BAU Journal - Health and Wellbeing

October 2018

THE IMPACT OF FINANCIAL DEVELOPMENT ON THE PROFITABILITY OF THE BANKING SECTOR IN LEBANON

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Abstract
This study seeks to examine the impact of financial development on the profitability of banks in Lebanon during the period 1989-2014 using time-series analysis. Different variables were used to measure financial development (the ratio of liquid liabilities to GDP to reflect the financial depth, the ratio of deposit money bank assets to GDP to reflect the size of the banking sector, and the ratio of private credit by deposit money banks and other financial institutions to GDP to measure the banking sector’s activity) and investigate its impact on the Lebanese banking sector’s profits which was measured by return on assets and return on equity. A variety of internal and external banking characteristics were used as control variables to predict profitability. The empirical findings from this study suggest that all the financial development indicators have a statistically significant impact on the Lebanese banking sector’s profitability. In other words, they suggest that the higher the level of monetization relative to GDP, the higher the profits of the Lebanese banking sector. It was also found that higher levels of profit are made by banks as banks are able to transform deposits into loans. In examining the impact of size on banks, it was also found that newer banks are more able to innovate and improve than older ones. As for internal variables (liquidity and non-performing loans ratio) affecting profitability, capital adequacy ratio showed no impact on return on assets but it affected return on equity significantly. Macroeconomic variables (gross domestic product and inflation) were not found to have an impact either on return on assets or return on equity. Finally, the findings indicate that financial development is a precondition for the Lebanese banking sector’s profitability.

Keywords
Financial development, ROA, ROE, growth, banking sector
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ABSTRACT: This study seeks to examine the impact of financial development on the profitability of banks in Lebanon during the period 1989-2014 using time-series analysis. Different variables were used to measure financial development (the ratio of liquid liabilities to GDP to reflect the financial depth, the ratio of deposit money bank assets to GDP to reflect the size of the banking sector, and the ratio of private credit by deposit money banks and other financial institutions to GDP to measure the banking sector’s activity) and investigate its impact on the Lebanese banking sector’s profits which was measured by return on assets and return on equity. A variety of internal and external banking characteristics were used as control variables to predict profitability. The empirical findings from this study suggest that all the financial development indicators have a statistically significant impact on the Lebanese banking sector’s profitability. In other words, they suggest that the higher the level of monetization relative to GDP, the higher the profits of the Lebanese banking sector. It was also found that higher levels of profit are made by banks as banks are able to transform deposits into loans. In examining the impact of size on banks, it was also found that newer banks are more able to innovate and improve than older ones. As for internal variables (liquidity and non-performing loans ratio) affecting profitability, capital adequacy ratio showed no impact on return on assets but it affected return on equity significantly. Macroeconomic variables (gross domestic product and inflation) were not found to have an impact either on return on assets or return on equity. Finally, the findings indicate that financial development is a precondition for the Lebanese banking sector’s profitability.

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1. INTRODUCTION

Financial development is considered a vital concept for economic growth, either through well-developed financial intermediaries or through its role on mobilizing savings, risk diversification and resource allocation, which enhances the development of the financial sector and could be a channel for higher bank’s profitability. Moreover, financial sector development, particularly the banking sector plays a main part in endorsing economic growth through capital accumulation, hence, leading to a well operational performance of the financial institutions operating in the market (Levin, 1997). Financial development could be defined as “the process that enhances quality, quantity, and efficiency of financial intermediary services” (Saad, 2014). Huang (2011) mentioned some of the financial development determinants as the following:

Institution: Legal and regulatory financial system could be an effective factor to achieve financial development through saving mobilization, projects evaluation and risk diversification. Hence, financial institutions of the country reflects how this country has a well-developed financial system or not.

Policy: Trade openness and financial liberalization enhances financial development, he added that lower rates of inflation lead to more efficient and active banking sector. A liberalized economy encourage investment and increase the growth rates.

Other variables: like “economic growth, income level, population level and religious, language and ethnic characteristics, etc.” could affect financial development, so that as economy grows competition increase lead to more investments, hence high levels of financial development. He added that concerning banking sector “as GDP per capita and saving rates” increase, more efficient and active banking structure will occur.

The financial system in Lebanon is dominated by banks; about 66 banks registered 97 percent of financial assets, which is 397 percent of GDP on Dec. 2015 (World Bank, 2016).
Deposits inflows especially by foreigners with high interest rates, stability of the exchange rate, and confidence of “Lebanese Diaspora” lead to financial stability. Moreover, deposits help in supporting reserves and financing public deficit, so that as FDI decreased, deposits are considered the main source of capital (World Bank, 2016).

Total deposits are essential for the financial institutions in Lebanon. It is considered as a source of funds and lead to higher profits as banks are able to transform deposits in to loans, hence deposit rates reached 5.6 percent (LBP), net interest margin increased to reach a profitability growth of almost 10 percent over 2014.

Loans are important for private sector in order to expand investment and increase growth; therefore, over 2015, the ratio of credit to private sector to GDP was the highest during that period (94.5 percent).

In contrary, private sector growth declined due to the decline in the foreign currency, hence private sector credit growth decreased to reach (7.3 percent) in 2015. At the same time, credit in LBP remained strong and vigorous (World Bank, 2016).

Total assets of the banking sector was 350 percent of GDP, this reflects how important is the size of banks for the economy (World Bank, 2016).

Lebanese banking industry plays an important role in the economy. Furthermore, banks are measured as the main financial establishments operating in the Lebanese market. Over the years, Lebanese banking system showed its ability to face the challenges either from the instable political situation and security issues or from economic conditions. In fact, the banking sector growth rates exceeded those of GDP growth rates during 2014. (Association of banks in Lebanon, 2014). In addition, concerning the capitalization, Lebanese banks are highly capitalized with a 12 percent capital adequacy ratio in 2015 (central bank of Lebanon).

Financial sector in Lebanon is considered attractive for depositors, “46 billion $ flowing in to the country between January 2008 to August 2011”, beside the lower international rate which had been endorsed internationally due to the shrink of international liquidity, hence, interest rates in Lebanon had been decreased (Awdeh and Hamadi, 2012).

Hence, the profitable Lebanese banking sector is considered an effective warrior in facing negative and instable financial system.

Profitability of the banking sector is affected by both internal and external factors. Internal aspects are related directly to banks and are considered to be micro or specific determinants, while external factors do not have a direct effect on bank’s account, but reflect the variables that affect the profitability and act of financial institutions (Athanasoglou et al, 2008).

Sofoklis(2009) mentioned that high lending rates, high interest margins and entrance of Greek banks in to SE European region had a comprehensive role in banking profitability. He added that banks profitability could be reached through good functioning of specific (capital, cost- efficiency) and macroeconomic factors (inflation, private consumption) which play a considerable role in determining banks profitability.

Banking sector profitability and economic cycle are interrelated with each other. Bad business cycle could have a negative influence on the ability of the banks to give loans, leading to credit losses which in turn affect the bank’s profitability (Albertazzi and Gambacorta, 2009).

In addition, insufficient market also affects the equity of banking sector, which means that “if equity is sufficiently low and it is too costly to issue shares” banks will face difficulties in lending process which will have a negative impact on investments (Albertazzi and Gambacorta, 2009).

This study examines whether financial development boosts the profitability of Lebanese banks. Towards this end, we empirically evaluate the impact of financial development on the profitability of Lebanese banks with a special attention to the bank’s characteristics during the period 1989-2014.To investigate this relationship we use a regression analysis. Our dependent variables are ROA and ROE. The control variables are divided to two categories, variables that are specific for the banking sector and macroeconomic variables.

The banking sector specific factors include banks’ non-performing loans, capital adequacy ratio and liquidity ratio, as for the macroeconomic variables we use the Gross Domestic Product (GDP) and Inflation. We use three financial development indicators; deposit money banks assets to GDP, which reflects the size of the banking sector, liquid liabilities to GDP to measure the financial depth, and private credit by deposit money banks and other financial institutions to GDP to measure banking sector’s activity. As proxies for the banking sector profitability, we use two measurements (ROA) return on asset and (ROE) return on equity.

The rest of this paper will be organized as follows: Section two presents a short-term review of the literature regarding the financial development and profitability. Section 3 explains the empirical methodology implemented in the paper. The empirical results of the study are presented in section 4 section 5 is the conclusion and findings.
2. FACTORS THAT AFFECT THE PROFITABILITY OF THE BANKING SECTOR

Profitability of banks attracted an attention to investigate the key factors for attaining profitability. Both banks’ specific factors and macroeconomic factors have an impact on the profitability of banks over time.

Chaudhry et al (1995) announced that the size of bank and the progress of interest rate are crucial for U.S commercial banks to achieve profitability after controlling for different variables (loans, government securities, investment, and total deposits etc.). They stated that, “bank’s size and general interest rate” affect the profitability of banks. Moreover, most of the loan losses are related to small size banks. Spathis et al (2002) classified Greek banks into small and large banks according to total assets. They indicated that large banks operate more efficiently than small ones due to their high assets, low capital and interest rate which lead to high ROA, while small banks registered low ratios of liquidity, high leverage ratio, high net interest margin, and high capital adequacy ratio matched with high ROE.

Ben Naceur (2003) investigated the determinants of the Tunisian banking industry using internal factors (equity, overhead and interest bearing assets) and external factors (inflation, growth). In additional, financial structure indicators (bank market size and concentration) are used to give a highlight on its impact on bank’s profitability using the measurements of Return on Asset and Net Interest Margin. He found that high bank’s profitability matched with high capital amount, large overhead, and bank’s loans, while macroeconomic factors register no impact on banks profitability. Concentration was less profitable while stock market affect bank’s profitability positively.

Oberholzer and westhuizen (2004) in an empirical study on measuring efficiency and profitability of banks regions used two profitability ratios, “the mean monthly return on assets (profit/ total earning assets)” and the mean monthly profit margin (profit/ total income), hence results indicated that in order to attain higher profitable ratios, regions should operate efficiently.

Furthermore, Kosmidou (2008) examined the determinants of profitability of Greek commercial banks during the period 1990-2002 of EU financial integration. He concluded that size of banks, well capitalized banks, efficient management of expenses and annual change in GDP are positively correlated with ROA. Furthermore, bank’s assets to GDP, market capitalization to bank assets, concentration and inflation are negatively correlated with ROA but statistically significant. Athanasoglou et al (2008) in their paper study the impact of bank’s specific (capital, credit risk, productivity, expense management, and size), industry specific variables (ownership, concentration) and macroeconomic variables (inflation, and cyclical output) on profitability (ROA, ROE) of Greek commercial banks during the period 1985-2001. They concluded that, bank specific characteristics excluding size, and macroeconomic variables are essential determinants for bank’s profitability as opposed to industry structure that had no impact on the profitability of Greek banks.

Kosmidou (2008) reasoned that many changes occurred in the Greek banking sector. These changes allow banks to increase its profitability. He indicated that higher ROAA is matched with low cost to income ratio “expense management” and high capital accounts, while size improves its significance during the entrance of macro-economic and financial structure variables. Hence, GDP has a significant impact on ROAA but inflation has a significant negative impact on ROAA. Concerning financial structure impact on ROAA, results indicated that “bank assets to GDP, market capitalization to bank assets, and concentration” affect ROAA negatively but statistically significant.

Dietrich and Wanzenried (2009) described some mechanisms that determine profitability of banks in Switzerland. They argued that either bank’s specific factors (equity over total assets, cost-income ratio, loan loss provisions over total loans, yearly growth deposits, difference between bank and market growth of total loans, bank size, interest income share, bank age, bank ownership, nationality, region and bank category) or macroeconomic factors (effective tax rate, yearly change of regional population, real GDP growth, stock market capitalization, and bank concentration) could have an impact on bank’s profitability using the measurements of return on average asset and return on average equity. They find that internal factors besides external factors contribute and have a crucial impact on the Swiss bank’s profitability; furthermore, profitability differs between bank’s regions. Finally, domestic owned banks and privately owned institutions are found to be more profitable than foreign banks and state owned institutions, while effective tax rate and concentration rate have negative impact on bank’s profitability.

Alper and Anbar (2011) examined the determinants of commercial bank’s profitability in Turkey during the period 2002 to 2010. They found that assets size and non- interest income/assets ratio has a positive and significant impact on ROA. The ratios of loans/assets and loans under follow up/loans affect ROA negatively but significant. Real interest rate affect ROE positively, while other specific factors (capital adequacy ratios, liquidity, deposits/assets ratio, and net interest margin) and macroeconomic factors (Real GDP growth, and inflation) didn’t give a sense on bank profitability.

Sufian (2011) studied the impact of bank’s specific (size, credit-risk, network embeddedness, bank diversification, liquidity, overhead cost, capitalization level), and external factor (log of GDP, inflation, ratio
of three largest banks' assets, ratio of stock market capitalization to GDP) on bank's profitability (ROA and ROE) in Korea. He concluded that the lower the liquidity levels, the higher the bank's profitability; moreover, size of banks, bank diversification, network embeddedness and capitalization level had a positive impact on profitability, while credit-risk and overhead cost had a negative impact on profitability. Regarding the external factors, inflation, concentration and stock market capitalization affected Korean banks positively, while GDP showed no impact on bank's performance.

As mentioned above, banks are essential for the economy, in which they are considered the source of funds from depositors to investors, hence, financial profitability plays a crucial role in economic growth. An organized study of financial profitability of banks in Kenya by Ongore and Kusa (2013) stated that, profitability of banks are affected by internal (assets which reflect the size of banks so that the quality of loans are standard for banks to generate income, capital which reflects the level of liquidity owned by banks for own businesses, and liquidity which reflects the bank's profitability) and external factors (GDP growth, inflation..etc) that reflect bank’s profitability. They declared that the main goal for banks is to achieve profit beside other social and economic goals. Because of that they tend to measure profitability using Return on Asset (ROA), Return On Equity (ROE), and Net Interest Margin (NIM), to find that specific factors (internal) are important factors to determine the profitability of banks in Kenya, while macroeconomic factors (external) can’t.

Furthermore, financial development attracts a high level of attention due to its importance either for economic growth or for bank’s profitability. Financial system development could be an essential indicator for bank’s profitability. Demirguc- kunt and Huizinga (2000) argued that the level of financial development was essential for bank’s profitability. They assured that “Countries with underdeveloped financial system had a higher bank’s profitability and margins”. The greater the bank was developed, the wider the competition and efficiency would be, and the lower the bank’s profitability and margin.

Hermes and Lensink (2004), noticed that high level of financial development lead to increase competition between foreign and domestic banks. Foreign banks will stress domestic banks to create new financial services and techniques. Moreover, at low level of financial development, both cost and margin of domestic banks will increase due to the fact that financial services and techniques provided by foreign banks are more qualified compared to domestic ones.

Kosmidou et al (2005) showed that capital had an important influence on the profitability of UK banks, other indicators related to concentration measures and stock market development that were found positively affect the profitability of UK banks measured by ROA and NIM during the period 1995-2002. Wu et al (2007) highlighted in their study that financial development through (monetization, financial interrelation ratio, and capitalization) plays an important role in the Chinese commercial bank’s profitability measured by ROA. They also found that the longer the bank was in the market, the lower the profitability will be. Moreover, they added that Chinese commercial banks were less efficient before the economic reform due to public ownership, which acts as an obstacle for attaining efficient allocation of resources and corporate governance.

Vog and Chan (2009) stated that financial development plays an important role in bank’s profitability. They found that high asset to GDP reflect high economic growth which in turn increase competition and push banks to improve better in order to create new services.

Ben Naceur and Omran (2011) showed that, bank’s specific factors (size, credit-risk) and a well-developed stock market are crucial for achieving bank’s profitability, while macroeconomic factors mainly(GDP per capita) and financial development (stock market capitalization, credit-private) registered no impact on net interest margin among the MENA countries. They insisted that a well-developed banking sector could be a channel for low operation cost. Furthermore, laws and regulations seem to be essential for achieving bank’s profitability and efficiency.

Saad and El-Moussawi (2012) in their paper stated that, capitalization, off-balance sheet activities which reflect activity of banks operating in Lebanon, market structure indicator such as the concentration measure, size of banks and economic development as real gross domestic product (RGDP) are considered important determinants for net interest margin in Lebanon. While operation cost, credit-risk and inflation are considered as contraction elements to achieve a high level of net interest margin.

Jha and Hui (2012) used a multivariate regression analysis to predict Nepals commercial bank’s profitability. ROA and ROE were used as a dependent variables of bank profitability,(capital adequacy ratio, nonperforming loans ratio, interest expense to total loans, net interest margin, and credit to deposit ratio) were used as independent variables to compare between different commercial banks in Nepal (public sector banks, joint venture banks, domestic private banks). They concluded that, the profitability of public sector banks were better than joint venture and domestic private banks concerning (ROA). As for overall profitability measured by (ROE), joint venture and domestic private banks were operating better than public.
banks. They added that capital adequacy ratio; interest expense to total loan, net interest margin had a significant impact on ROA, while non-performing loans and credit to deposit, were found to have no impact on ROA. Capital adequacy ratio affects ROE positively. Other variables (non-performing loan, credit to deposit ratio, interest expense to total loan and net interest margin) registered no impact on ROE.

3. METHODOLOGY:

3.1 Model Specification

Based on the demonstrated models in the literature review, our aim is to authenticate the impression of financial development on the profitability of the Lebanese banking sector. Taking in to consideration the measurements of both financial development and profitability. As for the control variables some measures of internal and external factors are used to take in to account the determinants of profitability.

Therefore, after some necessary adjustments were made to the general form of the equation used by Demirguc-Kunt and Huizinga (2000), Ben Nacceur (2003), Kosmidou et al (2005) and Wu et al (2007) to suit the purpose of this research, the profitability equation which is accommodating on a standard set of explanatory variables.

We estimated the following model (Eq.1):

$$ ROA_t = \alpha_0 + \beta_1 FD_t + \gamma_1 B_t + \mu_t $$

Taking in to consideration the impact of each variable of financial development on the profitability of the banking sector in Lebanon, since using all financial indicators in the same model were meaningless.

The expanded model will be as follow:

1.1. $$ ROA_t = \alpha_0 + \beta_1 LGDP_t + \gamma_1 CAR_t + \gamma_2 GDP_t + \gamma_3 INF_t + \gamma_4 LLS_t + \gamma_5 LTD_t + \mu_t $$

1.2. $$ ROA_t = \alpha_0 + \beta_1 DMGDP_t + \gamma_1 CAR_t + \gamma_2 GDP_t + \gamma_3 INF_t + \gamma_4 LLS_t + \gamma_5 LTD_t + \mu_t $$

1.3. $$ ROA_t = \alpha_0 + \beta_1 PCGDP_t + \gamma_1 CAR_t + \gamma_2 GDP_t + \gamma_3 INF_t + \gamma_4 LLS_t + \gamma_5 LTD_t + \mu_t $$

(Eq.2):

$$ ROE_t = \alpha_0 + \beta_1 FD_t + \gamma_1 B_t + \mu_t $$

The expanded model will be as follow:

2.1. $$ ROE_t = \alpha_0 + \beta_1 LGDP_t + \gamma_1 CAR_t + \gamma_2 GDP_t + \gamma_3 INF_t + \gamma_4 LLS_t + \gamma_5 LTD_t + \mu_t $$

2.2. $$ ROE_t = \alpha_0 + \beta_1 DMGDP_t + \gamma_1 CAR_t + \gamma_2 GDP_t + \gamma_3 INF_t + \gamma_4 LLS_t + \gamma_5 LTD_t + \mu_t $$

2.3. $$ ROE_t = \alpha_0 + \beta_1 PCGDP_t + \gamma_1 CAR_t + \gamma_2 GDP_t + \gamma_3 INF_t + \gamma_4 LLS_t + \gamma_5 LTD_t + \mu_t $$

Where FD_t is the financial indicator; B_t is a vector of control variables, t represents the years (from 1989 to 2014) and \( \mu \) is the error term. The dependent variables are ROA and ROE, where ROA is the returns on assets which is measured through net income/ total assets and reflect how efficiently the banks using their total assets. ROE is the returns on equity which is measured through ROA/financial leverage (average asset/average equity), so that ROE helps banks to norm how do they generate income (central bank of Lebanon).

3.2 Model variables

The independent variables are: (LGDP) is the liquid liabilities to GDP as a measure of financial depth, where liquid liabilities (broad money) is calculated through (money plus interest bearing liabilities of the commercial banks, plus demand and interest bearing liabilities of the non-bank financial intermediaries), one reason behind the choice of liquid liabilities/GDP, it is the fact that this ratio would give a highlight on the ability of banks to meet their short term liabilities relative to GDP (world bank).

(DMGDP) is the deposit money banks assets to GDP as a measure of banks’ size. Deposit money banks comprise “commercial banks and other financial institutions that accept transferrable deposits” (World Bank).

Size of banks reflect bank’s efficiency, profitability and diversity, which means that as large as the banks would be, the greater the efficiency, profitability and diversity, but in some cases if bank grows too much, so this could have an opposite impact as lower efficiency, profitability and may drive higher risk.

(PCGDP) is the ratio of credit by deposit money banks and other financial institutions to GDP as a measure of banking sector’s activity, this measure is used to give an estimate of the development of financial intermediaries.

As for control variables:
We divided control variables as internal (specific factors) and external (macroeconomic factors). As for internal factors: capital adequacy ratio (CAR) is used measured by equity/total assets to capture the level of capitalization of banking sector, non-performing loans (LLS) measured by the ratio of loan loss to gross loan which are doubtful loans, and liquidity ratio (LTD) measured as net liquid assets/total deposit. As for external factor (macroeconomic): annual growth rate of the real gross domestic product (GDP) and inflation rate (INF).

3.3 Profitability equation: Data and sources
Data used in this study were obtained from two bases. The financial development measures, profitability measures, GDP growth rate and inflation were obtained from the World Bank. The remaining variables, they were collected from the Central Bank of Lebanon (BDL). Data ranges from 1989 to 2014 and it is important to know that this is the only time period in which values for relevant variables were available.

3.4 Data empirical analysis
First of all, we need to check specification error using Durbin-Watson test, then we will be able to classify our variables as stationary or deterministic trend stationary after setting up our model. Results indicated that Durbin-Watson computed value for ROA, ROE and the independent variables are close to 2, this indicates that the suggested model doesn’t suffer from specification error. Then we checked for collinearity since the existence of collinearity affects the efficiency of the suggested multiple regression model. We find that the suggested multiple regression model doesn’t suffer from any specification error so that collinearity statistics column showing that all independent variables have a variance inflation factor (VIF) value below 5 except for CAR with a value greater than 5. In this case, we can’t consider it as a variable facing a severe multi-collinearity, this makes sense along with O’brien (2007) who suggested that a threshold level of 10 or above indicate a serious problem of multi-collinearity. Moreover, unit root test is applied to check for stationary and results indicates that variables in the regression models are co-integrated.

4. EMPIRICAL RESULTS
This section introduces and analyses the results of this paper. As a result, a section is completely devoted for the results obtained.

Table 4.1: Regression Results for Dependent Variable (ROA)
Reference: Author’s compilation from regression data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>28.29623</td>
<td>10.20771</td>
<td>2.772046</td>
<td>0.0121</td>
</tr>
<tr>
<td>DMGDP</td>
<td>-0.150304</td>
<td>0.058999</td>
<td>-2.547590</td>
<td>0.0197</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.224224</td>
<td>0.613591</td>
<td>-0.365429</td>
<td>0.7188</td>
</tr>
<tr>
<td>GDP</td>
<td>0.063121</td>
<td>0.092494</td>
<td>0.682431</td>
<td>0.5032</td>
</tr>
<tr>
<td>INF</td>
<td>0.081443</td>
<td>0.062945</td>
<td>1.293879</td>
<td>0.2112</td>
</tr>
<tr>
<td>LLS</td>
<td>-1.198096</td>
<td>0.446323</td>
<td>2.684368</td>
<td>0.0147</td>
</tr>
<tr>
<td>LTD</td>
<td>0.258446</td>
<td>0.118339</td>
<td>-2.183937</td>
<td>0.0417</td>
</tr>
</tbody>
</table>

| R-squared | 0.713254 | Mean dependent var | 5.085769 |
| Adjusted R-squared | 0.622703 | S.D. dependent var | 8.691362 |
| S.E. of regression | 5.338624 | Akaike info criterion | 6.412617 |
| Sum squared resid | 541.5173 | Schwarz criterion | 6.751335 |
| Log likelihood | -76.36402 | Hannan-Quinn criter. | 6.510156 |
| F-statistic | 7.876808 | Durbin-Watson stat | 1.661827 |
| Prob(F-statistic) | 0.000233 |                     |           |

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>27.32099</td>
<td>10.70844</td>
<td>2.551350</td>
<td>0.0195</td>
</tr>
<tr>
<td>LGDP</td>
<td>0.083876</td>
<td>0.040621</td>
<td>-2.064849</td>
<td>0.0529</td>
</tr>
</tbody>
</table>
Table 4.2: Regression Results for Dependent Variable (ROE)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>82.73090</td>
<td>11.02307</td>
<td>7.505247</td>
<td>0.0000</td>
</tr>
<tr>
<td>DMGDP</td>
<td>-0.308495</td>
<td>0.063711</td>
<td>-4.842072</td>
<td>0.0001</td>
</tr>
<tr>
<td>CAR</td>
<td>-1.170478</td>
<td>0.662603</td>
<td>-1.766484</td>
<td>0.0934</td>
</tr>
<tr>
<td>GDP</td>
<td>0.022935</td>
<td>0.099882</td>
<td>0.229623</td>
<td>0.8208</td>
</tr>
<tr>
<td>INF</td>
<td>0.089498</td>
<td>0.061573</td>
<td>1.316668</td>
<td>0.2036</td>
</tr>
</tbody>
</table>

4.1 Results interpretation of ROA

The regression shows that all variables are significant at 5 percent level and 10 percent level except for the control variables (CAR, INF, and GDP). Finding R-square tell us the “goodness of fit” of the model. R-square is the multiple coefficient of determination, this is the proportion of variance in the dependent variable (ROA) and (ROE), which can be explained by the independent variables (DMGDP, LGDP, PCGDP, CAR, GDP, INF, LLS, LTD). Bank size (DMGDP) and banking sector’s activity (PCGDP) are highly significant and negatively related to ROA at 5 percent level of significance. Financial depth (LGDP) is found to be significantly affects ROA at 1 percent level of significance.

As for specific factors (LLS and LTD) affect the profitability of banking sector significantly at 5 percent level, except for CAR which shows no impact on ROA. The macroeconomic variables (GDP, INF) are not found to have a significant impact on ROA as indicated in (Table 4.1).
4.2 Results interpretation of ROE

The regression shows that all variables are significant at 5 percent level and 10 percent level, except for control variables (GDP, INF) in most cases. Bank’s size (DMGDP), and banking sector’s activity (PCGDP) are highly significant and negatively related to ROE at 5 percent level of significance. While financial depth (LGDP) is highly significant at 5 percent level and affect ROE positively.
As for specific factors (CAR, LLS, and LTD) affect the profitability of the banking sector significantly at 5 percent and 10 percent level of significance. The macro-economic variables (GDP, INF) are not found to have a significance impact on ROE in most cases as indicated in (Table 4.2).

5. CONCLUSION AND FINDINGS DISCUSSION

Profitability is considered the reflection of the performance of banks, especially in the changing environment. Moreover, financial sector development, particularly the banking sector plays a major role in promoting economic growth and then leading to a better operational performance of the financial institution operating in Lebanon. According to this, studying financial development or profitability has been a matter of interest based on different variables that determine either the financial development or profitability. This paper studies and examines the impact of financial development on the profitability of the Lebanese banking sector.

For this aim, time-series data method is applied to data which obtained financial development indicators from 1989 to 2014. The Ordinary Least Square (OLS) method of regression was used. The tests showed that deposit money bank assets to GDP, liquid liabilities to GDP and ratios of deposit money bank assets and other financial institution to GDP affect ROA and ROE significantly.

It can also be concluded that bank’s specific (non-performing loan and liquidity) variables are important factors in contributing to the profits of banks. Capital adequacy ratio showed no impact on ROA but it affects ROE significantly. On the macro-economic variables (GDP and inflation) found to have no impact on profitability.

As mentioned before, three financial development ratios are taken in to consideration in determining their impact on the profitability of the banking sector. These indicators are: financial depth, size, and banking sectors’ activity, efficiency was also considered first but later dropped.

For financial depth, liquid liabilities to GDP resulted in a significant impact on ROA and ROE. This result supports the findings of Wu et al (2007) who found that as the level of monetization (liabilities) are large relative to GDP, this will increase the demand for loans by business enterprise, which in turn increase bank’s profitability through efficient allocation of funds.

The deposit money bank assets to GDP showed a negative relationship with the profits. This indicates that the longer the age of the bank, the worse ROA and ROE.

In other words, newer banks are more able to innovate and to improve better either in decision making or its operational strategy, against aged banks, which could have large branches, assets and deposits that stress its operation and make it more complicated, hence higher risk and lower ROA and ROE.

This result supports the findings of Wu et al (2007) and Vong and Chan (2009) against Alper and Anbar (2011) and Chaudhry et al (1995) who found that the longer the bank was in the market, the higher the profit will be.

Ratio of credit by deposit money banks and other financial institutions to GDP is used to measure the banking sector’s activity. Higher levels of profits are made by banks as banks are willing to transform deposits in to loans. In other words, as the economy grows, the higher the demand for loans by business enterprise and the higher the banking sector’s activity. This result supports the findings of Wasiuzzaman and Tarmizi (2010) and the negative correlation with profitability is due to the fact that severe competition in the Lebanese banking sector regarding the placement of funds has reduced the profitability as Alexiou and Sofoklis (2009) stated that.

Equity to total assets is used to measure the capital adequacy ratio of the banks which reflects the level of capitalization. The regression model shows a negative relationship with profitability. This means that Lebanese banking sector should not focus on “equity performance to increase the profitability”. Although most of related studies indicated that capital adequacy ratio could have an essential impact on bank’s profitability, but this doesn’t apply in this dissertation. In other words, bank’s efficiency increased by low equity to total assets ratio which help to avoid going bankruptcy (Wasiuzzaman and Tarmizi, 2010).

Inflation which is measured through the increase in consumer price index (CPI), and it may have either a positive or a negative impact on the profitability depending on our expectations (Perry, 1992).

Moreover, if inflation has a positive impact on profitability, this means that bank’s income is higher than its cost. In other words, if inflation rate is as expected, interest rate will be correctly adjusted resulting in a higher revenue and vice versa. This doesn’t apply in this dissertation, so that inflation has no impact on profitability. This results support the findings of (Alper and Anbar (2011), Ben Naceur (2003), Ongore and Kusa (2013)).

Annual real GDP growth rate, which is the measure of the economic activity as a whole. In our dissertation GDP has no impact on profitability. This results support the findings of (Ben Naceur (2003), Alper and Anbar (2011), Ongore and Kusa (2013)).
Most of studies found that there is a positive relationship between GDP and profitability depending on the “demand and supply for banks deposit and loans” (Alper and Anbar, 2011).

According to the literature, on the impact of annual growth rate on profitability, most of researchers found a positive relationship as (Kosmidou (2008), Dietrich and Wanzenried (2009)). Besides others who found no impact on profitability as mentioned above.

Non-performing loan are those loans that are expected to be doubtful loans, which means those loans that are not expected to generate income. In this dissertation, non-performing loan has a negative and significant impact on banking sector profitability. As known, negative correlation between non-performing loan measured by (the ratio of loan loss to gross loan) and profitability (ROA and ROE) lead to negative loan loss provisions, hence increasing profitability of the banking sector ( Dietrich and Wanzeried (2009), Wasiuzzaman and Tarmizi (2010), Jha and Hui (2012)).

The net liquid assets to total deposit ratio showed a positive relationship with profitability. This indicates that the higher this percentage, the more the bank has cash in reserves and the higher the profitability will be.

In other words, liquidity reflects the bank’s ability to fulfill banks commitment especially with depositors. Most studies such as Wasiuzzaman and Tarmizi (2010), and Ongore and Kusa (2013) showed that liquidity is positively related to profitability against Alper and Anbar (2011) who found that liquidity doesn’t have an important impact on profitability.

REFERENCES

Website
- http://www.BDL.com