period. On the other hand, the result also shows in the short run that INT, GDP and INF have influence on bank ROE during pre-war period. INT and GDP have short run influence on bank ROE during transition period. INT, GDP and INF have short run influence on bank ROE during post-war period.

Result discussions

This study examines the relationship between economic conditions and bank performance in Iraq, with the focus on how macroeconomic variables affect bank performance within three different range of periods, which is the pre-war period (1993 – 2002), transition period (2003 – 2005), and post-war period (2006 – 2018). The aim is to show that the unstable and uncontrolled economic conditions of Iraq causes macroeconomic variables to have unbalanced and varied effects on Iraqi bank performance. The findings show that during pre-war and post-war interest rate has a negative significant effect on bank performance, implying that interest rate plays significant role in generation of bank profitability during the pre-war and post-war periods; and suggesting that the unexpected increase in interest rate discourage bank customers' borrowings which then have effect on bank performance. Furthermore, GDP growth has a positive significant effect on bank performance in all periods, indicating that rise in GDP growth during the economic boom improves the banks' performance. Moreover, inflation rate has positive significant effect on bank performance, implying that the banks effectively anticipate the changes in inflation to regulate their interest rates accordingly, which then improve the bank performance. In addition, exchange rate has negative significant effect on bank performance, implying that high exchange rates caused by economic instability and destabilized macroeconomic policy of the Iraqi government have negative effect on bank performance. The findings of this study are consistent with the argument and conclusion of past studies that macroeconomic variables have impact on bank performance (Babazadeh & Farrokhnejad, 2012; Bartram & Karolyi, 2006; Bildersee & Roberts, 1981; Bourke, 1989; Demirguc-Kunt & Huizinga, 1999; Hassan & Bashir, 2003; Kosmidou et al., 2007; Lutf, 2018; Molyneux & Thornton, 1992; Wadhwani, 1986; Zeitun et al., 2007).

Conclusion and Recommendations

From the findings, it is obvious that macroeconomic factors have drastic significant effect on bank performance in Iraq, which could be attributed to the many years of economic instability caused by wars. This is as result of the mixed implications of the macroeconomic variables on the bank performance. During periods of economic booms, specifically the pre-war (1993-2002) and transition (2003)-2005) period, while GDP growth improves bank performance, other macroeconomic variables (i.e., interest rates, inflation and exchange rates) reduced bank performance. Also, during post-war period, there is averagely stable inflation rate which the banks were able to anticipate to adjust their interest rates, this then increase the banks' performance. It is suggesting that there is need for the government and its regulatory agencies to ensure a proper management of GDP as its growth would augment growth in most sectors of the economy. This growth would have multiplier effect and leads to huge leaps in the industries' growth and country's growth at large. Also, there is need for banks to always make policies that would enable them to efficiently and effectively exploit the gains of economic booms.

In addition, banks management need to have effective policies to be able to effectively anticipate changes in inflation and effectively adjust their interest rates accordingly to improve their bank performance. Effective measures should be put in place to mitigate interest rate risk so that not to have adverse effect on profitability. Furthermore, there is need for more effort from the Central Bank of Iraq regarding the management of exchange rate in order to achieve a realistic exchange rate that will enhance economic growth and attain a relative stability in the value of the Iraqi dollar against other currencies, specifically the US dollar. Also, banks should put in place effective risk mitigating strategies that would counter fluctuations in foreign exchange to avert its drastic effect on their performance.

There are many macroeconomics variables that could determine and affect bank performance in Iraq. This study only concentrated on four of the macroeconomic variables (i.e., interest rate, GDP, inflation rate and exchange rate) out of the numerous macroeconomic variables. Further studies can be carried out to include other macroeconomic variables that could have significant effect on bank performance.

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WARUNKI GOSPODARCZE A DZIAŁALNOŚĆ BANKU: DOWODY Z GOSPODARKI PRZEDWOJENNEJ, PRZEJŚCIOWEJ I POWOJENNEJ W IRAKU

Streszczenie: Badania wykazały, że czynniki makroekonomiczne są kluczowymi determinantami wyników banków. Jednak w przypadku rozdartego wojną Iraku wpływ warunków ekonomicznych wydaje się mieć znaczący wpływ na wyniki banków. W związku z tym niniejsze badanie analizuje związek między zmiennymi makroekonomicznymi a wynikami banków w celu ustalenia tego związku w okresie przedwojennym, przejściowym i powojennym w Iraku. W badaniu tym wykorzystano dane 32 banków za okresy od 1993 do 2018 roku. Dzięki zastosowaniu testów Augmented Dickey Fuller i Co-Integration, wyniki wykazały mieszany wpływ zmiennych makroekonomicznych na wyniki banków w poszczególnych okresach. W dłuższej perspektywie produkt krajowy brutto ma pozytywny wpływ na wyniki banków we wszystkich okresach, podczas gdy stopy procentowe mają mieszany wpływ na wyniki banków w tych okresach. Jednak kurs walutowy ma niewielkie znaczenie dla wyników irackich banków. Badanie to sugeruje, że banki muszą wdrożyć politykę, która umożliwiłaby im wydajne i efektywne wykorzystanie korzyści płynących ze zmiennych makroekonomicznych, aby uniknąć ich wpływu na ich wyniki.

Słowa kluczowe: zmienne makroekonomiczne, wyniki banków, banki irackie, stopy procentowe, stopy inflacji, PKB

经济状况和银行绩效:来自伊拉克战前，转型和战后经济的证据

摘要:研究表明，宏观经济因素是银行业绩的关键决定因素。但是，对于饱受战争 war 的伊拉克来说，经济状况的影响似乎对银行的业绩产生了重大影响。因此，本研究研究了宏观经济变量与银行绩效之间的关系，旨在在伊拉克战前，过渡时期和战后时期建立这种关系。这项研究使用了 1993 年至 2018 年期间 32 家银行的数据。通过应用增强迪基·富勒和协整检验，研究结果显示了各时期宏观经济变量对银行绩效的混合影响。从长远来看，国内生产总值在所有期间均对银行业绩产生积极影响，而利率在各期间均对银行业绩产生不同的影响。但是，汇率对伊拉克银行的业绩无关紧要。这项研究表明，银行需要实施政策，使它们能够有效地利用宏观经济变量的收益，从而避免其对绩效的影响。

关键词:宏观经济变量，银行业绩，伊拉克银行，利率，通货膨胀率，GDP