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The Effect of Inflation on Performance: An Empirical Investigation on the Banking Sector in Jordan

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Abstract

This paper aims to investigate the effect of inflation trends on the performance of the banking sector in Jordan., with data from five Jordanina listed banks in Amman Stock Exchange over the period of 2009–2019. The performance indicators employed in this study are return on assets, return on investment, and margin of net interest. Our empirical strategy for this quantitative approach employ regression analysis to explore th influential of inflation on banks' performance. The results of descriptive statistics show that the banks' performance in Jordan has increased gradually during the period 2015 to 2018, meaning that banking sector had performed of this study effeciantly during the period of study regardless of the increasing of inflation rate in the country. Generally, our results show that there is a strong and negative relationship between inflation rate and banks' performance. In addition, the results show that the Banks' performances are significantly affected by inflation. Interested parties may pay attention to other macroeconomic variables to investigate the impact of the macroeconomic factors on Banks' performance. Future research shall consider not only bankin sector but other sectors in the financial market.

1. Introduction

During inflation cost of goods and services in an economy goes up as the purchasing power of money goes down. There are two basic reasons which leads to inflationary conditions in an economy (Almansour, 2015). The smooth running of the economy needs a lot of money and as a result a high volume of currency is printed by the Federation and Treasury (Ndou & Gumata, 2017). As a result of climbing costs and a desire to spend more currency during inflationary period, the profit margins are low and organizations are reluctant to increase wages (Boyd et al., 2001).

Since the renegotiation process is not over, another key strategy is to achieve the goal of reducing the unstable burden of domestic debt obligations is to strictly adhere to quality as well as work on reducing the fixed installmets in a regular manner (Alimi, 2014). The least difficult alternative and the one which can be managed is through expansion, increasing costs can reduce the flow of money and it can also help in reducing the burden of extraordinary household debt (Suyanto, 2021). Banks may not be in a good condition but avoiding giving loans in inflationary conditionmay help banks and other lenders avoid risks and also helps in lowering costs for them (Hersugondo et al., 2021). Individuals may feel that inflationary conditions may be helpful for them and will help avoid losses occurring due to debt. In such a scenario, lending is bad for banks and other financial institutions while it is good for the borrowers (Almansour & Almansour, 2016). When the flow of money resuces then it

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can cause trouble for the lenders as they will not be able to fulfill their finnaialcommitments (Almansour & Almansour, 2016, Dalabeeh et al., 2021). Likewise, expanding the flow of funds available helps in reducing the burden of commitment and can help in improving the situation for the lenders.

According to Jordan's economy profile on the Mundi index, Jordan's economy is among the smallest in the Middle East, with insufficient supplies of water, oil, and other natural resources, underlying the government's heavy reliance on foreign assistance. The global economic slowdown, however, has led to depression in the Jordanian economy, the budget deficit is likely to remain high, at 5%–6% of GDP. Jordan's economy continues to struggle, weighed down by a record deficit of $2 billion this year. Inflation in Jordan has risen by 1.5% to 6.1% in December 2010. The annual inflation rate in Jordan increased 0.6 percent in December, 2019, after a 0.4 percent drop in the previous month. This indicates that inflation in Jordan has been unstable throughout the years.

The main purpose of this study is to focus on inflation that may change banks' performance in Jordan. This effect suggests that higher prices lead to a decline in standard bank loans for the macroeconomic industry, which is that the rise in prices gives credit to the financial institutions. This research is done in five banks listed on Amman stock exchange. However, due to time constraints and limited literature in this field, this study is limited on the effect of the inflation rate on the banking sector's performance.

2. Literature Review

The relationship between macroeconomic factors and the stock prices are have been identified in Arbitrage Pricing Theory (APT) (Almansour & Almansour, 2016). The APT declared that traditional factors such as labor, capital, exchange rate, GDP inflation, and other macroeconomic factors have a strong relationship with stock prices. This theory has been investigated by several researchers in developed and developing markets (Almansour & Almansour, 2016; Mgammal, 2012).

2.1. Literature Reviews on the Relationship between Macroeconomic Factors and Performance

The relationship between macroeconomic factors and the stock return has been investigated in developed as well as developing countries. Almansour and Almansour (2016) investigated the input of macroeconomic factors on financial market performance in Saudi Arabia. The researcher employed time series analysis from 2010 to 2014. The result showed that there is a significant and positive relationship between oil price and stock returns. Moreover, the result indicated that there is a negative association between

inflation and financial market performance. Boyd and Smith (1998) stated that there is an adverse effect of inflation on the performance of banks. They declared that when inflation is high it drops down the profit margins of the banks. Which further results in the bank giving lesser credits to the companies as there is a high risk of return. When an economy or a country is facing inflation the resource allocation tends to become less efficient and becomes more dangerous.

Naifar and Al Dohaiman (2013) studied the effects of oil prices on the financial market performance, while also noting the non-linear relationship among oil price, interest rates, and inflation rates. The effects of oil price variations provide important evidence to establish it as a primary macro-economic factor, which can generate unstable economic conditions and affects global financial stability in oil-producing and oil-importing countries. It is noted that a significant symmetric upper and lower tail dependence, considering a financial crisis, and shows that there is a similar link between crude oil prices and inflation rates. The implications between the relationship of stock prices and inflation and that of stock prices and crude oil can guide the policies set by the government and the economic decisions.

Almansour and Almansour (2016) investigated the influence of macroeconomic factors on stock returns in Saudi Arabia over the period 2010–2014. By employing Ordinary Least Squared (OLS) and the Granger Causality Model, they found that there is a positive relationship between inflation rates and Saudi equity market's returns. They also declared that the inflation rate significantly affected Saudi economy. In Ghana context, Abbey (2012) studied the effect of inflation on financial development using a time series method over the period 1990 to 2008. By employed Cointegration Approach the Granger Causality testing procedure, the results indicated that there is a negative relationship between the inflation rate and financial development in Ghana.

Moyo and Head (2020) investigated the association between inflation and exchange rates and the performance of the banking sector in South Africa for the period 2003–2019. By employing the ARDL, FMOLS, and DOLS models, the results showed that there is a significant inverse association between inflation and the banks' performance in South Africa. Chege (2010) explored the relationship between inflation rate and banks' performance in Kenya over the period 2000 to 2009. The results indicated that there is a significant and negative relationship between inflation rate and banks' performance. In other words, when the inflation rate decreased, the banking sector in Kenya will make more profit and vice versa.

3. Research Methodology

This section commences into data sources, research design, measurment of variables and econometric approach.

In the following lines, we will clarify the data collection procedure.

3.1. Data Sources

The database collected for this study comprises of yearly financial data. The data used in this study is collected from the financial statements which are presented by either Amman equity market or the respective banks' website from the period starting from 2009 to 2019. The inflation rate data has been gathered from the central bank of Jordan website.

3.2. Research Design

The main objective of this study is to investigate the association between inflation rate and banks' performance in Jordan. The research model has two variables and three dimensions. Figure 1 illustrates the research model of this study.

Figure 1 shows the research model of this study. The independent variable is the inflation rate. The dependent variable is banks' performance which is measured by three ratios namely Return on Investment (ROI), Return on Assets (ROA), and Margin of Net Interest (MI).

3.2.1. Return on Investment

Return on Investment (ROI) is known as a measure of performance that is used to assess the quantity of financial investment which is optimum for the best performance of the bank or to compare the efficiency of different types of investments. It further helps in measuring the amount of return on an investment made by any organization and relates it to the actual cost of the investment. Banking companies primarily look up to the cost returns. Banks have to generate a high cost of return or else low-cost returns may lead to lower profits and a bank may not be able to pay the operating and other costs. ROI is a discipline that is used by banks for measuring the profit or loss that they generate on a particular investment. Decisions related to the ROI is regularly made in the banks. Companies can invest more and increase their economic profitability with the help of economic commitment to any standard bank (Almansour, 2015). The return on investment is calculated as follow:

$$\text{Return on Investment} = \frac{\text{Net Income}}{\text{Investment}} \qquad (1)$$

3.2.2. Return on Assets

Return on Asset (ROA) is a discipline that shows how profitable are the assets of a company in generating revenue. ROA is known as a financial ratio and it is usually evaluated in percentage. ROA helps an organization to know how well and efficiently are they utilizing their assets. Return on Investment and Return on Assets are inter-dependent. If the return on investment is high, it means that the assets of the organization are being used efficiently. ROA enables an organization to envision the effectiveness and generate profit by using the assets of an organization efficiently (Almansour, 2015). A study on banks in Jordan by Ramadan et al. (2011) shows that specific banking factors were contributing to the bank performance in Jordan. This means large credit activity, budgeting cost-effectively, lowering the risk of credit, and well-capitalized financial institutions have a direct link to the productivity of a bank. The return on asset is calculated as follow:

$$\text{Return on Asset} = \frac{\text{Net Income}}{\text{Total Assets}} \qquad (2)$$

3.2.3. Margin of Net Interest

The outcomes of inflation in an economic system may vary and can either have a good or bad effect on the economy. Nonetheless, the side effects of inflation on an economy are perceptible and if the interest rate is lower, people tend to borrow more money which may cause the economy to grow and increase the inflation as there is excessive flow of money in the economy of a country. However, during inflation higher interest rates are charged by the banks so that they can discourage economic activities and therefore lesser money flows in the economy. Despite that, the economic activities may be impacted negatively if the prices rise a lot more than usual (Almansour, 2015). The margin of net interest is calculated as follow:

$$\text{Net Interest} = \frac{\text{Investment Return} - \text{Interest Paid}}{\text{Average Earning Assets}} \qquad (3)$$

3.2.4. Inflation

Inflation is known as a specific/sustained increase in the actual prices of the commodities in the economy over a certain period. Inflation has a lot to do with the banks
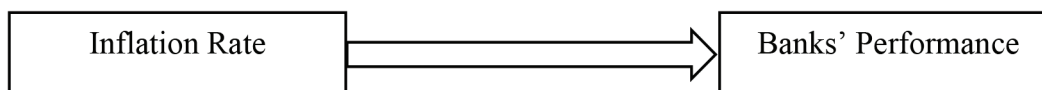

Figure 1: The Association between Inflation Rate and Banks' Performance in Jordan

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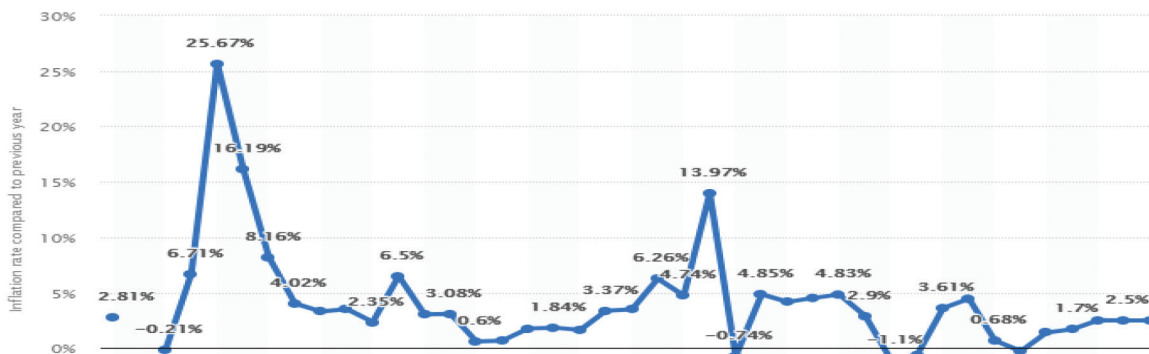*Journal of Asian Finance, Economics and Business Vol 8 No 6 (2021) 0097–0102*

Figure 2: The Inflation Rate in Jordan

as it fluctuates the interest rates of the bank to balance the economy. The purchasing power of a particular currency can be decreased because of inflation (Almansour & Almansour, 2016). The inflation data in Jordan is as follow (Figure 2):

3.3. Research Model

This paper aims to explore the relationship between the inflation rate and banks' performance in Jordan. To achieve the research objective of this study, a regression model is employed which is illustrated as follow:

$$\text{Perf}_i = \beta_0 + \beta_1 \text{INF}_{1i} + \varepsilon_i \qquad (4)$$

Where,

Perf: Performance

INF: Inflation

e: Error

B_0: Constant

4. Empirical Results

The results of this study are used when investigating the impact of inflation rate on banks' performance. In order to summarize the data for bank's performance, descriptive statistics is employed which summarizes the value of banks' performance over the period 2015–2018. Table 1 shows the summary of banks' performance.

It can be seen in the table above that the banks' performance in Jordan has increased gradually over the period 2015 to 2018. Bank of Jordan records values of 3.75% (ROE), 0.37% (ROA) and 23.21% (Margin of Net Interest) in 2015, while it records values of 11.42% (ROE), 1.06% (ROA) and 20.65% (Margin of Net Interest) in 2018. The Arab Bank records values of 6.07% (ROE), 0.85% (ROA)

and 60.5% (Margin of Net Interest) in 2015, while it records values of 10.24% (ROE), 1.52% (ROA) and 97.69% (Margin of Net Interest) in 2018. The Cairo Amman Bank records values of 8.96% (ROE), 1.01% (ROA) and 9% (Margin of Net Interest) in 2015, while it records values of 13.38% (ROE), 1.63% (ROA) and 12% (Margin of Net Interest) in 2018. The Jordan Kuwait Bank records values of 9.46% (ROE), 1.55% (ROA) and 9% (Margin of Net Interest) in 2015, while it records values of 8.6% (ROE), 1.39% (ROA) and 11% (Margin of Net Interest) in 2018. The Jordan Islamic Bank records values of 12.66% (ROE), 1.2% (ROA) and 8% (Margin of Net Interest) in 2015, while it records values of 15.66% (ROE), 1.28% (ROA) and 21% (Margin of Net Interest) in 2018. This means that the Jordanian banking sector performed effeciantly during the period of 2015 to 2018 regardless of the increasing of inflation rate in the country.

4.1. The Influence of Inflation on Banks' Performance

In order to investigate the effect of inflation on banks' performance, a regression analysis is employed. Table 2 shows the regression results. The results of Table 2 revealed that the inflation rate explained 18.7% of the variance in banks' performance in Jordan. The findings of regression analysis indicate that there are no multicollinearity issues. Furthermore, the findings show that the general model is acceptable due to a high F-statistic which records a value of 3.28 with a significant probability value of 0.004.

The results on the impact of inflation on banks' performance are seen in Table 2. The results indicated that the banks' performance is significantly affected by the inflation rate in Jordan. When ROA is assumed as a measure of banks' performance, the results record a probability value of 0.027 with a negative coefficient value of 0.109, the results indicated that there is a significant and negative relationship

Table 1: Summary of Banks' Performance

Banks' Name		Key Performance			
		2015	**2016**	**2017**	**2018**
BOJ	ROE	3.750%	2.530%	6.400%	11.420%
	ROA	0.370%	0.270%	0.740%	1.060%
	INT	23.21%	18.94%	17.65%	20.65%
AB	ROE	6.070%	8.090%	8.950%	10.240%
	ROA	0.850%	1.150%	1.260%	1.520%
	INT	60.5%	71%	54.3%	97.69%
CAB	ROE	8.960%	9.010%	10.740%	13.380%
	ROA	1.010%	1.070%	1.390%	1.630%
	INT	9%	7%	8%	12%
JKB	ROE	9.460%	5.750%	6.470%	8.600%
	ROA	1.550%	0.950%	1.100%	1.390%
	INT	9%	9%	10%	11%
JIB	ROE	12.660%	14.440%	15.760%	15.660%
	ROA	1.200%	1.290%	1.320%	1.280%
	INT	8%	11%	9%	21%

Table 2: The Influence of Inflation on Banks' Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Performance
	B	**Std. Error**	**Beta**			
(Constant)	1.682	0.351		5.570	0.000	
Inflation	–0.109	0.048	0.206	2.236	0.027	ROA
Inflation	–0.188	0.051	0.262	2.928	0.004	ROE
Inflation	–0.076	0.046	0.155	1.676	0.007	MNI
R^2	0.187					
F	6.218					
Durbin-Watson	1.83					
F-Statistic	3.28					
Prob. F-Statistic	0.004					

between inflation rate and banks' performance. Also, when ROE is expected to be as a proxy of banks' performance, the results record a probability value of 0.004 with a negative coefficient value of 0.188, these results indicated that there is a significant and negative relationship between inflation rate and banks' performance. Finally, when MNI is assumed as a measure of banks' performance, the results record a probability value of 0.007 with a negative coefficient value

of 0.076, these results indicated that there is a significant and negative relationship between inflation rate and banks' performance. The tables and the above results exhibit that inflation has a significant impact on the return of assets, return of equity and the margin of net interest on the selected banks in Jordan. Aligning this with our finding which shows negative and significant relationship between inflation and performance of banks, the Arbitrage Pricing Theory (APT)

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stated that the macroeconomic factors affect institutions' performance which supports our findings that shows the banking sector in Jordan is affected by inflation significantly.

5. Conclusion and Recommendations

This research paper aims to study how does inflation impct banks' performance in Jordan. The key performance indicators employed in this study return on assets, return on investment, and margin of net interest. The descriptive statistics illustrates that the banks' performance in Jordan has gradually increased over the period 2015 to 2018.

Through all of the above analysis of this study, it can be concluded that inflation does have a significant relationship with banks' performance in Jordan. The results indicated that there is a significant and negative association between inflation rate and return on assets, return on equity and margin of net interest. Moreover, the results show that the Banks' performances are significantly affected by inflation. Interested parties may pay attention to other macroeconomic variables to investigate the impact of the macroeconomic factors on Banks' performance. Besides, researchers may focus on studying the effect of inflation on banks' performance in different countries as a comparative study.

References

Abbey. (2012). Inflation and Financial Development: Evidence. *American Journal of Economics and Business Administration*, *4*(4), 227–236. https://doi.org/10.3844/ajebasp.2012.227.236

Alimi, R. S. (2014). Inflation and Financial Sector Performance: The Case of Nigeria. *Timisoara Journal of Economics and Business*, *7*(1), 55–69. https://doi.org/10.2478/tjeb-2014-0003

Almansour, A. Y., & Almansour, B. Y. (2016). Macroeconomic Indicators and Saudi Equity Market: A Time Series Analysis. In: *British Journal of Economics, Finance and Management Sciences* (Vol. 12, Issue 2).

Almansour, B. Y. (2015). Empirical Model for Predicting Financial Failure. *American Journal of Economics*, *1*(3), 113–124. http://www.publicscienceframework.org/journal/ajefm, http://creativecommons.org/licenses/by-nc/4.0/

Bani-Khaled, S. M., El-Dalabeeh, A. R. K., Al-Olimat, N. H., & Al Shbail, M. O. (2021). Relationship Between Corporate Social Responsibility Expenditures and Performance in Jordanian Commercial Banks. *The Journal of Asian Finance, Economics and Business,* *8*(3), 539–549. https://doi.org/10.13106/JAFEB.2021.VOL8.NO3.0539

Boyd, J. H., Levine, R., & Smith, B. D. (2001). The impact of inflation on financial sector performance. *Journal of Monetary Economics*, *47*(2), 221–248. https://doi.org/10.1016/S0304-3932(01)00049-6

Boyd, J. H., & Smith, B. D. (1998). Capital market imperfections in a monetary growth model. *Economic Theory*, *11*(2), 241–273. https://doi.org/10.1007/s001990050187

Chege, W. (2010). The Relationship Between Inflation And Financial Performance of Commercial Banks In Kenya. *Master Thesis.*

Hersugondo, H., Anjani, N., & Pamungkas, I. D. (2021). The Role of Non-Performing Asset, Capital, Adequacy and Insolvency Risk on Bank Performance: A Case Study in Indonesia. *The Journal of Asian Finance, Economics and Business,* *8*(3), 319–329. https://doi.org/10.13106/JAFEB.2021.VOL8.NO3.0319

Mgammal, M. H. H. (2012). The Effect of Inflation, Interest Rates and Exchange Rates on Stock Prices: Comparative Study Among Two Gcc Countries. *International Journal of Finance and Accounting*, *1*(6), 179–189.

Moyo, D., & Tursoy Head. (2020). Impact of Inflation and Exchange Rate on the Financial Performance of Commercial Banks in South Africa. *Munich Personal RePEc Archive 101383*.

Naifar, N., & Al Dohaiman, M. S. (2013). Nonlinear analysis among crude oil prices, stock markets' return and macroeconomic variables. *International Review of Economics and Finance*, *27*, 416–431. https://doi.org/10.1016/j.iref.2013.01.001

Ndou, E., & Gumata, N. (2017). Inflation Dynamics in South Africa: The Role of Thresholds, Exchange Rate Pass-through and Inflation Expectations on Policy Trade-offs. https://doi.org/10.1007/978-3-319-46702-3

Ramadan, I. Z., Kilani, Q. A, & Kaddumi, T. A. (2011). Factors Affecting Jordanian Banks. *International Journal of Academic Research*, *3*(4), 180–191.

Suyanto, S. (2021). The Effect of Bad Credit and Liquidity on Bank Performance in Indonesia. *The Journal of Asian Finance, Economics and Business, 8*(3), 451–458. https://doi.org/10.13106/JAFEB.2021.VOL8.NO3.0451