IJCEAS

International Journal of Contemporary Economics and Administrative Sciences
ISSN: 1925 – 4423
Volume: XI, Issue: I, Year: 2021, pp. 117-133

DETERMINANTS OF COMMERCIAL BANKS' PROFITABILITY AND IMPORTANCE OF REMITTANCE IN LEBANESE BANKS

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Received: 22.02.2021, Accepted: 25.05.2021
DOI Number: 10.5281/ zenodo.5136590

Abstract

For developing countries, it is important to have effective functioning in order to enable the banking sector to grow. This study examines the factors determining banking profitability in Lebanon as a developing country by primarily investigating the effects of remittances (REM), return on average assets (ROA), and capital adequacy (CA), on return on equity (ROE) in Lebanon. The annual data cover 13 banks in the period between 2008 and 2019.

According to the results of the model estimated through the System Generalized Moments Estimator, REM, ROA, and CA variables have positive coefficients and are statistically significant in explaining ROE. The findings show that the indicators related to the banking sector, such as ROA and CA, have more influence on the return on equity in Lebanon than remittances.

Key words: Banking development; Return of Equity; Generalized Moments Estimator; Remittance, Lebanon.

JEL Code: G24, F20, F24

1. Introduction

Remittances are the currency that international migrant workers earn and transfer to their home country. Remittances are a constantly growing and crucial source of foreign capital, especially for the economies of developing countries. Although they are considered as a serious potential loss of production due to the loss of skilled workforce and brain drain, the income generated by these remittances

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reduces poverty in developing countries and increases opportunities for their economic growth.

There has been a significant increase in remittances in developing countries in recent years. Thus, the role of remittances has become important in financing for development and in exceeding official development assistance and foreign direct investments in emerging markets. The World Bank (2021) estimated that the remittances reached USD 654 billion in 2019 in the world while they reached USD 517 billion in low income and middle-income countries (LMICs). Recent figures shows that approximately one-third of the total financial inflows in emerging countries consist of remittances.

Due to the shrinkage in the employment of migrant workers and their wages because of the Covid-19 pandemic, remittances in LMICs were expected to decrease by 7.2% to USD 508 billion by 2020, while they were expected to decrease by 7.5% to USD 470 billion by 2021 (World Bank, 2020). In 2019, in current USD, the countries which received the most remittances were India (83.3 billion), Mexico (39 billion), the Philippines (35.2 billion), the Arab Republic of Egypt (26.8 billion), Nigeria (23,8 billion), Pakistan (22.2 billion), Bangladesh (18,3 billion), and China (18,2 billion). Moreover, the top 5 economies that transferred the highest remittances as a percentage of gross domestic product (GDP) in 2019 were Tonga (41.9% of GDP), Tajikistan (28.6 %), the Kyrgyz Republic (28.5%), Nepal (26.9 %), and Haiti (22.8%) (World Bank, 2021). These statistics show that remittances are the key financial instruments for LMICs.

The socioeconomic factors which affect the volume of remittances are the number of the workers abroad and their wages, the level of the economic development of the host country, exchange rates, the difference in interest rates between the host and the home country, political risks, money transfer opportunities, workers' marital status, the number of family members, the education level of migrant workers and the income levels of the migrants' households. Informal channels can be used for the transfer of workers' remittances besides the official banking system (Puri and Ritzema, 2011:13). Besides the socioeconomic factors mentioned above, the efficiency of the banking systems of the host countries and the countries of origin also affect the decisions to send remittances. (Russell, 1992; Straubhaar, 1986).

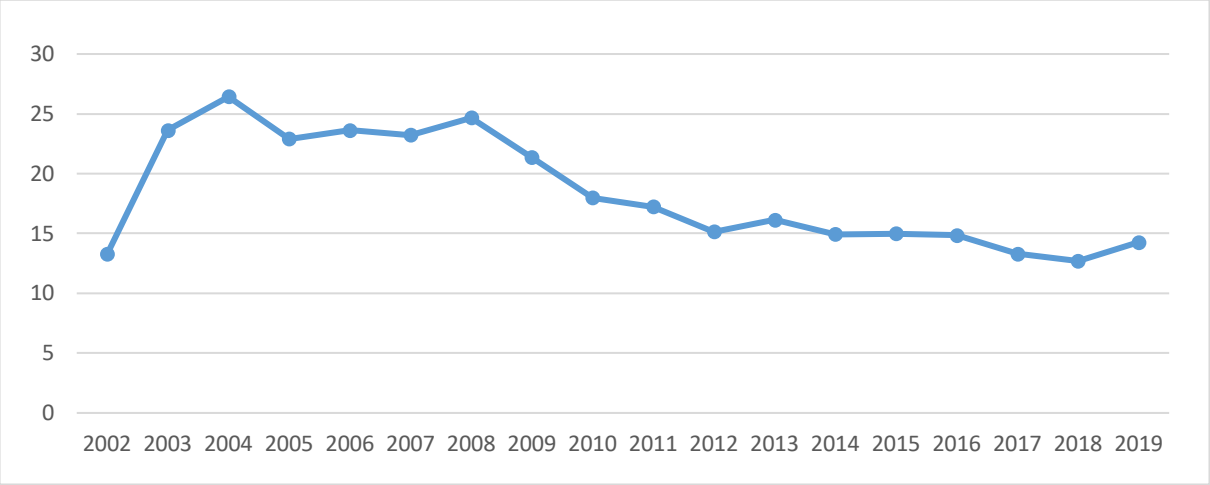
Remittances have macro and microeconomic effects on the economies of the countries of origin. Remittances help family members in their country to finance their consumption expenditures required for basic subsistence needs. In this way, they improve the living standards of families and provide an increase in the general level of welfare. Remittances stimulate production by meeting the primary requirements, such as housing, food, health, and education expenditures and thereby increasing the total demand. Besides, the portion saved from remittances is directed to investments, creating a multiplier effect, thereby increasing productivity and production (Stahl and Arnold, 1986; El-Hamma, 2018). Remittances provide financing opportunities for family members to establish small businesses. In

addition to these micro effects, which will increase the welfare level of the household, remittances also have macroeconomic effects. In developing economies at the macro level, remittances are a key source of foreign exchange which is used to overcome the problems in the balance of payments (Russell 1986; Lopez-Cordova and Olmedo, 2006: 7-8). Moreover, remittances contribute significantly to the financing of productive investments, economic growth, capital accumulation, and poverty reduction (Solimano, 2003: 6; Karagöz, 2009: 1894). Remittances increase bank deposits. In this way, banks offer more banking products and services, contributing to the development of the banking sector and indirectly increasing the financial deepening (Tarus, 2015).

Remittances are a significant channel of external funding for the Lebanon economy and more importantly, they provide a large percentage of consumption. Remittances contribute to supporting expenditure on basic subsistence needs for families, alleviate poverty, and provide better education and health facilities. More recently, a significant portion of the money has been invested in manufacturing industries, which has led to the growth of the real estate business in Lebanon (Awdeh, 2012).

Aside from the fact that remittances from emigrants are a sign of affiliation to the country of origin, they also function as a vehicle for the economic growth of such countries. Lebanon as a case study is known to be a remittance-dependent economy with a continuous movement of people out of the country, which in turn brings regular remittance inflows. According to the World Bank (2021), the share of remittances in GDP for Lebanon was 14.2% in 2019 and 26.4% in 2004 in Figure.1.

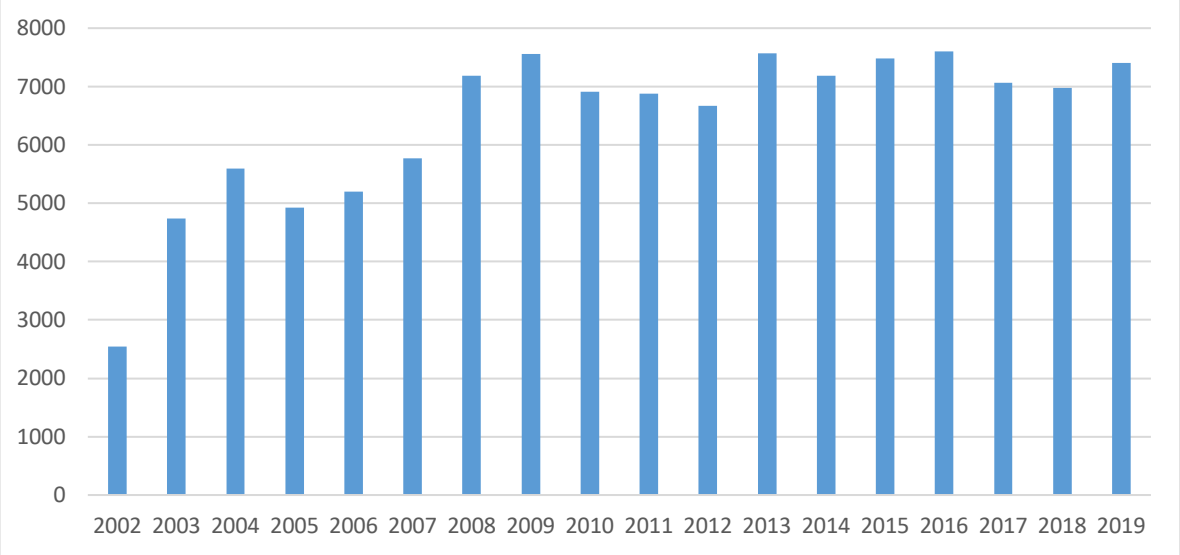
Figure 1. Remittances as percent of GDP (%) in Lebanon



Source: Worldbank database.

Lebanon received USD 7.4 billion after 2008 as shown in Figure.2. The remittances provide important micro and macroeconomic externalities in Lebanon's economy.

Figure.2 Received Personal remittances in Lebanon (current USD million)



Source: World Bank database.

The importance of the impact of remittances on bank profitability has not been studied much in the literature. Remittances have been a significant and growing source of funds from abroad for many developing countries, including Lebanon. The inflow of remittances has continued to increase over the years and forms a large source of foreign earnings in comparison to other financial sources.

Remittances are a crucial fund of foreign currency for achieving stability in Lebanon's current account balance, especially in a country facing a structural trade deficit. Moreover, remittances to Lebanon like any other developing countries nourish the country's economy by reducing poverty and generating employment as well as improving the living standards of people and they have been one of its main components of economy during tough times.

The Lebanese banking system occupies a significant position in Lebanon's financial system, which is anchored on the global banking framework that legally authorizes commercial banks to provide various services in the financial markets. The banking sector acts as the lifeblood for modern and economic development. It provides businesses and consumers with access to capital and investment that are vital to a healthy and growing economy.

The banking sector is the building block of Lebanon's financial system and acts as a financial intermediary in economic growth processes, channeling funds from lenders (savers) to borrowers for investment. As financial intermediaries, banks are the key providers of funds and their financial stability is of paramount

importance to the financial system and the economy. The link between remittances as a high source to finance Lebanon and its banks' profitability calculated by the return on equity (ROE) is an important issue for Lebanon.

In the relevant literature, while generally emphasizing the influence of remittances on the economic growth and development, their impacts on the progress of the banking sector and their profitability have been neglected. The originality and contribution of this study to the field is it empirically tests the effect of remittances, which are an important part of GDP, on banking profitability in the case of Lebanon as a developing country. With this study, revealing the effect of remittances on banking profitability of developing countries constitutes the importance and difference of the study.

Given the above, this study aims to examine the impact of capital adequacy (CA), remittances (REM), and returns of the average assets (ROA) on the Return on Equity (ROE) of the Lebanese banking sector by employing the data from 13 banks for the period spanning from 2008 to 2019.

The remaining sections of the study are structured as follows: Section 2 consists of the literature review. Section 3 explains the variables, scope, data, and methods used in the study. Section 4 includes the results and discussion on the findings. Section 5 presents the conclusion.

2. Literature Review

It may be true that most developing countries have lost a significant number of their skilled workers who have relocated out of the country, which has generally been caused by the lack of economic opportunities and internal conflicts in these countries as well as other factors. However, most of the developing countries, among which is Lebanon, have been benefiting from the Diasporas' remittance for their economic growth. This part of the study examines the empirical studies which generally handle the direct influence of remittances on the economic growth, on the financial development, and on the improvement of the liquidity of the Lebanese banking sector. Moreover, this section reviews some studies that show a relationship among capital adequacy, bank size, and bank profitability.

Acosta et.al (2008) reviewed the influence of remittances on poverty and the result of a panel study shows that the increase of remittances increases income, raises consumption and improves the standard of living in 10 Latin American and Caribbean countries. Acosta et al. (2008) argued that migrant remittances influence positively the balance of payment in several developing countries, and also improve their economic growth. Calero (2009) argued that remittances raise the educational attainment and reduce the scope of child labor in Ecuador.

Azeez and Begum (2009) concluded in their study that remittances have many benefits like fair income distribution and improve the standard of living. The results of Azeez and Begum's (2009) study were supported by Chawdhurg (2014),

who found that remittances improve the standard of living and drive socioeconomic development.

Moreover, Giuliano & Ruiz-Arranz (2009) investigated the relationship among remittances, economic growth, and financial development for 100 developing countries. The findings show that remittances affect positively the economic growth in the countries where financial development is not very strong.

Aggarwal et al. (2011) examined the impact of remittances on financial development using a homogeneous panel model for 99 developing countries. The results of the study show that remittance transactions trigger financial progress by expanding the total deposit and credit volume.

Javid et.al. (2011) examined the determinants of bank profitability in Pakistan for the period 2004-2008 by applying pooled ordinary least squares (POLS). The result shows that banks with a higher capital capacity appear to have more security and to achieve more profits. The also further shows that bank size has a direct relationship with bank profitability. As they argued the higher the size, the higher the bank profitability.

Oke et al. (2011) investigated the link between remittances and financial sector progress by applying Ordinary Least Squares and Generalized Method of Moments for the period from 1977 to 2009 for Nigeria. The result shows that remittances affect positively the financial sector progress except the rate of private credit to GDP.

In a similar study in Jordan, Ramadan, Kilam, and Kaddumi (2011) explored the factors that determined the bank profitability from 2001 through 2010. Their study revealed that capital adequacy is closely linked with bank profitability while their study found no significant correlation between bank size and the profitability of banks in Jordan.

Chowdhury (2011) researched the effects of remittances on financial progress in Bangladesh for the period 1971-2008. The results of Johansen's cointegration test and Error Correction Model indicate that remittances have a significant and positive impact on booth deepening and expanding the financial sector in Bangladesh.

Javid, Arif, and Qayyum (2012) examined the relationship among remittance, poverty reduction, and economic growth by using Autoregressive Distributed Lag (ARDL) and the result shows that remittances had a positive significant impact on the economic growth and poverty reduction in Pakistan for the period 1973-2010.

Fayissa et.al (2012) investigated the relationship between remittances and the financial sector development for the period from 1985 to 2007 by using data for 44 countries, 25 of which are in Africa and 19 in America via panel fully modified

OLS. The findings of the study indicate that remittances have a positive effect on exchange rate stability and financial sector development.

In a recent study, Lee and Hsieh (2013) investigated the relationship between capital and profitability by applying panel data Generalized Method for 42 Asian countries over the period 1994-2008. The result shows that capital has a positive significant impact on bank profitability. Besides, he proposed that these countries promote their financial efficiency by developing their banking system.

Sibindi (2014) analyzed the nexus among remittances, financial development, and economic growth in Lesotho over the years from 1975 to 2010. The result shows that remittances have a positive impact on financial development and growth.

Shazad et.al. (2014) investigated the influence of remittances on financial progress in South Asia for the period from 1989 to 2011. The results of the Generalized Method of Moments show that remittances have a positive effect on the financial sector development.

Tariq et al. (2014) worked on the commercial banks' profitability in Pakistan over the period 2004-2010. The results show that capital adequacy is significantly related to banks' profitability and also found that bank size has a direct relationship with bank profitability. As they argued the higher the size, the higher the bank profitability.

Karikari et al. (2016) explored the relationship between remittances and the financial development in Africa for 50 developing countries for the period 1990-2011. According to fixed and random effect panel analysis, remittances increase the financial development in developing countries.

Meyer and Shera (2017) reviewed the influences of remittances on economic growth by applying a panel data model of six high remittance receiver economies for the period 1993-2013. The findings of the study show that remittances have a positive meaningful impact on economic growth.

Anghel et al. (2017) investigated the impact of remittances on financial progress and economic growth. The result shows that remittances have a positive influence on credit market development and bank deposits.

Abbas et al. (2017) analyzed the impacts of macroeconomic, political, and financial determinants on remittances in Pakistan by employing GMM and data for the period 1972–2012. They revealed that inflation has an inverse effect on remittances indicating financial liberalization is negatively connected to remittances. Moreover, democracy provides migrants to send more remittances.

Fromentin (2017) studied the influences of remittances on the financial progress for developing economies for the period 1974–2014 by employing a Pooled Mean Group (PMG) approach. The results show that there is a positive

connection between remittances and financial development in the long term, but not in the short term.

Nita (2018) investigated the effects of remittances on the economic development in Romania between 2000 and 2016. According to OLS results, there is a positive connection between remittances and the GDP.

El-Hamma (2018) examined the relationship between remittances and the economic growth for 14 Middle East and North African (MENA) countries over the period 1982-2016. The results indicate that remittances induce growth in economies with a developed financial system and a keen institutional environment.

Azizi (2020) analyzed the relationship between international remittances on the financial development in 124 developing countries via panel analysis for the period 1990-2015. According to the findings of the fixed-effect model, remittances positively affect financial development and decreases poverty in developing countries.

Ikpesu et.al (2020) examined the relationship between banking development and remittances for 34 emerging economies within Sub Saharan Africa from 2000 to 2016 and employed a panel estimated generalized least square method. They found that remittance flows negatively affect the banking sector development.

3. Variables, Scope, Data, and Methods

3.1. Definitions of the Data

The study primarily investigates the effects of capital adequacy, remittances, and returns of the average assets on return on equity in Lebanon. The annual data covers 13 banks[3] over the period between 2008 and 2019. The data for capital adequacy, bank size, returns of average assets (ROA) and return on equity were retrieved from Bankscope of 13 Banks in Lebanon while the remittances were gathered from the World Bank. A brief information and expected effects of the variables are presented in Table.1. The definitions of the data are as follows;

- ✓ **Return on Equity (ROE**) is the ratio of net income by shareholders' equity. ROE is evaluated as a tool for the profitability of a business concerning stockholders' equity (Tariq et.al, 2014; Anbar and Deger, 2011)

- ✓ **Returns of Average Assets (ROA**) is the ratio of net profit over total assets. It measures the profit earned per dollar of assets and reflects how well the bank management uses the bank's investment resources to generate profits (Flamini et al, 2009; Khrawish, 2011).

[3]B.L.C. Bank, BLOM Bank, Societe Generale De Banque AU Liban Sal, Byblos Bank Sal, IBL Bank Sal, Credit Libanais Sal, Bank Audi, Bank of Beirut, First National Bank, MEAB Bank, BBAC Bank, Fransabank Sal, Saradar Bank.

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International Journal of Contemporary Economics and Administrative Sciences
ISSN: 1925 – 4423
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✓ **Remittance (REM)** is defined as money transferred by foreign workers from foreign countries to their home countries (Beck and Peria, 2011). Bank Size (BS) is calculated by taking the logarithm of the total assets (Log A). It is generally accepted that the size of the banks will have a positive effect on the profitability of the banks (Naceur & Goaied, 2008; Dietrich & Wanzenrid, 2009). In this study, statistical information regarding the remittance shares of Lebanese banks could not be retrieved due to a lack of data. Therefore, for the 13 banks, whose data were used in the study, which constitutes 85% of Lebanese banks, the bank sizes were proportioned to the total remittances of Lebanon. The remittance/bank size ratio calculated by the authors was used as an explanatory variable in the analysis as a proxy of banks' remittance shares.

✓ **Capital Adequacy (CA)** is calculated by dividing equity by total assets. It is an indicator of the financial superiority of the banks. Therefore, it is accepted as the determinant of the profitability of banks (Athanasoglo et al, 2005).

Table 1. Details of Selected Independent Variables

Abbreviation	Variables	Proxy	Expected Sign	Source of Data
ROE ***(Dependent Variable)***	Return On Equity	Net Income/ Common Stock equity		Bankscope
CA ***(Independent***	Capital Adequacy	Equity/ Total Assets	+/-	Bankscope
REM ***(Independent)***	Remittance	Billion Dollar	+	World Bank and Bank Scope
ROA **(Ind*ependent Variable)***	Returns of Average Assets	the ratio of net profit / total assets	+	Bankscope

3.2. Methods and Empirical Analysis

The descriptive statistics for variables within the scope of the research are presented in Table.2. In the research, ROE, ROA, REM, and CA belonging to 13 Lebanese banks were examined for the period 2008-2019. It is seen here that the panel data set is N> T featured (long panel) and balanced. We selected and worked on the top banks in Lebanon that represent 85% of the Lebanese banking sector.

Table 2: Descriptive Statistics

Variables	Obs. *(NxT)*	Mean	Std. Dev
ROE	156 *(13x12)*	17.76058	1.89832
ROA	156 *(13x12)*	1.057071	0.291817
REM	156 *(13x12)*	7.282756	0.361532
CA	156 *(13x12)*	13.53929	3.748167

Arellano & Bover (1995) and Blundell & Bond (1998) System Generalized Moments estimators were employed in the estimation of the regression model. This estimator can be used with N> T featured panels.

System GMM model where annual return on equity (ROE) is the dependent variable in the model is set up as follows in Eq.1;

$$ROE_{i,j} = \alpha + \beta_1 ROE_{i,j-1} + \beta_2 REM_{i,j} + \beta_3 ROA_{i,j} + +\beta_4 CA_{i,j} + \varepsilon_{i,j} \quad (1)$$

Table 3: Pesaran (2004) Cross-section Dependence Test Results

Variables	CD Stat. *(Prob)*
ROE	4.7* (0.000)
CA	7.45* (0.000)
REM	9.65* (0.000)
ROA	5.9* (0.000)

Note: **,** and *** respectively shows the 0,01, 0,05 and 0,10 significance level.*

Table 3 shows the results of Pesaran's (2004) cross-section dependency test to investigate the cross-section dependency between the variables. In the null hypothesis, which is frequently preferred in the case of N> T, it is assumed that there is no cross-sectional dependency in the variable. The null hypothesis was rejected for all the variables according to CD test statistics in Table 2. Therefore, there was a cross-section dependency in these variables, and cross dependency should be taken into account in unit root analysis.

Table 4: Pesaran CIPS (2007) Panel Unit Root Test Results

Variables	Intercept (Z t-bar)	Intercept&Trend (Z t-bar)
ROE	-2.375**	-3.332*
CA	-2.935*	-3.476*
REM	-3.043*	-3.139*
ROA	-2.498**	-3.005**

Note: **,** and *** respectively shows the 0,01, 0,05 and 0,10 significance level.*

Table 4 shows the results of the Pesaran (2007) CIPS panel unit root test, which expresses the null hypothesis of the unit root presence. The null hypothesis was rejected for all variables analyzed according to CD statistics in Table 3. In this case, the CIPS panel was stationary at the level according to the unit root test.

In the estimation of the regression model, Arellano & Bover (1995) and Blundell & Bond's (1998) System Generalized Moments Estimator was employed in our analysis. This estimator can be used with N> T featured panels.

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Table 5: Model Estimation Results

Arellano&Bover / Blundell &Bond System Generalized Methods of Moments			
Orthogonal Deviations			
Dependent Variable: ROE			
Regressors		**Coefficient**	**Std. Err.**
ROE_{t-1}		0.687535	0.077337
CA		0.340242	0.081463
REM		0.089953	0.051811
ROA		0.176317	0.058209
Model			
Wald Stat.	31502.44		
Prob.	0.000*		
Autocorrelation			**Stat.**
Arellano-Bond AR(1) Test			-3.57
Arellano-Bond AR(2) Test			-1.11
The Validity of Instrumental Variables			
Sargan Test			8.09
Difference Sargan Tests			
First Moment Condition Test			8.07
$E(Y_{it-s}, \Delta X_{it})=0$			0.02
Second Moment Condition Test			6.79
$E(Y_{it-s}, \Delta \varepsilon_{it})=0$			1.30

Note: **,** and *** respectively shows the 0,01, 0,05 and 0,10 significance level.*

Table 5 shows the results of the model estimated through the System Generalized Moments estimator. ROE_{t-1}, CA, REM, and ROA variables, which are a lagged value of the dependent variable, are statistically significant in explaining ROE. According to the analysis of the findings, 1% increase in ROEt-1, CA, REM and ROA approximately increases ROE by 0.69%, 0.34%, 0.09% and 0.18%, respectively. When the model information was examined, it was concluded that the overall model was statistically significant and reliable.

However, since a GMM-based estimator was used in model estimation, the validity of the instrument variables regarding the usability of this regression and a limited autocorrelation test were required.

In this estimator's assumptions, the first-order autocorrelation was allowed, while the second-order autocorrelation was not. According to Arellano-Bond AR (1) and AR (2) tests, it was seen that the calculated statistical values were the first order autocorrelation in the model. However, this situation was allowed. It shows that there was no second-order autocorrelation. At this stage, assumptions regarding autocorrelation were provided.

Through the Sargan and Sargan Difference tests, the validity of over-definition constraints, which is the validity of instrument variables, was tested. According to the result of the Sargan test, the null hypothesis that the variables are exogenous could not be rejected. Thus, there was no endogeneity problem in the instrument variables. In the Sargan difference test, the validity of the control

variables was tested separately. Thus, it was seen that both the first-moment condition and the second-moment condition were satisfied.

5. Conclusions

The development of the banking sector is the key factor for developing countries' economies. One of the factors affecting the development of banking is the returns of equity in the banking sector as a proxy of the profitability of banking. Increasing banking profitability triggers the development of banking in developing countries. This study aimed to explain the factors affecting the profitability of banking through the sample of Lebanon as a developing country.

One of the major problems of developing countries is losing qualified human capital because of brain drain and skilled workforce moving abroad. However, remittances obtained when workers working abroad send some of their income to their families in their countries of origin are an important resource for the economies of many developing countries. As a matter of fact, according to the data of the World Bank, 500.8 billion dollars of remittances, which reached 654.3 billion dollars worldwide in 2019, went to the low and middle low-income country group. For this group of countries and the share of workers' remittances in the GDP is 4.57%. These indicators show how important remittances are for low-income countries and developing countries.

In this study, the effect of capital adequacy, remittances, returns on average assets and on banking profitability (Return on Equity) in Lebanon were examined by panel data analysis. According to the results of the model estimated through the System Generalized Moments Estimator as well as, ROE_{t-1}, CA, REM, and ROA, which are a lagged value of the independent variables, are statistically significant in explaining ROE. In this context, a 1% increase in ROE_{t-1}, CA, REM and ROA increases ROE approximately 0.69%; 0.34%; 0.09% and 0.18% respectively. When the model information is examined, it is concluded that the overall model is statistically significant and reliable.

In the light of the findings, although Lebanon earns a significant amount of remittances, the returns of average assets and capital adequacy indicators are more effective variables on the rate of equity in the Lebanese banking sector rather than the remittances. According to these results, in order to increase the profitability of the banking sector in Lebanon, necessary measures should be taken, which will ensure that the Lebanon banking sector obtain more ROA and CA.

Limitations of the Study

The basic limitation of this study is that it was based on only Lebanon economy and a relatively old dataset. If more studies are done with new dataset, different explanatory variables (e.g. macroeconomic indicators), different statistical methods on different developing economies, the literature may extend.

Availability of Data and Materials

The data that support the findings of this study are openly available in the World Bank database available at https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT and Bankscope available at the following links of 13 banks of Lebanon;

1-B.L.C. Bank: https://www.blcbank.com/

2-BLOM Bank: https://www.blombank.com/english/home

3-Societe Generale De Banque AU Liban Sal: http://www.sgbl.com.lb/sgbl_fr/Pages/home.aspx

4-Byblos Bank Sal: https://www.byblosbank.com/personal-banking-lebanon

5-IBL Bank Sal: https://www.ibl.com.lb/english/home

6-Credit Libanais Sal: https://www.creditlibanais.com.lb/

7-Bank Audi: https://www.bankaudi.com.lb/

8-Bank of Beirut: https://www.bankofbeirut.com/

9-First National Bank: https://www.fnb.com.lb/Pages/Home.aspx

10-MEAB Bank: https://www.meabank.com/

11- BBAC Bank: https://www.bbacbank.com/

12-Fransabank SAL: https://www.fransabank.com/Mobile/english/pages/corporate-homepage.aspx

13-Saradar Bank: https://www.saradarbank.com/

Competing Interests

The authors declare that they have no competing interests.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author Contributions

The authors contributed equally to this work. All the authors read and agreed to the version of the manuscript.

Acknowledgements

Not applicable.

Consent for Publication

The authors are willing to permit the Journal to publish the article.

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