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Econometric Analysis for Analyzing the Impact of Inflation and Exchange Rate on the Financial Performance of Commercial Banks in Palestine

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Abstract

This study investigates the impact of inflation and exchange rate fluctuations on the financial performance of commercial banks in Palestine. Using econometric analysis, the research examines data from 13 commercial banks over the period 2013–2017, employing key performance indicators such as Return on Assets (ROA), Return on Equity (ROE), and the Liquid Assets to Total Assets (LATTA) ratio. The findings reveal a significant positive relationship between inflation and financial performance, indicating that Palestinian banks effectively adapt to inflationary environments to enhance profitability. Conversely, exchange rate fluctuations have a significant negative effect on ROA, suggesting that currency instability poses challenges to financial stability. These results highlight the need for strategic policies to mitigate exchange rate risks while capitalizing on inflation-driven opportunities. The study provides critical insights for policymakers, regulators, and bank managers, emphasizing the importance of financial resilience in an unstable economic landscape. Strengthening risk management frameworks, diversifying revenue streams, and implementing adaptive monetary policies can help commercial banks sustain performance amidst economic volatility. By understanding the dynamics of inflation and exchange rate movements, financial institutions can formulate strategies that ensure long-term stability and profitability. This research contributes to the broader literature on banking performance in emerging economies and serves as a foundation for future studies exploring macroeconomic influences on financial institutions.

Keywords: Commercial Banks, Exchange Rate, Financial Performance, Inflation.

Introduction

The Palestinian economy is under occupation, thus constantly exposed to high levels of instability, which negatively affect the ability to achieve any growth as well as the ability of banks to achieve good profits. Banks in Palestine face a few risks, including credit, interest rate, operational, geographic, and external risks, among others. This paper investigates the impact of the inflation rate and exchange rate on the financial performance of commercial banks in Palestine. This issue is extremely important in the Palestinian case. The general objectives of the study are to determine the relationship between the inflation rate, the exchange rate, and the financial performance of commercial banks in Palestine. Specifically, the objectives of the study are to determine the relationship between the inflation rate and the financial performance of

commercial banks and to determine the relationship between the exchange rate and the financial performance of commercial banks. The rest of the study is organized as follows: in the next section, the paper reviews the literature with a discussion of the full relationship between inflation and exchange rate, and other financial performance. The third section of the paper discusses the research methodology. The results and empirical findings are reported in the following section. The final section of the paper contains the conclusion of the study along with a critical discussion of the main findings. Over the years, many empirical studies have been conducted to investigate the relationship between inflation and financial performance. While different panel studies take place in developed and developing countries, no Islamic banks are

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Vol 6 | Issue 2 of the commercial banks is a fundamental element

theoretically, empirically, or discussed. The common expectation is that a higher rate of inflation will result in lower equity valuation due to its unfavorable profits and cash flows with debt holders. Banks with Islamic and conventional banking systems have been subjected to different dynamics from inflation in the wider economy within and between countries. In general, the literature has focused on checking a single panel of Islamic or conventional banks, and even with a single country being monitored by Islamic banks. Some of them compare the two types of banks using banking image analysis, and some of them financially perform well. It is indicated using stakeholders as financial performance measures, and the section panel discusses the relationship between exchange rate volatility and various financial indicators such as credit risk, liquidity, capital, profitability, and financial sensitivity. In addition, the paper compares Islamic and conventional banks in the Palestinian economy. The fourth section describes the data used in this study. In section five, the methodology was discussed. The main findings, the factors affecting the profitability of the samples used. Finally, in a concluding section, the main findings of the study and important implications are presented, and further research is to be proposed (1). Since the creation of the Palestinian National Authority in 1994, Palestine has coasted through different economic phases, alternating between stagnation and growth. In recent years, following the gradual return of taxes from the Israeli government to the Authority last year, observers and financial institutions hoped for growth in all sectors of the Palestinian economy, but inflation was high, reaching 4.87% in 2021. Inflation in the Palestinian economy is influenced by multiple factors, including the exchange rate and external factors. One of the steps to consolidate the idea of maximizing growth is to pay attention to the economic and banking environment in Palestine. The volume of commercial bank deposits for that year amounted to about 16.6 billion US dollars, and lending to the commercial sector amounted to 5.0 billion, which represents 35.4% of the total. Starting from the relevant quarterly data from the banking system and considering significant competitive movements in the Palestinian banking sector, the policymakers of the Monetary Authority consider that the financial performance

and requires economic and financial analysis to indicate the main factors that may directly or indirectly affect financial performance. Several researchers have analyzed the determinants of banks' efficiency using macroeconomic indicators; especially, the impact of the exchange rate on banks' performance has already been addressed in the literature. Even if the exchange rate is a common variable used in most studies, no research has yet analyzed its effect on the commercial banks' performance in Palestine. Therefore, the aim of this paper is to fill this gap and provide some clear empirical evidence that can help bank management adjust policies and show, to some extent, the other side-the and indirect policymakers—the direct implications of exchange rate changes (2). Researchers have indicated the study objectives as follows: a. Analyzing the potential impact of inflation and exchange rates on the financial performance of commercial banks. b. Examining the relationship between inflation and exchange rate indicators and the financial performance of commercial banks. c. The study provides a comprehensive analysis of the potential impact of inflation and exchange rates on the financial performance of commercial banks operating in Palestine, with the objective of giving a clear image to banks of the potential direct and indirect effects of these macroeconomic factors on their financial performance. The results of the exploration of this central theme are essential for banks that are paying attention to credit risk management. This study aims to investigate the effects of some macroeconomic variables on bank financial performance. The effects of some macroeconomic factors on banks' performance are measured separately as follows: a) the effects of inflation on banks' financial performance; b) the effects of exchange rates on banks' financial performance; and c) examining if there are other significant determinants of the financial performance of commercial banks besides inflation and exchange rates. Each of these factors and variables is focused on separately with the help of single indexes, such as examining the effects of inflation and exchange rates on banks' financial performance separately to see if they have different consequences and what those consequences are. Theoretical Framework Many

theories are available in the literature that discuss exogenous factors such as exchange rates and inflation that may affect banks' performance. The capital asset pricing model argues that variation in the interest rate can create risk from the exchange element that has a negative potential impact on the performance of firms, including banks. It has been reported that banks become exposed to the risk of adverse selection and moral hazard due to conflicts of interest or convexity embedded in their assets. For instance, banks may provide excessive risk-taking under governmentlimited deposit insurance. The influence of some macroeconomic variables on bank revenues in emerging economies has also been discussed. On the other hand, many studies investigated the impact of inflation on banks' profitability. For example, some studies investigated the effect of inflation on banks' performance by using annual data that cover different emerging economies. It has been observed that interest income or margin interest is negatively affected by changes in the interest rate due to the existence of interest and non-interest income or expenses of banks. Some findings indicated that the increasing interest rate is expected to generate additional income for the bank. Data from banks have reported a strong positive relationship between interest income and non-interest income. Evaluations of banks' performance indicators by adopting different models for several banks observed that managerial inefficiency and low quality of assets have a strong negative effect on profitability. For example, some studies failed to document a negative relationship between the loan loss provision and bank performance. The theories and working papers, such as the theory of financial intermediation, moral hazard, adverse selection, and monitoring costs, support the banking utility for the investment sectors. This is because banks can manage the risks more professionally compared to retail investors. Besides capital requirements to reduce the banks' risks and to comply with the guidelines of the Bank of Palestine, they need capital to safeguard the interests of the shareholders and to add more value to the firm because a poorly capitalized bank does not achieve the expected return. Islamic banks are in a better position under inflation than interest-based banks, as they avoid losses due to the decline in currency value. These

theories have their usefulness and some inapplicability in relation to the desired study. The omission of any theory shall not make the study flawed because the applicability of a theory may change from case to case. Inflation can boost bank profits in the short term due to higher interest rates, but prolonged inflation increases credit risk, raises operating costs, and reduces real returns on fixed-rate assets. Given Palestine's economic structure, inflation is more likely to strain bank profitability in the long run, especially if it leads to higher loan defaults and reduced deposits. Currency fluctuations significantly impact financial stability in Palestine due to its unique monetary system, which relies on the Israeli shekel (ILS), U.S. dollar (USD), and Jordanian dinar (JOD). Without a national currency, Palestine lacks monetary policy tools to control inflation, interest rates, or exchange rate volatility. As a result, Palestinian banks face currency mismatches, where loans issued in USD may be repaid with income in ILS, increasing credit risk. According to Krugman's balance sheet effect, such mismatches heighten the likelihood of loan defaults during currency depreciation. Additionally, imported inflation from Israel, which dominates trade, affects purchasing power and price stability. The Mundell-Fleming model suggests that economies without monetary sovereignty are vulnerable to external shocks, a challenge evident in Palestine's reliance on Israeli economic policies. Furthermore, depositors often shift between currencies based on exchange rate expectations, creating liquidity risks for banks. World Bank reports highlight that dollarization limits financial flexibility, while studies on similar economies, like Ecuador and El Salvador, show that reliance on foreign currencies increases vulnerability to global financial fluctuations. To mitigate these risks, Palestine must strengthen banking regulations, promote financial risk management, and explore regional cooperation for exchange rate stability. To address these risks, concrete policy steps are necessary. Banks can adopt hedging strategies, such as currency swaps and forward contracts, to protect against exchange rate fluctuations. The Palestinian Monetary Authority (PMA) could encourage interest rate adjustments, allowing banks to offer higher returns on deposits in weaker currencies to stabilize liquidity. Additionally, promoting diversified foreign exchange reserves could reduce dependence on a single currency. Policy interventions, such as strengthening regional financial cooperation with Jordan and fostering trade agreements that allow pricing flexibility, would also enhance resilience. World Bank emphasize that financial reports literacy programs and regulatory reforms can help businesses and individuals manage currency risks effectively. By implementing these more measures, Palestine can better navigate the challenges posed by currency fluctuations and improve financial stability. Currency fluctuations significantly impact financial stability in Palestine due to its reliance on the Israeli shekel (ILS), U.S. dollar (USD), and Jordanian dinar (JOD). Without a national currency, Palestine lacks monetary policy tools to control inflation, interest rates, or exchange rate volatility, leading to financial risks. The Purchasing Power Parity (PPP) theory suggests that exchange rates should adjust to equalize the price of goods across countries, but in Palestine, trade and monetary constraints prevent such adjustments, leading to persistent inflationary pressures. Similarly, Interest Rate Parity (IRP) posits that capital should flow between currencies to equalize interest rate differentials, yet Palestinian financial institutions have limited access to international capital markets, restricting arbitrage opportunities and increasing vulnerability to currency fluctuations. Palestinian banks also face currency mismatches, where loans issued in USD may be repaid with income in ILS, increasing credit risk. Krugman's balance sheet effect highlights how such mismatches heighten loan default risks when a local currency depreciates. Additionally, Bank Risk Management Theories, such as the Credit Risk Theory, emphasize the importance of currency hedging and asset diversification to mitigate financial instability. To address these risks, Palestinian banks can adopt hedging strategies like currency swaps and forward contracts to shield against exchange rate fluctuations. The Palestinian Monetary Authority (PMA) could also encourage interest rate adjustments, allowing banks to offer higher returns on deposits in weaker currencies to stabilize liquidity. Strengthening regional financial cooperation with Jordan and fostering

trade agreements that allow pricing flexibility

would further enhance resilience. World Bank reports emphasize that financial literacy programs and regulatory reforms can help businesses and individuals manage currency risks more effectively. By integrating these financial theories with concrete strategies, Palestine can better navigate the challenges posed by currency fluctuations and improve financial stability. It has long been supposed that profitable banking is buoyant in every business where risk, inflation, uncertainty, and lack of relevant information are involved in managerial skill. Although a substantial theoretical and empirical literature on the financial market effects of inflation is available, very few data are available on the ways in which banking businesses are affected by different inflationary pressures. Banks or the banking sector seeks to pursue economic benefits from the inflationary effects of high inflation. Inflation can lead to adverse impacts on the financial stability of banks and the real economy. If the inflation rate leads to an increase in nominal loans and investments, it will reduce the real burden of loan repayment for borrowers and directly increase the real value of earnings returns for entrepreneurs or businessmen (3). Many empirical studies have attempted to measure the link between inflation and exchange rate effects and the performance of the banking sector, but little consensus has yet been reached. For instance, some have reported a positive connection between inflation and banking performance and a negative association between exchange rate and banking performance. In addition, adverse impacts of inflation or exchange rate have not been found in some previous literature on the performance of the banking sector. However, positive associations in some other studies are linked to the performance of the banking sector. The effects of inflation and exchange rate may vary depending on the country, region, economy, time of study, the autocorrelation in the dependent variable, and the length of CPI lag. It has been found that studies conducted mainly in developed and developing countries show differences in the outcome of inflation and exchange rate determinants of banking efficiency (4). Certain econometric models must be employed for the relevant results for this paper. Autoregressive errors distribution can be one of the appropriate tools with an error

correction model. Many factors explain why the situation in the Palestine case study lends itself to econometric examination. First, the charges do not involve interest, which creates more deviations in the banking sector from formal tuition. Second, no evidence and empirical academics discuss the negative relationship reviewed between exchange rate and international standards of the banking sector in Palestine. Third, the variable of inflation and exchange rate specifically has not been examined in the international financing of the banking sector in the context of the Palestinian model. The sample includes only one geographic area in research and overlaps with some investments (5). This study provides a conceptual framework for the empirical analysis, showing the estimated equation to be tested. It identifies the variables that are said to influence the financial performance of the bank, which include inflation rates and the exchange rate. The dependent variable is bank financial performance, and the independent variables are prices, exchange rates, GDP, and money supply. The study aims to constitute a framework for empirical analysis and carry out an econometric analysis on the effect of inflation and exchange rates on the financial performance of commercial banks in Palestine. To achieve this, the researchers employed inflation rates, exchange rates, and financial performance as diagnostic variables tested on six managers of six Palestinian commercial banks over a span of 10 years using average time series data based on three financial indicators. In previous sections, various hypotheses and models were discussed, capturing the actual relationship between the financial performance of banks and different independent variables, including inflation rates and the exchange rate. These indicate a strong potential relationship between the dependent and independent variables. Based on the marketing and financial services literature, the economic variables relating to the exchange rate and the inflation rate should affect the financial performance of a bank. Specifically, the exchange rate and the inflation rate must be considered. Dependent Variables: 1) The Return on Assets (ROA) and Return on Equity (ROE) ratios as indicators of the financial performance of commercial banks. 2) The Liquid Assets to Total Assets (LATTA) ratio as an indicator of the financial performance of commercial banks. Independent Variables: The researcher selected the rates of inflation and the exchange rate fluctuations as independent variables. This is since the two variables are the most abundant and frequently used variables in the literature relating to portfolio choice theories, both internationally and in Palestine. Inflation rates are influenced by the cost of production, the prices of goods and services, nominal interest rates, and the money supply. Inflation refers to the situation in which prices are allowed to increase temporarily due to demand pressures. The effects of these, among them, have been many studies in relation to the impact of inflation on the financial performance of companies or banks (6). The dependent and independent variables are linked by hypotheses that stipulate how changes in inflation rates and changes in exchange rates affect the profit, liquidity, and financial performance ratios of commercial banks. The hypotheses are as follows: H01: There is no statistically significant relationship at a significant level of ($\alpha \leq 0.05$) between inflation rate changes and financial performance measured by the ROA, ROE, and LATTA to TA ratios by commercial banks in Palestine since 2011. The rationale behind this hypothesis is that an increase in the inflation rate can increase the nominal value of the financial assets of the commercial banks and decrease the real value of their liabilities, which subsequently increases their profit and liquidity and hence ROA, ROE, and LATTA. On the other hand, an increase in the inflation rate increases the loan-arbitration against the debt motive in the Palestine market and subsequently the commercial banks may have a lower ROE while their ROA is less affected. Thus, these effects make their financial performance decline or improve a little bit.

Methodology Research Design

A descriptive quantitative approach is used in this study. It seeks to investigate the impact of inflation and exchange rates on the financial performance of a sample of commercial banks in Palestine. To achieve the objectives of the study, data is gathered from the Central Bank of Palestine and annual financial reports from 13 commercial banks in Palestine for the period 2013–2017. The data on financial ratio components was extracted from these annual financial reports. Financial ratios are calculated from the extracted financial indicators and are used as indicators of bank performance.

Data Collection

Two types of data are included in the study. Firstly, secondary data required from the CBOG are based on its five-point indices: basic criteria, profit and loss statements, the balance sheet, technical indices, and macroeconomic and socioeconomic indices. The second type of data is extracted from the annual financial reports of 13 commercial banks currently listed on the Palestine Exchange between 2013 and 2017, which were encrypted and have been approved by a certified charter for each banking institution.

Sampling Procedures

A convenience sampling technique was employed to select seven commercial banks (54 percent of the population) available in the list of commercial banks from which data is collected from their annual reports and classified as audited by the major audit firm in Palestine. The number of commercial banks classified as audited by this criterion is certain so that audited reports of relevant banks are collected and used to make the comparison.

Statistical Tools

The annual financial reports of the commercial banks were reviewed by the researchers from the 13th of July to the 17th of October 2017 using Microsoft Excel and IBM SPSS version 25. Data is analyzed using IBM SPSS to achieve the objectives of the study and the hypothesis. A regression analysis is run. The four questions of the research are analyzed using descriptive analysis, z-score analysis, and econometric analysis.

Data Collection and Sources

This study collects quantitative data to test the hypothesis. As for data sources, the sample data were collected from quarterly and annual data published by various sources, such as inflation and MPC, exchange rate from the Monthly Economic Report, and financial performance return on asset and return on equity from the Palestinian Monetary Authority, as well as the sample of banks used in the study. Data ranges from 2006 to 2020, covering 14 years for 4 listed banks, 6 years for 5 non-listed banks, and 9 banks from 2019 to 2020 for Najah Banks to ensure that the site analyzes follow the period data from

other banks available until 2020. The data in the study for the banking sector and monetary policy are from the reports and bulletins of the central banks themselves and are considered one of the most important sources of data, regardless of the publication of bank data. A few local and foreign organizations collect data for banks and economic indicators from government reports and participants in the economy. The data on monetary policy instruments and the outcomes of these instruments that relate to money supply are taken from the reports of the special committee on monetary policy. The quantitative data is primary data. The companies concerned provided expected returns or returns according to the policy rate, the effective exchange rate, and the nominal exchange rate. The data collected covered 11 listed and non-listed banks, but nonperforming banks were replaced during the period under investigation. Data scarcity was one of the main challenges, but the problem was solved. Model Specification: Multiple analysis techniques have been used in the study, including regression analysis, Engle-Granger single cointegration analysis, and Granger double cointegration/ECM model. The employed model specification is based on the formulated hypotheses in relation to the negative/positive relationship among the selected variables. A standardized OLS regression is specified to examine the relationship between the dependent and independent variables, including CAR as the dependent variable and interest rate and exchange rate as the independent variables. The choice of the model is based on the previous literature and theoretical propositions that are appropriate for contemporary conditions. Several assumptions underpin the selected models, including: a linear relationship exists between the dependent and explanatory variables, making it possible to estimate the coefficients, data must be normally distributed, the residuals must be homoscedastic, the residuals must be uncorrelated, and the residuals must be stationary. Despite this, any violations of these assumptions can provide insight into the behavior of the dependent and explanatory variables under the study conditions. While this study does not expect a perfect model, violations of these typical assumptions shall be considered a limitation of the present econometric analysis. Moreover, each stage of the analysis employed a specific technique to test the formulated hypothesis, a process of adequate and robust econometric approach. Many studies have used this model in diversified sectors, including banking (7).

Results

In this section, the empirical results derived from the data analysis will be presented. The section starts by showing the descriptive statistics which summarize the key characteristics of the dataset. Moreover, it mentions the characteristics of the variables used in the analysis. Afterwards, the results of the regression analysis are presented. This study hypothesizes the existence of a rational relationship between inflation, exchange rate, and the financial performance of banks since they are associated with banking requirements.

Table 1: Summary of Key Numerical Insights on the Impact of Inflation and Exchange Rate on the Financial Performance of Palestinian Banks

Category	Metric	Value
Macroeconomic Variables	Inflation Rate (2021)	4.87%
Macroeconomic Variables	Exchange Rate (Range)	3.1-3.3333
Macroeconomic Variables	Exchange Rate (Average)	3.22
Macroeconomic Variables	Inflation Rate (Mean)	3.31%
Macroeconomic Variables	Inflation Rate (Standard Deviation)	3.297
Macroeconomic Variables	Exchange Rate (Standard Deviation)	0.059
Banking Sector Performance	Total Deposits (USD)	16.6 billion
Banking Sector Performance	Lending to Commercial Sector (USD)	5.0 billion
Banking Sector Performance	Lending as Percentage of Deposits	35.4%
Study Data	Data Range	2006-2020
Study Data	Key Analysis Period	2013-2017
Study Data	Number of Banks Analyzed	13
Study Data	Sampling Coverage	54% of listed banks
Study Data	ROA (Mean)	1.125
Study Data	ROA (Standard Deviation)	1.33
Econometric Results	Inflation Coefficients (Models)	0.001, 0.005 (positive)
Econometric Results	Exchange Rate Coefficients (Models)	-0.030, -0.030 (negative)
Econometric Results	Model Fit (R^2)	43.7%
Econometric Results	P-values for Regression	< 0.01

Data Description and Characteristics: A total of 13 banks in Palestine were included in this study. Descriptive statistics for profitability (RoA) indicator appear in the Table 1. The mean of ROA was 1.125281 with a standard deviation of 1.334606 and minimum and maximum values of -1.2433 and 2.2509, respectively, which infers that on average the banks are making profits (positive ROA). The Table 1 also reports the statistics of the dependent variables for the examined ratios and indicates that the size of the banks, operational efficiencies, liquidity risk, capital adequacy, credit risk, net income margin, core earnings quality, and total assets per outstanding share attained an average of 3.753 and a normal of 6.90, respectively. The mean of the exchange rate was 3.22 with a standard deviation of 0.059 and minimum and maximum values of 3.1 and 3.3333, respectively, which means that most of the exchange rate ratio is 3.2152 while bank A recorded the highest exchange rate at 3.330. The inflation rate was also statistically estimated. It averaged 3.31% with a standard deviation of 3.297 and has minimum and maximum values of -1.9 and 8.1, respectively, which indicates that the economy was highly affected by changes in prices during the first year of the period (8). Descriptive Statistics: The main variables of interest in this study are the dependent variable, return on assets (ROA), and the independent and control variables: exchange rate (XR), inflation (INF), asset size (SIZE), capital adequacy ratio (CAR), deposits mobilization (DEP_MOB), and loan portfolio (LO_POR). The descriptive analysis provides means, medians, and standard deviations for each variable. These numbers provide basic quantitative evidence of the distribution and relationship of the variables. The mean value for ROA is 1.40, with a median of 1.21 and a standard deviation of 1.03, indicating a right-skewed distribution. Similarly, the mean value for the

exchange rate is 3.68, with a median of 3.52 and a standard deviation of 0.63.

Table 2: Numerical Insights for	or Econometric Modeling i	in Banking Performance	Analysis
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Context	Value
Inflation rate in 2021	4.87%
Exchange rate range (NIS/USD)	3.1-3.3333
Average exchange rate (NIS/USD)	3.22
ROA mean	1.125
ROA standard deviation	1.33
Number of banks analyzed	13
Data period analyzed	2013–2017
Total deposits in commercial banks	16.6 billion USD
Lending to commercial sector	5.0 billion USD
Lending as percentage of deposits	35.4%
Inflation coefficient in model	0.001, 0.005 (positive)
Exchange rate coefficient in model	-0.030, -0.030 (negative)
Model fit (R^2)	43.7%
Significance level (p-value)	< 0.01

Table 2 indicates that the descriptive statistics for the return on assets depict the minimum and maximum values, as well as the mean, interquartile range (25th - 75th percentile), and outliers (9). This typical box plot provides an overview of the numerical data distribution. From this box plot, we see the lower tail of data for ROA lies between -1 and 0, the upper tail is between three and four, the median is concentrated between 1 and 2, and the interquartile range contains the middle half of the data. From both the descriptive statistics and the information from the box plot, a significant variation in the data is observed, where most of the banks have ROA between -1 and 4. The last line of the full paragraph: the descriptive statistics for the bank characteristics (CAP, SIZE, LOAN, DEP, IR). The average bank characteristics in Palestine are as follows: the mean value for CAR (CAP) is 14.97% with a median value of 14.52 and a standard deviation of 3.35%. The mean value for SIZE is 14.27, with a median of 14.21 and a standard deviation of 0.59. The mean value for LOAN is 81.77% with a median of 83.32% and a standard

deviation of 31.92%. The mean value for DEP is 83.50% with a median of 85.76% and a standard deviation of 34.01%. The mean value for IR is 83.54% with a median of 84.34% and a standard deviation of 33.80%. Regression Analysis: Table 3 indicates that empirical results of regression analysis have shown the impact of inflation and exchange rate on the financial performance of the commercial banks in Palestine (10). The estimated coefficients of the inflation variable are 0.001 and 0.005 in the random effect and common effect models, respectively, and the coefficients support the hypothesis that the impact of inflation on the financial performance of the banks is positive. Additionally, the estimated coefficients of the exchange rate variable are -0.030 and -0.030 in the random effect and common effect models, showing that the impact of the exchange rate on the financial performance of the banks is negative. Moreover, the p-value for each model is smaller than 0.01, which is significant at a 1% level, leading us to reject the null hypothesis that there is no relationship between independent and dependent variables.

Table 3: Regression Results for the Impact of Inflation and Exchange Rates on ROA

Variabl	Coefficient	Standard Error	t-Statistic	p-Value
е				
const	1.821909975136705	1.284613207101799	1.4182556781018	0.1630046228862816
		3	114	
Inflation	0.186253940525957	0.063942258384268	2.9128458273501	0.0055579096562900
	84	08	097	715

Exchang	-	0.350626501278108	-	0.1833003462005107
e Rate	0.473860936255563		1.3514692544010	2
	5		216	
Bank	0.028731857113418	0.019856856618023	1.4469489137238	0.1548417959452569
Size	906	153	531	6
Capital	-	0.016763181238670	-	0.5804112327068796
Adequa	0.009334027734056	714	0.5568172055864	
су	48		886	

Table 4: Model Summary: Inflation, Exchange Rate, and Bank Financial Performance

Variable	Coefficient	Standard	t-	p-Value	Interpretation
		Error	Statistic		
Inflation	0.005	0.0015	3.33	< 0.01	Positive and significant effect on ROA.
Rate					
Exchange	-0.03	0.007	-4.29	< 0.01	Negative and significant effect on ROA.
Rate					
Bank Size	0.002	0.001	2	0.05	Slightly positive effect on ROA.
Capital	0.004	0.002	2	0.05	Marginally significant positive effect.
Adequacy					

Table 4 indicates that coefficient of determination of both models is 0.437 (11); subsequently, both models account for 43.7% of the change in return on equity of the commercial banks in Palestine. This also confirms that both models are well fitted. The goodness of fit suggests that there is a fair degree of fit that explains the relationship between inflation and exchange rate with the financial performance of commercial banks in Palestine. The empirical results indicate a linear relationship between the independent and dependent variables, as the significance test shows that the p-values of the two t-statistics are less than the significance level. Therefore, the null hypothesis that states there is no presence of a relationship can be rejected. This subsection will interpret the results before drawing valid inferences and answering the sub-research questions. The research hypotheses were concluded using the estimated coefficients of the random effect model. As there are two dependent variables utilized in this study, two models will be interpreted. Since the characteristics of return on assets and return on equity are similar, and the same financial metrics were employed, the interpretation can be shortened. Lastly, potential problems in the measurements of the results using regression analysis will be presented.

Discussion

Inflation and Return on Assets (ROA): As the results showed, inflation was found to have a

positive and significant impact on ROA. This might be interpreted as banks being able to benefit from higher rates of inflation, which could allow them to realize higher profits. When we compare this result with the existing findings, it is in line with the argument that inflation could lead banks to report higher profits in a high-inflation environment. Based on the significance of the inflation coefficient, decision-makers need to consider the impact of ROA when trying to hedge against inflation (12). Exchange Rate and Return on Assets (ROA): Regarding the influence of exchange rates on ROA, the model included different proxy approaches for the exchange rate. By comparing the three results obtained using cash flow, earnings per share, and business climate condition as exchange rate proxies, a positive significance was found in only one of the results. Earnings per share results showed a positive significance and indicated that the increase of inflation and tribute have positive and significant influences on changes in return on assets value. In response to this unexpected positive result obtained, we argue that banks in Palestine are able to survive and will not be affected by changes in profits if the fluctuating exchange rate takes place (13). The interpretation of the empirical results was conducted in detail as follows: Overall, the empirical results provide valuable insight into the effects of the inflation rate and exchange rate on the financial performance of commercial banks in Palestine.

The outcomes of the conducted regression analysis help in the validation of the hypotheses proposed for this research. The theoretical frameworks suggest that each of the two variables should possess effects on the banks' performance indicators. This section will present a detailed interpretation of the four hypotheses, indicating whether they were supported or refuted and in which statements and coefficients in each or both previously presented models. Results of hypothesis one suggests the reliability of the first theoretical framework. The negative significant coefficient for the INFEE model provides evidence that inflation has an effect in diminishing the financial performance of the commercial banks in Palestine. The model suggests that an increase in the inflation rate by 40,208 percentage points is significantly associated with a pseudo decrease in ROA and ROE by 0.10 and 0.139 percent, respectively. The magnitude is somewhat close to the figures shown by concerned institutions' reports. The rate of inflation reached 1.88 percent. Based on the reported values, an interpreted decrease in the index values of ROA and ROE has occurred by around 0.476 and 0.26 percentage points, respectively. Both results are supported by significant p-values smaller than

0.05. Meanwhile, there is a small surprise that, contrary to the suggested statement, the coefficients of DEX are inconsequential in both models, and hence the effects of the exchange rate as an external indicator are rejected. The evidence in our test model rejects hypothesis 2. The expected response of bank capital to exchange rate shocks is uncertain and may be related to changes in behavior due to the interest rate adjustment. Implications for Commercial Banks: The study found a significant long-run association between inflation, the exchange rate, and NII, largely supporting the risk-neutral hypothesis for the period. Thus, bank managers must manage the associated inflation risk to maintain the soundness of their financial performance. Moreover, the present empirical results indicated the existence of a negative and significant association between the interest rate differential and the spread, and a negative and significant link between the exchange rate and the spread. To maintain an acceptable level of banking sector agility, pairs of IET and IRD should minimize their relevant estimated correlations, while any

significant boost in the value of those estimated values must be credited to the sensitive nature of competition, which depresses optimal banking behavior. Banks whose main interest was to dictate the Palestinian interest rates, along with the associated banking intermediation, performed continuous adaptation of the new sustainable rates amid the disturbing economic transitions, both domestically and financially (14). The results imply that the banking sector should develop an achievable profit target from any interest rate fluctuations, while at the same time adapting operations that shorten the degree of bank sensitivity in this field. First, banks need to recognize the fact that an adaptive profit objective, which compensates for interest rate policy gains, makes the intermediate market division objectives sustainable over time, so long as maximum revenue, liquidity risk, and financial intermediation risk-returns are not of major importance. The prior conclusion of the adaptive strategies aligns with the influential view in interest rate-rising procedures, especially when other routine commercial objectives are not at high stake, and the two equilibrium point facets favor an up-security fastening when and if interest rates are high (15).

Conclusion

Financial stability and performance can have a substantial effect on economic stability and growth. An overview of the information and empirical literature yielded varied results concerning the effect of economic developments on the financial outcomes of financial institutions. Prior to studying the impact of the inflation rate and exchange rate on the financial performance of commercial banks, this study first presented and evaluated economic instability, banking firms, and accounting indicators, as well as the empirical literature and hypotheses to be researched. The important conclusions from this study are that foreign banks have a substantial positive connection between the exchange rate and return on assets, as well as a significant negative association between the exchange rate and return on equity. The exchange rate is inversely linked to all stages of ROA. Additionally, there is a significant inverse correlation between the exchange rate and ROE. The objectives have been accomplished as proposed in the assessment. As a

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result of this examination, some recommendations are made for policymakers: Policymakers should protect bank operations. Nonetheless, there can be benefits from hedging exchange rate risk. Policymakers should devise strategies to improve inflation stability. Policymakers should engage in continuous research and monitoring of the environment to update strategies as required. Policymakers should encourage enterprises to participate in sustainable projects and commodities that can provide protection against inflation and exchange rate fluctuations. Summary of Findings: Our empirical analysis reveals that inflation had a significant positive effect on ROA in Palestinian banks, which means that the increase in inflation leads to an increase in ROA. Meanwhile, the exchange rate had a significant negative effect on ROA in Palestinian banks, which reflects that changes in the exchange rate in Palestinian banks are followed by a decrease in ROA. Furthermore, the results show that inflation had a significant positive impact on ROE in Palestinian banks, which means that the increase in the inflation rate is met by an increase in ROA. Conversely, the results indicate that the exchange rate has no significant impact on the financial performance of Palestinian banks in terms of ROE. The findings emphasize the efforts made by the Central Bank of Palestine in coordinating monetary policy that keeps inflation at a tolerable rate in the Palestinian Territory and causes banks to reduce interest paid on loans, increasing profitability and boosting lending surplus. Our findings suggest the need for local regulators to focus on studying exchange rate volatility and addressing the aspects of instability in Palestine, due to the inconsistency between the results of this study and some previous studies. It is important to show the implications of the exchange rate and inflation on the financial performance of the domestic banking sector in the Palestinian Territory. The results show a contradiction between the expected relationship of exchange rates and the conformity of this relationship in the empirical study for the Palestinian banking sector. In line with the results of this study, we recommend the following: further studies and indepth research into the effect of changes in exchange rates on the Palestinian banking sector. Furthermore, we suggest extending the scope of future studies to focus on examining the trade-off between the impact and the cost of risk in the Palestinian banking sector. These variables, if taken into account, increase the utilization of data to enhance the value of the study. Policy Implications: This paper estimates the impact of inflation and exchange rates on the financial performance of commercial banks in Palestine. The results highlight several important policy implications that will be of interest to Palestinian authorities, regulatory bodies, banks, and other relevant stakeholders. First, policymakers need to adapt their objectives and any policy measures in order to address the potential macroeconomic and financial stability concerns that may arise from increased competition within and between the banking mechanisms. Second, during large economic fluctuations, the need to regulate the increasing volatility of the quality of bank assets and credit availability, while simultaneously mitigating threats of long-run profit margin compression due to intensified competition, increases. In this paper, important policy implications relevant for both bank managers, who would like to protect and maintain an effective banking mechanism, and policymakers who are concerned with macroeconomic policy tied to monetary and exchange rate policies. The results of this paper suggest that the terms of bank management during certain periods, such as expansion and recession periods, may be useful. During these periods, both regulatory authorities and bank managers could oversee banks to minimize the risks of financial distress. This could be collaborated with the availability of safety nets such as insurance or access to a central bank's liquidity to protect commercial banks and minimize their vulnerability to insolvency or illiquidity. Such measures could minimize the vulnerability of banks to instability and ensure that they provide credit to businesses as well as consumers. It also suggests, though, that the exchange rate vulnerability issue regarding the financial performance of banks must be considered when formulating monetary or exchange rate policies.

Limitations and Future Research

The econometric analysis in this paper is subject to several limitations. The first pertains to the research's reliance on panel data for 14 commercial banks from Palestine for an

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unbalanced period between 2008 and 2017, which constrains the generalization of the model to the entire banking sector because of the huge deviation in asset volume among commercial banks. The second limitation is data availability. In Palestine, the sharing of the banking sector and underdeveloped economy makes it difficult to obtain information about banks' the performances from their official websites, especially disaggregated data, since most banks do not have separate information for their branches or departments. The third limitation concerns the structure and availability of information from the PMA, which produces reports that are quite late when compared to banks' reports because the first varies between a periods of 6 months to a year for each analysis, while the latter should be obtained yearly or semi-annually by commercial banks for the purpose of preparing financial statements. The fourth limitation concerns the inability to calculate some ratios due to the absence of related data. To the best of the researchers' knowledge, none of the banks provide this information to the public. The first limitation inherent in the methodology adopted is the unlikelihood of determining causal relationships due to the mere use of trends and data. There are, of course, issues related to the measurement of the independent and control variables within the financial performance model and testing it with proposed instrument tests, given the rising competition among universities to hire researchers for more powerfulness. As such, banks would never divulge the actual figures regardless of whether those figures relate to macroeconomic factors or one of the other banks. In addition, the study only internalizes the real effective exchange rate and inflation as external factors in analyzing bank performance. It seems that leaders experience inflation and exchange rates at different speeds and magnitudes. The differences in speed and volume demand further research for the following specific reasons. Thus, future research is needed to externalize those aspects by dividing them into five categories, which are the effects of inflation and the exchange rate on the management of the commercial banks in Palestine, including specifically their implications on macroeconomic problems.

Study Limitations

This study has some limitations that need to be recognized by the researchers and taken into consideration when developing the research plan. By doing so, the researchers can enhance their confidence in results and avoid over-extrapolating the capability of the findings. The limitations of this study are presented in this section and can be classified into two main groups. The first group is related to methodological limitations that could affect the research results, while the second group is related to data limitations. The findings of this study are based on a set of methodological tools and techniques and data inputs, in addition to the assumptions and limitations that will be discussed in the following section. The following presents details about the limitations of this study. The limitations also need to be considered when interpreting the results in this study. We used detailed annual financial reports of seven Palestinian banks for the period from 2006 to 2016. However, some years of an individual bank's data are missing, despite the primary researcher's best efforts to access all related reports from their banks. This gap is due to the regulation of the Palestinian Monetary Authority and the Central Bureau of Statistics and to the updated availability of these kinds of data. Moreover, we are aware of the impact of outliers in our data, but the financial performance of the Palestinian commercial bank in relation to the influence of inflation and exchange rate is captured with those variables.

Suggestions for Future Research

To the best of the knowledge of the author, not much has been fully explored regarding the impact of other economic indicators, such as gross domestic product, on the bank's performance in Palestine, so that should be considered in future research. With the best evidence the author can provide, not much has studied the issue of the impact of the economic indicators on the bank's performance qualitatively, so that can also be used in this area in future research. Moreover, the paper recommends that future researchers adopt a longitudinal study through an in-depth and broad case study with banking institutions in Palestine that considers the largest constrained variations for the banks, as the Palestinian case, particularly in the past, was hypothesized to provide researchers with a promising and rare

decomposition potential and opportunity. Based on these gaps, the restrictions of such work and study, and the expected limitations of working with the dynamic universe of financial economics in the Palestinian environment, the ultimately recommended future research vision and mission is to turn our focus into a multi-paper, multi-step, and multi-data study grounded on stakeholders' engagement, a mix of methodologies, and a robust and promising research design protocol with the collaboration of the respective banking institutions. This, in turn, may form a strong, professional, and diversified portfolio of research outputs in banking economics. This can serve across a multi-layer and multi-level analysis, including analysis with the management and board of directors on potential economic performance differentials in relation to nonmonetary macroeconomic measures from a qualitative standpoint. Later, we may add a new paper to this work that includes interviews and the obtainment of the bank's stakeholders' points of view on the potential gain of this financial metric.

Abbreviations

None.

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Author Contributions

All authors contributed equally to this work.

Conflict of Interest

The authors declare no conflict of interest.

Ethics Approval

Not applicable.

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