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Impact of Liquidity Management and Macroeconomic Determinants on Bank's Profitability in the Jordanian Commercial Banks

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Abstract
The aim of this research is to check the impact of the liquidity management and macroeconomic determinants on profitability of commercial banks in the Jordan. Liquidity management and macroeconomic determinants are independent variables and profitability is dependent variable. The secondary data has been used for this study and has been taken from published annual reports of six Jordanian commercial banks during the time period 2009–2016.The data has been analyzed by using correlation, descriptive statistics and regression techniques through E-views. Six banks have been choosen to express on the whole Jordanian commercial banks. Liquidity management is measured through *capital ratio, liquid ratio, investment ratio, assets quality ratio and current ratio.* Macroeconomic determinants include real gross domestic product and inflation and data for these variables is obtained from CIA world fact book. Profitability is measured through *return on assets* and *return on equity*. The results of this study found that the capital ratio has significant relationship with banks profitability. While, liquid ratio, investment ratio, current ratio and assets quality ratio has insignificant relationship with banks profitability. With regard to macroeconomic determinants real gross domestic product has significant relationship and inflation has positive and insignificant relationship with profitability of Jordanian commercial banks. Overall our research findings will help the bank managers and investment managers in devising their liquidity management strategies.
Keywords: Liquidity management, Macroeconomic determinants and Banks profitability

Introduction

Today modern era of technology banks plays important role in growing the economy and financial system of a country. Banks take deposits of general public and give loans to general public, government and businessmen for fulfilling their needs. Every bank or business wants to maximize its profits by successfully and efficiently managing its operations. Liquidity is a term that shows the position of a bank to successfully managing its operations by writing off its liabilities or obligations. It shows the position of a bank that bank has enough liquid assets to pay off its obligations on time efficiently and effectively. Liquid assets are the assets that can be easily convertible into cash in the time of need without loosing its fair market value and include cash balance, bank balance, marketable securities and other short term securities of a bank which can be converted into cash easily and in less time period.

Liquidity position of a bank is measured through liquid ratio, current ratio, investment ratio, asset quality ratio and capital ratio. Current ratio is measured by current assets to current liabilities. Liquid ratio is measured by liquid assets to current liabilities. Investment ratio is measured by net credit facilities to total deposits. Capital ratio is measured by total equity to total assets. And assets quality ratio is measured by total credit facilities to total assets.

Due to recent financial crisis in the economy, Liquidity management has become an important topic. Due to its prominent impact on profitability of banks, every banks now create various methods and strategies for successfully their liquidity positions and for enhancing their profitability levels. Different researchers conducted their research liquidity management and showed through their research findings of positive impacts of liquidity management on bank's profitability. As study conducted by (Khan & Ali, 2016) on commercial banks of Pakistan showed positive significant effect of liquidity on the profitability of banks and many more researchers also showed their findings of strong positive impact of liquidity on the performance of banks. Profitability is measured through ROA that is computed by net profit to total assets and ROE computed by net profit to total equity of banks.

Further except the liquidity, macroeconomic factors also play important role in the overall economy and financial health of a country. Change or volatility in any one of the country wide/ macroeconomic factors can also have a huge effect on the profitability of banks also. These macroeconomic factors include inflation, exchange rates, interest rates, annual gross domestic product and many more.

In this study, we have checked the combine effects of liquidity management and macroeconomic factors on the profitability of Jordanian commercial banks. Our research findings will help the bank managers who can best device their liquidity management strategies for achieving maximum profitability levels and managing the overall operations efficiently and effectively. Our research findings will also help the investment managers for

making effective investment decisions for fulfilling the liquidity and profitability needs of investors. The major problem addressed in this study is to see the relationship between liquidity, macroeconomic determinants and performance of Jordanian commercial banks.

The purpose of the study is to determine the impact of Liquidity management and macroeconomic determinants on performance of Jordanian commercial banks. The research question for our study is what is the impact of Liquidity management and macroeconomic determinants on the Performance of jordanian commercial banks?

Our dependent variable are ROA and ROE. Independent variable include Capital ratio, liquid ratio, investment ratio, assets quality ratio, quick-acid ratio, GDP and inflation. Our study is arranged in following components. In section 1, we presented the introduction. Section 2 represented the review literature and section 3 presented the methodology that we used in our research. In last, Section 4 represented the results and conclusion is presented in section 5.

Literature review

Liquidity management and bank's performance

Today in this modern era of technology and financial crisis every company needs capital and finance to grow fastly. Companies have to make different strategies for enhancing revenue and improving its internal position. Liquidity is a position in which a firm has maximum enough funds for meeting its short-term obligations. Recent financial crisis has increased the importance of successful liquidity management and regulators are also devising different liquidity standards for making financial system strong and stable (Bordeleau & Graham, 2010).

Liquidity means easily convertible into cash that means assets which can be converted into cash easily and in short time period (Maqsood, Anwar, Raza, IJAZ, & SHOUQAT, 2016). If a firm has enough cash then it can pay to its creditors on time and can meet its obligations quickly or on time.

A company's liquidity position can be evaluated through 'current ratio' and 'quick ratio'. Current ratio ensures that a firm has enough current assets to meet its current liabilities. Quick ratio ensures that a firm has enough amount of liquid assets like cash, bank balance and marketable securities to meet its current liabilities. Low liquidity of a company or inability of a company to write off its obligations with enough amount of liquid assets can affect to all operations and profitability of the company.

Liquidity management has become an important tool and strategy and without managing liquidity a firm cannot successfully operate and meet its responsibilities. Due to global financial crisis, expensive bank loans in local and international market and crash of the capital market Liquidity management has become an important or major concern for business managers (Ware, 2015).

Every company has to manage its liquidity position and working capital for profitability and smooth working of its operations. Hoque, Mia, and Anwar (2015) conducted a study on working capital management and profitability of cement industry in Bangladesh concluded that profitability of the industry depends on the efficiently managing the working capital that includes current assets and current liabilities. Further, a study conducted by the (Afeef, 2011) on evaluating the the impact of working capital on profitability of SME's in Pakistan found that working capital management has prominent impact on a firm's profitability.

Like successful working capital management impact on profitability, liquidity management also has powerful impact on profitability of a firm that includes current and quick ratio management of a firm. Study conducted by the (Alshatti, 2015) during the time period (2005-2012) for checking the effects of liquidity management on profitability of commercial banks in the Jordan found that quick ratio and the investment ratio has positive relationship with profitability and capital ratio and liquid assets ratio has negative relationship with profitability of banks.

Study conducted by the (Karani, 2014) on liquidity management and profitability of commercial banks in Kenya during period (2009-2013) found that profitability and liquidity management has positive relationship and liquidity is an important determinant of profitability.

Furthermore, study conducted by the (Agbada & Osuji, 2013) on checking the efficiency and effectiveness of liquidity management on performance of banks in Nigeria revealed that there is prominent significant relationship between liquidity management and banking performance and that proper and effective liquidity management enhances the smoothness and stableness of the banks.

Firms' liquidity position should be balanced because both illiquidity and excess liquidity can be dangerous for firm's profit. As study conducted by the (Olagunju, David, & Samuel, 2012) on commercial banks in Nigeria for checking the impact of liquidity management on profitability found that profitability of banks has significant relationship with liquidity and companies should maintain a reasonable liquidity level they further found that both illiquidity and excess liquidity are financial diseases that can harm high profitability level of the banks.

Some researchers found that there is weak relation between profitability and liquidity. As research conducted by the (Lartey, Antwi, & Boadi, 2013) on analyzing the relationship between liquidity management and profitability of listed banks in Ghana during the period 2005-2010 concluded that there was a very weak

positive relationship between the liquidity and profitability banks.

Macroeconomic determinants and bank's performance

Macro-economic determinants are one of the key issues that affect not our economic growth but also the profitability of firms. Profitability is more volatile that is affected not only by internal or specific reasons but also due to different external or country-wide macro factors (Bekeris, 2012). Different country level wide variables that include inflation, Interest rates, exchange rates, export rates and many more affect the overall economy and also the financial health of businesses and firms. If these macro-economic determinants are not controlled properly can hugely impact overall economic growth and profitability of firms also. As study conducted by (Posiouras & kosmidou, 2007), on the factors that influence the profitability of domestic and foreign commercial banks in the European Union from time period1995-2001. This study found that profitability of banks is not only affected by bank-specific characteristics but also the macroeconomic factors hugely impact or influence the profitability levels of banks.

Different researchers conducted their research on macroeconomic determinants and reflected their different views through their research. As study conducted by (Osamwonyi & Michael, 2014) on checking the effect of macroeconomic variables on the profitability of Nigerian listed commercial banks from 1990-2013 showed that gross domestic product and return on equity has positive relationship, while interest rate and inflation rate have a negative relationship with return on equity.

Furthermore, study conducted by (Sheefeni, 2015) on macroeconomic determinants of profitability among commercial banks in Namibia during the period 2001-2014 revealed that GDP, inflation rate and interest rate do not have any significant relationship with bank's profitability.

Study conducted by the (Garcia & Liu, 1999) conducted a research on macroeconomic determinants of stock market development from period 1980-1995.This study found that the macroeconomic determinants that affect stock market development include real income, saving rate, financial intermediary development and stock market liquidity.

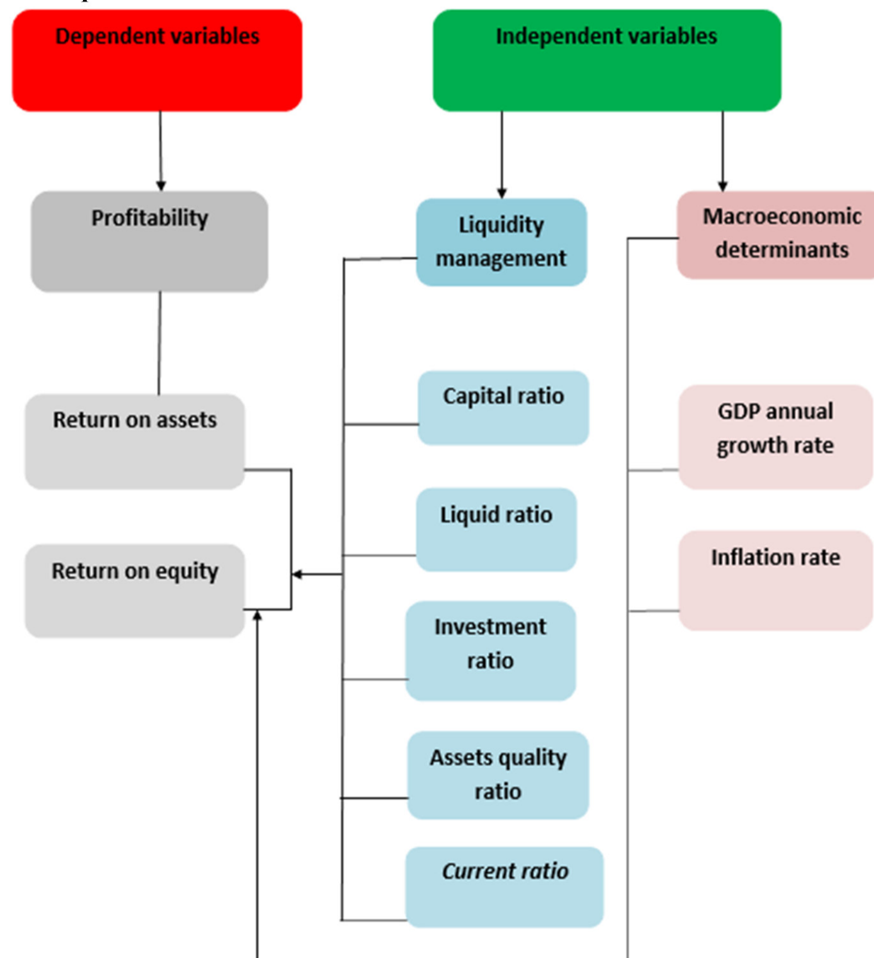
Kanwal and Nadeem (2013) conducted a study on determining the effect of macroeconomic variables on the profitability of Pakistan listed commercial banks during period 2001-2011 found that real interest rate and ROA has positive relationship, ROE, EM, and real GDP found insignificant positive impact and inflation rate found negative link.

Further, different bank-specific and macroeconomic determinants collectively affect bank's performance and profitability. As study conducted by (Anbar & Alper, 2011) on bank-specific and macroeconomic determinants that affect commercial banks profitability in Turkey from period 2002-2010 revealed that asset size and non-interest income have positive significant impact on profitability and with regard to macroeconomic variables only real interest rate positively affects the profitability of banks.

Study conducted by the (Vejzagic & Zarafat, 2014) on macroeconomic determinants of commercial banks profitability in Malaysia from 1995-2011 showed the results that real GDP has significant and positive, inflation is not significant and real interest rate has no relation with profitability. Furthermore, Kiganda (2014) conducted a study on checking the effects of macroeconomic factors on commercial banks profitability in Kenya from 2008-2012. This study indicated that real GDP, inflation and exchange rate have insignificant impact on bank's profitability.

Some researchers have also found in their research that macroeconomic variables have no negative impact on profitability of banks. As research conducted by the (Saeed, 2014) on bank-related, industry-related and macroeconomic factors that affect the profitability of banks in UK for checking the impacts of before, during and after the financial crisis of 2008 for the period of 2006-2012. This study concluded that bank-specific factors have positive effect on the profitability of banks while macroeconomic factors like GDP and inflation have negative effect on profitability.

Conceptual Framework



Source: Model developed by authors

Research data and methodology

Data has been collected from the annual reports of jordan country's commercial banks from the period 2009 to 2016.The variables that are taken to analyze the profitability of commercial banks include liquidity indicators *Capital ratio, liquid ratio, investment ratio, assets quality ratio, current ratio* and macroeconomic determinants include *GDP, inflation.* Our model for measuring the bank's profitability is;

$$ROA_{it} = \alpha_0 + \beta_1 CAPR_{it} + \beta_2 LR_{it} + \beta_3 IR_{it} + \beta_4 AQLT_{it} + \beta_5 CR_{it} + \beta_6 RGDP_{it} + \beta_7 INF_{it} + \varepsilon_{it} \quad (1)$$

$$ROE_{it} = \alpha_0 + \beta_1 CAPR_{it} + \beta_2 LR_{it} + \beta_3 IR_{it} + \beta_4 AQLT_{it} + \beta_5 CR_{it} + \beta_6 RGDP_{it} + \beta_7 INF_{it} + \varepsilon_{it} \quad (2)$$

	Variables	Measures	Notations
Dependent variables	Return on assets	**Net profit/Total assets**	ROA
	Return on equity	**Net profit/Total equity**	ROE
Independent variables	Capital ratio	**Total equity/Total assets**	CAPR
	Liquid ratio	**Liquid assets/Total assets**	LR
	Investment ratio	**Net credit facilities/Total deposits**	IR
	Asset quality ratio	**Net credit facilities/Total assets**	AQLT
	Current ratio	**Current assets/Current liabilities**	CR
	Real gross domestic product	**Annual rate of growth domestic product**	RGDP
	Inflation	**Annual inflation rate**	INF

Commercial banks are taken for data collection and six banks have been taken from jordan country that are:

- Capital bank of jordan
- Bank of Jordan
- Jordan kuwait bank
- Cairo Amman Bank
- The housing bank for trade & finance
- Jordan ahli bank

Data analysis

Table1 Descriptive results

Variables	Minimum	Maximum	Mean	SD
ROA	0.000538	0.025055	0.013790	0.006042
ROE	0.003295	0.168744	0.100871	0.043586
CAPR	0.090742	0.193625	0.140499	0.025338
LR	0.141294	4.926166	0.388169	0.679830
IR	0.000294	1.035822	0.667409	0.179248
AQLT	0.000227	0.587748	0.446947	0.111330
CR	11.37400	140.2944	35.22614	24.63249
RGDP	2.000000	5.500000	2.925000	1.032761
INF	-0.900000	4.800000	2.350000	2.529990

Table 1 displays the descriptive statistics results that include the mean, maximum value, minimum value and standard deviation. Mean reveals the average value and standard deviation indicates deviation from the mean. Quick-acid ratio has the highest average value of 35.226 while Return on assets has lowest average value of 0.013. Return on equity has mean value of 0.100, Capital ratio has mean value of 0.140, liquid ratio has 0.388, investment ratio has value of 0.667, asset quality ratio has mean value of 0.446, real gross domestic product has 2.925 and inflation has mean value of 2.350.

Descriptive results also show that quick-acid ratio has highest standard deviation of 24.632 and return on assets has lowest standard deviation of 0.006. Return on equity has standard deviation 0.043, capital ratio has standard deviation value of 0.025, liquid ratio has value of 0.679, investment ratio has standard deviation of 0.179, asset quality ratio has 0.111, real gross domestic product has 1.032 and inflation has standard value of 2.529.

Table 2 Correlation Results

	ROA	ROE	CAPR	LR	IR	AQLT	CR	RGDP	INF
ROA	1								
ROE	0.918788	1							
CAPR	0.000208	-0.35313	1						
LR	-0.12754	-0.02144	0.28526	1					
IR	-0.22328	-0.19121	0.018891	-0.02287	1				
AQLT	-0.17518	-0.11815	-0.05306	-0.00860	0.938876	1			
CR	-0.50535	-0.46653	-0.01235	0.312630	0.144660	0.127172	1		
RGDP	-0.01410	0.072988	-0.10746	0.445784	-0.04160	-0.06052	0.267641	1	
INF	0.274464	0.270667	-0.07201	-0.18309	0.007551	0.010493	0.009707	-0.29607	1

Table 2 shows correlation results that show the relationship between different variables and tell that whether the relationship is positive or negative between various dependent and independent variables. These results reveal that return on equity has strong positive correlation with return on assets at 0.91. Inflation has positive relationship with dependent variables return on assets and return on equity. Investment ratio, asset quality ratio and quick-acid ratio has negative relationship with dependent variables return on assets and return on equity. Capital ratio has positive relationship with return on assets and negative relationship with return on equity. Real gross domestic product has negative relationship with return on assets and positive relationship with return on equity.

REGRESSION RESULTS

Table 3 dependent variable ROA

Variables	Coefficient	T-Statistics	Prob
C	-0.011498	-6.697828	0.0000
ROE	0.146006	26.44207	0.0000
CAPR	0.088438	11.45976	0.0000
LR	0.000267	0.886430	0.3808
IR	0.000467	0.161973	0.8722
AQLT	-0.002622	-0.568044	0.5733
CR	8.03007	0.087719	0.9305
RGDP	-0.000393	-1.910213	0.0635
INF	5.04006	0.064031	0.9493
R-squared	0.969145		
F-statistic	153.1202		
Prob(F-statistic)	0.000000		

Third test that has been applied for analyzing the data is regression test. Firstly, there is dependent variable return on assets then return on equity. In Table 3 the results shows that return on equity and capital ratio has positive and significant relationship with profitability of banks. Real gross domestic product has negative and significant relationship with bank's profitability. Liquid ratio, investment ratio, quick-acid ratio and inflation has positive and insignificant relationship with banks profitability. Asset quality ratio has negative and insignificant relation with profitability of banks. Our r-squared value is 0.9691. Our model is 96.91% fit that means all the independent variables explain ROA 96.91%. The value of f-statistic is 153.12 that is used to analyze if variances between two populations are significantly different.

Table 4 Dependent variable ROE

Variables	Coefficient	T-Statistics	Prob
C	0.083032	8.112085	0.0000
ROA	6.487165	26.44207	0.0000
CAPR	-0.599112	-12.35108	0.0000
LR	-0.001767	-0.880898	0.3838
IR	-0.008614	-0.449045	0.6559
AQLT	0.024391	0.795750	0.4310
CR	-5.49005	-0.908646	0.3691
RGDP	0.003203	2.394444	0.0215
INF	0.000277	0.530426	0.5988
R-squared	0.973652		
F-statistic	180.1482		
Prob(F-statistic)	0.000000		

Table 4 shows that the regression results that is taking return on equity as dependent variable. The results shows that value of R-squared is 0.9736 that means all the independent variables explain return on equity 97.36%. F-statistic value is 180.14 and p-value is 0. Results show that return on asset and real gross domestic product has positive and significant relationship with banks profitability. Capital ratio has negative and significant relationship with bank's profitability. Liquid ratio, investment ratio, quick-acid ratio has negative and insignificant relationship with banks profitability. Asset quality ratio and inflation has positive and insignificant relationship with profitability of banks.

Conclusion

The aim of this research is to check the impact of the liquidity management and macroeconomic determinants on profitability of commercial banks in the Jordan. The secondary data used for this study and taking from publish annual report of six Jordanian commercial banks during the time period (2009–2016).The data was analyzed by using correlation, descriptive statistics and regression techniques run on E-views. Six banks have been chosen. The nine variables are taken. These are **(liquidity indicators)** Capital ratio, liquid ratio, investment ratio, assets quality ratio, current ratio**, (macroeconomic determinants)** GDP, inflation and **(profitability indicators)** return on equity and return on assets are the measures for profit.

The empirical results shows that the capital ratio has positive and significant relationship with return on assets. Liquid ratio, investment ratio, current ratio has insignificant but positive relationship with return on assets . Assets quality ratio has negative and insignificant relationship when analyzed through return on assets. Annual GDP has negative and significant relationship while inflation has insignificant but positive relationship with return on assets.

When measured through Return on equity, capital ratio has significant and negative relationship with banks profitability. Liquid ratio, investment ratio, current ratio has negative and insignificant relationship with banks profitability when these are analyzed through return on equity. Assets quality ratio has positive and insignificant relationship with return on equity. With regard to macroeconomic determinants, real gross domestic product has positive and significant relationship while annual inflation has insignificant and positive relationship with banks profitability when measured through return on equity.

Limitations of the Study

Our study has different limitations. The financial statements of some commercial banks were missing and the study has carried out over a period of 8 years covering 2009 to 2016 that is not sufficient. There was limited time available to conduct the study and our study is conducted only on Jordanian commercial banks and therefore results cannot be generalized to entire population and in different countries.

References

- Afeef, M. (2011). Analyzing the Impact of Working Capital Management on the Profitability of SME's in Pakistan. *International Journal of Business and Social Science, 2*(22).
- Agbada, A. O., & Osuji, C. (2013). The efficacy of liquidity management and banking performance in Nigeria. *International review of management and business research, 2*(1), 223-233.
- Alshatti, A. S. (2015). The effect of credit risk management on financial performance of the Jordanian commercial banks. *Investment Management and Financial Innovations, 12*(1), 338-345.
- Anbar, A., & Alper, D. (2011). Bank specific and macroeconomic determinants of commercial bank profitability: Empirical evidence from Turkey.
- Bekeris, R. (2012). The impact of macroeconomic indicators upon SME's profitability. *Ekonomika, 91*.
- Bordeleau, É., & Graham, C. (2010). *The impact of liquidity on bank profitability*. Retrieved from
- Garcia, V. F., & Liu, L. (1999). MACROECONOMIC DETERMINANTS OF STOCK MARKET DEVELOPMENT. *Journal of Applied Economics, 2*(1).
- Hoque, A., Mia, A., & Anwar, R. (2015). Working capital management and profitability: A study on cement industry in Bangladesh. *Research Journal of Finance and Accounting, 6*(7), 18-28.
- Kanwal, S., & Nadeem, M. (2013). The impact of macroeconomic variables on the profitability of listed commercial banks in Pakistan. *European journal of business and social sciences, 2*(9), 186-201.
- Karani, R. M. (2014). The effect of liquidity management on profitability of commercial banks in Kenya. *Unpublished MBA Project*.
- Khan, R. A., & Ali, M. (2016). Impact of Liquidity on Profitability of Commercial Banks in Pakistan: An Analysis on Banking Sector in Pakistan. *Global Journal of Management And Business Research*.
- Kiganda, E. O. (2014). Effect of macroeconomic factors on commercial banks profitability in Kenya: Case of equity bank limited. *Journal of Economics and Sustainable Development, 5*(2), 46-56.
- Lartey, V. C., Antwi, S., & Boadi, E. K. (2013). The relationship between liquidity and profitability of listed banks in Ghana. *International Journal of Business and Social Science, 4*(3).

- Maqsood, T., Anwar, M., Raza, A., IJAZ, M., & SHOUQAT, U. (2016). Impact of Liquidity Management on Profitability in the Banking Sector of Pakistan. *International Review of Management and Business Research, 5*(2), 643-652.
- Olagunju, A., David, A., & Samuel, O. O. (2012). Liquidity management and commercial banks' profitability in Nigeria. *Research Journal of Finance and Accounting, 2*(7-8), 24-38.
- Osamwonyi, I. O., & Michael, C. I. (2014). The impact of macroeconomic variables on the profitability of listed commercial banks in Nigeria. *European Journal of Accounting Auditing and Finance Research, 2*(10), 85-95.
- Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222-237.
- Sheefeni, J. (2015). The impact of macroeconomic determinants on non-performing loans in Namibia. *International Review of Research in Emerging Markets and the Global Economy (IRREM), 1*(4), 612-632.
- Saeed, M. S. (2014). Bank-related, industry-related and macroeconomic factors affecting bank profitability: a case of the United Kingdom. *Research Journal of Finance and Accounting*, 5(2), 42-50.
- Vejzagic, M., & Zarafat, H. (2014). An analysis of macroeconomic determinants of commercial banks profitability in Malaysia for the period 1995-2011. *Journal of Asian Economy and Financial Review, 4*(1).
- Ware, E. O. (2015). Liquidity Management and Its Effect on Profitability in a Tough Economy:(A Case of Companies Listed on the Ghana Stock Exchange). *International Journal of Research in Business Studies and Management, 2*(11).