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Utilizing Australian Shareholders' Association (ASA): Fifteen Top Financial Ratios to Evaluate Jordanian Banks' Performance

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Abstract

The study aims at investigating the Australian Shareholders' Association (ASA) Fifteen Top financial ratios to measure the health of Jordan banks' performance, and also utilizing the implication of Casu & Girardone 2006 and Gutie'rrez de Roza 2007 model to estimates the banks' production function; interest rate revenue function thru analyzing 2015 and 2014data.

The study approves the mismatch between banks' deposits and it credits, all banks operating in Jordan are likely to have a high spread (interest margin), Jordan banks experiencing a wide concentration, and banking sector exhibits a monopolistic competition market with high liquidity. Between comparator banks in Jordan, Islamic banks have less risks and more liquidity than Jordanian commercial banks, and Arab banks. However, Foreign banks are profitable and less risky among all banking industry.

Finally, The study, through estimating interest rate revenue function, found that, the independent variables utilized (labor expenses, capital expense, funds interest expense, credit loans, deposits and equities) are proved to be significant, and explained 65.4% of the banks' interest rate revenue.

The study recommends that Central Bank of Jordan has to develop its policies to be more active in regulating banking sector to co-opt with economic development needs, and ambitions. It has to work more on reducing banking concentration, stabilizing a moderate liquidity, and promote to achieve more efficient market.

JEL classification numbers: G2
Keywords: Interest spread, interest rate margin banking concentration, and banking performance, Geometric Mean or Average, JODIBOR and, Islamic Sharea'.

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1 Introduction

It's one of the economic postulates that banks play a key role in financial and economic development; this fact is due to its effective intermediary tool that organizing between lenders; mainly the depositors and the borrowers. By this intermediation, banks are collecting funds from all potential sources, lend and relend money to finance all developmental projects and multivariate programs.

Banks have all means and accessibility to finance projects (micro, small, medium and large scale projects), businesses, individuals for different aspects; investment and consumption activities, as well as, financing government programs, and other entities' projects.

In Jordan, there are 25 acting commercial banks in 2015; of which 16 are Jordanian commercial banks (2 Islamic banks), and 9 foreign banks (7 of which are Arab banks, and 2 international banks). Number of branches reach up to 770 scattered at 12 governorates' districts. Banks have employed 19,433 employees, of the total 14,637 employees in Jordanian commercial banks (75.3% of the total number of employees), 3350 employees in Islamic banks (17.2%), and 1446 employees in foreign commercial banks (7.4%) by the end of 2014 (Association of Jordan, 36$^{th.}$Annual Report 2014, P73).

Jordanian banking sector is characterized by high liquidity, and reliable profitability. Investment to foreigners is freely open; foreigners (non Jordanians) are owing 53 % of banks' stocks by the end of 2014, of which Arab investors were owes 40% and foreigners owe 13% of Banking sector' shares at Amman Stock of Exchange; this is considered one of the highest shares in the MENA region. Furthermore, foreign banks can widen its share or enter into more banking investment through two channels: buying stocks through Amman Bourse, and establishing a new bank entities under the regulations of the Central Bank of Jordan (Central Bank of Jordan CBJ, Jordan Financial Stability Report 2014, P38).

2 Literature Review

Evaluating banks performance through utilizing financial ratios have been widely utilized. Al Zarqan (2010) study focused on the importance of utilizing financial ratios on banks' decision making, and credit risk minimization. Other Studies explore more banks' capital structure relationships, Al-Zoubi (2013), and Siam, Khrawish and El-Hammoury (2005). Alnajjar, Noor, Al-ahmad and, Issa (2010) study has concerned of the interest rate levels impact on investment, it concluded that, Jordan banks' are exercising high interest rates; which put strain on investment.

A few studies analyses the relationship between the profitability of banks and macroeconomic factors (Taha, 2013). Najjar (2013) study has evaluated the ability of financial ratios on banks' performance in Bahrain. A main focus on financial management to comparative banks, especially before and after the international financial crisis were drawn. Another study examined the impact of capital structure and bank size on Jordanian banks' performance (Hamda & Qudhah, 2013). One of the studies explore the impact of economic and political contingencies on banks' value, revenue and, credits (Othman, 2008).

Empirical studies thoroughly analyzed the banks' types of market structure, researchers have concluded that banks in Jordan are operating under monopolistic competitive

conditions (Al-Qais, 2013). Al Shatti (2014) study examined the competitiveness of the Jordanian commercial banks via concentration. It found that there is a high concentration ratio among the largest four banks relative to the others, which results in weakening the chance of competition among banks, and thereby, increases the chances of concentration and monopoly.

Hashem, A. , Ayoub, F., and Bani Ata, H. (2015) paper has showed the existence of an insignificant effect of corporate governance on banks' competition, and the differentiation of bank services have led to a more monopolistic behavior. An insight study by Demirguc-Kunt and Pería (2010) were analyzed the competition and the concentration in the banking sector of Jordan. The analysis indicated that the current concentrated market structure and the lack of contestability in the Jordanian banking sector appear to explain the low level of competition. Furthermore, results indicated that the Jordanian banking sector operates under monopolistic competition, they appeared to be less competitive than that of most comparator countries.

Moreover, other studies relates liquidity, profitability and management with competitiveness and efficiency. Al Saegh & Abu Hamad (2004) study ranked banks according to their liquidity, it comes into the result that, almost all banks were not succeeded in compromising between liquidity and profitability goals. Thereby merging between banks is crucial, and also banks' top management strategy have to focus on enforcing competitiveness. Zeitun and Benjelloun (2013), concluded that the majority of the Jordanian banks are inefficient in managing their inputs. Furthermore, the efficiency of Jordanian banks is below the world mean efficiency, which is also adversely affected by the financial crisis.

Other studies have realized their concern on risk, and financial crises. Al-Fayoumi & Abu-Zayed (2009) on their assessment of the Jordanian banking sector within the context of GATS agreement found that, GATS environment urge Jordan banks to be more wake for risk, and to utilize modern technology. The study recommended that, banks need to adopt more advanced early warning systems, improve their reports, and address advance training for the supervisory staff concerning risks.

Kumbirai and Webb (2010) study investigated South Africa commercial banks' performance. It concluded that banks were experienced a dramatic changes during the international financial crisis in 2007. This trend led to a decrease in the level of profit, and credit quality of the banking sector.

3 Overview of Jordan Banking Sector

Due to the fact that Jordan was under Othman Empire by more than 520 years, then be under Great Britain Rule during 1916-1957. The first bank initiated in Jordan was the "Othman Bank" by late of 19th. century, this bank was restructured to be the "Agricultural Bank" in 1928, and the bank renamed thereafter, during the British Rule to be the " Grandlys Bank". The second bank initiated in Jordan has been the Arab Bank in 1930, it is actually formed and started in Palestine, then shifted its management to the East of Jordan (Atoom, 2006, P 23).

Jordan banking sector witnessed a wide development in its number and activities.

Therefore, its intermediary roles are developed and widened due to geographical, societal, and economic developments. Thereby, Banks total assets have increased from 12.9 b. Jordanian Dinars (JDs)[4] in 2000 to 34.97 b. JDs in 2010, and to 47.13 b JDs in 2015, by a growth rate of 6.2% annually for the 2010-2015. On the other hand, banks deposits grew from 8.22 b. JDs in 2000 to 22.5 b. JDs in 2010, and to 32.6 b JDs in 2015, with a growth of 7.7% annually for the 2010-2015, as can be drawn from Table No. (1).

Table 1: Jordan GDP, Total Assets, Deposits and Credit Facilities of Licensed Banks (JDs) During 2000-2015

Year	**Total Assets of Licensed Banks (m. JDs)**	**Current GDP @ Market Prices**	**Banks' Assets / GDP (%)**	**Total Deposits**	**Total Credit Facilities**	**Credit Facilities / Deposits (%)**
2000	12913.5	5998.6	215.3	8224.5	4546.5	55.28
2001	14016.4	6363.7	220.3	8721.3	4948.9	56.74
2002	15119.3	6794	222.5	9367.7	5130.	54.76
2003	15701.5	7228.8	217.2	9969.4	5262.4	52.79
2004	17821.1	8090.7	220.3	11564.1	6189.2	53.52
2005	21086.5	8925.4	236.3	13119.3	7744.3	59.03
2006	24237.6	10675.37	227.0	14591.9	9761.9	66.90
2007	26815.6	12131.42	221.0	15988.1	11295.6	70.65
2008	29796.6	15593.41	191.1	18102.6	13044.3	72.06
2009	31956.9	16912.21	189.0	20298.4	13317.2	65.61
2010	34973.1	18762.02	186.4	22504.8	14451.4	64.21
2011	37686.4	20476.59	184.0	24377.9	15851.2	65.02
2012	39275.3	21965.5	178.8	24969.7	17817.	71.35
2013	42802.8	23851.6	179.5	27593.2	18939.7	68.64
2014	44868.1	25437.1	176.4	30261.	19274.5	63.69
2015*	47133.2	26327	179.0	32598.5	21103.5	64.74

Source: Central Bank of Jordan, Monthly Bulletin Statistics' Series, www.cbj.org.jo/http://statisticaldb.cbj.gov.jo/index., GDP for 2015 is estimated.

The deposits in 2015 were distributed to 55.4% as a Time Deposits, 30.5% a Demand Deposits, and 14.1% as a Saving Deposits (Central Bank of Jordan, Monthly Statistical Bulletin, 2016, www.cbj.org.jo).

In comparison, the Credit Facilities has grown from only 4.55 b. JDs in 2000 to 14.45 b. JDs in 2010, and to 21.1 b. JDs in 2015, by a growth rate of 7.9% annually for the period of 2010-2015. Henceforth, the ratio of credit facilities to deposits for Jordanian Banking sector is only amounted to 64.7% in 2015, as drawn by Table No. (1). This fact indicates

4Jordan Dinar JD has been pigged to the US $ since 1994 by a value of $1.41=JD 1.

to the mismatch between deposits and credits, and an existing gap of 11.5 b. JDs at the market; which comprises 43.7% of the GDP, and 36.4% of the Money Supply (M2**)** in 2015, as can be depicted from Table No. (2). This fact is also a proof of the conservative management mentality of commercial banks, in one hand, and the loose and ineffectiveness of the Central Bank monetary policies, on the other hand, which in turn, weakening the business atmosphere and the whole economy of Jordan.

Table 2: Banks' Credits-Deposits Gap to GDP and Money Supply in m. JDs

Year	Money Supply (MS)	Credit-Deposit Gap*	Credit-Deposit Gap / GDP	Credit-Deposit Gap / MS
2000	7434.7	3678.0	61.31	49.47
2001	7866.1	3772.4	59.28	47.96
2002	8419.1	4237.7	62.37	50.33
2003	9465.7	4707.0	65.11	49.73
2004	10571.4	5374.9	66.43	50.84
2005	12364.	5375.0	60.22	43.47
2006	14109.7	4830.0	45.24	34.23
2007	15606.8	4692.5	38.68	30.07
2008	18304.2	5058.3	32.44	27.63
2009	20013.3	6981.2	41.28	34.88
2010	22306.7	8053.4	42.92	36.10
2011	24118.9	8526.7	41.64	35.35
2012	24945.1	7152.7	32.56	28.67
2013	27363.4	8653.5	36.28	31.62
2014	29240.4	10986.5	43.19	37.57
2015	31605.5	11495.0	43.66	36.37

Source: Central Bank of Jordan, Monthly Statistical Bulletin, 2016.
* Credits-Deposits Gap at banks is calculated as = Total Credit Facilities -Total Deposits.

Another actual proof of commercial banks exploitation and operational mismanagement is that its administrative cost is still so high, as being referenced to IMF equation for calculating net interest margin on the Banks operating in Jordan for the years of (2011-2014), the Central Bank of Jordan has calculated the operating cost to banks (a weighted average to all banks) in 2014 by a 2.43% as of the interest, and 0.53% the cost of provisions. On the other hand, banks profitability target is as high as 2.29% comparing to the GDP real growth of 2.5% in the same year, as shown by Annex No. (1).

Actually, banking management, either doesn't realize the impact of the money multiplier in the economy, and also the economic multiplier of spending on investment and consumption, or they don't care of money circulation and development effects on the economy at all. As a matter of concern, Jordan banks experiencing a wide concentration; only five banks out of 25 have the property of 54.8% of the banks' total assets. Two banks have 35.2% of banking total assets in Jordan market; Arab bank has 20.16% of the banking system's Assets, followed by the Housing Bank for Trade & Finance of 15.04% of the market. However, the total assets of foreign banks are constituting only 8.91%.

Whereas, total assets of Islamic banks are forming a percentage of 14.87% of the banking assets market in 2014, as driven by Annex No. (2).
Henceforth, a rigidity is shaping the banking sector financial intermediation, which leaves investment, and entrepreneurs for Micro and Small Enterprise unmotivated. Therefore, money circulation among economic activities is still weak. These results are stated clearly by the Ministry of Planning & International Relations' Financial Stability Report in 2014. The report showed that Jordan banks would rather prefer lending to families (big names) rather than companies; due to the fact that, it will increase the economic activities, and diversify the uses of funds, reduce the exposure to risks, and enforce their profitability (Ministry of Planning & International Relations, 2014, P 54).

4 The Study Methodology

4.1 The Study Objective

The study aims at investigating the Australian Shareholders' Association (ASA) Fifteen Top financial ratios as a tool to measure the health of Jordan banks' performance. It's known that we can derive a lot of financial ratios, but to be restrict and concise we would rather prefer to choose the ratios that have a consensus on, common to apply for the banking system, and be accredited by a professional entity (Australian Shareholders' Association, asa, 2010). Moreover, the study analyses Casu & Girardone (2006) and Gutie'rrez de Roza (2007) Model that estimates the banks' interest rate revenues.

4.2 Why the Study

The importance of the study stems from the following facts:

- Banking sector proportion to Amman Stock of Exchange is approaching 68.7% in 2015 from the total market exchanges (Amman Stock Exchange, 2015, P23).
- There is a wide gap between banks' credit facilities and deposits. Data shows that at least about one third of available money are idle at banks' vaults.
- Furthermore, there is the wide gap between interest on deposits and on credits; the margin or the interest spread[5]. Banks margin are so high in Jordan; interest on deposits are ranged of 0.32% to 3.06% per annum, whereas interest on credit facilities are at a range of 8.01% to 8.7% +1% commission + 0.1% penalty for early repayments of loans, in addition to other fees which at least amounted to 1-1.5%, as shown by Annex No. (1). By this, we can derive the margin or spread as (8.7%+1%) minus 3.06% at most (= 6.64%) at least; this equals to more than double of the highest of the deposit rates. On the other hand, the average inter-bank lending interest rates;

[5]Interest rate margin is calculated as the difference between the weighted average of interest rates on loans and advances and the weighted average of interest rates on time deposits. Although, the Association of Banks in Jordan ignores the weights of the amount of money deposited as a saving and demand deposits, and also, ignores the commission rates and penalties costs; which in turn, minimize the margin (Associations of Banks in Jordan, 2013, P113).

the JODIBOR reaches up to 6.04% per annum in 2014, and amounted to 3.79% for one week only (Association of Banks in Jordan, Op. Cit., P117).

4.3 Data and Time Frame

The study is covering the analysis of the banks' Top 15 Financial Ratios mainly for the year 2015, and a few for 2014 or 2013 for certain banks that didn't publish their financial reports at Amman Stock of Exchange. Researchers will utilize the formal data published through the Association of Banks in Jordan, the Central Bank, Amman Stock of Exchange and, the banks' websites. Noting that some data for Arab banks are not published and have no exchanges at Amman Stock of Exchange.

4.4 The Model and the Study Theoretical Background

The study comprises of the analysis for the top 15 financial ratios accredited by Australian Shareholders' Association (ASA) in 2010; which classified in four groups: liquidity, financial leverage, profitability and, evaluation ratios. The analysis is drawn on Jordan banks, and benefiting from comparing these results between commercial banks , Islamic banks, and foreign banks to determine the banks' health, and performance which will guide planners, monetary policy, and other interested parties (asa, Ibid., PP4-5).
Casu & Girardone and Gutie'rreze de Roza model relates Interest Rate Revenues (IRTA) to bank's Price of Labor (Lp), Funds and Capital (Fp). Other independent variables were added to envelop banks operations and risks; which are Total Loans to Total Assets (TLTA), Total Deposits to Total Assets (TDTA) and, Total Equities to Total Assets EQTA as independents (AÇIKALIN & SAKINÇ, 2015, P 6).
Generally, the formula can be written as follows (where, e is the error term):

$$\text{Ln IRTA}i = A + a \text{ Ln Lp} + b \text{ Ln Fp} + c \text{ Ln Cp} + \text{Ln TLTA} + \text{Ln TDTA} + \text{Ln EQTA} + e \quad (1)$$

4.5 Performance Indicators Manipulation

In general, figures were initiated to evaluate the performance of companies, thereby to be more accurate and concise, KPIs are manipulated under the following prepositions:

- A few formula' figures have been adopted to be parallel with banks' themes.
- Due to some differences in Islamic banks' financial reports, the study recalculated some figures to be parallel to the commercial banks, to fulfill the logic of comparison.
- To achieve the research objectives, an industry norm have to be driven to have a consistent comparison between banks. This has been calculated utilizing the Geometric Average[6] GA statistics due to three reasons 1) GA is a better measure with values that have high discrepancies, 2) It will be more meaningful and true when a negative figures are existing and, 3) It is a better mean estimate for ratio values.
- Finally, the overall banking industry norm has calculated as the normal arithmetic mean to all sub norms driven by geometric mean.

[6]Geometric Mean or Average is the " nth. root product of 'n' numbers"; it is calculated as the root of 1-the number times 1-other numbers under the root of the numbers' size.

5 The Study Findings

The study findings come into two main parts, part 1 is the outcomes of the 15 ASA Financial Ratios, which are driven by Table No. (3). Part 2 is the implication of Casu & Girardone (2006) and Gutie'rrez de Roza (2007) Model.

5.1 ASA Financial Ratios

5.1.1 Liquidity Ratios

In general, the higher value indicates a greater capacity to meet banks' debt obligations**:**

1. **Current Ratio CR:** CR measures bank's ability to cover short-term liabilities *(total liabilities-other liabilities)* using available short-term assets *(total assets-tangible assets-other assets).* A ratio of 2:1 is considered a common benchmark for liquidity.
   In general, all banks in Jordan are so liquid, the mean average to all norms; the banking industry norm was 1.57 to all banks. The industry norm is the highest for Islamic banks, which amounted to 2.63, followed by 1.25 to Foreign banks (Arab & International), and lesser to Jordanian banks which is about to 1.11.
2. **Profit before Depreciation and Amortization to Current Liabilities PDACL:** PDACL is defined as net operating profit before tax in relation to debt obligations. This is a powerful liquidity ratio because it shows a bank's safety margin to meet short-term commitments. The higher the ratio, the less risk exhibits, the more safe is the bank.
   Calculations show that foreign banks are less risky than all other banks, whereas, Islamic banks have less risks than Jordanian commercial banks, and Arab banks. They were experiencing a benchmark norm of 2.37, 1.53, 1.47, and 1.32 respectively.
   Among Jordanian banks, Arab bank and Jordan commercial bank were acting with more risk. On the other hand, Jordan Dubai Islamic bank is also acting risky, and also Al Rajhi bank and Cairo mortgage bank were suffering from risky operations in 2015.
3. **Operating Cash Flow to Current Liabilities OCFCL:** OCFCL pertains to the net operating cash flow generated from bank's operations relative to bank liabilities. Consistently a positive operating cash flow is vital to support ongoing operations. The higher the OCFCL ratio, the lower the level of risk.
   By going over the figure results, the benchmark norm is 0.06 for Jordanian commercial banks vs. 0.3 for Islamic banks, but there is no available data to have this figure to Arab bank and international ones. However, some banks were achieving a positive net operating cash flows, others were operating a negative outcomes, as for bank of Jordan, Jordan Islamic bank, and Jordan Dubai Islamic bank; this is normal to both the former banks; Jordan Islamic and bank of Jordan, they were expanding their investment at some companies.
4. **Cash Balance to Total Liabilities CBTL:** Cash is the most liquid asset a business has, especially to financial institutions. A lower edge cash balance will pace a warning signal to the failure of banks. The abundance of cash is critical to banks existence, it is so sensitive to clients. Therefore, any expectation of less cash will leave clients' view unstable to bank stand and its overall existence.
   By calculating the CBTL, we found that Islamic banks have the highest liquidity of 1.15 in comparison to Jordan commercial banks of only 0.25. However, international banks have a ratio of 0.51, then Arab banks at a rate of 0.35.

5.1.2 Leverage Ratios

It referred to as gearing ratios, measure the extent to which a bank utilizes debt to finance growth. In general, leverage ratios can provide an indication of a company's long-term solvency, as driven by Table No. (3).

5. **Debt to Equity Ratio (DE Ratio):** DE ratio provides an indication of a company's or a bank capital structure and whether it is more reliant on depositors and shareholders' capital (equity) to fund its activities.
   Although, a higher ratio indicates to a more risk, Banks higher ratio indicates for positive and negative indications; a positive indication for more clients' deposits, and a negative for other banks' deposits, loans, and allowances. DE ratio will be more meaningful when compared over a period of time, and between banks.
   For the banking system operating in Jordan, DE ratio is 3.92, it is seen the highest to Jordan commercial banks of a rate of 6.23, followed by foreign banks for 4.15, Arab banks for a rate of 3.69, and finally to Islamic banks of 1.6 ratio.
6. **Total Liabilities to Total Tangible Assets TLTA:** TLTA provides the relationship between a company's liabilities and tangible assets.
   By definition, tangible assets are the physical assets; property, cash, inventory and receivables, it excludes the value of a brand, franchise, patent or trademark. Due to the fact that those intangibles are not registered at bank's financial statements, by the Central Banks regulations, tangible assets are the same as the total assets. Thereby, the formula of TLTA will be total liabilities relative to total assets. The higher the TLTA ratio, the higher the level of risk.
   The results of the figures show that, Islamic banks are less risky than all other banks, it's referenced to the fact that, Islamic banks' operations are more likely focused on real assets' exchanges, less direct intermediation of money, and far away from speculative demand for money; for it is against Islamic Sharea' regulations. These advantages play positive roles in their stability. Therefore, Islamic banks' TLTA average approaches 0.26 only compared to 0.68 to the banking industry, versus to around 0.80 to Arab and international banks, and 0.86 to Jordan commercial banks.
7. **Interest Cover Ratio ICR;** A bank's interest cover ratio measures its ability to meet interest accrued on deposits using interest and commissions earned on loans. Although, the higher ICR is, the better the banks; this means more profitability. On the other hand, it reveals to bank exploitation to their clients.
   ICR figures revealed that the highest profit margin has taken by foreign banks, it was amounted to 4.25; this means that the net interest margin is 425% charged on the expense of clients deposits, this indicates to the trust and affiliation of those banks' clients; which due to certain strata or class (foreigners, and local certain top class).
   The second banks' group who gain a high margin is the Jordanian commercial banks of 3.06 (=306%), followed by Islamic banks of 3.01, and Arab banks of 2.54 times. In general, all banks are above the banking industry norm (3.21) except Arab banks operating in Jordan. This means that, banks operating in Jordan are likely to have a high spread (interest margin), this is due to the existence of monopolistic competition sovereignty, and the loose of Central Bank monetary policies.

5.1.3 Profitability Ratios

Measure company's performance and provide an indication of its ability to generate profits, as driven by Table No. (3).

8. **Earnings Per Share EPS:** EPS allows to measure bank's earnings in relation to every share on issue. It measures how much each share has earned. The published figures show that Jordanian commercial banks have an average of 23% (0.23) earning per their subscribed shares. However, Islamic banks are in the middle case except Jordan Dubai Islamic bank. Noting that, Arab and international banks had not published their data to have a comparison.
9. **Gross Profit Margin GPM:** It helps determine the ability of the bank that have enough funds to cover operating expenses. It refers to the bank total efficiency in comparison to its competitors, or the industry. The higher the average ratio, the more efficient the bank is, citrus' paribus. The ratio is calculated by dividing bank gross profit before tax relative to its total assets.
   It can be concluded that foreign banks are the most profitable among banking sector in Jordan, it's GPM norm is 0.03 (3%) in comparison to industry norm of 0.02; as has proven before by the Interest Cover Ratio ICR. The Jordanian commercial banks comes at the second rates, by a 0.02 (2%), followed by Arab banks and Islamic banks for a rate of 0.01 (1%).
10. **Net Profit Margin NPM:** NPM indicates what percentage of a bank's profit after paying taxes would remain to capitalize and /or set dividends. It's also an efficiency indicator. The ratio will be the bank net profit before tax relative to total assets.
    Calculations envisaged that foreign banks are the most profitable among the banking sector in Jordan, it's NPM norm is 0.02 (2%) in comparison to industry norm of 0.01. However, Jordanian commercial banks, Arab banks and Islamic banks are experiencing the same NPM rates, they perform a rate of 0.01 (1%).
11. **Return on Assets ROA:** ROA is a measurement of management performance. It tells the investor how well a bank uses its assets to generate income. Here, to differentiate between ROA and GPM, the total income is considered relative to total assets.
    It is so crucial this adaptation; due to the fact that, banks' financial reports shows a big difference between total income, total profit and net profit, for example, Arab Bank; the biggest bank in Jordan who owned 20.16% of the Banking total assets in 2014 has a total income of 946.4 m. JDs (Association of Jordan Bank, Annual Report 2015, P127). Whereas, total profit before tax is 286.1 m. JDs; which amounted to 30.2% of total income only, and net profit after tax amounted to 154.0 m., which comprises of 16.3% only of total income JDs in 2015. Also for housing bank, it comprises 51.1% of total income, and net profit after tax comprises of 36% only of total income.
    It has depicted from the formula results that ROA average was 3% for the banking sector, Arab banks and Islamic banks have an equal ROA of 3%. Whereas, foreign banks gained the highest rate of 5.8%, on the other hand, Jordanian commercial banks were in the middle return rate of 4%.
12. **Return on Equity ROE:** ROE is another measurement of management performance. It tells how well a bank has used the capital from its shareholders to generate profits, taking into account the net income after taxes. It's derived that the best rate were attained by Arab banks to achieve a rate of 22%, comparing to 18% as an industry average to the banking sector. This figure is followed by foreign banks for a rate of 19.6%, then Islamic banks by a rate of 17%, and finally Jordanian commercial banks

with a rate of 14%.

5.1.4 Valuation Ratios

In general, these ratios are usually used to determine whether the current share price of the bank is high or low in relation to its true value. Valuation ratios also help us assess if a bank is cheap or expensive relative to earnings, growth prospects and dividend distributions (asa, Op., Cit., P1). Results are driven by Table No. (3).

13. **Price to Earnings Ratios PE:** PE shows the number of times the share price covers the earnings per share over a year. It may also be interpreted as how much an investor pays for every $1 dollar the bank earns. PE is one of the most widely used ratios for assessing a bank's value (PE = Current share price / EPS).
    Results show that Jordanian commercial banks and Islamic banks have roughly the same PE rates, except for the case of Jordan Dubai Islamic bank which performs a very high rate of 32.4 in comparison to 10.9 to Jordan Islamic bank, and 7.5 to Arab Islamic bank. This means that the price of Jordan Dubai Islamic bank is so high compared to its earnings; it has a less return, as driven from profitability ratios mentioned before. Jordan commercial banks are exercising an industry average of 9.7, the most expensive bank share relative to its earning is the Housing bank for a figure of 19.57, followed by Arab Investment bank with 11.92. Whereas, the cheapest share relative to its earnings is Capital bank of 7.51 (in 2013), followed by Etihad bank and Jordan commercial bank with 7.79 and 7.80 respectively.
14. **Price / Earnings to Growth Ratio PEG (=** PE ratio/ EPS growth rate): The PEG ratio should be considered for growth stocks where the PE ratio is above the industry average, in order to assess whether the premium price paid is justified given the current level of earnings growth.
    A value of less than one implies that a stock may be undervalued and have further potential for share price appreciation. A value of more than one implies the stock is overvalued at current prices. Calculating PEG figures, we conclude that all Jordanian banks have reasonable figures except Investment bank and Jordan Ahli bank. Although Islamic banks have reasonable figures except Jordan Dubai Islamic bank which has an overvalued stocks. Noting that, we have no publish data to Arab and foreign banks to compare with.
15. **Dividend Yield DY:** DY is a calculation of the dividends paid over the last 12 months as a percentage of a bank’s current share price.
    This figure is drawn directly from bank's annual reports, reviewing DY figures reveal that, the Jordanian banking industry average norm is 11% to all banks except Arab and International banks. For Jordanian commercial banks it is 15% versus to 7% for Islamic banks; where Arab Islamic International bank has the least DY rate of only 3.9%, compared to 15% to Jordan Islamic bank.

Table 3: Banks Working in Jordan Top 15 Financial Ratios for the Year 2015 (in 000 JDs)*

Figures & Ratios / Banks	Arab Bank	Housing Bank HBTF^	Bank of Jordan	Jordan Kuwait Bank	Jordan Ahli Bank	Cairo Amman Bank	Arab-Jordan Investment Bank 2014	Jordan Commercial Bank	Investment Bank 2014	ABC Bank	Etihad Bank
1. Current Ratio	1.19	1.14	1.19	1.12	1.08	1.12	1.10	1.04	1.14	1.14	0.93
2. Profit before Depreciation and Amortization to Current Liabilities PDACL	0.60	1.64	1.99	1.45	0.70	1.59	1.49	1.00	1.53	1.59	1.15
3. Operating Cash Flow to Current Liabilities OCFCL	0.028	0.033	0.106	0.079	0.109	0.047	0.114	0.130	0.016	0.054	0.051
4.Cash Balance to Total Liabilities CBTL	0.336	0.250	0.365	0.266	0.209	0.395	0.232	0.268	0.174	0.180	0.162
5. Debt to Equity Ratio (D/E Ratio)	6.350	6.623	5.012	5.262	6.957	7.232	7.008	9.781	4.504	5.736	7.145
6. Total Liabilities to Total Tangible Assets TLTA	0.86	0.87	0.83	0.84	0.87	0.88	0.88	0.91	0.82	0.85	0.88
7. Interest Cover Ratio R̃	2.887	3.537	6.347	3.587	3.336	3.958	2.853	2.185	2.216	2.861	2.666
8. EPS = Net Profit / No. of Shares	0.67	0.483	0.263	0.386	0.130	0.257	0.172	0.15	0.123	.142	0.231
9. Gross Profit Margin GPM	0.011	0.022	0.028	0.020	0.013	0.024	0.019	0.016	0.020	0.023	0.019
10. Net Profit Margin NPM	0.006	0.016	0.018	0.014	0.009	0.016	0.014	0.011	0.015	0.015	0.012
11. Return on Assets ROA	0.037	0.044	0.057	0.045	0.048	0.052	0.034	0.043	0.044	0.046	0.038
12. Return on Equity ROE	0.136	0.131	0.166	0.160	0.126	0.121	0.125	0.093	0.182	0.148	0.123
13. Price to Earnings Ratio PE= Mkt Value/EPS	9.63	19.57	9.89	10.62	9.62	9.92	11.92	7.80	10.00	6.90	7.79
14. Price/Earnings to Growth Ratio PEG	14.37	40.51	37.59	27.52	73.96	38.61	69.29	52.00	81.30	48.60	33.73
15. Dividend Yield	0.25	0.32	0.20	0.20	0.10	0.13	0.12	0.075	0.070	0.090	0.248

Figures & Ratios / Banks	**Capital Bank 2013**	**Industry Norm (Geomean)**	**Jordan Islamic Bank**	**Arab Islamic Inter. Bank 2014**	**Jordan Dubai Islamic Bank**	**Industry Norm**	**Foreign Banks**	**Overall Industry Norm (All Banks)**	
							City Bank (2012)	**Standard Chartered Bank** 2013	**Industry Norm**
1. Current Ratio	1.14	**1.11**	2.35	1.06	7.30	**2.63**	1.30	1.21	**1.25**
2. Profit before Depreciation and Amortization to Current Liabilities PDACL	2.20	**1.32**	2.57	1.86	0.75	**1.53**	2.31	2.44	**2.37**
3. Operating Cash Flow to Current Liabilities OCFCL	0.110	**0.06**	-0.140	0.720	-0.265	**0.30**	#VALUE!	#VALUE!	
4.Cash Balance to Total Liabilities CBTL	0.264	**0.25**	0.781	1.022	1.890	**1.15**	0.518	0.510	**0.51**
5. Debt to Equity Ratio (D/E Ratio)	4.818	**6.23**	1.000	4.627	0.885	**1.60**	3.433	5.025	**4.15**
6. Total Liabilities to Total Tangible Assets TLTA	0.83	**0.86**	0.32	0.38	0.15	**0.26**	0.77	0.83	**0.80**
7. Interest Cover Ratio R̂	2.061	**3.06**	3.501	3.026	2.565	**3.01**	4.289	4.215	**4.25**
8. EPS = Net Profit / No. of Shares	0.213	**0.23**	0.325	0.134	0.033	**0.11**			
9. Gross Profit Margin GPM	0.026	**0.02**	0.020	0.012	0.006	**0.01**	0.027	0.033	**0.030**
10. Net Profit Margin NPM	0.020	**0.01**	0.013	0.009	0.004	**0.01**	0.018	0.021	**0.020**
11. Return on Assets ROA	0.047	**0.04**	0.035	0.028	0.029	**0.03**	0.049	0.068	**0.058**
12. Return on Equity ROE	0.172	**0.14**	0.319	0.083	0.171	**0.17**	0.226	0.170	**0.196**
13. Price to Earnings Ratio PE= Mkt Value/EPS	7.51	**9.72**	10.92	7.46	32.42	**13.83**	62,752.5	85,231.0	
14. Price/Earnings to Growth Ratio PEG	35.27	**41.88**	33.61	55.69	982.55	**122.52**	#VALUE!	#VALUE!	**#VALUE!**
15. Dividend Yield	0.194	**0.15**	0.150	0.039	0.070	**0.07**	#VALUE!	#VALUE!	**#VALUE!**

Arab Banks Figures & Ratios / Banks	**Al Rajhi Bank** (2012)	**Cairo Mortgage Bank 2013**	**Bloom Bank** (2012)	**Odeh Bank 2013**	**Abu Dhabi National Bank 2013**	**National Kuwait Bank 2013**	**Swaiste' Generale 2015**	**Al Rafidien Bank 2013**	**Industry Norm**
1. Current Ratio	1.27	1.09	1.08	1.06	1.23	1.33	1.10	2.02	**1.25**
2. Profit before Depreciation and Amortization to Current Liabilities PDACL	-0.91	-2.78	1.27	1.37	0.93	1.79	0.83	3.10	**1.47**
3. Operating Cash Flow to Current Liabilities OCFCL	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.208	#VALUE!	**0.21**
4.Cash Balance to Total Liabilities CBTL	0.280	0.220	0.212	0.159	0.635	0.404	0.360	1.292	**0.35**
5. Debt to Equity Ratio (D/E Ratio)	5.004	8.537	9.058	8.653	3.931	2.824	0.895	1.041	**3.69**
6. Total Liabilities to Total Tangible Assets TLTA	0.78	0.90	0.90	0.90	0.80	0.74	0.89	0.51	**0.79**
7. Interest Cover Ratio R̂	2.879	1.676	1.999	2.026	3.007	2.807	1.672	6.197	**2.54**
8. EPS = Net Profit / No. of Shares							0.100		**0.10**
9. Gross Profit Margin GPM	-0.001	-0.022	0.019	0.021	0.013	0.023	0.013	0.022	**0.01**
10. Net Profit Margin NPM	-0.001	-0.020	0.014	0.015	0.009	0.015	0.008	0.015	**0.01**
11. Return on Assets ROA	0.026	0.029	0.037	0.040	0.034	0.045	0.023	0.029	**0.03**
12. Return on Equity ROE	0.156	0.105	0.103	0.111	0.209	0.269	1.000	0.490	**0.22**
13. Price to Earnings Ratio PE= Mkt Value/EPS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	10.00	#DIV/0!	**#VALUE!**
14. Price/Earnings to Growth Ratio PEG	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	100.00	#DIV/0!	**#VALUE!**
15. Dividend Yield							0.04		**0.04**

Source: 1) Banks Association of Jordan, Annual Report 36 of 2014, Amman, Jordan, 2016, P47. , 2) Banks Annual Reports, 2014 & 2015. And, 3) Securities Deposit Center, http://www.sdc.com.jo/English/index.php.

ɑp: Islamic Banks have different Balance Sheets especially what regards to Interest; It referred as Returns (= Bank Services Revenue +Rev. of Foreword Sales + Financing Revenue). And, R̂ : Interest Paid is = Investors Profits at the Bank + at other Bank Profits under their names - Leasing Return.

* The Top 15 Financial Ratios are the Accredited KPIs of the Australian Shareholders' Association (asa), , 2010, PP5 -24. (www.asa.asn.au). And ^ HBTF Noted to Housing Bank for Trade & Finance.

5.2 The Estimation of Casu & Girardone (2006) and Gutie'rrez de Roza (2007) Banks' Model

In fact, Panzar-Rosse (1987) were developed the initial interest rate revenue model for banks utilizing total revenue as a dependent variable, and interest rates, total revenue to total assets, and the ratio of interest to total assets as independents. Casu & Girardone (2006) and Gutie'rrez de Roza (2007) developed the model to include the returns of the factors of production as independents. Annex No. (3) shows the data utilized by the Model.

The Tables 4, 5, and 6 summarize the model outcomes of the beforementioned formula. The study concludes that there is a positive correlation between interest rate revenue and price of funds, price of capital expenses, loans to assets, and deposits to assets. The strong correlation is seen with the funds prices of 0.757. Whereas, there is a negative correlation with labor expenses and bank equities.

Table 4: Correlations Matrix

Variables		RVTA	Lp	Fp	Cp	TL	TD	Q
Pearson Correlation Coefficients	RVTA	1.000	-.021	.757	.441	.436	.213	-.456
	Lp		1.000	-.143	-.137	-.068	.100	.139
	Fp			1.000	.264	.538	.306	-.369
	Cp				1.000	.399	-.096	-.681
	TL					1.000	.003	-.436
	TD						1.000	.108
	Q							1.000

The estimated model results is shown by Table No. (5), the formula proved to be significantly fit, and the six independent variables explain 65.4% of the dependent; the Interest rate revenue. Furthermore, parameter estimates prove to be positive and significant for funds prices, and roughly capital expenses variables, all other independent variables have insignificant impacts on interest revenue. Labor expenses and deposits, have positive relations. Whereas, loans and equities have negative relations, as drawn by Table No. (6). H-Statistics depicted is 0.29 as the drawn by summing up of a, b and c parameters of the beforementioned formula.

Table 5: Model Summary

Model	R	R Square	Adj. R Square	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.809[a]	.654	.539	.135929	.654	5.681	6	18	.002	2.185

Table 6: Model Summary

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Partial	Part	Tolerance
1 (Constant)	-2.613	.363		-7.191	.000	-3.377	-1.850			
Lp	.073	.088	.119	.836	.414	-.111	.258	.193	.116	.946
Fp	.171	.044	.716	3.894	.001	.079	.263	.676	.539	.567
Cp	.046	.035	.250	1.301	.210	-.028	.121	.293	.180	.519
TL	-.011	.028	-.072	-.408	.688	-.070	.047	-.096	-.056	.614
TD	.004	.045	.014	.092	.927	-.091	.099	.022	.013	.817
Q	-.026	.074	-.071	-.355	.727	-.181	.129	-.083	-.049	.477

6 Conclusions and Recommendations

6.1 The Main Conclusions

- The study approves the mismatch between banks' deposits and it credits, the ratio of credit facilities to deposits for Jordanian Banking sector is only amounted to 64.7%, and a gap of 11.5 b. JDs existed at the marker in 2015; which comprises 43.7% of the GDP.
- Banking sector exhibits a monopolistic competition case, there is a wide gap between interest on deposits and on credits; the margin (interest spread). Interest on credit facilities is more than the double of interest on deposits, which reveals to Banks' exploitation to customers.
- Jordan banks experiencing a wide concentration; only 20% of operating banks owes a 54.8% of the banking sector total assets.
- Banking sector was approached more than two third of the total market exchanges in Amman Stock of Exchange in 2015.
- Banks in Jordan are characterized by a high liquidity; it is the highest for Islamic banks, and the lowest for Jordanian banks. However, foreign banks are less risky than all other banks, Islamic banks have less risks than Jordanian commercial banks, and Arab banks.
- Debt to Equity ratio is seen to be the less for Islamic banks, and the highest to Jordan commercial banks. Whereas, foreign banks, and Arab banks were experiencing the middle place.
- Total liabilities to total assets TLTA ratio proved that Islamic banks are less risky than all other banks, due to the fact that, its operations are relied more likely on real assets, this advantage play positive roles in their stability.
- Profitability results show that, all banks operating in Jordan are likely to have a high spread (interest margin), this is due to the sovereignty of monopolistic competition. The highest profit margin has gained, in sum, by foreign banks, followed by Jordanian commercial banks, Islamic banks, and finally by Arab banks.

- By valuating banks through PE, PEG, and DY Ratios for the available banking data; i.e., among the lack of foreign banks, and Arab banks published data, it is found that, Jordanian commercial banks have a reasonable figures except few banks, and Islamic banks have reasonable figures too.
- Finally, through estimating interest rate revenue function as a banking operation's output, we found that, the formula proved to be significant; the independent variables of labor expenses, capital expense, funds interest expense, credit loans, deposits and equities were explained 65.4% of the banks' interest rate revenue. Statistical tests proved that only funds prices and capital expenses have positive and significant impacts on interest revenue among all independents.

6.2 Recommendations

However, banking operating in Jordan have a wide area of freedom to gain high profits, due to a wide interest spread and loose monetary policies, they are performing with less efficiency. Thereby, the monetary authority have to develop its policies to be more active in regulating banking sector to co-opt with economic development needs, and ambitions. Central Bank has to work more on reducing banking concentration, stabilizing a moderate liquidity in the market, and promote to achieve more efficient market. A further in depth studies is also recommended to clarify more the parallel monetary and fiscal policies needed to promote investment and the economy of Jordan.

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Annexes

Table A1: Interest Rates Structure in Jordan for the period 2000-2015 *

Year	Weighted Average Interest Rates on Interbank	Weighted Average Interest Rate on Demand Deposits	Weighted Average Interest Rate on Time Deposits	Weighted Average Interest Rate on Saving Deposits	Weighted Average Interest Rates on Overdrafts	Weighted Average Interest Rates on Loans and Advances	Weighted Average Interest Rates on Discounted Bills and Bonds	Prime Lending Rate
2000	5.75	1.2	6.55	3.76	11.6	11.38	12.81	9.5
2001	3.88	1.06	5.19	2.91	10.42	10.45	11.88	8.0
2002	2.88	.91	3.97	1.84	9.35	9.85	10.95	7.25
2003	2.12	.5	2.75	.88	9.43	8.92	10.24	6.5
2004	2.805	.38	2.49	.73	8.79	7.59	8.98	6.0
2005	4.629	.47	3.52	.83	9.26	8.1	7.92	7.0
2006	6.495	.87	5.13	.99	9.23	8.56	8.72	7.5
2007	5.147	.94	5.56	1.1	9.83	8.86	9.45	8.15
2008	4.649	1.01	5.66	1.04	9.31	9.48	8.89	8.45
2009	2.645	.67	4.23	.84	9.03	9.07	9.17	8.34
2010	2.15	.44	3.4	.77	9.12	9.01	9.41	8.2
2011	2.917	.43	3.46	.7	8.8	8.67	9.34	8.22
2012	4.309	.42	4.19	.76	9.28	8.95	9.59	8.68
2013	3.785	.38	4.97	.87	9.2	9.03	10.13	8.85
2014	2.944	.43	4.11	.79	9.15	8.84	9.95	8.72
2015	1.964	.32	3.06	.62	8.01	8.24	8.7	8.37

Source: Central Bank of Jordan, Monthly Bulletin Statistics' Series, www.cbj.org.jo/http://statisticaldb.cbj.gov.jo/index.

* Noting that credit facilities rate are excluding commission of 1% at the 1st. Year, and lump sum fees which varies from one bank to another, and also excluding other costs of funding as mortgage collateral fees, operating fees and others.

Table A2: Total Assets of Banks Operating in Jordan at the end of 2014

Bank	Total Assets	% of Total	Rank
Arab Bank	8,726.00	20.16%	1
The Housing Bank for Trade & Finance	6,508.60	15.04%	2
Jordan Kuwait Bank	2369	5.47%	4
Bank of El Etihad	2239.69	5.17%	5
Jordan Ahli Bank	2120	4.90%	6
Cairo Amman Bank	1885.22	4.36%	7
Bank of Jordan	1859.6	4.30%	8
Capital Bank	1825.47	4.22%	9
Arab Jordan Investment Bank	1632	3.77%	10
Jordan Commercial Bank	1096.41	2.53%	11
ABC Bank	1083	2.50%	12
Societe General-Jordan	867.13	2.00%	14
Invest Bank	778.62	1.80%	16
Total Assets of Jordanian Banks	**32,990.74**	**76.22%**	
Jordan Islamic Bank	3855.2	8.91%	**3**
International Islamic Arab Bank	1568.86	3.62%	11
Jordan Dubai Islamic Bank	658	1.52%	17
Al-Rajhi Bank	353.82	0.82%	21
Total Assets of Islamic Banks	**6435.88**	**14.87%**	
Bank Audi	1013.09	2.34%	13
BLOM Bank	811.55	1.87%	15
Standard Chartered	487.94	1.13%	18
Egyptian Arab Land Bank	399	0.92%	19
National of Kuwait-Jordan	361.8	0.84%	20
National Bank of Abu Dhabi	339.08	0.78%	22
Citi Bank	311.07	0.72%	23
Rafidain Bank	133	0.31%	24
HSBC (Acquired by Arab Jordan Investment Bank		Merged/ Exquisite	
Total Assets of Foreign Banks	**3856.53**	**8.91%**	
Total Assets of the Banking Sector	**43,283.15**	**100.00%**	

Source: Banks Association in Jordan, 36th. Annual Report 2014, Amman, Jordan, 2015, P127.

Table A3: The Model Data

RVTA	Lp	Fp	Cp	TL	TD	Q
-3.079	3.463	-2.9	-2.865	-0.83	-0.2	-2
-2.957	3.414	-2.688	-3.058	-0.82	-0.18	-2.03
-2.813	2.753	-3.474	-2.865	-0.66	-0.2	-1.8
-2.996	3.011	-2.781	-3.101	-0.73	-0.21	-1.83
-2.797	3.333	-2.303	-0.177	-0.71	-0.18	-2.07
-2.749	2.849	-3.058	-2.577	-0.79	-1.41	-2.11
-3.058	2.779	-2.513	-3.037	-0.92	-0.18	-2.08
-2.937	2.829	-2.313	-2.564	-0.91	-0.13	-2.38
-2.688	3.3	-1.528	-3.124	-0.57	-0.27	-1.7
-2.765	3.249	-1.945	-3.037	-0.67	-0.2	-1.91
-2.865	3.156	-1.884	-2.996	-0.67	-0.16	-2.1
-2.765	3.508	-1.959	-3.324	-1.02	-0.23	-1.76
-3.079	2.715	-2.937	-4.2	-0.38	-0.11	-1.14
-3.219	2.925	-3.411	-2.847	-0.58	-0.86	-2.49
-2.976	3.021	-2.674	-3.058	-0.89	-2.03	-1.77
-3.244	3.21	-4.135	-2.59	-0.35	-2.76	-1.86
-2.733	2.925	-1.625	-2.976	-0.7	-0.18	-2.25
-2.749	2.566	-1.754	-3.037	-0.89	-0.27	-2.31
-2.674	3.013	-1.427	-3.27	-0.9	-1.42	-2.26
-3.079	3.51	-3.507	-3.474	-1.44	-0.26	-1.59
-2.765	3.167	-2.577	-3.612	-1.97	-0.32	-1.34
-3.194	3.074	-2.577	-5.521	-0.7	-0.15	0
-3.411	2.987	-4.828	-4.828	-6.91	-0.76	-0.71
-3.058	3.998	-3.612	-5.809	-1.93	-0.29	-1.49
-2.765	3.499	-3.219	-2.056	-1.16	-0.26	-1.8

Source: Calculated as the Natural Logarithm of the mentioned figures.