



ORIGINAL ARTICLE

TITLE

Islamic finance value versus conventional finance, dynamic equilibrium relationships analysis with macroeconomic variables in the Jordanian economy: an ARDL approach

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Abstract: - The aim of this paper is to investigate the long and short run equilibrium relationship between conventional finance volume (CFV) and macroeconomic variables in one hand, and the long run and short run equilibrium relationships between Islamic finance volume (IFV) and macroeconomic variables in the other hand.

Autoregressive Distributed Lag (ARDL) approach has been utilized for the sample of (1983-2015) period, to analyze the short and long run relationship between IFV and macroeconomic variables. The results show that there are existed evidences of long run and short run relationships among variables of this study. Also the results of error correction term (ECT_{t-1}) showed that the IFV achieved high adjusted speed from the short run to the long run equilibrium by (17 months and 27 days) compared with CFV which needs to (20 months and 10 days). This study recommended that this is an opportune time to using Islamic finance system in order to reduce reliance on conventional system products and move into Islamic finance system which is closer to equity-based products and risk-sharing instruments. This paper uses empirical evidence to compare between Islamic finance and conventional finance. To the best of the authors' knowledge, the study on the role of Islamic finance industry towards reducing of economic obstacles, particularly in the context of Jordan economy.

Keywords: IFV, CFV, Macroeconomic Variables, ARDL, Jordan, Crisis

1 Introduction

The last quarter of 2007, the world has witness to a global financial crisis, and its impacts still overwhelming up until now. The severe impacts left on the level of Production, GDP, Level of Employment, Per Capita Income, Inflation, Net of Trading, Exchange Rate, Public Debt, and the Financial Markets. Those impacts have been spur many researchers to look into the main causes of that crisis (Ahmed, 2010).

Many studies have revealed that the interest rate has assumed its importance in the last global financial crisis. Moreover, a lower interest rate in 2003, motivated people to make an excessive lending of real estate loans. The US government issued loans to housing companies (mortgage companies) with low interest rates and extended to lenders with low income (Ito, 2013).

A lot of studies have gone on to investigate the relationship existing between interest rate and macroeconomic variables. At this juncture, it is perhaps worth knowing that the first and also an important theory about the relationship between interest rates and inflation were developed by Fisher (1930). This theory is known as Fisher effect where it suggests that, the relationship is so strong that if inflation increases, the interest rate will also rise in an equal amount. For example, if inflation rate increases one percent, the interest rate will rise by one percent too. Fuei (2009) states that since its proposition, the Fisher effect has been widely accepted in theory. Essentially, it postulates that the real interest rate on a financial asset is constant over time. As such, changes in the nominal interest rate fully reflect the changes in the anticipated inflation.

Higher GDP growth than expected is considered inflationary, propelling the central bank to increase the interest rate as to impede the GDP growth. By contrast, the interest rate might be reduced for the purpose of stimulating the economy when the GDP growth is negative that higher interest rates result in higher GDP. A rising GDP or income increases the demand for money (Lewis, 2010).

According to Dogrul and Soytaş (2010) they have observed that oil price and interest rate Granger contribute to cases of unemployment in the long run. Chun (2008) explores into the interest rate mean and volatility spillover to the industrial production index in two China stock markets, where the results suggest that China monetary policy has a positive consequence to the country's economic growth and stock markets.

Hayakawa and Kimura (2010) empirically investigate the relationship between exchange rate volatility and international trade, with focus resting on the East Asian region. In summary, the first conclusion is that the intra-East Asian trade is dampened by the exchange rate volatility more severely than the trade in other regions. Secondly, one important source of the discouragement is that intermediate goods trade in international production networks, which is quite susceptible to the exchange rate volatility compared with other types of trade, takes up a remarkable fraction of East Asian trade. Thirdly, the negative effect of the volatility is greater than that of tariffs and smaller than that of distance-related costs in East Asia.

Since traditional financing has been found to be able to discover the financial bubbles in many capitalistic economies, this has led to various attempts being made to get out of these financial bubbles. Therefore, some scholars indicate that, Islamic economics system has a vision and a different attitude in unraveling the causes of economic shocks, thus, this particular study is determined to make fine contribution of Islamic banking in the financial shocks, especially after the Islamic banks have also stood in prominence locally and globally. Some researchers pointed out that, in terms of performance and stocks prices, the Islamic banks have been affected less than the conventional banks in the last global financial crisis.

Since the researcher is from that part of the economists who believe on no different or various sciences of Economics, instead there is only one Science of Economics with different and various regimes and systems. As such, it's worthy to note that, there is no Islamic economics or conventional economics, but there is a

science of economics comes with its theories and applications. Moreover, when the Economic applications follow the Cabalistic regulations and thoughts the regime becomes a Capitalistic regime. And when it follows the Islamic regulations and thoughts, it became an Islamic regime and vice versa (Almsafir and Alsmadi 2013).

The rest of the paper is structured as follows. The next section reviews the root causes of the crisis from Islamic finance perspective. Section three will discuss some literature review related to this paper. Section 4 presents Islamic finance in Jordan, next section which is section 5 presents the methodologies, section 6 show the results of this study. The conclusion will end this paper.

2 Roots of financial crisis form Islamic finance perspective:

Smolo and Mirakhor (2010) argued that the global financial crisis 2008 highlighted the Islamic finance as alternative of the current finance regime. Moreover, the Islamic finance system was not far of this crisis although to a much more moderate extent.

The most important cause of crises has been found to be excessive lending by banks for long period which raises question of why banks resort to such an unhealthy practice which destabilizes the financial system. The answer of this question may summarize in these points, one of these is inadequate market discipline in the financial system resulting from the absence of PLS. The second is the mind-boggling expansion in the size of derivatives, particularly credit default swaps (CDSs), and the third is the “too big to fail” concept, which tends to give an assurance to big banks that the central bank will definitely come to their rescue and not allow them to fail (Ahmed, 2010). In addition, the mortgage crisis in USA at present, is an example of excessive lending. Securitization model of financing has played a crucial role in this. Mixing prime and subprime debt made it possible for mortgage originators to pass the entire risk of default of even subprime debt to the ultimate purchasers who would have normally been reluctant to bear such a risk. Mortgage originators had, therefore, less incentive to undertake careful underwriting. Consequently, loan volume gained greater priority over loan quality and the amount of lending to subprime borrowers and speculators increased steeply (Borio and Disyatat, 2011).

Ahmed (2010), realize greater justice in human society is one of the most important objectives of Islam. Quran stated that, a society where there is no justice will ultimately head towards decline and destruction (Quran, 57:25). Justice requires a set of rules, which everyone accepts and faithfully complies with. The financial system may be able to promote justice if, in addition to being strong and stable, it satisfies at least two conditions based on moral values. One of these is that the financier should also share in the risk so as not to shift the entire burden of losses to the entrepreneur, and the other is that an equitable share of financial resources mobilised by financial institutions should become available to the poor to help eliminate poverty, expand employment and self-employment opportunities and, thus, help reduce inequalities of income and wealth.

Holy Quran preventing and reducing Hram. Riba[̄] is vehemently prohibited in the Quran and the Sunnah, implying the severity of its harmful implications. Moreover, Al-Suwailem (2010,pp. 21-35) maintains that Riba[̄] is the principal cause of these crises as well as financial and economic instability. It creates a separation between the real economy and the financial sector and allows debt inflation as compared to the real production. From this perspective, Riba[̄] is not restricted to loans; it rather embraces all transactions involving money for money with inequality and/or postponement of one of the counter values. Premised on this standpoint, transaction involving the sale of debt and derivatives shall fall within the definition of Riba.

Riba was involved at different stages of the crisis. The subprime loans were based on interest. The (un)success of the securitization process was also due to the possibility of selling the CDOs at discount, which is discussed under the ambit of sale of debt in Islamic commercial Law. As aforementioned, securitization and CDOs trading

were identified as a principal cause of the crisis. Given the prohibition of interest by Shari'ah, the CDOs could be sold at par value. It is clear that this injunction would be the most effective way of preventing the bubble, as the mortgage lenders would be obliged to keep the loans on their book knowing that no investor would be willing to buy the securities at face value. However, from a Shari'ah point of view, Riba is not the sole issue in CDO trading; the transaction involves also Gharar, which is a major prohibited element in exchange contract (Ahmed, 2010).

3 Literature review:

Adebola, Yusoff & Dahalanc (2011) explores the factors propelling Islamic banks' nonperforming loans (NPLs) in Malaysia for the period 2007:1 to 2009:12. They utilized the ratio of NPLs to total financing in Islamic banks to measure the extent of NPLs in Malaysia. The study employs ARDL of Pesaran and Shin (1999) and Pesaran et al. (2001) to examine the effects of some macroeconomic variables which include industrial production index, interest rate and producer price index. The findings indicate two long run relationships among the variables and note that interest rate has significant positive long run impact on NPLs. Industrial production index turns out with a positive but insignificant sign. This reflects the popular believe that Islamic banking system in Malaysia is not fully motivated by profit and loss mechanism, as the impact of interest rate is stronger relative to productivity. Producer price index appears to have negative and significant impact on NPLs. The outcomes of this study are similar to the findings of previous studies including Bofondi and Ropele (2011) work on conventional banks in Italy.

study for Abduh & Omar & Duasa (2011) aims to analyze the dynamic effects of interest and profit rate changes towards the fluctuation of total deposits in Malaysian Islamic banks, using monthly data from January 2000 to December 2010, co-integration test and vector error correction model were utilized to uncover the dynamic relationship between macroeconomic variables and crisis with total deposit and lending of Islamic banking. The results show that changes in interest and profit rate as well as production growth has no significant effects on the lending volume.

Abdul Kader & Leong (2009) consider the impact of interest rate changes on the demand for Islamic financing in Malaysia. With a monthly data spanning 1999 to 2007, the study adopts time series econometric techniques such as unit root test, cointegration, VAR, Granger Causality and Impulse Response Function (IRF). Overall, the findings indicate that interest rates are positively associated with Islamic financing but negatively associated with conventional loan.

Karim *et al.* (2011) by using annual commercial bank balance sheet data for the period 1993 to 2008 and applied generalized method of moment (GMM) on 37 banks in Malaysia found that bank-lending channel (BLC) plays a pivotal role in monetary transmission, therefore the monetary authority has to monitor the stability in the interest rates in order to stabilize the banks' loan supply. This is because any changes in monetary policy variable, will affect the bank loan, and subsequently will affect the firm investment and economic activity.

Hasin and Majid (2011) used ARDL approach in order to investigate the relationship between GDP and Islamic finance in Malaysia for the period 1991 to 2010. This paper argued that GDP shows a positive relationship with Islamic financing in short and long run. When GDP rises by one percent, Islamic financing will increase by 0.25 percent. When aggregate output increases, it raises the demand for credit thereby causing the financing to increase. This may infer that Islamic financing cannot shun away from the fluctuation in the real economic activities.

Laskary & Imandoust & Goli (2013) investigates the effect of economic factors on lending behavior in Maskan Bank during the period 1991-2011, using (VECM) model. The results of estimated long-term VECM model showed that among key economic variables such as inflation rate in long term, has an inverse effect on Maskan Bank lending behavior. Also the results showed that in estimated short-term VECM (Vector Error Correction Model), inflation rate has no significant effect on Maskan Bank lending behavior. In Hong Kong, for the period 1995–2002, Shu (2002) observe that NPLs is negatively affected by consumer price inflation rate, but positively affected by nominal interest rates. Bofondi and Ropele (2011) observe that loan losses is positively associated with the unemployment rate and the short-term nominal interest rate, while inversely associated with the growth rates of real gross domestic product and house prices.

4 Islamic finance in Jordan

In Jordan, according to Addustour (2012) the Director-General of the Jordanian Islamic Bank (JIB) Musa Shehadeh stated that the Islamic finance instruments have proved the success and its ability to overcome obstacles and keep up with the various developments in the Islamic banking industry. These instruments have met the requirements smoothly and efficiently of individuals, public and private institutions. Beside, Islamic bank is providing a large amount of money to improve the living standards including education, treatment and marriage. Moreover, the non-profit loans (Qardh Hasan) that granted by the Jordanian Islamic Bank (JIB) in 2010 amounted around JD23.4 million, benefiting 27 thousands citizens while non-profit loans provided by the bank since its inception until the end of the year 2011 amounted about JD154.4 million, benefiting about 293 thousands citizen (JIB, 2011).

Also figure 1.7 shows that the IFV recorded a high annual growth rate 12.4 % comparing with CFV which recorded an annual growth rate of 7.3% for the same effective period of the global financial crisis.

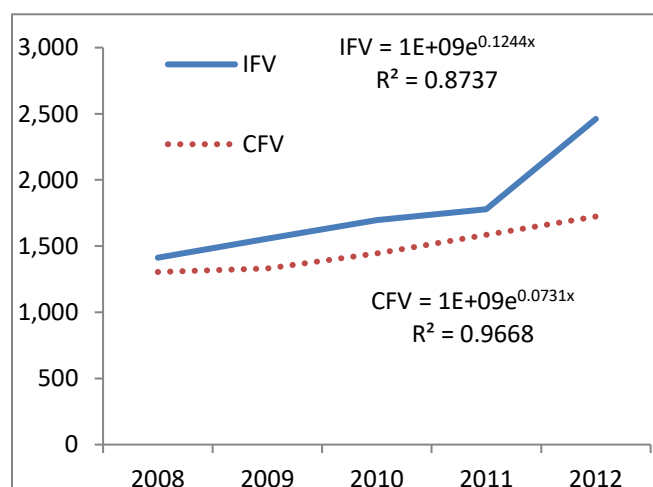


Figure 1.7: IFV and CVF for the 2008-2012 period (*Financial Crisis Period*)

Source (2012) available online at <http://www.cbj.gov.jo/>

As the Islamic finance models don't deal with financial instruments that associated with the interest rate which are not commensurate with the provisions of Islamic law, Islamic banks were able to reduce the effects of the credit crisis that confronted the conventional banking system. Moreover, JIB has proved its capacity to face the financial crisis because of the success of its control elements (Murabahah, Mudarabah, Musharakah.....etc) (Addustour 2012).

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5. Data and Research Methodology

1. Data:

The lending volumes of Islamic bank and conventional banks have been drawn from the database of Central Bank of Jordan (CBJ) and Jordanian Islamic Banks (JIB) for the period 1981 - 2015. The data for the macroeconomic variables have been collected from the publications of Jordanian Islamic Bank (JIB), Jordan Statistical Department (JSD), World Bank and International Monetary Fund (IMF). The macroeconomic variables that used in this study are, Interest rate (IR), Inflation rate (INR), Unemployment rate (UNR), Gross Domestic Product (GDP), Murabahah Rate (MRR) and Money Supply (M2). However, all the data have transformed into natural logarithms (L) to reduce the heteroscedasticity problem and to obtain the growth rate of the relevant variables (Bekhet & Matar, 2012; Bekhet & Mugableh, 2012; Chen *et al.*, 1986).

2. Autoregressive Distributed Lag Model (ARDL) and ECM:

ARDL model is a new approach developed by Pesaran *et al.* (2001) to fix the problem of testing the existence of a level relationship between the variables, based on standard F- and T- statistics used to test the significance of the level of the variables in a univariate equilibrium correction mechanism. The distributions of these statistics are non standard under the null hypothesis that there exists no level relationship, irrespective of whether the regressors are $I(0)$ or $I(1)$. Therefore, ARDL model has several advantages for example, it is not necessarily to examine the non stationary property and order of stationary which means that ARDL model could be applied whether the results of stationary are $I(0)$, $I(1)$ or both; ARDL model has the ability to determine the cointegration relation in small sample size also ARDL procedure allows that the variables may have different optimal lags.

To investigate the long run and short run equilibrium relationships among the variables. ARDL approach could be divided into two sections as below:

First Model

ARDL Equations for CFV Model

$$\Delta LCVF_t = \mu_1 + \sum_{j=1}^k \beta_{11} \Delta LCVF_{t-1} + \sum_{j=1}^k \beta_{12} \Delta LIR_{t-1} + \sum_{j=1}^k \beta_{13} \Delta LGDP_{t-1} + \sum_{j=1}^k \beta_{14} \Delta LM2_{t-1} + \sum_{j=1}^k \beta_{15} \Delta LINF_{t-1} + \sum_{j=1}^k \beta_{16} \Delta LUNR_{t-1} + n_{11} LCVF_{t-1} + n_{12} LIR_{t-1} + n_{13} LGDP_{t-1} + n_{14} LM2_{t-1} + n_{15} LINF_{t-1} + n_{16} LUNR_{t-1} + \lambda_1 ECT_{t-1} + \varepsilon_{1t}$$

Second Model

ARDL Equations for IF Model

$$\Delta LIFV_t = \mu_1 + \sum_{j=1}^k \beta_{11} \Delta LIFV_{t-1} + \sum_{j=1}^k \beta_{12} \Delta LMRR_{t-1} + \sum_{j=1}^k \beta_{13} \Delta LGDP_{t-1} + \sum_{j=1}^k \beta_{14} \Delta LM2_{t-1} + \sum_{j=1}^k \beta_{15} \Delta LINF_{t-1} + \sum_{j=1}^k \beta_{16} \Delta LUNR_{t-1} + n_{11} LIFV_{t-1} + n_{12} LMRR_{t-1} + n_{13} LGDP_{t-1} + n_{14} LM2_{t-1} + n_{15} LINF_{t-1} + n_{16} LUNR_{t-1} + \lambda_1 ECT_{t-1} + \varepsilon_{1t}$$

Error term with lagged parameter (ECT) is an adaptive parameter measuring the short-term dispersal from long-term equilibrium. In short-run, the variables may disperse from one to another which will cause system in equilibrium. Hence, the statistical significance of the coefficient associated with ECT provides us with evidence for an EC mechanism that drives the variables back to their long-term relationship.

6. Results and discussion:

Table (6.1) provides the results of calculated and critical values of bounds F-statistics test for CFV model, followed by table (6.2) which provides the results of calculated and critical values of bounds F-statistics test for IFV model.

Table 6.1 Bounds F-statistics Test Result for CFV Model

Model	F-statistics	Significance Level	$I(0)$	$I(1)$
LCFV_t	2.35***	10%	2.03	3.15
IR_t	2.60**	5%	2.03	3.15
LGDP_t	6.71***	10%	3.02	4.29
LINF_t	3.4345*	1%	3.02	4.29
LUNR_t	3.80***	10%	3.02	4.29
LM2_t	1.18	NON	NON	NON

Notes: *, **, ***, significance at 1%, 5% and 10% levels, respectively.

Source Micro-fit 4.1 Software

Table 6.2 Bounds F-statistics Test Result for IFV Model

LIFV_t	18.2*	1%	3.02	4.29
LUNR_t	2.10*	1%	2.03	3.15
LGDP_t	4.47***	10%	3.02	4.29
LINF_t	3.42**	5%	3.02	4.29
MURR_t	2.51*	1%	2.03	3.15
LM2_t	2.40*	1%	2.03	3.15

Notes: *, **, ***, significance at 1%, 5% and 10% levels, respectively.

Source Micro-fit 4.1 Software

In Table (6.1) the result of the bounds co-integration F-statistics test shows that the H_0 has been rejected for all the study models except LM2_t at different significance level. In addition, table (5.4.2) shows that H_0 has

been rejected at difference significance level for all the models. However, these results are confirmed by Persaran et al. (2001) which argued that if the co-integration exists among the variables means that there is an existence of a steady-state long-run relationship among all the model variables.

Table 6.3 shows the results of lag length for study models (CFV and IFV) which are 2 lag for both models. These results pointed out depends on LR, AIC and HQ criteria as suggested by Engle and Granger (1987).

Table 6.3 Lag Length Criteria Results for both CFV and IFV Models

CFV Model	Lag	LR	AIC	HQ
	0	NA	-3.02	-2.93
	1	226.4	-10.47	-9.84
	2	95.44*	-13.68*	-12.52*
IFV Model	Lag	LR	AIC	HQ
	0	NA	5.04	5.13
	1	302.3	-5.70	-5.07
	2	62.79*	-6.99*	-5.83*

Source: output of Eviews 7.1 econometric software

(*) indicates lag order selected by the criterion.

LR: sequential modified LR test statistic (each test at 5% level)

AIC: Akaike information criterion

HQ: Hannan-Quinn information criterion

6.1 Long Run Equilibrium Results for (CFV and IFV) Models

Table 6.5 shows the results of long run relationship among the variables of both models at different significant levels. However, first model which is CFV includes (LCFV, LIR, LGDP, LM2, LINR, and LUNR) and second model which is IFV includes (LIFV, LMRR, LGDP, LM2, LINR and LUNR).

Table 6.5 Long Run Equilibrium Results for CFV and IFV Models

Model	Constant	LIR _{t-1}	LGDP _{t-1}	LM2 _{t-1}	LINR _{t-1}	LUNR _{t-1}
$\Delta LCFV_t$	-22.6*	-0.23*	1.74*	0.13*	0.13***	-0.50*
Model	Constant	LMRR _{t-1}	LGDP _{t-1}	LM2 _{t-1}	LINR _{t-1}	LUNR _{t-1}
$\Delta LIFV_t$	-36.2*	-0.05*	3.19*	-1.11*	2.00*	0.08*

Note: *, **, *** denote significance at 1, 5 and 10% level respectively
Source: Output of Micro-fit 4.1 Econometric Software.

Table 6.5 shows that the LCFV model has a positive relationship with $LGDP_{t-1}$, and $LM2_{t-1}$ variables. While, $\Delta LCFV_t$ model is negatively associated with $LUNR_{t-1}$ and LIR_{t-1} variables. Therefore, $\Delta LCFV_t$ model is positively associated with $LINR_{t-1}$ variable at 10% level. This means that any increase in GDP, LM2 and INR the lending volume of conventional finance should be increase in long run. In other hand, any decrease of IR and UNR the lending volume of conventional finance should be increase.

The traditional finance theory argues that whenever the loan size that providing from the banks increase, the interest rate on that loan rises to accommodate the increased risk associated with the loan (Homer et al., 1996). Moreover, interest rate is controlling the lending volume in the banking system all over the world. In addition, Wicksell (1935) in his interest rate theory argued that, growth in the quantity of money leads to increase the reserves in the banking system. Furthermore, when banks find out that they have excessive reserves, they will increase the quantity of loans, so they decrease the interest rate. This means that when interest rate increases the lending volume will decreases and vice versa.

Also, table 6.5 shows that all the variables in IFV model are significance at 1% level. More specifically, $\Delta LIFV_t$ model is negatively associated with MRR_{t-1} and $LM2_{t-1}$, while $\Delta LIFV_t$ model is positively associated with $LGDP_{t-1}$, $LINR_{t-1}$ and $\Delta LUNR_{t-1}$. This reflects that any decrease of MRR and M2 the volume of Islamic finance would be increase. In other hand, any increase in GDP, INR and UNR the lending volume of conventional finance should be increase in long run term.

In other vein, the results of this study recorded that there are a different effects in the long run between CFV and IFV in terms of UNR, for example; in CFV the results recorded a negative value which means that this system of finance is not helpful to reduce the economic obstacles. Basically, because of the lending in this system mostly goes to unreality projects which will not give any added value to the economy. Beside, the increasing in M2 led to increase in CFV and this result is not confirmed with previous studies. While, in IFV system M2 has a correct relationship with lending volume, which is the decreasing in M2 would lead to encourage the people to deal with Islamic finance system in order to improve the living standers.

6.2. ECT_{t-1} Coefficients Results for (CFV and IFV) Models

The results of ECT_{t-1} estimation had based on ARDL approach for both models. If the error correction terms are significant with negative signs, means that the long run equilibrium among the variables is achieved (Pesaran *et al.*, 2001). Table 6.6 provides the error correction terms of the CF and IF models.

Table 6.6 ECT_{t-1} Coefficients Results for CFV and IFV models

Model	ECM_{t-1}
$\Delta LCFV_t$	-0.59*
$\Delta LIFV_t$	-0.67*

Note: *, **, *** denote significance at 1, 5 and 10% level respectively

Source: Output of Micro-fit 4.1 Econometric Software.

The results of ECT_{t-1} of both models achieved appropriate signs and statistically significant at 1% level. The high significant (ECT_{t-1}) implies a relativity speed of achieving the long run equilibrium. In addition, the ECM_{t-1} for $\Delta LCFV_t$ model achieved (-0.59) which means that this model is corrected from the short run towards the long run equilibrium by 20 months and 10 days. In addition, table 5.5 shows that the $\Delta LIFV_t$ model recorded (0.67). This means that $LIFV_t$ would be shortly corrected back form disequilibrium to equilibrium by (17 months and 27 days).

6.3 Short Run Results for (CFV and IFV) Models

After conducted long-run and error correction analyses it's possible to proceed for analyzing the short-run test in order to detect if the short-run relationship is existing among the variables in this study. Moreover, table 6.7 presents the results of the short-run analysis for both models.

Table 6.7 Short Run Results for CFV and IFV Models

Model	ΔLIR_t	$\Delta LGDP_t$	$\Delta LM2_t$	$\Delta LINR_t$	$\Delta LUNR_t$
$\Delta LCFV_t$	-0.13*	1.03*	0.03***	0.082	-0.03
$\Delta LCFV_{t-1}$	-----	-----	-----	-----	0.19**

Model	$\Delta LMRR_t$	$\Delta LGDP_t$	$\Delta LM2_t$	$\Delta LINR_t$	$\Delta LUNR_t$
$\Delta LIFV_t$	0.01	2.3*	-0.76*	-0.48***	0.01
$\Delta LIFV_{t-1}$	0.02**	0.40***	-----	0.01	-----

Note: *, **, *** denote significance at 1, 5 and 10% level respectively

Source: Output of Micro-fit 4.1 Econometric Software.

Table 6.7 shows that the $\Delta LCFV_{t-1}$ is positively associated with $\Delta LGDP_t$ variable at 1% significant level. While it's negatively associated with ΔLIR_t variable. In addition, $\Delta LCFV_{t-1}$ is positively associated with $\Delta LM2_t$ variable at 10 % significant level. Also, all the variables have no relationship at one lag except $\Delta LCFV_{t-1}$ is positively associated with $\Delta LUNR_t$ variable at 5% significant level with two lags.

Also, table 6.7 shows that the $\Delta LIFV_{t-1}$ model is not significant with one lag while become positively associated with two lag with $\Delta LMRR_t$, at 1% significant level. While it's negatively associated with $\Delta LM2_t$ and $\Delta LUNR_t$. In addition, $\Delta LIFV_{t-1}$ model is negatively associated with $\Delta LINR_t$ at 10 % significant level. Therefore, the relationship between $\Delta LIFV_{t-1}$ and $\Delta LGDP_t$ is positively with one and two lags at 1% and 10% significant levels.

6.4 Comparison between CFV and IFV Models

As mentioned before, the ECM_{t-1} coefficients show how quickly variables return to equilibrium. Moreover, the ECM_{t-1} coefficients supposed to be significant with a negative sign (Pesaran et al., 2001). Also, if the ECM_{t-1} coefficients hold highly significant error correction term is further proof of the existence of a stable long –term relationship (Bannerjee et al., 1998). Moreover, in order to compare between (CFV & IFV) models, this study has relied on ECM_{t-1} .

Moreover, as mentioned in table (5.6) which reflect the ECM_{t-1} for CFV model that gives the adjusted speed from the short run to the long run equilibrium. The result suggested that $\Delta LCFV_t$ achieved (-0.590) which means that this model is corrected from the short run towards the long run equilibrium by 20 months and 10 days. In contraire, the results of ECM_{t-1} coefficients for IF model shows different values as mentioned in table (5.7). However, the highest ECM_{t-1} coefficients achieved for $\Delta LIFV_t$ model records (0.67). This means that $LIFV_t$ would be shortly corrected back form disequilibrium to equilibrium by (17 months and 27 days).

As a result of above discussion, this study concluded that the Islamic financial system in Jordan has been achieved a high ECM_{t-1} compare with conventional finance system which achieved the low ECM_{t-1} . From this point of view, the Islamic financial system is better than the conventional financial system in terms of corrected from the short run to the long run equilibrium point in Jordanian economy.

7. Conclusion

This section discussed the general results for both study models (CFV and IFV) by relying on ARDL approach to analysis the short run and long run equilibrium relationships. Moreover, Granger test has been used to detect the directional of causality among the study variables. The result of this study shows an evidence of long and short run equilibrium relationship between CFV model and its determinants. In addition, CFV model has relationships with (LGDP, LM2, LUNR, LIR and LINR) in the long run whether this relation is positive or negative, while CFV model has short run relationships with (LGDP, LM2 and LINR) whether this relation positive or negative.

Moreover, the adjusted speed of ECM_{t-1} shows that $\Delta LCFV_t$ model achieved (-0.59) which means that this model is corrected from the short run towards the long run equilibrium by 20 months and 10 days. Besides, Granger results shows different directional of causality among CFV model and other variables (GDP, INR, IR, and M2) whether this direction is Uni-directional, Bi-directional or there is no direction between the variables.

In addition, the result shows an evidence of long and short run equilibrium relationship between IFV model and its determinants. Moreover, IFV has relationships with (M2, INR, UNR, GDP and MRR) in the long run whether this relation is positive or negative, while IFV has short run relationships with (MRR, M2, UNR and INR) whether this relation positive or negative.

Moreover, the adjusted speed of ECM_{t-1} shows that the $\Delta LIFV_t$ model recorded (0.67). This means that $LIFV_t$ would be shortly corrected back form disequilibrium to equilibrium by (17 months and 27 days).

Granger results shows different directional of causality relationship among IFV and other variables (GDP, INR, MRR, UNR and M2) whether this direction is Uni-directional, Bi-directional or there is no direction between the variables. Beside, in terms of the comparison between IFV and CFV models the results indicated that the Islamic financial system is better than the conventional financial system in terms of corrected from the short run to the long run equilibrium point in Jordanian economy.

References:

[1] Abduh, *et al* (2011). The Impact of Crisis and Macroeconomic Variables towards Islamic Banking Deposits. *American Journal of Applied Sciences*. Vol 8, No 12. PP. 49-65.

- [2] Abdul Kader, R. & Leong, Y. (2009). "The Impact of Interest Rate Changes on Islamic Bank Financing", *International Review of Business Research Papers*, 5(3), 189-201.
- [3] Adebola, *et al* (2011). An ARDL Approach to the Determinants of Nonperforming Loans in Islamic Banking System in Malaysia. *Journal of Business and Management Review*, Vol. 1, No.2. 20.
- [4] Ahmed, A (2010), "Global financial crisis: an Islamic finance perspective", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 3 Iss 4 pp. 306 – 320
- [5] Alsmadi. A. A. & Almsafir. M. K. (2013). Murabahah versus Interest Rate, the Equilibrium Relationship with Macroeconomic variables in Jordanian Economy: An ARDL Approach, *International Conference on Innovation, Management and Technology Research. Procedia - Social and Behavioral Sciences*. Science Direct Journal.
- [6] Bekhet, H.A. & Mugableh, M.I. (2012). Analyzing the Equilibrium Nexus between Macroeconomic Variables and the Malaysian Stock Market Index: Bounds Tests Approach, *International Journal of Economics and Finance*.
- [7] Bekhet, H.A., and Matar, A. (2012). Risk-Adjusted Performance: A two-model Approach Application in Amman Stock Exchange, *International Journal of Business and Social Science (IJBSS)*, Vol.3, No.7, USA.
- [8] Bofondi, M. and Ropele, T. (2011). Macroeconomic determinants of bad loans: evidence from Italian banks. *Occasional Papers*, 89.
- [9] Borio, C. and Disyatat, P. (2011), "Global imbalances and the financial crisis: link or no link?", BIS Working Papers No. 346, Bank for International Settlements, Basel.
- [10] Chen, N., Richard. R., & Stephen, A. (1986). Economic Forces and the Stock Market, *Journal of Business* 59, 383 - 403.
- [11] Chun, W. (2008). The Analysis of Interest Rate Mean and Volatility Spill Over to the Industrial Production Index and Stock Markets: The Case of China. *Economics Bulletin Journal*. Vol. 3, No. 65 pp. 1-14.
- [12] Dogrul, H. & Soytas, U. (2010). Relationship between oil prices, interest rate, and unemployment: Evidence from an emerging market, *Energy Economics* 32, 1523–1528.
- [13] Fuei, L. (2009). An Empirical Study of the Fisher and the Dynamic Relation between Nominal Interest Rate and Inflation in Singapore, *the Singapore Economic Review*, Vol. 54, No. 1.
- [14] Hasin, Z. & Majid, M. (2011). The Importance of the Islamic Banks in the Monetary Transmission Mechanism in Malaysia. *8th International Conference on Islamic Economics and Finance*.
- [15] Hayakawa, K. & Kimura, F. (2010). The Effect of Exchange Rate Volatility on International Trade in East Asia, *Journal of The Japanese and International Economies*, Vol. 2 Iss 4 pp. 322 – 385
- [16] Homer, S., Sylla, R. & Sylla, R. (1996). A History of Interest Rates. *Rutgers University Press*. ISBN 978-0-8135-2288-3. Retrieved 2008-10-27.
- [17] Karim *et al*. (2011). Bank Lending Channel of Monetary Policy: Dynamic Panel Data Study of Malaysia. *Journal of Asia-Pacific Business*. 225-243.
- [18] Laskary, *et al* (2013). The study of correlation between exchange rate volatility, stock price and lending behavior of banking system (Case Study Maskan Bank). *International Journal of Engineering Research and Applications (IJERA)*. Vol. 3, Issue 2, March -April, pp.912-920-912.
- [19] Lewis, M.K. (2010), "An Islamic economic perspective on the global financial crisis", in Kates, S. (Ed.), *Macroeconomic Economic Theory and its Failings: Alternative Perspectives on the Global Financial Crisis*, Edward Elgar, Cheltenham, Northampton, MA, pp. 159-183.
- [20] Pesaran, *et al*. (2001). Bound Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics*, 16, 289-326.
- [21] Shehadeh, M. (2012). Islamic banks have proven ability to grow and its indicators comfortable despite global crises. *Addustour Newspaper*, 04 January, pp. 1, 4-5.
- [22] Shu, C. (2002). The Impact of macroeconomic environment on the asset quality of Hong Kong's banking sector. *Hong Kong Monetary Authority Research Memorandums*.
- [23] Siddiqi, M.N. (2008), "Discussion forum on the financial crisis: comments from Islamic perspective", *IJUM Journal of Economics and Management*, Vol. 16 No. 2, pp 21-33.

- [24] Smolo, E and Mirakhor, A (2010), "The global financial crisis and its implications for the Islamic financial industry", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 3 Iss 4 pp. 372 – 385.
- [25] Takayasu Ito , (2013), "Islamic rates of return and conventional interest rates in the Malaysian deposit market", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 6 Iss 4 pp. 290 – 303.
- [26] Toda, H.Y. and Yamamoto, T. (1995), "Statistical inference in vector autoregressions with possibly integrated processes", *Journal of Econometrics*, Vol. 66 Nos 1/2, pp. 225-250.