The Impact of Macroeconomic, Structural Variables and Banks' Characteristics on Islamic Banks Performance: Panel Evidence from Jordanian banks (2000-2014)

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Abstract: The study examines the determinants of Jordanian Islamic banks' performance during the period 2000-2014 and the study sample includes 2 Islamic banks. A variety of bank-specific Characteristics (internal determinants: capital, deposit, risk, efficiency, liquidity), macroeconomic and structural determinants (external variables: GPD, inflation and bank size) are used to predict the performance, using the panel regression analysis.The results reveal that: first, all internal banks' determinants, with the exception of liquidity risk and efficiency, significantly affect the Islamic banks profitability using both measures (ROE and ROA) in the study period. Second, the paper finds that the macro-economic indicators such inflation and GDP have a significant impact on Islamic bank's performance. Finally, turning to financial structure and its impact on bank's performance, the researcher finds that size is beneficial to the Jordanian Islamic banks.

Keywords: Profitability, Islamic Banks, Panel Data, Jordan.

Jel Classification Codes : L25, G21, C33.

I- Introduction:

Islamic banking system is fifty years old and it is a part of banking system. Since, the first Islamic bank has been established at the beginning of the 1960s in Egypt and the activity of Islamic banking growing steadily since the beginning of the 1970s all over the world during eighties of the twentieth century. The Islamic banking system witnessed a main great growth. The major progress was the foundation of Islamic and Training Institute by Islamic Development Bank in Jeddah to conduct research at the practical and theoretical level. Bahrain and Malaysia are examples of the countries which encourage Islamic banking. The banking systems were converted to noninterest banks in Iran, Pakistan, and Sudan. In addition, western commercial banks began to provide Islamic products through what is known as Islamic windows (Greuning & Iqbal, 2008) [1]

Total worldwide assets managed in accordance with the principles of Islamic finance are estimated at over US$ 800 billion, with growth of between 10% and 15% over the last ten years (Ilias, 2010) [2]. Global Islamic banking assets held by commercial banks are set to cross US$1.8 trillion in 2013, up from the US$1.3 trillion of assets held in 2011, According to Ernst & Young's World Islamic Banking Competitiveness Report 2013[3], there were about 270 Islamic financial institution worldwide, including banks, mutual funds, mortgage companies, and insurance firms. However, Islamic finance is not limited to stakeholders with common religious backgrounds. Britain, as an example, has announced plans to turn London into the world centre of Islamic finance. Moreover the global Islamic financial services industry reached an overall total value of USD1.88 trillion as of 2015.

It is also interesting to note that charging interest is prohibited in Buddhism, Hinduism, and many other faiths and philosophies (Wayne and McIntosh, 1998) [4]. Islamic Finance as terminology refer to finance system complying with Shari'ah laws that were

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introduced by prophet Mohamed (Peace Be Upon Him) in the sixth century with its main two sources Quran (the holy book of Islam) and Sunnah (also known as prophet's sayings or Hadith). After the prophet death, Islamic scholars and Jurists depended on other sources like Ijmaa (consensus), Qias (Analogy) and Ijthad (Diligence). The Islamic based financial transactions continued until the sixteen century (El-Salous, 1993) [5]. In the seventeenth century and because of the colonization, this Islamic banking system was replaced by the western banking system (i.e. Traditional) (Archer & Abd El Karim 2002) [6].

Moreover, The Jordanian banking sector has long established itself as one of the key pillars and mainstays of both the Jordanian services sector and the economy at large. But, during 2008, this sector and the economy as a whole were exposed to a series of shocks. Furthermore, Islamic banks in Jordan started around three decades ago, since then these banks have played an important role in financing and contributing to different economics and social sectors in the country in compliance with the principles of Shariah rules in Islamic banking practices. Reflecting the increased role of Islamic banks in Jordan, the literature on these banks has grown, but while there has been plenty of research into risk management and risk analyses within Islamic banks, the financial stability has only been addressed from a theoretical viewpoint and treated this issue for the financial system in general, and not on an individual financial institution or a bank itself.

Accordingly, This paper intends to analyze how banks' characteristics and the overall financial environment affect the performance of Islamic banks, by investigating the main performance determinants of Islamic banks in Jordan for the period 2000-2014, which is done through examining the relationship between these banks' performance represented by the Return On Equity (ROE) and the Return On Assets (ROA), and a number of bank-specific internal characteristics (efficiency, deposits growth, capital, liquidity and risk) representing the microeconomic variables, and a number of external performance determinants including macroeconomic factors (inflation and GDP growth) and structural factors (bank size) For this end the researcher seeks to answer the following two main questions: *"what are the main performance determinants of Jordanian Islamic banks during the study period?*

I-1- Study Objectives:

The following objectives are addressed and highlighted:

1. To identify the most important determinants of the performance of Islamic banks in Jordan;
2. To determine the most significant influencer variable on Profitability of Jordanian Islamic banks;
3. This paper is intended to help managers in Islamic banks to improve their banks' performance to remain competitive;

I-2- Study Hypotheses:

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

- H_1: There is a positive impact of banks' specific determinants on Islamic banks' performance.
- $H_{1.1}$Islamic banks' performance is positively influenced by yearly growth of deposits.
- $H_{1.2}$: Islamic banks' performance is positively influenced by capital.
- $H_{1.3}$: Islamic banks' performance is negatively influenced by efficiency.
- $H_{1.4}$: Islamic banks' performance is negatively influenced by liquidity.

- $H_{1.5}$: Islamic banks' performance is negatively influenced by risk.
- H_2 : There is a positive impact of macroeconomic variables on Islamic banks' performance.
- $H_{2.1}$: Islamic banks' performance is positively influenced by GDP growth.
- $H_{2.2}$: Islamic banks' performance is positively influenced by Inflation.
- H_3: Islamic banks' performance is positively influenced by bank size.

I-3-Theoretical Frame Work:

In this section, the researchers discusses some issues that may help for understanding and providing insights; descriptions and some definitions for the study variables and the related issues including banks' profitability, the Islamic banks and the Jordanian economy and Financial System.

I-3-1- Islamic Banking:

Before defining what an Islamic bank is like, it is better to give a short description of conventional banking. Conventional banking does not follow one pattern. In Anglo-Saxon countries, commercial banking dominates, while in Germany, Switzerland, the Netherlands, and Japan, universal banking is the rule. Naturally, then, a comparison between banking patterns becomes inevitable Commercial banking is based on a pure financial intermediation model, whereby banks mainly borrow from savers and then lend to enterprises or individuals. They make their profit from the margin between the borrowing and lending rates of interest. They also provide banking services, like letters of credit and guarantees. A proportion of their profit comes from the low-cost funds that they obtain through demand deposits. Commercial banks are prohibited from trading and their shareholding is severely restricted to a small proportion of their net worth (Al-Jarhi and Iqbal, 2001). [7]

Al-Jarhi and Iqbal (2001) [8] identify An Islamic bank as a deposit-taking banking institution whose scope of activities includes all currently known banking activities, excluding borrowing and lending on the basis of interest. On the liabilities side, it mobilizes funds on the basis of a Mudarabah or Wakalah (agent) contract. It can also accept demand deposits which are treated as interest-free loans from the clients to the bank and which are guaranteed. On the assets side, it advances funds on a profit-and–loss sharing or a debt-creating basis, in accordance with the principles of the Shariah.

However, Silva (2006) [9] states that Islamic banking can be considered banking with a conscience. Islamic banks each have a Shariah board made up of Shari'ah scholars as well as financial experts who are responsible for determining what activities are and are not Shari'ah-compliant.

I-3-1-1- Brief Review of Developments in Islamic Banking:

The first Islamic social bank was established in Pakistan in the 1950s to help poor farmers. At about the same time, Malaysian Muslims established funds that helped pilgrims gather their savings for the pilgrimage to Makkah (Mecca). Then the Mit Ghamer savings bank in Egypt was established in 1963 and closed down in 1967 after this the Nasser Social Bank was established in 1971 (Gait and Worthington, 2009) [10].

The accumulated intellectual and theoretical knowledge during the 1960s and early 1970s had laid the ground for the first private Islamic bank (Dubai Islamic Bank) as the world's first private interest-free bank and the Jeddah-based Islamic Development Bank in

1975(Ayub, 2007) [11]. Followed by the Kuwait finance house in 1977 and the JordanIslamic bank in 1978, all these banks where extensively involved in shari'ah compliant trade finance especially of imports from Europe using s structure known as *Murabahah.* Whereby, an Islamic bank would purchase an imported good on behalf of a client. And then resell the good to the importer for deferred payment covering the costs of the purchase plus a murk-up representing a bank's profit (Iqbal and Mirakhor, 2007) [12].

Islamic banking spread dramatically during the final decades of the last century. Currently, there are about 270 Islamic financial institutions worldwide, including banks, mutual funds, mortgage companies, and Takaful or insurance firms (Ariss, 2010) [13]. Moreover, the growth of Islamic banking world-wide has been phenomenal with assets under management generally growing at annual rates of 12% to 15% per year (Olson and Zoubi, 2008)[14]. Aioanei (2007) [15] mentioned that there are Islamic banks opening branches or subsidiaries in Europe or US, and they are "forcing" the authorities to find some ways to integrate these services into the global financial system. Much progress was made in UK for launching Islamic products from an UK authorized and established Islamic bank. This is expected to be followed by US and Canada. It is worth mentioning that a large number of traditional banks are providing Islamic products through their Islamic windows.

I-3-1-2- The Jordanian Economy:

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. Other economic challenges for the government include chronic high rates of poverty, unemployment, inflation, and a large budget deficit. Since assuming the throne in 1999, the government has implemented significant economic reforms, such as opening the trade regime, privatizing state-owned companies, and eliminating some fuel subsidies, which in the last decade spurred economic growth by attracting foreign investment and creating some jobs (Index Mundi, 2015) [16].

The Jordanian economy is dominated by tourism, financial services, transportation, manufacturing and remittances from Jordanians working abroad. Jordan's lack of arable land and insufficient supplies of water means that agriculture is mostly a non-relevant sector and that the country invests heavily in water recycling. Jordan's economy is highly influenced by the state, however, recently, the efforts have been undertaken to reduce barriers to do business.

The global economic slowdown and regional turmoil, however, have depressed Jordan's GDP growth, impacting export-oriented sectors, construction, and tourism. In 2011 and 2012, the government approved two economic relief packages and a budgetary supplement, meant to improve the living conditions for the middle and poor classes. Jordan's finances have also been strained by a series of natural gas pipeline attacks in Egypt, causing Jordan to substitute more expensive diesel imports, primarily from Saudi Arabia, to generate electricity. Jordan is currently exploring nuclear power generation in addition to the exploitation of abundant oil shale reserves and renewable technologies to forestall energy shortfalls. In 2012, to correct budgetary and balance of payments imbalances, Jordan entered into a $2.1 billion, multiple years International Monetary Fund Stand-By Arrangement (Index Mundi, 2015) [17].

The Gross Domestic Product (GDP) in Jordan expanded 2.80 percent in the third quarter of 2013 over the same quarter of the previous year. GDP Annual Growth Rate in

Jordan is reported by the Central Bank of Jordan. GDP Annual Growth Rate in Jordan averaged 4.95 Percent from 1993 until 2013, reaching an all time high of 10.58 Percent in the first quarter of 2007 and a record low of -1.11 Percent in the first quarter of 1996. The Gross Domestic Product (GDP) in Jordan expanded 2 percent in the first quarter of 2015 over the same quarter of the previous year. GDP Annual Growth Rate in Jordan averaged 4.81 percent from 1993 until 2015, reaching an all time high of 10.58 percent in the first quarter of 2007 and a record low of -1.11 percent in the first quarter of 1996 (Central Bank of Jordan, 2015) [18].

I-3-1-3- Banking System in Jordan:

The banking industry has changed dramatically throughout the world over the last three decades of the twentieth century. As part of the world scene, Jordanian, banks have embarked on a series of radical changes at both the industry-wide and institutional level.

Jordan's banking sector has historically moved from strength to strength, posting impressive results along the way despite political and economical instability affecting the region. This growth was a consequence of effective and efficient management practices and a well regulated operating environment spearheaded by the Central Bank of Jordan (CBJ). Banking in Jordan traces back to the early 1900's with the establishment of the "Ottoman Bank" in 1925. Soon after, the largest commercial Palestinian bank "The Arab Bank" was relocated to Amman as a result of the 1948 Arab-Israeli war and a number of local and foreign banks subsequently started their operations in Jordan.

The Islamic banking in Jordan started around three decades ago with the foundation of its first Islamic bank that is Jordan Islamic bank for finance investment in 1978, since then the Islamic banks in the country have grown in number and size with the establishment of more branches (Jordan Islamic Bank was recently named the best Islamic retail bank in the world and the best Islamic bank group in Jordan for 2010, by World Finance Magazine-London, during the annual evaluation of international banks and investment corporations issued in the magazine. According to World Finance, winners are chosen based on a wide array of methodological and practical criteria, including customer service and relationship optimization, competitive values, financial stability, geographical spread, in addition to other factors such as innovation, flexibility and social responsibility (Ahlul Bayt News Agency, 2010) [19]) and more Islamic banks such as Islamic International Arab bank (Saleh And Zeitun, 2006) [20].

I-3-2- Profitability Determinants:

In this study the performance determinants are divided into bank-specific (internal determinants: capital, deposit, risk, efficiency, liquidity), macroeconomic and structural determinants (external variables: GPD, inflation and bank size):

I-3-2-1- Internal Determinants of Bank Profitability:

The profitability variable is represented by two alternative measures: the ratio of profits to assets, i.e. the return on assets (ROA) and the profits to equity ratio, i.e. the return on equity (ROE). In principle, ROA reflects the ability of a bank’s management to generate profits from the bank’s assets, ROE indicates the return to shareholders on their equity and equals ROA times the t Bank-specific profitability determinants

Capital: the researcher uses the ratio of equity to assets (CAP) to proxy the capital variable. In this study this variable is expected to have a positive impact on banks’

performance for both Islamic as well as traditional banks. As well-capitalized banks face lower costs of going bankrupt which reduce their costs of funding.

Credit risk: To proxy this variable the researcher uses the loan-to-total assets ratio (RIS). Increased exposure torisk is normally associated with decreased firm profitability and, hence, we expect a negative relationship between ROA (ROE) and PL. Banks would, therefore, improve profitability by improving screening and monitoring ofrisk.

Efficiency: the overheads-to-total assets ratio (EFF) is used to proxy the efficiency of banks which has been one of the most important concerns in the new monetary and financial environment. 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 performance is negative.

Liquidity: total loans over total deposits (LIQ), is a liquidity indicator, the higher Total Loans to Total deposits, the less liquid the bank will be. Since banks' operations rely heavily on loan, loans to total deposits ratio is included in the study. Previous studies show positive relationship with performance. Therefore, it is expected to have a positive relationship with performance measures.

Deposit Growth: deposit growth (DEP) is another leverage indicator it is included in this study to examine the influence of liability on performance and how well the banks use it. Moreover, deposits are considered to be the main source of banks funding. Thus, deposits are included as independent variable, and can be compared by the other used ratios. As it is shown before, many researchers included this ratio in their studies and found a positive relationship with performance. It is therefore expected to have positive relationship with performance.

I-3-2-2- The External Determinants of Banks' Performance:

The second set of variables represents the factors that are beyond the control of banks' managers. For this study, these factors are named as external determinants.

- **The Macro Economic Variables:**

In terms of external determinants, two sets of variables have been considered in this study, indicating financial structure and macroeconomic conditions. The macroeconomic variables used are GDP growth and inflation (INF):

Gross domestic product growth rates (GDP) is a measure of the total economic activity and is expected to have an impact on numerous factors related to the supply and demand for loans and deposits. A positive relation is expected between the performance of the banks and this variable.

Inflation (INF) high inflation rates are generally associated with high loan interest rates and if inflation is fully anticipated and interest rates are adjusted accordingly, a positive impact on performance will result. Alternatively, unexpected rises in inflation cause cash flow difficulties for borrowers, which can lead to premature termination of loan arrangements and precipitate loan losses. Indeed, if the banks are sluggish in adjusting their interest rates, there is a possibility that bank costs may increase faster than bank revenues (Vong and Chan, 2008). In this study this variable is expected to have a positive impact on banks' performance for both Islamic as well as traditional banks. Perry (1992)[21] points out

that the effect of inflation on bank performance depends on whether the inflation is anticipated or unanticipated. In this study this variable is expected to have a positive impact on banks' performance for Islamic.

- **The Structural Variables:**

The Bank Size (SIZ) The natural logarithm of the bank total assets is used in this study as a measure of bank size. This variable is included to control for cost differences relating to bank size and to the greater ability of larger banks to diversify. The first factor may lead to positive effect if there are significant economies of scale while the second may have negative effects, if increases diversification leads to lower risk and lower returns. It is argued that bank size is positively related to bank performance since increasing in bank's size may reduce cost. In this study this variable is expected to have a positive impact on banks' performance for both Islamic as well as traditional banks.

I-4- Literature Review:

- *Bashir (2003) "**Determinants of Profitability in Islamic Banks: Some Evidence from the Middle East**"* [22] : The researcher in this study examined the determinants of Islamic banks' profitability across eight Middle Eastern countries between 1993 and 1998. Three measures of profitability were used in this study: Before Tax Profit, returns on assets, and returns on equity, seven bank characteristics are used as internal determinants of profitability. They comprised fund source management; funds use management, capital and liquidity ratios, risk and a dummy variable for ownership. Four sets of control variables were expected to impact performance: the macroeconomic (The GDP per capita, The GDP Growth and inflation) environment, the financial, market structure, the regulation indicators (required reserves of the banking system and taxation), and country (dummy) variables.

The results of analyses indicated that high leverage and large loans to asset ratios led to higher profitability. In addition foreign-owned banks were more profitable than their domestic counterparts; also the study concluded that implicit and explicit taxes affected the bank profitability measures negatively. Finally, favorable macroeconomic conditions impacted profitability measures positively.

- *Hassan and Bashir (2003) "**Determinants of Islamic Banking Profitability**"* [23]: The researchers examined the relationship between the profitability of Islamic banks and a set of internal and external characteristics. Whereas capital, leverage, overhead, loan and liquidity ratios were used as proxies for the bank's internal measures, macroeconomic indicators, taxation, financial structure, and country dummies were used to represent the external measures. A cross-country bank level data of 43 Islamic banks for 21 countries during 1994 to 2001 was used. The regression results indicated that the following internal characteristics have a positive and a significant relation with Islamic banks profitability: the capital assets ratio, the overhead ratio of total liabilities over total assets, while the following internal characteristics have a negative and significant impact on banks' profitability: non-interest earning, loan to total assets and customer and short term funding to total assets.

- *Vong and Chan (2008) "**Determinants of Banks Profitability in Macao**"* [24] : The objective of this paper was to examine the contribution of bank-specific as well as macroeconomic and financial structure factors to the variation in profitability across banks and over time in Macao. Utilizing bank level data for the period 1993-2007, with a sample

of five different banks, the study adopted the panel data regression to determine the important factors in achieving high profitability.

The main findings, of this study can be summarized as follows: First, banks with more equity capital were perceived to have more safety and such an advantage can be translated into higher profitability. Second, a higher loan-to-total assets ratio not necessarily led to a higher level of profits. While A lower spread together with a higher loan-loss provisions led to lower profitability. Lastly, the study revealed that smaller banks, on average, achieved a higher return on assets than larger ones.

- *Al-Tamimi (2010) "**Factors Influencing Performance of the UAE Islamic and Conventional National Banks**"* [25]: The main purpose of this paper was to examine the influencing factors on the performance of Islamic banks compared with conventional banks during the period 1996-2008. Whereas, ROE and ROA were used alternatively as dependent variables, a set of internal and external factors were considered as independent variables including: GDP per capita, size, financial development indicator, liquidity, concentration, cost and number of branches.

The results indicated that the significant determinants of conventional national banks' performance were liquidity and Concentration. Conversely, cost and number of branches were the most significant determinants of Islamic banks' profitability.

Based on this brief survey for the earlier literature, it can be concluded that the determinants of banks performance can be divided in to two groups: internal factors and external factors. The internal determinants of profitability are those factors within the control of bank management like, efficiency, liquidity, risk, deposits…. External determinants of bank profitability, on other hand, are those factors that are not under the control of management, such as, GDP, Inflation and bank size. In evaluating banks performance, most studies conducted on Islamic banks employed the same profitability determinants of conventional banks and the same methodology. In the current study on the determinants of profitability of Islamic bank operating in Jordan over 2000-2014, the researcher employs the most important variables based on the earlier empirical evidence reported on conventional and Islamic banks.

II- Methodology and Model Specification:

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

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

Where: $PROF_{i,t}$ represents two alternative performance 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 $(i = 1 \text{ to } 8)$ is variable coefficient; while ε_{it} is an error term.

III-Empirical results:

This study uses a panel analysis method to investigate the performance determinants of 2 Jordanian Islamic banks spanning the period 2000–2014.

III.1 Descriptive Statistic:

Table 1, in the appendices, presents a descriptive analysis of the different variables associated with Jordanian Islamic banks obtained from the results analysis using the eviews software. The mean ROA is 1.52%, the minimum 0.14% and maximum 17.22%. On the average, ROE rate is 10.47% and minimum and maximum is 1.44 % and 21.83% respectively. The mean of capital ratio is 9.68% its minimum and maximum are 5.16% and 22.93% respectively. Regarding the deposit growth, the average is 17.86% where minimum and maximum is -33.73% and 110.64% respectively. The risk shows a mean equal to 46.48 and bears minimum and maximum 0.530% and 100.13% respectively. Moreover, the efficiency mean is 180.6% it shows a minimum of 106.0% and maximum of 317.0%. The liquidity variable on average is equal to 64.49 % its minimum and maximum are 1.14% and 434.50% respectively. Concerning the macro economic variables while the GDP on average is 5.18% the inflation rate is 4.05%, and while the GDP minimum and maximum are 2.2% and 8.6% , the inflation minimum and maximum are -.70 % and 14.90 respectively. Finally, the banks size mean is 20.70% and its minimum and maximum are 19.09% and 22.00% respectively. According to the standard deviation results the liquidity ratio shows the highest value (75.07) among all the study variables however the banks size shows the lowest one (0.78).

III.2 Unit Root Test Results:

The unit root test results applying LLC test with 4 lags, are reported in table (2), these results show that the null hypotheses of the *unit root* existence (non- Stationarity) 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.

III.3 Regression Results of Performance Determinants for Islamic Banks:

Table (3) shows the statistical outcomes of the regression analysis for performance models concerning Islamic banks. Two regression analyses are utilized to determine the factors that have an important effect on Islamic bank's performance.

In regression (1) that is represented by equation (2), Islamic banks' ROE 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) that is represented by equation (3), Islamic banks' ROA is regressed against all bankspecific, structural and macroeconomic variables:

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

It can be seen from tables (3 and 4) that the explanatory power of the R^2 explained about 80 % from the variation, of Islamic banks' performance when ROE is used as dependent variable and 82 % when ROA is used. The adequacy of the models as predicting is validated by the F-test. As indicated in tables (3 and 4), the values of all F-ratios are

statistically significant at 5% for all performance 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 performance ratios.

Regression (1) :

In regression (1), ROE is regressed against all bankspecific, structural and macroeconomic variables of Jordanian Islamic banks and the results are explained as follows:

The total deposit growth ratio (DEP), shows a positive and statistical significant effect on Islamic banks performance represented by the ROE measure as it was expected, a 10 % change in Islamic banks' return on equity will be with a 1% change in total equity to total assets ratio. And this result is consistent with the earlier works of Vong and Chan (2008) which means that $H_{1.1}$ is accepted.

As well, *total equity-to-total assets ratio* (CAP), indicates a positive and statistically significant effect on Islamic banks ROE, Furthermore, a 1% change in *banks capital* triggering about 2.41 % change in Islamic banks performance this result is consistent with the previous findings of (Vong and Chan, 2008; Bashir, 2003) which means that $H_{1.2}$ is accepted.

Moreover, the *total overheads-to-total assets ratio* (EFF), shows a positive effect on banks' ROE, except that this effect is statistically insignificant which means that efficient banks don't tend to be more profitable than inefficient ones. These results don't support the earlier finding of Hassan and Bashir (2003) which means that $H_{1.3}$ is rejected.

The *loans-to-total assets ratio* (RIS), in contradiction of what it was expected it trails behind a negative and statistically insignificant impact on Islamic banks (ROE) and this result is consistent with the earlier findings of what Vong and Chan (2008) which means that $H_{1.4}$ is rejected.

Moreover, (LIQ) has a positive but insignificant effect on the Jordanian Islamic banks' return on equity (ROE) and this insignificant effect doesn't supported the findings of Bashir (2003) but it is consistent with the findings of (Vong and Chan, 2008), which means that $H_{1.5}$ is rejected.

The Islamic banks' *size* shows a positive and statistically significant effect on Islamic banks' return on equity, and, a 1% change in *banks size* triggering about 480 % change in Islamic banks performance which means that $H_{2.1}$ is accepted. Since almost the sub hypotheses are accepted we can accept the main hypothesis (H_1).

The *inflation (INF)* results indicate that the inflation has a positive and statistically significant impact, on the performance of Islamic banks expressed by the return on equity. High inflation rates are generally associated with high interest rates which increase banks' performance. This is under the competition circumstances and whether banks can pass-through increase in costs (high deposit growth rates) to customers (clients). This result in similar to what Bashir (2003) founds in his study, accordingly $H_{2.2}$ is accepted. So, form the results of the macroeconomic variables it can be concluded that H_2 is accepted.

The *GDP* was regressed to the Islamic banks' return on equity in regression (1) as a macroeconomic variable, and the results indicate that the GDP has a positive and statistically significant effect, on the performance of Islamic banks expressed by the return on equity which means that H_3 is accepted.

Regression (2) :

In regression (2), ROA is regressed against all bankspecific structural and macroeconomic variables of Jordanian Islamic banks and the results are explained as follows:

The total deposit growth ratio (DEP), as it was expected has a positive and statistical significant effect on Islamic banks performance represented by the ROA measure, with a 1% change in total equity to total assets ratio triggering about 11.75 % change in Islamic banks' return on assets. And this result is consistent with the earlier works of Vong and Chan (2008) this means that $H_{1.1}$ is accepted.

In addition, as it was expected, *total equity-to-total assets ratio* (CAP), trails behind a positive and significant effect on Islamic banks ROA, with a 1% change in total equity to total assets ratio triggering about 53.19 % change in Islamic banks' return on assets. This result is consistent with the previous findings of Vong and Chan, 2008 and this means that $H_{1.2}$ is accepted.

Moreover, the *total overheads-to-total assets ratio* (EFF), has a positive sign indicating the positive effect on ROE, but this effect is statistically insignificant which means that efficient banks don't tend to be more profitable than inefficient ones. These results are inconsistent with the earlier finding of Hassan and Bashir (2003) accordingly $H_{1.3}$ is rejected.

The *net loans-to-total assets ratio* (RIS), in contrast to what it was expected has a positive but statistically insignificant impact on Islamic banks return on assets (ROA) which means that $H_{1.4}$ is rejected.

Furthermore, *Net loans-to-total deposits ratio* (LIQ) has a negative but statistically insignificant effect on the Islamic banks' return on assets (ROA) this insignificant effect is inconsistent with the finding Bashir (2003) accordingly $H_{1.5}$ is rejected. According to the preceding results we can accept the main hypothesis H_1 since most the sub hypotheses are accepted.

The Islamic banks' *size* has a positive and statistically significant effect at on Islamic banks' return on assets and this result do not stand in line with the empirical findings of Hassan and Bashir (2003) Furthermore, a 1% change in *banks size* generating about 387 % change in ROA this means that $H_{2.1}$ is accepted.

The *inflation (INF)* was regressed to the Islamic banks' return on assets in regression (2) as a macroeconomic variable, and the results signify that the inflation has a positive and statistically significant effect, on the Islamic banks return on assets. High inflation rates are generally associated with high interest rates which increase banks' performance. This is under the competition circumstances and whether banks can pass-through increase in costs (high deposit growth rates) to customers (clients). Bashir (2003) founds a positive relationship between inflation and Islamic banks performance this means that $H_{2.2}$ is accepted. Since both $H_{2.1}$ and $H_{2.2}$ are accepted we can conclude that H_2 is accepted.

In this study the *GDP* was considered as a macroeconomic variable, and the results indicate that the GDP has a positive and statistically significant effect, on Islamic banks return on assets which means that H_3 is accepted.

IV- Conclusion:

This paper presented evidence on the determinants of banks' performance in Jordan by investigating some influential factors in Jordanian Islamic banks during the period 2000-

2014 and employed internal and external variables covering most aspects of banking performance, as well as using an appropriate econometric methodology for the estimation panel data models.

The data obtained from Jordanian official sources regarding the regression model used of which two dependent variables, the ROA and ROE, were used alternatively with eight independent variables. The panel data regression model is used to test the study hypothesis the results reveal that:

First, two important internal determinants of profitability for Islamic Banking in Jordan were found: deposits' growth and capital, individual bank characteristics explain a substantial part of the within-country variation in bank performance. High performance tends to be associated with banks that hold a relatively high amount of capital, and with large deposits. The results reveal that all banks specific performance determinants, with the exception of liquidity, efficiency and risk, significantly affect the Islamic banks profitability using both measures (ROE and ROA) during the study period.

Second, the paper finds that the macro-economic indicators such inflation and GDP have a significant impact on Islamic bank's performance. Third, turning to financial structure and its impact on bank's performance, the researcher finds that size is beneficial to the Jordanian Islamic banks.

Overall, these empirical results provide evidence that the profitability of Jordanian Islamic banks is shaped by bank-specific factors (that are affected by bank-level management) and macroeconomic, control variables that are not the direct result of a bank's managerial decisions. In addition, industry structure seems to significantly affect banks' profitability. The approach followed in this paper may well have considerable potential as a tool for exploring bank profitability determinants with the purpose of suggesting optimal policies to bank management.

Among the limitations of this study is the data availability, as the longer the data coverage (e.g. quarterly or monthly) the better results can be obtained. The other limitation is the lack of similar study for countries having the same features of Jordan economy. Further research can be conducted by using monthly or quarterly data with different set of dependent and independent variables.

- Appendices :

Table (1): The Descriptive Statistics

	ROA	ROE	CAP	DEP	RIS	EFF	SIZ	LIQ	INF	GDP
Mean %	1.52	10.47	9.68	17.86	46.48	180.6	20.75	64.49	4.050	5.18
Maximum %	17.22	21.83	22.93	110.64	100.13	317.0	22.00	434.50	14.90	8.60
Minimum%	0.14	1.44	5.16	-33.73	0.530	106.0	19.09	1.14	-0.700	2.20
Std. Dev.	3.00	6.10	3.866	22.73	26.64	52.95	0.78	75.07	3.53	2.34
Obs.	30	30	30	30	30	30	30	30	30	30

Source: prepared by the researcher depending on Eviews 7 outputs

Table (2): Unit Root Test Results for Islamic Banks

Islamic banks			
Variable	**T-Statistic**	**Probability**	**Decision**
ROE	-2.4646	0.0068***	Reject H_0. There is no unit root
ROA	-3.1814	0.0039***	Reject H_0. There is no unit root
LIQ	-5.4418	0.0000***	Reject H_0. There is no unit root
EFF	-3.4839	0.0002***	Reject H_0. There is no unit root
RIS	-4.6343	0.0000***	Reject H_0. There is no unit root
CAP	-2.2316	0.0012***	Reject H_0. There is no unit root

DEP	-2.5917	0.0048***	Reject H_0. There is no unit root
SIZ	-2.2624	0.0011***	Reject H_0. There is no unit root
GDP	-5.0729	0.0000***	Reject H_0. There is no unit root
INF	-3.9892	0.0000***	Reject H_0. There is no unit root

"***", Significant at 1% level

Source: prepared by the researcher depending on Eviews 7 outputs

Table (3): Regression Results of Islamic Banks' Performance Determinants Using the ROE Measure

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	-96.13831	39.08338	-2.4598	0.0231	
DEP	0.1045	0.0278	3.7514	0.0013	$H_{1.1}$ is accepted.
CAP	0.0241	0.0134	1.7972	0.0274	$H_{1.2}$ is accepted
EFF	0.0389	0.0239	1.6273	0.1193	$H_{1.3}$ is rejected
RIS	-0.0087	0.0400	-0.2188	0.8290	$H_{1.4}$ is rejected
LIQ	0.4436	0.2899	1.5299	0.1417	$H_{1.5}$ is rejected
SIZ	4.8077	1.8452	2.6054	0.0169	$H_{2.1}$ is accepted
INF	0.7700	0.2731	2.8186	0.0106	$H_{2.2}$ is accepted
GDP	0.8891	0.3448	2.5783	0.0179	$H_{3.1}$ is accepted.
R-squared = 0.80		Mean dependent var = 4.07			
Adjusted R-squared = 0.71		S.D. dependent var = 2.13			
F-statistic = 9.1791		Sum squared resid = 24.83			
Durbin-Watson stat = 1.72		Prob (F- statistic) = 0.0000			

Source: prepared by the researcher depending on Eviews 7 outputs

Table (4): Regression Results of Islamic Banks' Performance Determinants Using the ROA Measure

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	-76.2843	36.776	-2.0742	0.0505	
DEP	0.1175	0.0271	4.3339	0.0003	$H_{1.1}$ is accepted.
CAP	0.5319	0.2820	1.8857	0.0332	$H_{1.2}$ is accepted
EFF	0.0160	0.0196	0.8213	0.4207	$H_{1.3}$ is rejected
RIS	0.0420	0.0390	1.0768	0.2938	$H_{1.4}$ is rejected
LIQ	-0.0142	0.0115	-1.2353	0.2304	$H_{1.5}$ is rejected
SIZ	3.870606	1.755115	2.205329	0.0387	$H_{2.1}$ is accepted
INF	1.023980	0.218556	4.685195	0.0001	$H_{2.2}$ is accepted
GDP	0.870297	0.325832	2.671003	0.0143	$H_{3.1}$ is accepted.
R-squared = 0.82			Mean dependent var = 4.27		
Adjusted R-squared = 0.74			S.D. dependent var = 2.39		
F-statistic = 11.84			Sum squared resid = 25.02		
DurbinWatson stat = 1.91			Prob(F-statistic) = 0.0000		

Source: prepared by the researcher depending on Eviews 7 outputs

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