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Determinants of Profitability of Jordanian Banks: A Panel Data Analysis

محددات ربحية البنوك الأردنية: تحليل البيانات التجميعية

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Abstract:

The study examines the determinants of tenJordanian conventional banks' performance between2000 and 2015 using the panel data methods. A variety of internal factors (bank specific variables: deposits growth, capital, efficiency, liquidity and risk), and external banking characteristics macroeconomic factors (external variables: inflation and GDP)were used to predict profitability which is in turn tested using two profitability measures (ROA and ROE).

Before starting the analysis, the unit root test using the LCC is applied and the results indicate that all the study variables are stationary at the level during the study period which allows applying the fixed effect and the random effect models the selection of the best model is done through applying the Hausman test.

Finally, the results of the hypotheses testing show that capital and efficiency are important in explaining banks' profitability using both ROE and ROA. While operating expenses are negatively and strongly linked to Jordanian banks profitability, capital shows a positive impact on it. GDP tends to have a positive and significant impact on banks profitability measured by the ROA. But the results reveal that the following variables: liquidity, deposit growth, risk, size, and inflation don't have a significant impact on the profitability of the studied banks.

Key words: profitqbility, panel data, banks, Jordan.

ملخص:

سعت الدراسة إلى فحص محددات أداء عشرة بنوك تقليدية أردنية بين عامي *2000* و2015 باستخدام أسلوب البيانات التجميعية. أين تم استخدام مجموعة متنوعة من العوامل الداخلية (المتغيرات الخاصة بالبنوك: نمو الودائع، رأس المال، الكفاءة، السيولة والمخاطر)، ومجموعة أخرى من العوامل الخارجية (المتغيرات الاقتصادية الكلية: التضخم والناتج المحلي الإجمالي) للتنبؤ بالربحية التي يتم اختبارها باستخدام مقياسين للربحية وهما معدل العائد على الأصول ومعدل العائد على حقوق الملكية.

قبل الشروع في التحليل، تم تطبيق اختبار جذر الوحدة باستخدام *LCC* وتشير النتائج إلى أن جميع متغيرات الدراسة مستقرة عند المستوى خلال فترة الدراسة مما يسمح بتطبيق التأثير الثابت ونماذج التأثير العشوائي على اختيار أفضل نموذج وذلك من خلال تطبيق اختبار *Hausman*.

وأخيرًا، تظهر نتائج اختبار الفرضيات أن رأس المال والكفاءة كان لهما أثر ذو دلالة احصائية في تفسير ربحية البنوك باستخدام كل من معدل العائد على الأصول ومعدل العائد على حقوق الملكية. في حين أن النفقات التشغيلية مرتبطة ارتباطًا سلبيًا بربحية البنوك الأردنية، فقط أظهر رأس المال تأثيرًا إيجابيًا على المؤشرين.الناتج المحلي الإجمالي كان له تأثير إيجابي وكبير على ربحية البنوك التي تم قياسها من خلال معدل العائد. في الأخير تبين أن المتغيرات التالية: السيولة ونمو الودائع والمخاطر والحجم والتضخم ليس لها أثر ذو دلالة إحصائية على ربحية البنوك المدروسة.

كلمات مفتاحية: الربحية، البيانات التجميعية، البنوك، الأردن.

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1. Introduction

The banking sector is very active in Jordan. It is one of the main pillars of the national wealth and it is pushing the whole economy forward. This is obviously a stake that is placing the whole sector in a leading position as some Kingdom based banks are offering online banking services that leading international banks are not able to provide today. It's the result of partnerships between these banks and software development companies located in the country.According to oxford business group (2015) Jordan's banking sector is the strongest segment of its financial services industry, with a history of dating back to 1948, when Arab Bank moved its headquarters from Jerusalem to Amman. Banking accounted for 18.82% of GDP as of mid-2015, making it one of the largest economic sectors in the

kingdom.Despite ongoing regional volatility, low oil prices and slowing GDP growth within the kingdom, the banking sector remains resilient, stable and attractive to investors

Moreover, the banking system in Jordan consists of the Central Bank of Jordan (CBJ), licensed banks, and specialized credit institutions. The establishment of licensed banks in Jordan dates back to1925 when the Ottoman Bank (later to become British Bank) started its operations. Following this, and due to the 1948 Arab-Israeli War, the Arab Bank, which was established in Palestine (Jerusalem) in 1930, moved its headquarters to Amman (Jordan). In other words, since the late 1950s and early 1960s, the Jordanian economy has been witnessing the growth of privately licensed banks. Indeed, since that time period, the total number of banks has grown to reach thirteen national banks, two Islamic banks, and eight foreign banks.

It is obvious that uncertainty and volatility are the main attributes of today's nations' economies and a stable banking system is a key ingredient for a healthy and successful economy. Since, the economy health is closely related to the soundness of its banking system, people need to have confidence that the system is safe and stable and performs in the best way. While, banks represent the major players in economies, its stability is a crucial issue that needs more investigation. Accordingly, the current study attempts to investigate the profitability determinants of Jordanian conventional banks using the panel data models.

Furthermore, the current paper aimed at helping Jordanian conventional banks to improve their profitability and remain competitive. The explanatory variables used in this study are bank-specific factors and macroeconomic determinants. This paper is organized as follows: an introduction to introduce the research and it presents the study problem, the study objectives and hypotheses, the next section presents the

literature review. The third section explains thedata and the model specification including the sample, the sources of data, and the empirical model used in the study. The fourth section reports the empirical findings of the study. Section five concludes the study.

1.1 Research Objectives

The current research seeks to achieve the following objectives:

1. To identify the most important profitability determinants of Jordanian banks;
2. To determine the most significant influencer variable on Jordanian banks' profitability;
3. to help managers in Jordanian conventional banks to improve their banks' profitability to remain competitive;

1.2 Research Hypotheses

In order to achieve the study objectives, the following hypotheses are developed:

H_1: Jordanian conventional banks' profitability is positively influenced by yearly growth of deposits.

H_2: Jordanian conventional banks' profitability is positively influenced by capital.

H_3: Jordanian conventional banks' profitability is negatively influenced by efficiency.

H_4: Jordanian conventional banks' profitability is negatively influenced by liquidity.

H_5: Jordanian conventional banks' profitability is negatively influenced by credit risk.

H_6: Jordanian conventional banks' profitability is positively influenced by bank size.

H_7: Jordanian conventional banks' profitability is positively influenced by Inflation.

H_8: Jordanian conventional banks' profitability is positively influenced by GDP.

2. Literature Review

A large number of empirical studies have been conducted about determinants of bank profitability. Most of these studies were conducted in the developed countries, while very few studies provide evidence from developing countries. One of the early studies attempted to find out the major determinants of bank profitability and profitability was carried by Short (1979) and Brouke (1989). Since then many studies have been conducted by other researchers,

Athanasoglou et al. (2008) examined the effect of bank-specific, industry-specific and macroeconomic determinants of Greek banks' profitability s over 1985-2001. They found that capital is important in explaining bank profitability and the increased exposure to credit risk lowers profits. Additionally, labor productivity growth has a positive and significant impact on profitability, while operating expenses are negatively linked to it. The estimated effect of size does not provide evidence of economies of scale in banking. Macroeconomic control variables, such as inflation and cyclical output affect the profitability of the banking sector.

Vong and Chan (2008)examinethe impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the Macao banking industry. the results show that the capital strength of a bank is of paramount importance in affecting its profitability. A well-capitalised bank is perceived to be of lower risk and such an advantage will be translated into higher

profitability. On the other hand, the asset quality, as measured by the loan-loss provisions, affects the performance of banks adversely. In addition, banks with a large retail deposit-taking network do not achieve a level of profitability higher than those with a smaller network. Finally, with regard to macroeconomic variables, only the rate of inflation exhibits a significant relationship with banks' performance.

Zeitun (2012)investigates some influential factors (foreign ownership, banks-specific variables, and macroeconomic factors) on Islamic and conventional banks in Gulf Cooperation Council (GCC) countries, during the period 2002- 2009, using a cross-sectional time series (panel data). Two samples are used in this study. The first sample contains 38 conventional banks. The second sample contains 13 Islamic banks. The results show that bank's equity is important in explaining and increasing conventional banks profitability only. The cost-to-income had a negative and significant impact on Islamic and conventional banks performance. Additionally, the estimated effect of size provides evidence of economies of scale in Islamic banking using the ROE, while it is not significant for conventional banks. Foreign ownership, however, does not improve Islamic and conventional banks performance. Furthermore, bank's age and banking development have no effect on bank performance. Finally, GDP is positively correlated to bank's profitability, while inflation is negatively correlated to bank's profitability.

Muda and Shaharuddin (2013)Examined the determinants of profitability of the domestic and foreign Islamic banks operating inMalaysia. The Generalized Least Square (GLS) is employedwith unbalanced panel data on seventeenIslamic banks, using quarterly data for the period of 2007 to2010. In order to find out the differencesin the profitability determinants, the sample of banks isdivided into two sub-samples (domestic andforeign). The results reveal that domestic Islamic

banksare more profitable than foreign Islamic banks. The results also show that the profitabilitydeterminants of domestic banks are different from those of foreign banks. The overhead expenses,loans, efficiency, gross domestic product growth rateand bank size have a significant effect indetermining banks' profitability, in which case applicable tothe domestic banks only. In turn, thegross domestic product per capita has a significant effect in determining banks' profitability of onlythe foreign banks. The study finds that, deposits, capital andreserves, inflation and banks' age have asignificant effect in determining banks' profitability of both domestic and foreign banks. Meanwhile,liquidity and concentration are not able to explain thevariability of domestic and foreign Islamicbanks' profitability. The findings indicate that the profitability of domestic banks is affected by theglobal financial crisis while, the profitability of foreign banks is not affected.

Petria,Capraru andLhnatov (2015) the researchers inthis study assess the main determinants of banks' profitability in EU27 over the period 2004-2011. They split the factors that influence bank profitability in two large groups: bank-specific (internal) factors and industry specific and macroeconomic (external) factors. By considering as proxy for banks profitability the return on average assets (ROAA) and the return on average equity (ROAE). The results of the study reveal thatcredit and liquidity risk, management efficiency, the diversification of business, the market concentration/competition and the economic growth have influence on bank profitability, both on ROAA and ROAE. An interesting and valuable result is the positive influence of competition on bankprofitability in EU27.

Rahman, Hamidand Khan(2015), This study attempts to investigate capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities, liquidity as potential bank specific determinants as well as growth in gross domestic products, inflation as potential

macroeconomic determinants of bank profitability by taking 25 commercial banks from Bangladesh for a period ranges from 2006 to 2013. Three different measures of profitability namely return on assets (ROA), net interest margin over total assets (NIM) and return on equity (ROE) are used in the study. The empirical findings suggest that capital strength (both regulatory capital and equity capital) and loan intensity has positive and significant impact on profitability. Results also show that cost efficiency and off-balance sheet activities have negative and significant impact on bank profitability. The impact of other variables is not uniform in respect of different measures of profitability. Non-interest income, credit risk and GGDP are found as important determinant for NIM. Size has a positive and significant impact on ROA. Finally inflation has a negative and significant impact on ROA and ROE.

The preceding literature have used a variety of factors to determine the main influencing variables of banks performance and profitability, and these studies were done on different countries and samples. Accordingly, this study aims at identifying the main determinants of cconventional banks in Jordan using a variety of internal factors (bank specific variables: deposits growth, capital, efficiency, liquidity and risk), and external banking characteristics macroeconomic factors (external variables: inflation and GDP) were used to predict profitability which is in turn tested using two profitability measures (ROA and ROE).

3. Methodology and Model Specification

The following section provides some insights about the sample, the data and the model specification for the current study:

3.1 Data and Sample

A cross-sectional and time-series (panel data analysis) data concerning ten Jordanian conventional bank (Arab Bank, Arab Jordan Investment Bank, Arab Banking Corporation, Bank Of Jordan, Cairo Amman Bank, Jordan Kuwait Bank, Housing Bank, Union Bank, Jordan National BankAnd Jordan Investment And Finance bank)were employed in this study derived from the Bankscope databases and from Amman stock exchange for the period 200-2015 however, the data for the macroeconomic variables is gotten from the World Bank data base. Here are several advantages to using panel data. Gujarati (2004) and Baltagi (1995) stated that the preference of the pooled data appears through:

1. Pooled data can better detect and measure the effects that simply cannot be observed in pure-cross sectional or time series.
2. By combining time series of cross-section observations, pool data give "more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency".
3. Pooled data provides the ability to construct and test more complicated behavioral models than purely cross-section or time series data.
4. Pooled data provides better opportunities to study the dynamics of adjustment.

3.2 Model Specification

In this study two measures of bank profitability (profitability) are used: Return on assets (ROA), which is net income to total assets, and Return on equity (ROE), which is net income to total equity. These two ratios are considered by Sinkey (2002) as the best measures of a bank's profitability

The variables affecting Islamic banks profitability and the equation relating ROE and ROA and their determinants that will be tested are as following:

$$PROF_{i,t} = \alpha_0 + \beta_1 CAP_{i,t} + \beta_2 EFF_{i,t} + \beta_3 DEP_{i,t} + \beta_4 LIQ_{i,t} + \beta_5 RIS_{i,t} + \beta_6 SIZ_{i,t} + \beta_7 GDP_{i,t} + \beta_8 INF_{i,t} + \varepsilon_{it} \quad \textbf{(1)}$$

Where: $PROF_{i,t}$ represents two alternative profitability measures (ROA or ROE) for the bank *i* during the period *t*. $CAP_{i,t}$ is capital ratio of bank *i* at time *t*; $SIZ_{i,t}$ the size of bank *i* at time *t*; $DEP_{i,t}$ the annual deposit growth for bank *i* between period *t* and *t-1*. $LIQ_{i,t}$ the liquidity ratio for the bank *i* during the period *t*. $RIS_{i,t}$ the loan-to-total assets ratio that represent the risk born by the bank *i* during the period *t*. $EFF_{i,t}$, the bank' i efficiency during the period *t*. $INF_{i,t}$, is the inflation rate, however the $GDP_{i,t}$ growth is a measure of economic conditions, α_0 is a constant; β_i $(i = 1\ to\ 10)$ is variable coefficient; while ε_{it} is an error term. The following table provides the definitions, the notation and the expected effect of the independent variables on banks' profitability.

Table 1 Definitions, Notation and Expected Effect of the Explanatory Variables on Profitability

Variable	Definition(s)	Notation	Exp. e
The dependent variables			
Profitability	The "*Return on Assets*" is defined as the after tax net income divided by total assets of each bank.	ROA	
	and/or	and/or	/
	The "*Return on Equity*" is defined as the after tax net income divided by total equity of each bank.	ROE	
The independent variables:			
Bank internal determinants			
Capital	The "*Capital*" variable is defined for each bank, as the ratio of equity to total assets. This ratio measures the		(+

	ability of the bank to withstand losses. A declining trend in this ratio may signal increased risk exposure and possibly capital adequacy problems.	CAP	
Efficiency	The "*Efficiency*" ratio is defined for each bank as the ratio of total overheads to total assets	EFF	(-
Risk	The "*Risk*" is the ratio of net loans-to-total assets for each bank. It indicates what percentage of the assets of the bank is tied up in loans.	RIS	(+
Deposit	The "*Deposit*" is defined as the annual growth of deposits (percentage) for each bank.	DEP	(+
Liquidity	The "Liquidity" is defined as the ratio of net loans-to-total deposits for each bank.	LIQ	(-
External determinants:			
Macroeconomic variables			
Inflation	Is the inflation ratio	INF	(+
GDP Growth	is a measure of economic conditions	GDP	(+
Structural variables			
Size	The natural logarithm of the banks' total assets	ZIS	(+

Source: prepared by the researcher.

4. Empirical Results

Table 2 below reports the descriptive statistics of the variables used in the regression analysis.

Table (2) Descriptive Statistics

	ROA?	ROE?	DEP?	LIQ?	EFF?	RIS?	CAP?	INF?	GDP?
Mean	1.3135	8.6166	9.2328	55.3287	249.7258	74.2182	12.4732	3.8331	5.1197
Max	4.9700	39.840	50.000	97.4400	449.000	5060.00	20.3900	14.900	8.6000
Min	0.2700	-5.8600	-17.150	22.5100	2.9500	19.1600	3.23000	-0.9000	2.3000
Std.Dev	0.6916	5.8775	12.131	14.0773	74.7488	400.551	3.6178	3.5629	2.2760
Obs	157	157	157	157	157	157	157	157	157
Cross sections	10	10	10	10	10	10	10	10	10

4.1 Panel Unit Root Test Results

The unit root test results applying LLC test, are reported in table (3), these results show that the null hypotheses of the *unitroot* existence (non- Stationarity THE PANEL DATA HAS A UNIT ROOT) are rejected at 1% level, which indicate that all the study variables are stationary at the level during the study period. These findings imply that the study's variables show a degree of time dependency that allows applying the Pooled Least Square method.

Table (3) Panel Unit Root Test Results

Islamic banks

Variable	T-Statistic	Probability	Decision
ROE	-1.9311	0.0267**	Reject H_0. There is no unit root
ROA	-4.4571	0.0000***	Reject H_0. There is no unit root
LIQ	-2.1988	0.0013***	Reject H_0. There is no unit root
EFF	-1.76875	0.0385***	Reject H_0. There is no unit root
RIS	-2.4001	0.0082***	Reject H_0. There is no unit root
CAP	-2.2998	0.0107**	Reject H_0. There is no unit root
DEP	-3.9219	0.0000***	Reject H_0. There is no unit root
SIZ	-2.31010	0.0104**	Reject H_0. There is no unit root
GDP	-5.0729	0.0000***	Reject H_0. There is no unit root
INF	-5.7622	0.0000***	Reject H_0. There is no unit root

"***","**"Significant at 1% and 5% levels respectively

4.2 The Hausman test

Before starting the analysis we have to select the best estimation method in order to get accurate results,depending on Hausman test results the researchers decide which method is appropriate the random effect model or the fixed effect model.

H_0: The random effect model is appropriate.
H_1: The fixed effect model is appropriate

If P value is less than 5% we reject the null hypotheses and we accept the alternative Table4 below indicates that: First, when ROA is used as a dependent variable the p value is more than 5% which means that the null hypothesis is accepted in other words the random effect model is appropriate in this case. But, when ROE is used as a dependent variable the results reveal that the fixed effect model is appropriate since, the null hypothesis is rejected (the p=0.008 less than 5%).
Accordingly, the researchers will use the random effect model to estimate the results and to test the hypotheses when the ROA is used as a dependent variable,

but the fixed effect model is used when the results are estimated using the ROE as a dependent variable.

Table 4The Hausman test results

Test cross-section random effects when ROA is used			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.454306	8	0.9027
Test cross-section random effects when ROE is used			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.700829	8	0.0080

4.3 Regression Results of Banks' Profitability Determinants

This section presents and analyzes the regression results for Jordanian banks profitability models and table (5) reports the statistical outcomes of these analyses. Two regression models are used to investigate the main factors that determine the banks' profitability.

In regression (1) banks' ROA is regressed against all bank specific, structural and macroeconomic variables:

$$ROE_{i,t} = \alpha_0 + \beta_1 CAP_{i,t} + \beta_2 EFF_{i,t} + \beta_3 DEP_{i,t} + \beta_4 LIQ_{i,t} + \beta_5 RIS_{i,t} + \beta_6 SIZ_{i,t} + \beta_7 INF + \beta_7 GDP + \varepsilon_{it} \quad \textbf{(2)}$$

In regression (2) banks' ROE is regressed against all bankspecific, structural and macroeconomic variables:

$$ROA_{i,t} = \alpha_0 + \beta_1 CAP_{i,t} + \beta_2 EFF_{i,t} + \beta_3 DEP_{i,t} + \beta_4 LIQ_{i,t} + \beta_5 RIS_{i,t} + \beta_6 SIZ_{i,t} + \beta_7 INF + \beta_7 GDP + \varepsilon_{it} \quad \textbf{(3)}$$

From the tables (5 and 6) it is obvious that the explanatory power of the R^2 explained about 54 % from the variation, of Jordanian banks' profitability when ROA is used as dependent variable and 35 % when ROE is used. The adequacy of the models as predicting is validated by the F-test. As indicated in tables (5 and 6), the values of all F-ratios are statistically significant at 5% for the two models. The results of these tests confirmed that the models applied are useful for measuring the relationship between internal and external variable items and the profitability ratios.

Regression (1)

Table 5 presents the results of the regression estimation using the random effect Model, when ROA is considered as a dependent variable. The results reveal that the deposit growth has a positive but statistically insignificant impact on Jordanian banks profitability and this result is inconsistent with the earlier works of Vong and Chan (2008) accordingly H_1 is rejected.

Contrary, the capital ratio shows a positive and significant effect on banks' return on assets, This supports the view that profitable banks remain well capitalized; or the view that well capitalized banks enjoy access to cheaper (less risky) sources of funds with subsequent improvement in profit rates. Many previous studies of the determinants of bank profitability found a strong and statistically significant positive relationship between banks' capital and profitability such asZeitun (2012).Hence, H_2 is accepted.

The efficiency ratio appears to be an important determinant of Jordanian banks profitability Furthermore, a 1% change in *total overheads to total assets ratio* triggering about -0.25 % change in profitability. However, their negative effect means that there is a lack of efficiency in expenses management since banks pass part of increased cost to customers and the remaining part to profits, possibly due to the fact that competition does not allow them to "overcharge". Clearly, efficient

cost management is a prerequisite for improved profitability of banks in any country, which have not reached the maturity level required to link quality effects from increased spending to higher bank profits. This result is consistent ith the finding of Petria,Capraru and Lhnatov (2015). From the earlier results it can be concluded that H_3 is accepted.

The *net loans-to-total assets ratio* (RIS), in contrast to what it was expected has a negative but statistically insignificant impact on banks return on equity (ROA) and this result is similar to what Vong and Chan (2008) has found in his study which means that H_4 is rejected.

Moreover, the liquidity ratio shows a positive but insignificant impact on Jordanian conventional banks'profitability. Liquidity ratios indicate the ability of the firm to meet recurring financial obligations. Liquidity is important for the firm to avoid defaulting on its financial obligations and, thus, to avoid experiencing financial distress (Ross, Westerfield and Jaffe 2005).The higher liquidity ratios mean bank has larger margin of safety and ability to cover its short term obligations but at the same time bank with high liquidity ratio will lose many investment opportunities which will decrease its profit. This result is consistent with the earlier work of Muda and Shaharuddin (2013)**.** From the results stated in table 5 it can be concluded that H_5 is rejected.

The Jordanian banks' *size* negatively impacts the banks profitability but the impact is statistically insignificant and this finding doesn't support the result found by, moreover, industrial economic theory postulates that if an industry is subjected to economies of scale, large institutions will be more efficient, and thus are able to produce services at a lower cost**.**Depending on the results mentioned in table 5, H_6 is rejected.

The *inflation (INF)* is considered in this study as a macroeconomic factor, and the results indicate that the inflation has a negative but statistically insignificant impact,

on the profitabilty of conventional banks in Jordan,which can be explained by the low levels of inflation rates in Jordan in the recent years. Consequently, H_7 is rejected. Perry (1992) points out that the effect of inflation on bank profitabilty depends on whether the inflation is anticipated or unanticipated. In this study this variable is expected to have a positive impact on banks' profitabilty for both Islamic as well as traditional banks.

The GDP has a positive and significant impact on banks' return on assets and 1% change in this factor will generate about 7% change in the ROA, this means that H_8 is accepted. Athanasoglou et al. (2008).

Table (5) Estimation Results for random effect Model Using ROA as Dependent Variable for Jordanian Conventional Banks

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Deci
C	-0.118274	0.370188	-0.319498	0.7498	
DEP	0.006962	0.004357	1.597978	0.1123	H_1 is rejec
CAP	0.101950	0.017722	5.752788	0.0000	H_2 is acce
EFF	-0.002521	0.000814	-3.098506	0.0024	H_3 is acce
RIS	-8.81E-05	0.000105	-0.841349	0.4016	H_4 is rejec
LIQ	0.006839	0.005007	1.365847	0.1742	H_5 is rejec
SIZ	-1.77E-10	2.92E-10	-0.606602	0.5451	H_6 is rejec
INF	-0.001324	0.012979	-0.102033	0.9189	H_7 is rejec
GDP	0.071623	0.022887	3.129449	0.0021	$H_8$is accep

R-squared	0.536149	Mean dependent var	1.313503
Adjusted R-squared	0.479419	S.D. dependent var	0.691609
F-statistic	9.450900	Sum squared resid	34.61179
Prob(F- statistic)	0.0000	Durbin-Watson stat)	1.485088

Regression (2)

Table 6 reports the results of the regression analysis using the ROE model rrom this table we can see that the total deposit growth ratio (DEP) has a positive but statisticallyinsignificant effect on banks'profitabilty represented by the ROE measure.This result is consistent with the earlier works of Vong and Chan (2008) this means that H_1 is rejected.

As it was expected the impact of capital on banks' profitability represented by the return on equity is positive and significant and 1% change in capital generates about 38 % in banks' ROE, we know that banks with high capital ratios are less risky and typically perform better during difficult times and lower risk increases creditworthiness and reduces funding costs. Moreover, banks with a higher capital ratio often have a smaller need for external funding which has a positive effect on profitability. From the results in the table below we can conclude that H_2 is accepted.

The efficiency of financial institutions is relatively difficult to be measured since their products and services are of intangible nature. Therefore, in this study the ratio of overheads-to-total assets is used to provide information on the variation in operation costs across the banking system. In addition this ratio reflects employment, total amount of wages and salaries as well as the cost of running branch office facilities. Hence, the expected effect of this variable on banks profitability is negative. According to table 6 H_3 is accepted and the result is consistent with the work of Petria,Capraru and Lhnatov (2015).

As well, *the risk* trails behind a negative but statistically insignificant effect on banks' ROE, which means that H_4 is rejected.

Moreover, the impact of the liquidity ratio on the return on equity of the Jordanian banks is positive but statistically insignificant this insignificant effect is inconsistent with the finding Muda and Shaharuddin (2013)of accordingly H_5 is rejected.

The Jordanian banks' *size* has a positive but statistically insignificant effect on banks' return on equity and this result stand in line with the empirical findings of Rahman, Hamid and Khan (2015) , this result can be explain by the view which states that well capitalized banks tend to be more profitable and if an industry is subjected to economies of scale, large institutions will be more efficient, and thus are able to produce services at a lower cost therefore, H_6 is rejected.

Inflation tends to have a positive but statistically insignificant impact on Jordanianconventional banks' return on equity, and the positive impact can be economically explained as follows: High inflation rates are generally associated with high interest rates which increase banks' profitability. This is under the competition circumstances and whether banks can pass-through increase in costs (high deposit rates) to customers (clients). Thus, H_7 is rejected.

Finally, the GDP seems to have a positive but statistically insignificant impact onbanks return on assets, subsequently, H_8 is rejected.

Table (6) Estimation Results for fixed effect Model Using ROE as Dependent Variable for Jordanian Conventional Banks

Variable	Coefficient	Std. Error	t-Statistic	Prob.	D
C	7.706360	3.710982	2.076636	0.0397	
DEP?	0.061304	0.043673	1.403689	0.1626	H_1 is re
CAP?	0.382078	0.177654	2.150685	0.0332	H_2 is ac
EFF?	-0.018933	0.008158	-2.320936	0.0217	H_3 is ac

RIS?	-0.001044	0.001049	-0.994613	0.3217	H_4 is re
LIQ?	0.022535	0.050196	0.448947	0.6542	H_5 is re
SIZ?	5.57E-10	2.93E-09	0.190275	0.8494	H_6 is re
INF?	-0.207621	0.229430	-0.904946	0.3671	H_7 is re
GDP?	0.045718	0.130107	0.351386	0.7258	H_8 is re

R-squared	0.354590	Mean dependent var	8.616685
Adjusted R-squared	0.275655	S.D. dependent var	5.877582
F-statistic	4.492178	Sum squared resid	3478.224
Prob(F- statistic)	0.0000	Durbin-Watson stat)	0.970161

Conclusion

The main aim of this paper is to specify an empirical framework to investigate the effect of bank-specific, structural and macroeconomic determinants on the profitability of Jordanian Conventional banks, by using the panel data for the period 2000-2015.

Bank-specific factors (internal variables: deposits growth, capital, efficiency, liquidity and risk), macroeconomic factors (external variables: inflation and GDP) and structural variables (bank size) have been used in this study as independent variables and two profitability measures (ROA and ROE) are used as dependent variables. Before starting the analysis, the unit root test using the LCC is applied and the results indicate that all the study variables are stationary at the level during the study period which allows applying the fixed effect and the random effect models.

The results of the hypotheses testing show that capital and efficiency are important in explaining banks' profitability using both ROE and ROA.While operating expenses are negatively and strongly linked to Jordanian banks profitability, capital shows a positive impact on it. GDP tends to have a positive and significant impact on banks profitability measured by the ROA But the results reveal that the following

variables: liquidity, deposit growth, risk, size, and inflation don't have a significant impact on the profitability of the studied banks.

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