



Impact of Interest Rate in the Economy from the Viewpoints of Banking Managers: Empirical Evidence from Jordan

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ABSTRACT

The research aims at investigating the role, impact and determinants of interest rate in Jordanian economy from view points of banking managers in Jordan. The methodology is descriptive and analytical using mean, standard deviation, t-test and percentages as statistical tools. The study concludes that the role of interest rate in Jordanian monetary policy is restricted by two factors: pegging JD with US\$ which limits the effective role of interest rate in Jordanian monetary policy and the dual banking system of traditional and Islamic banks where Islamic banks do not deal with Interest rate. Raising interest rate in Jordan caused higher cost of credit for companies, less competitiveness of exports, less liquidity in the economy, higher profit margin for banks, higher exchange rate of JD and higher inflation. Nevertheless, lowering interest rate in Jordan caused lower cost of borrowing, higher liquidity, better competitiveness of exports and more credit facilities by banks but inflation was much lower. Moreover, the study concluded the determinants of interest rate in Jordan are money supply, demand for money, inflation and economic conditions. In order to have an effective role for interest rate in monetary policy, the researcher recommends pegging JD to a basket of currencies.

Keywords: Economy of Jordan, interest rate, monetary policy, economic impact.

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1. Introduction

There is a controversy among economists and financial analysts on the role of interest rate as a tool for monetary easing and tightening policies and their impact on stimulating economic growth, creation of employment, provision of liquidity, controlling inflation and whether monetary easing policy should be stopped due to its burden on the government budget and public debt which reached more than 14

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trillion dollar in USA. Since 2008, central banks in USA, Euro Zone, United Kingdom, Japan and China. Several countries used changes in interest rate as a tool for controlling inflation, employment, economic growth and aggregate demand. Since December 2015, US Federal Reserve bank adopted a tightening monetary policy by increasing interest rate gradually to reach 3.5% in a few years started by increasing interest rate by 0.25% to reach 0.50% in USA followed by other countries particularly those which peg their currencies to US Dollar such as Jordan, Jordanian Arabia and other GCC countries. Various scenarios are open to Central Bank in Jordan (CBJ) to change interest rate as a tool of monetary policy to control inflation, stimulate economic growth, generate employment and increase aggregate demand.

The research problem stems from the significance of using interest rate as a tool of Jordanian monetary policy in the light of pegging Jordanian Dinar to US Dollar and the impact of changing interest rate on Jordan's economy. The research problem could be formulated in the following research questions: (1) what is the role of interest rate in Jordanian monetary policy? (2) What is the impact of changing interest rate on the Jordanian economy?

The research objectives are: (1) Investigating the role of interest rate as a tool of Jordanian monetary policy. (2) Shedding light on the impact of changing the interest rates on Jordanian economy during the period 2008-2015.

The research importance stems from the scarcity of research on the role and impact of using interest rate as a tool of Jordanian monetary policy besides the importance of the conclusions and policy implications of the study for decision-makers of monetary policy, financial analysts and economic researchers.

The research methodology is descriptive and analytical of primary and secondary data collected using statistical tools of mean, standard deviation, t-test and percentages. The primary data was collected through a purposive sample of 12 banking directors representing the following six Jordanian banks: Bloom bank, Ahli Bank, Itihad Bank, Capital Bank, Arab Bank and ABC Bank. A questionnaire was designed by the researcher including 34 paragraphs on role, impact and determinants of interest rate in Jordan and the questionnaire was sent to several universities' professors in finance as referees for evaluating its appropriateness and several amendments were made according to the suggested changes. The reliability of the questionnaire was tested by Cronbach Alpha as follows:

Table 1: Reliability test

Item	Coefficient of Cronbach Alpha
Role of Interest Rate	0.913
Impact of Rising Interest Rate	0.873
Impact of Lowering Interest Rate	0.880
Determinants of Interest Rate	0.903
Total	0.892

Source: Researcher computation

Coefficient of Cronbach Alpha (0.892) of the questionnaire's paragraphs is appropriate for this kind of study (see the Appendix). The secondary data was collected from reports of Central Bank of Jordan, Ministry of Finance besides IMF and World Bank.

The organizational structure of the study includes five sections. Section I: Introduction. Section II: Conceptual Framework of Interest Rate and Previous Studies. Section III: Salient Characteristics of Jordanian Monetary Policy & Macroeconomic Indicators. Section IV: Analysis of the Role, Impact and Determinants of Interest Rate in Jordan. Section V: Conclusions & Policy Implications, besides references and appendix.

2. Conceptual framework of interest rate and previous studies

Interest is defined as the rate of return on capital as a factor of production or the price which is paid by borrowers to lenders for the use of their savings. In other words, interest is the price that the consumer asks to compensate him for delaying his consumption for a coming period. Interest rate is the compensation required by the owner of capital for his loans to customers (Ahuja, 2006).

Interest is classified as "nominal rate of interest" which prevails in the market and "real interest rate" which is the nominal rate of interest adjusted for inflation as in the following equation: Real Interest rate= Nominal interest rate –Inflation.

Other types of interest are simple and compound rate of interest where simple interest rate is calculated on the principal amount of loan and compound interest rate is calculated on the principal amount plus interest accrued for loan.

There are three economic theories that explain the determinants of interest rate: First, the "Classical Theory of Interest" which stresses that interest is determined by demand and supply of savings for investment purposes. Second, the "Neoclassical Loanable Fund Theory" which explains the determinants of interest rate by the equilibrium between demand and supply of loanable funds. Third, the "Keynesian Interest Theory" which explains interest rate by the equilibrium between demand and supply of money. Keynesian Theory of Interest is called "Liquidity preference" where money is demanded for transactions motive, for precautionary motive and for speculative motive. John Keynes discussed liquidity trap which results from the fact that central bank cannot increase money supply after the interest rate reaches the minimum level of zero. Liquidity preference theory promoted by John Keynes explains changes in interest rates (Ahuja: 2006).

Other determinants of interest rate include money supply, inflation and discount rate charged by Central Bank when providing loans to banks, the business cycle of recession, boom, prosperity and depression besides whether the monetary policy is expansionary or contractionary. Central bank usually fixes the interest rate as an indicator for the banks' decisions on interest on deposits, loans and interest margin. Other concerns of interest are its impact on saving, investment, credit facilities, bonds' return, discount rate on repos, reverse repos and liquidity for the banking system (Begg et al: 2011).

According to changes in interest rates have an impact on the exchange rate of a currency which in turn affects exports, imports and foreign direct investment in a country where high interest rate leads to currency appreciation and vice-versa in case of low interest.

Raising interest rate is used by the US Federal Reserve Bank in case of "Monetary tightening" while lowering interest is used to get "Monetary Easing" in order to influence aggregate demand, inflation, employment and economic growth. Furthermore, determinants of interest rate in emerging markets include concentration ratio, cost of economic restructuring, direct and indirect monetary policies which have impact on companies profits (Ozdemir and Altinoz 2012).

Based on the economic theory, the equilibrium interest rate is determined by the cross point of money demand and money supply curves. Interest rate will be low when money demand declines and vice versa when demand for money increases. More money supply lowers interest rate and vice versa when money supply decreases (Samuelson & Nordhaus: 2005).

Concerning Monetary School, Milton Freidman, who belongs to Chicago School of Economics, explained how the increase of money supply and cutting down taxes lead to more economic activities and change of prices as specified by the following Quantity Theory of Money (Samuelson & Nordhaus:2005):

$$M V=PQ$$

Where

M= Money Supply

V=Velocity of Money

P= Price level

Q=Size of economy or output

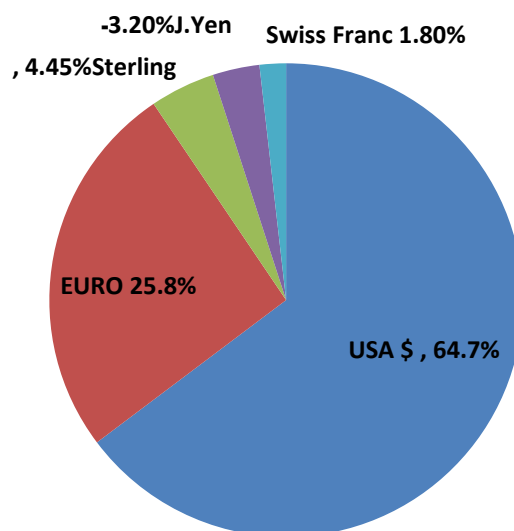
The equation shows that more money supply leads to higher prices if the velocity of money and output are kept constant. In the light of the International Financial Crisis, the Federal Reserve Bank in the USA adopted the Monetary Easing since 2008 by lowering interest rate to 0.25% and expanding money supply in order to encourage companies to borrow at low cost and get out of the economic recession. Monetary easing was accompanied by purchasing government bonds and encouraging commercial banks to borrow from the Federal Reserve Bank through the Security Lending Facility in order get rid of the liquidity trap which allows banks to borrow with their security guarantees under the so-called Asset Relief Program. In December 2015 the Federal Reserve Bank started Money tightening by raising interest rate to 0.50% after the USA economy achieved progress in economic growth, declining unemployment to 5% and higher inflation which reached less than 2%. Interest rate will be increased gradually to reach 3.5% in 2017 (Yelen: 2015).

As a reaction of increasing interest rate on US dollar, central banks in the EURO zone and in Japan followed the Federal Reserve Bank by increasing their interest discount rates (Edwin: 2009).

In order to fight recession, the Central European Bank has extended the Money Easing policy in the EURO Zone till 2017 with interest rate reaching less than 0.25%. Moreover, the Central Bank of Japan followed monetary easing policy by lowering its interest rate and buying governmental bonds to deal with Japan's recession. China Central Bank has lowered value of Yewan currency and lowered its interest rate from 2% to 1.5% to increase competitiveness (Al-Watan: 2015).

Money Easing is new application different from the traditional monetary policy for dealing with recession ([http://en.wikipedia/quantitative easing.com](http://en.wikipedia/quantitative_easing.com).) US dollar constitutes a high percentage of reserves of international currencies as in Figure1:

Figure 1: Shares of main currencies in international reserves



Source: IMF (2015) Financial Statistics. Washington DC.

Moreover, US Dollar plays an important role in foreign trade and global payments System as in Table 2:

Table 2: Role of US \$ in foreign traded and global payments system

Item	Percentage/Value
Global Exports in USA Dollar	50%
Share of US \$ in International Reserve	64%
Size of Transaction in US \$	3 trillion USA \$

Source: IMF (2015) Financial Statistics. Washington DC.

Interest on US \$ has fluctuated in the last decade as shown in Table 3:

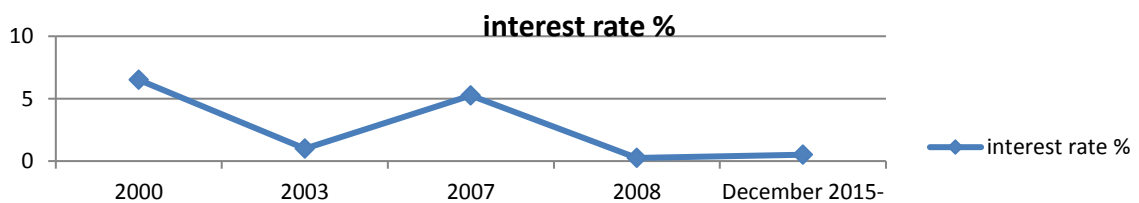
Table 3: Development of interest rates in USA during 1997-2015

Year	Interest Rate	Reasoning
1997-2000	6.50%	Dot Com. Bubble
2001-2003	1.0%	Recession
2004-2007	5.25%	Mortgage of Housing Bubble
2008-2015	0.0%-0.25%	International Financial Crisis
December 2015-	0.25-.50%	Monetary Tightening Policy

Source: Federal Reserve Bank (2015) Declining and Rising Interest Rates on Federal Funds. Washington

Development of Interest Rates in USA (1997-2015) is shown in Figure2:

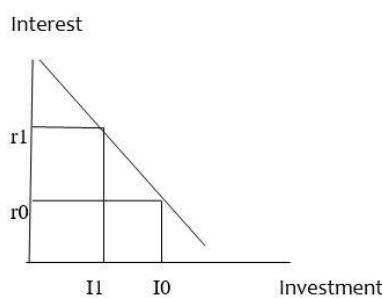
Figure 2: Development of interest rates in USA (1997-2015)



Source: Researcher design

The impact of raising the interest rate in USA is strengthening the Dollar, increasing the value of assets valued in Dollar and raising the values of currencies pegged to US dollar. Higher interest rates have reversed negative impact on consumption and investment as in figure 3 (Begg et al: 2011):

Figure 3: Function of interest rate



Quantitative Monetary Easing was introduced to overcome the global financial crisis which has the following implications: (1) Collapse of mortgage market. (2) Lack of bank lending. (3) Lower banks' reserves. (4) Lower aggregate demand. (5) Lower capital adequacy ratio. (6) Lower bonds prices. (7) Lower investment and consumption which are parts of aggregate demand. (8) Recession and loweconomic growth.

Review of previous studies is discussed as follows:

- The Study of Henry C. Murphy (1950) Role of Interest Rates in a Changing World: Reappraisal of Easy Money. The study concludes that interest rates have two fold function: the positive relation between interest rate and saving, i.e., the higher the interest, the

greater the amount of saving and interest rate has negative relation to investment, i.e., high interest rate discourages real investments. Furthermore, high interest rates curb excessive credit creation; i.e., if the interest rates are too high, banks credit would contract and prices would rise. Moreover, high interest rates have negative impact on capital formation due to the negative impact of interest on investment. The study also concluded that in time of emergency, interest rate is not an appropriate measure to allocate funds between the public and private sectors.

- The Study of [Phillip C. James \(2014\)](#) Sector Rotation and Interest Rate Policy. The study concluded that a sector rotation strategy based on changes in interest rates is one way for investors to maximize their returns. The study used U.S. monthly bank prime loan rate from January 31, 1949 to December 31, 2012 to measure changes in interest rate which were labeled as expansionary or restrictive. Betas to measure portfolio risks were obtained by regressing monthly equally weighted returns against the monthly Dow Jones industrial index. The study concluded that a sector rotation strategy based on changes of interest rate adjustments can improve the performance of investor's portfolio.
- The Study of [Nilufer Ozdemir & Cuneyt Altinoz \(2012\)](#) Determinants of interest rate for emerging market economies: the role of financial market structure. The study concluded that it is essential for central banks to assess whether or not the pass-through from monetary policy rates to credit and deposit interest rates is complete in order to ensure price stability. Emerging market countries lack large panel data sets that are typically available for developed countries which make it hard to analyze the determinants of pass-through coefficients for emerging markets. The findings indicate that competition among banks plays a more important role for emerging market countries than the developed counterparts.
- The Study of [Khalil Abdelrahim & Farid Flemban \(2009\)](#) Economic Feasibility of Pegged Dinar to US Dollar & Options for Adjusting Saudi Foreign Exchange System in Light of Recent Economic Developments. The study concluded that Saudi Arabia Monetary Agency (SAMA) has lost independence of its monetary policy due to pegging the Saudi Riyal (SR) with US Dollar for the last 30 years since 1986 where SAMA was obliged to change its interest rate to match the changes of Federal Reserve Bank of interest rate in USA. The study recommended that in order to increase the control of SAMA on Saudi Monetary Policy, Riyal should be pegged to a basket of currencies of US dollar by (40%), Euro (30%), Sterling Pound (10%) Japanese Yen (10%), Swiss Franc (5%) and Special Drawing Rights (5%).
- The Study of [Arab Monetary Fund \(2015\)](#) Developing Arab Bond Markets. The study concluded that bond return is affected by the level of market interest rate. Bonds markets in the Arab Countries are weak compared with stock markets. The bond market is considered a source of finance in medium and long term. Bonds markets support the role of banks in providing finance to economic sectors particularly long-term financing. Sukuk, which is an alternative to bond, is used as a tool of Islamic Financing which is growing rapidly to reach about 1 trillion dollar world-wide.
- The Study of [Mackenzie International Consultative Institute \(2015\)](#) Saudi Arabia Far Away from Oil Sector. The study concluded that KSA should identify the areas of disequilibrium in Saudi economy and should have a strategy till the year 2030 to diversify its economy away from the share of 90% of oil in the economy to reach 30% in 2030, creation of 6 million jobs for the Saudis, increasing the per capita income by 60% till the year 2030, investment of 1 trillion Dinar during the coming 15 years mostly through private sector, privatization of certain governmental project to raise productivity, increasing training of human resources and attracting more foreign investments.
- The Study of [Fahd Ben Abdullah Alhwimani \(2015\)](#) Impact of the American Monetary Policy upon Saudi Monetary Policy. The study concluded that the changes in US Monetary Policy created challenges to Saudi Arab Monetary Agency (SAMA) due to pegging Riyal to US Dollar since 1986 despite the differences in economic structure between the two countries. Interest on deposits in KSA was lowered to 1.5% when US lowered interest rate to nearly zero leading to more lending by Saudi Banks and when the US Federal Reserve Bank

increased interest rate from 0.25% to 0.50%, SAMA increased the interest rate on reversed repos to 0.50% which led to increase the interest on loans between banks (SIBOR) to 1.3% which caused an increase in the borrowing cost. Such an interest change caused pressure on SR exchange rate which hurts exports.

3. Jordan's macroeconomic indicators & monetary policy

Macroeconomic indicators of Jordan in the last decade show increase in unemployment rate, reduction of inflation, increase in consumption, decline in investment, lower growth of GDP, increase in broad money supply, increase in government and private sector debts, fluctuation of interest rate and increase of interest on treasury bills as shown in Table 4:

Table 4: Macroeconomic indicators of Jordan (2010-2015)

Year	2010	2011	2012	2013	2014	2015
Population number	6.113	6.993	7.427	8.114	8.804	9.532
Unemployment Rate	12.5%	12.9%	12.2%	12.6%	11.9%	13.0
GDP at Current Prices (JD)	18762	20476	21965	21851	25437	26.289
GDP Growth at constant prices	2.3%	2.6%	2.7%	2.8%	3.1%	2.4%
National Income in current prices	21323	23743	24774	28424	30302	30.234
Change in Price Index	4.8%	4.2%	4.5%	4.8%	2.9%	-0.9
Share of Consumption in GDP	95.7%	105.1%	NA	NA	NA	NA
Share of Fixed Investment in GDP	23.6%	21.6%	NA	NA	NA	NA
Share of national Saving in GDP	4.3%	5.1%	NA	NA	NA	NA
Money Supply (M2) in JD	22306	24118	24945	27363	29240	31605
Government Debt (JD)	4907	6701	9461	10494	10473	11386
Net Debt on Private Sector (JD)	13612	14925	15953	17222	17582	18704
Re-discount Rate	4.25%	4.50%	5.0%	4.50%	4.25	3.75
Interest on Treasury Bills	2.208%	3.232%	3.788%	NA	NA	NA

NA= non available

Source: Central Bank of Jordan, Annual Reports 2010-2015. Research Department

Monetary indicators of Jordan in the last few years show a decline in foreign currency reserves, increase in money supply, increase in credit facilities and an increase in bank deposits as shown in Table 5:

Table 5: Main Monetary indicators of Jordan (2015-2016) JD million and % change

Monetary Indicators	November 2015	November 2016	%Change
Foreign Currency Reserves	14077	12708	-10.2%
Money Supply (M2)	31366	32472	2.7%
Credit Facilities	21048	22736	7.7%
Total Bank Deposits	32433	32901	0.9%

Source: Central Bank of Jordan, Annual Reports 2010-2015. Research Department

Interest rate in Jordan economy is structured into interest rate on monetary policy instruments and interest rates on credit facilities of banking institutions. In the last few years Central bank of Jordan followed flexible interest rate policy where the interest rate was mostly reduced to stimulate the economy as shown in Table 6:

Table 6: Structure of interest rate in Jordan (2012-2013) and (2015-2015)

Interest rate	2012	2013	2015	2016
Re-discount rate	5.00%	4.50%	3.75%	3.75%
Repurchase agreements overnight	3.75%	3.50%	3.50%	3.50%

Overnight Deposit window rate	1.75%	1.50%	1.5%	1.5%
Repurchase agreement one month	2.50%	2.25%	2.5%	2.5%
Interest rate on Certificate of Deposit one week	2.50%	2.25%	2.25%	2.25%
Demand deposits	0.45%	0.30%	0.33%	0.24%
Time deposits	3.73%	2.96%	3.13%	3.04%
Discount bills and notes	8.58%	7.91%	9.24%	10.37%
Loans and Advances	9.38%	10.06%	8.27%	7.90%
Over draft	8.34%	7.58%	7.93%	7.64%
Prime lending rate	8.49%	8.39%	8.37%	8.39%

Source: Central Bank of Jordan. Statistical Monthly Bulletins 2015-2016. Amman

The Central Bank of Jordan changed the structure of interest rate during (2013-2016) by reducing discount rate from 4.5% to 4.25%, reduction of interest rate on loans among banks from 4.25% to 4%, reduction of repurchasing agreement (Repos) from 3.5% to 3% and reduction of interest rate on deposit for one night among banks from 3.5% to 2.75% as in Table 7:

Table 7: Change of interest rates on loans, deposits and treasury bills In Jordan

Interest Rate	2012	2013	2014	2015	2016
Weighted Average of interest on loans	8.95	9.03	8.84	8.24	7.91
Weighted Average of interest on Time Deposits	4.19	4.97	4.11	3.06	2.96
Interest Rate on Treasury bills for six months	3.788	3.788	3.788	3.788	3.788

Source: Ministry of Finance (2016) public finance bulletin no.4 vol.18 May. Amman

In sum, the monetary policy of Central Bank of Jordan during 2013-2016 was characterized by flexibility as it used quantitative money easing policy first to stimulate the economy and increase credit facilities for the economic sectors followed by quantitative tightening of money since November 2016, the Central Bank of Jordan increased interest rate by 25 points in consistency with the increase of the Federal Reserve Bank of USA due to pegging Jordanian Dinar to US\$. However on February 19, 2017 CBJ increased the interest rate in Jordan by 50 points in order to maintain the stability of the economy which was an independent decision of the Central Bank away from the Federal Reserve Bank of USA.

4. Analysis and discussion of empirical results on role, impact and determinants of interest rate in Jordan

4.1 Characteristics of respondents in the sample

The descriptive analysis of the characteristics of respondents shows that they are selected on purpose from six Jordanian banks in Amman; one forth of them are branch managers, one forth are credit directors, one forth are head of corporation and 16.7% of them executive manager and 8.3% of them are head treasury. Their specializations are accounting 16.7%, finance 58.3%, economics 16.7% and management 8.3%. Five of the respondents are with master degree, four of them are with bachelor degree and three of them are with doctorate degree. The experiences of the respondents are 16- 20 years and more for 41.7% of them, 10years or less for 33.3% of them and 11-15 years for 25% of the respondents as in Table 8:

Table 8: Characteristics of sample's respondent

Variable	Category	Frequency	Percentage
1-Job	Head of corp.	3	25.0
	Head Treasury	1	8.3
	Credit director	3	25.0
	Branch Manager	3	25.0
	Executive Manager	2	16.7
	Total		12

2-Bank	Bloom bank	3	25.0
	Ahli Bank	2	16.7
	Itihad Bank	1	8.3
	Capital Bank	3	25.0
	Arab Bank	1	8.3
	ABC Bank	2	16.7
	Total	12	100
3-Specialization	Accounting	2	16.7
	Finance	7	58.3
	Economics	2	16.7
	Management	1	8.3
	Total	12	100
4-Scientific Degree	Bachelor	4	33.3
	Master	5	54.7
	Doctorate	3	25.0
	Total	12	100.0
5-Experience	10 years or less	4	33.3
	11-15 years	3	25.0
	16-20 years or more	5	41.7
	Total	12	100.0

Source: Researcher computation

4.2 Analysis and discussion of the role of interest rate in Jordan's economy

Analysis of respondents' points of view on role of interest rate in Jordan economy shows the following: Average of role of interest rate in Jordanian economy was (4.324) which is higher than average 3 at Likert scale. Interest rate role in attracting deposits got the highest rank with a (mean =4.50) which is statistically significant ($t=9.798$), followed by interest role in controlling liquidity with a (mean =4.42) which is statistically significant ($t=6.708$), followed by interest role in controlling credit facilities with a (mean=4.33) which is statistically significant ($t=9.978$), followed by interest role as a monetary instrument and as stimulating economy against recession with a (mean=4.25) which is statistically significant ($t=4.118$, $t=6.332$), followed by role of interest in controlling profit margin and calculating present value with a(mean=4.17) which is statistically significant ($t=4.714$, $t=6.091$), followed by interest role in controlling discount rate and inflation with a mean (4.08) which are statistically significant ($t=3.161$, $t=3.00$), followed by role of interest rate as a cost of capital (mean=4.00) which is statistically significant ($t=4.811$) as in Table 9:

Table 9: Descriptive statistics and one sample T-Test of role of interest rate

Role of Interest Rate	Mean	Rank	Std.	t-test	Sig.(2-tailed)
Interest is an instrument of Monetary Policy	4.25	4	1.215	4.118	.003
Interest rate is the cost of capital	4.00	7	.853	4.811	.001
Interest rate is used as discount rate by Central Bank	4.08	6	.996	3.161	.012
Interest rate is used to control Inflation	4.08	6	.996	3.000	.015
Interest rate is used by banks to determine profit margin	4.17	5	.718	4.714	.001
Interest rate is used to attract more deposits	4.50	1	.522	9.798	.000
Interest rate is used by banks to control credit facilities.	4.33	3	.778	9.798	.000
Interest rate is used for controlling liquidity	4.42	2	.669	6.708	.000
Interest rate is used to calculate Present Value of Cash flows	4.17	5	.718	6.091	.000
Interest rate is used by central bank to stimulate economy	4.25	4	.754	6.332	.000
Average of Role of interest rate	4.325				

Likert scale 1=strongly disagree 2=disagree, 3=some what agree, 4=agree, strongly agree=5

Source: Researcher Computation

4.3 Analysis and discussion of impact of rising interest rate in Jordan

Analysis of respondents' points of view on impact of rising interest rate in Jordan economy shows the following: Average of impact of rising interest rate in Jordanian economy was (3.845) which is above average 3 at Likert scale. Increase Cost Of Borrowing got the highest rank with a (mean =4.25) which is statistically significant ($t=23.685$), followed by Increase Profit Margin with a (mean =4.00) which is statistically significant ($t=18.7628$), followed by Increased Cost Of Production with a (mean=3.92) which is statistically significant ($t=17.110$), followed by Lower Credit Facilities with a (mean=3.83) which is statistically significant ($t=18.501$), followed by Reduce Competitiveness Of Export with a (mean=3.75) which is statistically significant ($t=17.234$), followed by Increase Prices Of Goods And Services with a mean (3.67) which are statistically significant ($t=16.316$), followed by Raise Exchange Rate with a (mean=3.42) which is statistically significant ($t=13.146$) as in Table 10:

Table 10: Descriptive statistics and one sample T-Test of impact of rising interest rate

Impact of Rising Interest Rate	Mean	Rank	Std.	t-test	Sig. (2-tailed)
Increase Cost Of Borrowing	4.25	1	.622	23.685	.000
Increased Cost Of Production	3.92	3	.793	17.110	.000
Increase Prices Of Goods And Services	3.67	6	.778	16.316	.000
Lower Credit Facilities	3.83	4	.718	18.501	.000
Increase Profit Margin	4.00	2	.739	18.762	.000
Raise Exchange Rate	3.42	7	.900	13.146	.000
Reduce Competitiveness Of Export	3.75	5	.754	17.234	.000
Reduce Foreign Exchange	3.92	3	.793	17.110	.000
Average Impact of Rising Interest Rate	3.845				

Likert scale 1=strongly disagree 2=disagree, 3=some what agree, 4=agree, strongly agree=5

Source: Researcher computation

4.4 Analysis and discussion of impact of lowering interest rate in Jordan

Analysis of respondents' points of view on impact of lowering interest rate in Jordan economy shows the following: Average impact of lowering interest rate in Jordanian economy was (3.88) which is above average at Likert scale. Reduce Cost Of Borrowing got the highest rank with a (mean =4.33) which is statistically significant ($t=23.685$), followed by Attracting Foreign Investment with a (mean =4.17) which is statistically significant ($t=17.234$), followed by Improving Competitiveness Of Exports with a (mean=4.08) which is statistically significant ($t=18.501$), followed by increase of liquidity and credit facilities with a (mean=4.00) which is statistically significant ($t=17.110$, $t=16.316$), followed by Reduce Cost Of Production with a (mean=3.83) which is statistically significant ($t=13.146$), followed by interest Resist Recession with a mean (3.75) which are statistically significant ($t=23.635$), followed by Reduce Inflation (mean=3.42) which is statistically significant ($t=18.762$) as in Table 11:

Table 11: Impact of lowering interest rate in Jordan

Impact of Lowering Interest Rate	Mean	Rank	Std.	t-test	Sig. (2-tailed)
Reduce Cost Of Borrowing	4.33	1	.492	23.685	.000
Increase Liquidity Of Banks	4.00	4	.739	17.110	.000
Increase Credit Facilities	4.00	4	.739	16.316	.000
Improve Competitiveness Of Exports	4.08	3	.669	18.501	.000
Reduce Inflation	3.42	7	1.240	18.762	.000
Reduce Cost Of Production	3.83	5	.718	13.146	.000
Attract Foreign Investment	4.17	2	.718	17.234	.000
Increase Burden Of Burden Of Public Budget	3.42	7	.996	17.110	.000
Resist Recession	3.75	6	.866	23.685	.000
Average of Impact of Lowering Interest Rate	3.88				

Likert scale 1=strongly disagree 2=disagree, 3=some what agree, 4=agree, strongly agree=5

Source: Researcher computation

4.5 Analysis and discussion of determinants of interest rate in Jordan

Analysis of respondents' points of view on determinants of interest rate in Jordan shows the following: Average impact of determinants of interest rate in Jordan was 3.89 which is above average 3 at Likert scale. Demand for money has positive relation with interest rate with a (mean =4.17) which is statistically significant ($t= 25$), followed by Recession has negative relation with interest rate with a (mean =4.08) which is statistically significant ($t=21.158$), followed by liquidity has negative relation with interest rate rate with a (mean=4.00) which is statistically significant ($t=18.762$), followed by Economic boom has positive relation to interest rate with a (mean=3.92) which is statistically significant at ($t=15.070$), followed by money supply has negative relation with interest rate with a(mean=3.83) which is statistically significant ($t=18.501$), followed by inflation has positive relation with interest rate with a (mean =3.67) which is statistically significant at (12.899), followed by pegging dinar with US\$ with a (mean=3.58) which is statistically significant at ($t=18.567$) as in Table 12;

Table 12: Analysis of determinants of interest rate in Jordan

Impact of Lowering Interest Rate	Mean	Rank	Std.	t-test	Sig. (2-tailed)
Money supply has negative relation with interest rate	3.83	5	.718	18.501	.000
Demand money has positive relation with interest rate	4.17	1	.577	25.000	.000
Inflation has positive relation with interest rate	3.67	6	.985	12.899	.000
Pegging dinar with US\$	3.58	7	.669	18.567	.000
Liquidity has negative relation with interest rate	4.00	3	.739	18.762	.000
Recession has negative relation with interest rate	4.08	2	.669	21.158	.000
Economic boom has positive relation to interest rate	3.92	4	.900	15.070	.000
Average of Determinants of Interest rate	3.89				

Likert scale 1=strongly disagree 2=disagree, 3=some what agree, 4=agree, strongly agree=5

Source: Researcher computation

5. Conclusions & policy implications

The study aims at investigating the role, impact and determinants of interest rate in Jordan. The limitation of this study is that its coverage is limited to the period of the International Financial Crisis (2008-2015) which is significant period and other periods are not covered.

The conclusions of the study could be summarized as follows: (1) Pegging Jordanian Dinar (JD) to American Dollar has restricted the role of interest rate as a tool of monetary policy in Jordan. Hence, the role of Jordanian monetary policy in the economy is weak compared with the role of fiscal policy which plays a bigger role in the economy. (2) Due to the dual banking system in Jordan, where traditional banks exist side by side with Islamic banks, the impact of fluctuating interest rate in Jordan have affected profitability of traditional banks, while the Islamic banks have not been affected by changing interest rate as they are prohibited by Sharia Law from using interest rate in their operations. (3) Raising interest rate in Jordan caused higher cost of credit for companies, less competitiveness of exports, less liquidity in the economy, higher profit margin for banks, higher exchange rate of JD and higher inflation. (4) Lowering interest rate in Jordan caused lower cost of borrowing particularly for small and medium enterprises, higher liquidity, better competitiveness of exports and more credit facilities by banks but inflation was much lower. Moreover, lowering interest rate caused financial burden on government budget and public debts. (5) The determinants of interest rate in Jordan are: (a) Money supply in Jordan has a reverse relation with the interest rate as more money supply lowers the interest rate. (b) Demand for money in Jordan has positive relation with the interest rate as more demand for money increases interest rate. (c) Inflation in Jordan has positive relationship with nominal interest rate as when nominal interest rate increases, inflation will have tendency to rise. On the other hand, inflation has negative relation with real interest rate as when inflation rises, real interest rate declines. (d) Pegging the Jordanian Dinar with US\$ determines to certain extent the rate of interest in

Jordan. (e) The economic condition of economic recession or economic boom determines the level of interest rate in Jordan. In case of recession, interest rate is lowered to stimulate the economy and when there is an economic boom, interest rate is to rise.

The policy implications of the study are: (i) the role of interest rate in Jordanian monetary policy is restricted by two factors: pegging JD with US\$ which limits the role of interest rate in monetary policy and the dual banking system where traditional and Islamic banks exist side by side. (ii) In order to have an effective role of interest rate in Jordanian economy, one of the alternatives is to peg JD to a basket of currencies including US\$.

The study recommends that researchers could investigate other aspects of the interest rate in Jordan that this research could not tackle such as: the impact of the interest rate in Jordan's economy if the Jordanian monetary authorities decide to peg the Jordanian Dinar to a basket of currencies instead of pegging to US dollar.

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Appendix: Questionnaire

Impact of interest rate in the economy from the viewpoints of banking managers: Empirical evidence from Jordan

Part I: Personal data

Job :
Institution :

Specialization :
 Scientific Degree :
 Years of Experience :

Part II: Select appropriate answer on role of interest rate as a monetary instrument

Serial No.	Paragraph	Strongly Disagree 1	Disagree 2	Some What Agree 3	Agree 4	Strongly Agree 5
1	Interest is an instrument of Monetary Policy					
2	Interest rate is the cost of capital					
3	Interest rate is used as discount rate by Central Bank for lending commercial banks					
4	Interest rate is used to control Inflation					
5	Interest rate is used by banks to determine profit margin					
6	Interest rate is used to attract more deposits					
7	Interest rate is used by banks to control credit facilities.					
8	Interest rate is used for controlling liquidity					
9	Interest rate is used to calculate Present Value of Cash flows					
10	Interest rate is used by central bank to stimulate economy and resists recession					

Part III: Select appropriate answer on impact of raising interest rate

Serial No.	Paragraph	Strongly Disagree 1	Disagree 2	Some What Agree 3	Agree 4	Strongly Agree 5
1	Increase cost of borrowing for small and medium enterprises					
2	Increase cost of production					
3	Increase prices of goods& services					
4	Lower value of credit facilities					
5	Increase profit margin of banks					
6	Raise foreign exchange of currency					
7	Reduce competitiveness of exports					
8	Reduction of Foreign Investment					

Part IV: Select appropriate answer on impact of lowering interest rate

Serial No.	Paragraph	Strongly Disagree 1	Disagree 2	Some What Agree 3	Agree 4	Strongly Agree 5
1	Reduce cost of borrowing					
2	Increase liquidity for banks					
3	Increase value of credit facilities					
4	Improve competitiveness of exports					
5	Reduce inflation					
6	Reduce cost of production					
7	Attract more of foreign investment					
8	Increase burden on public budget					

 9 Resisting recession

 Part V: Select appropriate answer on determinants of interest rate

Serial No.	Paragraph	Strongly Disagree	Disagree	Some What Agree	Agree	Strongly Agree
		1	2	3	4	5
1	Money Supply has negative relation with interest rate					
2	Demand for money has positive relation with interest rate					
3	Inflation has positive relation with interest rate.					
4	Pegging local currency with US \$					
5	Liquidity has negative relation with interest rate					
6	Recession has negative relation with interest rate					
7	Economic has positive relation with interest rate					

 Source: Researcher computation
