Does the Profit and Loss Sharing Financing increase the Performance of Islamic Banks?

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A R T I C L E I N F O	A B S T R A C T
	The profit and loss sharing financing may be effect on the performance indicators of Islamic banks. This paper aims to tests the relationship between PLSF and profitability, liquidity and risk indicators and analyzes why the Islamic banks neglect the long term financing, based on empirical case of thirteen bank at level of thirteen Islamic countries namely: Algeria, Bahrain, Bangladesh, Dubai, Indonesia, Iran Jordan, Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia and Sudan, during 1997 to 2013. We use the regression analysis model with unbalanced panel data. The relationship between PLSF and performance indicators (Profitability, liquidity, risk) is significant, and the dual fixed effects model is accepted which shows the difference in the relationship between the variables differs depending on the characteristics of the bank and the country as well as period. We propose to re-test this problematic with distinction between Mudharaba, Musharaka and PLSF, and the use of other econometrics method.

1. Introduction

The Islamic banks have known in recent years much attentions by academics and professionals for its performance and stability under the subprime crisis (Boumediene & Caby, 2009), but many empirical studies (Othman & Masih 2015) indicate that these banks rely on short-term funding and neglect long-term financing.

The operation of Islamic banks in an unfavourable environment has led them to find themselves in front of several obstacles. The most important are that Islamic banking is subjected to man-made legislation and government control that had been developed primarily to be used with the traditional banking system which is based on bank interest, without taking into account the nature of functioning of Islamic banks. These are also subjected to the monetary policy that is decided by the central banks; they must comply with the same controls, regulatory rules and norms that regulate the functioning of usurious banks, beside the fact that the social environment considers that Islamic banks are charitable social non-profit institutions. Therefore, it is not easy to accept the idea that Islamic banks are non-profit banks. Most people in general compare the Islamic finance costs to interest costs; this means that Islamic banks ought to distribute profits that are similar or equal to the profits that conventional banks distribute between investment accounts; the idea of loss is totally unacceptable for the customers of these banks.

Theoretical background refers to the concentration of Islamic banking financing to PLS, the latter is a contractual agreement between a group of parties to assemble their capital to invest in projects implemented long term, where are participating in the profit and loss (see Kayed (2012). PLS Divided into Musharaka and Mudharaba contracts Ismail (2011). Several studies have proven rejected dealer banks bear the loss on their deposits and the marginalization of Islamic banks to participate in financing practice (Dar & Presley, 2000, p. 5)

The question remains on the table about the relationship between profit and loss sharing funding (PLSF) and indicators of performance in Islamic banks.

Based on the above discussion, it can be said that the problematic of profit-and-loss sharing funding stems mainly from the possibility to have Islamic banks. This above-mentioned funding is based on a set of external challenges and internal factors that are supposed to contribute to the establishment of this type of banking systems. Therefore, the problematic of this research may be addressed by answering the following question: environment of the countries where these banks operate, knowing that the banking system in most of these countries is founded on usury banking? A number of sub-questions may stem from this problematic:

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What is the extent of the relationship between PLSF (PLSF) and the profitability indicators, and what is its nature?

What is the extent of the relationship between PLSF (PLSF) and the liquidity indicators, and what is its nature?

What is the extent of the relationship between PLSF (PLSF) and the security indicators, and what is its nature?

Does this relationship depend on the bank, the country and the period?

The importance of this research work stems from the importance to succeed in establishing Islamic banks, so that the methods of *PLSF* can be applied, and also to succeed in achieving the goal for which this type of financing exists. Next, the results must be transferred from theory to practice. The success of such an operation is mainly based on the balance between the profitability of these banks and the banking security of the stakeholders, who are the investors, depositors, owners, banking administrators and banking regulators.

The importance of the present research work can be summarized in the following points:

- The banking environment in Islamic country's needs, today, a combination of financing methods, particularly those based on PLSF for financing investment projects. Therefore, it is easy to see the importance of this research work, as it attempts to determine the long-term funding constraints and the challenges in its application. The most important challenges in using the techniques of PLSF have got to be identified. One has to find appropriate ways to *put these techniques into practice, as well as to study and assess them.* This would help the Islamic banking to grow; it also allows identifying the strengths and weaknesses in these techniques.

This research aims to study the low of PLSF, along with the most important obstacles that may prevent its application, and to show the extent to which the Islamic banks are committed to apply this kind of financing, in the case where the banks can cope with these obstacles. This can be addressed through:

- Studying the most important obstacles facing this type of financing and the most important risks that result from them;
- Standing on the reality of PLSF in Islamic banks in various Muslim countries;
- Standing on the most important internal determinants of PLSF in Islamic banks, and the extent of influence each one of these determinants can have on the degree of application of these financing techniques;
- Highlighting the impact of changing the investment environment on the specific internal and external factors of PLSF;
- Proposing the possible solutions to address these obstacles and identify the most important challenges that may help Islamic banks to rely more on these financing concepts, in accordance with the results and recommendations obtained from the present research work.

Theoretical studies (Ismail and Tohirin (2010), Othman, A. N., & Masih 2015) explain the low use of PLS financing products in practice to moral hazard risk by Demanders for financing, capital adequacy imposed by work rules in banking sector. In addition, the competitive of conventional banks led to the decline the PLSF and thus Islamic banks do cannot use PLS financing to deal with the demanders of long term financing. (Othman & Masih 2015, p 5).

PLSF is considered as the real bet in assessing the performance of Islamic banks, because PLSF has got several characteristics that make it among the preferred methods to achieve the goals of Islamic banks compared to other systems. Theoretically, the above-mentioned way of financing is the most efficient in terms of improving the investment results and is best able to achieve economic growth of finance, using any method that is based on known income. In addition, this type of financing focuses on the rehabilitation of administrative competencies, which are capable of setting up projects and managing them, while preventing the funding of any non-productive activities, except on a small scale.

PLSF is an adequate technique to finance new technological goods, beside the fact that it guarantees more success for small projects, because the economic feasibility studies, prepared by banks, reflects the degree of importance of these projects and provides the reasons for their success, before embarking in financing these projects by one of the methods of Musharaka. This increases the capacity of small enterprises to progress and grow, and to reduce the probability of failure.

Diversifying the PLSF methods makes it possible for organizers to get the appropriate funding for their projects, in accordance with their needs and interests.

The actual general trend, which is based on the need to be present in a highly complex and competitive banking environment, has led to a lack of application of the long-term PLSF on the field, as reported in the literature. Many reasons can be invoked to justify the fact that Islamic banks could not be business banks. There are many barriers that limit their growth and spread. These can be divided into two categories, namely barriers resulting from the banking environment and those from the bank itself.

Today, most Islamic banks are suffering from the problem of cognitive competencies of their employees, because most of them have no knowledge of the rules of Islamic economy, adopted by Islamic banks. Most of the human resources working in Islamic banks do not have the required level, in accordance with the appropriate characteristics and qualities that are suitable for the nature of work in Islamic banks. On the contrary, such human resources are characterized by a number of qualities that are bad and impeding to

the operation of Islamic banks. Therefore, PLSF requires that Islamic banks have executives with special skills. This type of funding needs permanent follow-up and good knowledge of all economic considerations that are related to the subject of shared funding.

The organizational structure of Islamic banks has a lot in common with that of usurious banks, in all its aspects. This fact is not compatible with the nature of Islamic banking (see Abdul-Rahman and Nor , 2016)). When Islamic banking presents its methods of profit and loss sharing funding, it must study the projects asking for funding in order to make the appropriate selection of these projects, based on the intellectual and scientific concept which suits their nature. Here, one can say that it is urgent to find adequate systems to study and assess the feasibility of investment projects, in addition to effective systems for risk management and also a legal supervisory board to prevent any action contrary to the rules of Islamic law to occur.

What is the extent of the relationship between PLSF and the performance indicators of banks? Does this relationship depend on the period and country?

Section 2 surveys the literature review related to PLS financing and its reality, application and challenges. Section 3 outlines the methodology and study's variables for testing the relationship between PLSF and performance indicators. In section 4 the results of empirical study are analysed, and in section 5 the contributions and recommendations are presented.

2. Literature review

Many researchers have been interested in the subject dealing with the challenges and constraints of PLSF in Islamic banks. *Researchers have* approached the subject in different ways Bidabad, B. and M. Allahyarifard (2016). Some of them have addressed these approaches only to know them better, use them, and define their basis, as it is the case on the theoretical side Dar, H. A. and J. R. Presley (2000), Iqbal and Molyneux (2016), and present the most important challenges facing their implementation in practice. Others tried to find new ways or models for profit-and-loss financing in practice, so that the obstacles to use PLSF can be overcome, using standard models and quantitative methods Swartz, N. P. and O. O. Itumeleng (2015), (Othman, A. N., & Masih 2015). In order to highlight the efforts and findings of some researchers dealing with this topic, the following studies can be noted.

The study of (Chong & Liu, 2009) discussed the nature of the operation of Islamic banks, and how they use the concept of profit-and-loss sharing funding, from the theoretical point of view. However, in practice, these banks do not differ much from traditional ones, though they do *not depend* on *interest rates*. For this reason, the researchers conducted an investigation on a number of banks in Malaysia in order to study the long and short-term dynamic relationship between the interest rates on traditional deposits and the Islamic investment return rates in Islamic banks, using the time-series technique, where the Granger causality test was used with the dependent and independent variables. This study concluded that interest rates have a significant impact on investment in Islamic banks, where the investment returns are affected by the changes in interest rates. Therefore, the authorities concerned ought to enact the banking laws used in traditional banks, while taking into account the operation of Islamic banks.

Abu Muhaimid's thesis aimed to show the risks linked to some funding methods, and their relation with the capital adequacy ratio (Mahimid, 2008). This study discussed the concept of these risks, as well as their nature and the way they should be managed. It also defined the Basel Committee, the Basel I agreement as well as the different stages of its development up to Basel II agreement, with its three frameworks, in order to determine the relationship between the risks of the Islamic financing methods, as specified in the study, and the organizational capital, with the three risks, encountered in the capital adequacy standard. The study concluded that such a relationship exists indeed, but it varies from one financing form to another.

The researcher recommended not to exclude all the possible risks linked to the types of financing from participating accounts, and a number of such risks must be taken into account in the capital adequacy equation to cover the operational risks and the transferred commercial risks.

Tag El-Din's study focused on the approach of Mudharaba Financing, since this technique is based on the income generator, to analyse the relationship between return and risk, and hence to optimize the application of this approach, since this study is an extension of another one, conducted by this researcher (2002), where he found that the combination of common threats between the two financing types is in perfect agreement with the return ratio in the Musharaka contract (El-Din, 2008). The study resulted in two additional outcomes with practical dimensions. The first one is the existence of a negative correlation between the return ratio and the combination of common risks, using the optimization of the contracts curve (OCC); the second one is that the optimum ratio of return in a Musharaka contract depends heavily on the behaviour of the contracting parties with respect to risks.

al-Yasiri aimed to address the problematic of using the Musharaka contract in Islamic banks (al-Yasiri, 2009), and to see whether Islamic banks can fulfil or not the terms of that contract in Islamic jurisprudence. The study discussed the jurisprudential dimensions of the speculative contract; it also attempted to predict the developments and trends in Islamic banking and to identify its contributions in

financing and development and to find the obstacles preventing the application of the speculative contract. These obstacles can be both those associated with the banks themselves or with the economic environment within which the banks operate.

The study was based on the hypothesis that the application of the speculative contract in Islamic banking faces huge difficulties due to its nature and to the nature of Islamic banking, and also to the operators these banks deal with. This study relied on the data obtained from the scientific methodology used in economic research which uses different descriptive and analytical research tools; the results were then associated with the reasons.

The study came down to several conclusions; the most important one being that the Musharaka contract in its Islamic version. This contract, which was approved by the Islamic law (Islamic Sharia) and explained by religious scholars from different branches, seemed to be unsuitable for practical usage in Islamic banks, because it lacks many regulations of banking, and gives speculators opportunities for manipulation. This increases the number of risks resulting from this type of contract; and today there is an urgent need to develop this kind of contract to make it more suitable for application in Islamic banks.

Abdul Kader & Yap's study addressed the impact of interest rate changes on demand for Islamic finance in a dual banking system, and whether the Islamic bank clients' decisions in seeking funding are influenced by the changes in interest rates, as approved by conventional banks. Therefore, this study's objective was to test this impact, by using monthly data of funding from Islamic and traditional banks, for the period extending from 1999 to 2007(Abdul Kader & Yap, 2008). The study found that all the funds from Islamic banks respond to the sudden changes (shocks) caused by all funds from traditional banks as well as by their lending rates, but the level of response to lending rate changes was stronger.

The study concluded that the proportion of funds provided by Islamic banks is affected by the lending rate changes of conventional banks, due to the mentality of investors who rely too much on the profit motive in making funding decisions. This what makes Islamic banks, in the dual banking system, exposed to the risk of changing interest rates, though Islamic banks do not rely on them in its banking operations.

Akhter, Raza, & Akram, (2011) aimed to analyse the efficiency and performance of Islamic banks and compare them with those of conventional banks (public and private banks) in Pakistan, in order to reach a clear understanding of the efficiency and performance of the Islamic banking services. The study used nine financial ratios, equally divided between three groups, namely the profitability, liquidity risk and credit risk, in order to measure the efficiency and performance. They were extracted from the financial statements of the Islamic and conventional banks, located in Pakistan, during the period 2006-2010. Moreover, the general trend analysis tool was used along with the public *balance sheet data* and the income statement. The study found a significant difference between the profitability of the banks that rely on interest rates and those that do not rely on interest-free return, while there is a difference between liquidity and credit performance. As for the *general trend analysis*, the same trend was found between the budget and gross income (Akhter et al., 2011).

3. Methods

To achieve the objectives of this study, the descriptive approach will be used in order to identify the components of the topic, as well as to understand and analyse its contents. Moreover, the findings of the practical study will be analysed and interpreted through the analysis of the financial statements related to the variables of the study, using the appropriate regression analysis methods in order to highlight the effects of PLSF on performance indicators in Islamic banks.

The variables of the study were identified so that one can find the answers to the above stated questions, based on the problematic of the study. The study variables are dependent variables which are expressed as the long-term financing arrangements, including the profit-and-loss sharing financing (PLSF) or Musharaka and/or Mudharaba financing.

The following standard model was formulated in order to select the appropriate relationship between these variables:

$$PLSF_{it} = \alpha + \beta DET_{it} + \mu_i + \gamma_t + \varepsilon_{it} \ldots\ldots\ldots\ldots(01)$$

where:
PLSFit is the ratio of other securities in balance sheet statement to the total assets of bank i at year t; it is calculated as follows:

$$PLSF = \frac{Other\sec iruties}{TotalAssets}\ldots\ldots\ldots\ldots(02)$$

DETit refers to the determinant of PLSF for bank i at time t; these are internal parameters that are related to the performance indicators of bank.

The indicators performance of bank are choices with CAMEL approach (Benahmed-Daho, Bouteldja, & Bendob, 2015). There are six such variables we assembled in three groups, two by two.:

Bank's profitability, expressed as the return on equity (ROE) and return on assets (ROA);

Bank's Liquidity, expressed as the net loans to total assets (NLATA) and the ratio of liquid assets to customer's deposits and short-term funds (LACDSTF).

Bank's capital adequacy, expressed as the ratio of total equity to total assets (ETA) and total equity to total loans (EL).

μ_i, γ_t refers to the cross section effects and period effects respectively. ε_{it} is model's errors and is IID (Baltagi, 2008).

We obtained the data from the Bankscope database, which provided also the financial statements as well as certain financial ratios. For estimation the parameters we use the regression models with unbalanced panel data during the period extending from 1997 to 2013, through a sample consisting of thirteen banks from thirteen Islamic countries namely: Algeria, Bahrain, Bangladesh, Dubai, Indonesia, Iran Jordan, Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia and Sudan. The list of banks is follows:

Banks in the Middle East
1. Al Rajhi Bank - Saudi Arabia
2. Dubai Islamic Bank (DIB)
3. Kuwait Finance House
4. Jordan Islamic Bank
5. Al Baraka Banking Group (BSC) –Bahrain
6. International Islamic Bank – Qatar

Banks in Southeast Asia
7. Bank keshavarzi-agricultural bank of iran
8. Bank Syariah Mandiri PT (Indonesia)
9. Bangladesh Bank Limited (Islamic Bank Bangladesh Limited)
10. Albaraka Bank - Pakistan (limited)
11. CIMB Islamic Bank Berhad (CIBB)

Banks in Africa
12. Islamic Solidarity Bank – Sudan
13. Al Baraka Bank of Algeria

To test the relationship between profit and loss funding financing and the performance indicators, we could test the hypotheses, are the answers of following questions:
- Do profit and loss funding (PLSF) increase the profitability indicators?
- Is there a significant relationship between PLSF and the liquidity indicators?
- Do PLSF increase capital adequacy indicators?
- Does the relationship vary with the bank an another, the country and the period?

4. Results and discussion

The performance indicators, which are supposed to have an impact on the PLSF in Islamic banks. However, the question that needs to be asked is: Does this influence vary from one bank to another, from one country to another? Does this influence change from year to year? Is this effects fixed or random?

This section aims to test the impact of the characteristics of each bank on the amount of PLSF, in four methods are used: pooled least, fixed effects, dual fixed effects and random effects. Before using the regression model we must test the unit root in all series for avoiding the false regression. As seen below, the stationarity of the variables is checked by using the LLC (Levin, Lin, and Chu) test with individual intercept.

Table .01: Stationarity tests results

Variables	Llc test	
	Value	P value
ROAA	-9.45205	0.0000
ROAE	-7.58714	0.0001
NLTA	-4.29356	0.0000
LACDSTF	-3.63596	0.0000
ETA	-6.22433	0.0000
EL	-5.73967	0.0000
POLS	-3.97789	0.0000

Source: Authors.

Table .01 shows the P value of the LLC test for all variables are closed to 0, which means we reject the null hypothesis of Unit Root at 1 % significance level for all variables. Stationarity of variables is then detected. Thus, we can estimate our models using static panel with four methods of estimation:

- Pooled least squares method;
- Fixed effects model;
- Dual fixed effects model;
- Random effects model.

4.1 Testing the relationship between PLSF and the profitability indicators using POLS

The dependent variable is the profit-and-loss sharing funding, but the independent variables, namely the indicators of profitability, liquidity, and capital adequacy. However, the parameters of the model are the constant and the tendency; the last one represents the degree of sensitivity of each variable to the dependent variable. The following summary table presents the assessment results after estimation of the simple regression model parameters:

Table .02: Estimation results of the relationship between PLSF and the performance indicators using POLS

Method: Pooled Least Squares
Sample: 1997 2013
Included observations: 17
Cross-sections included: 13

Total pool (unbalanced) observations: 174

Independent variables	Profitability		Liquidity		Capital	
	ROE?	ROA?	NLTA ?	LACDSTF?	ETA?	EL?
Constant	10,625	11,693	29,751	12,421	12,790	12,152
t-Statistic	8,369	10,799	12,219	12,396	8,489	13,018
Pronpensity	0,111*	4,616	-0,318***	-0,003	-0,065	-0,001
t-Statistic	1,653	0,675	-7,687	-0,946	-0,603	-0,632
Adjusted R-squared	0,010	-0,003	0,251	-0,001	-0,004	-0,003
F-statistic	2,733*	0,455	59,08***	0,895	0,364	0,400
Prob(F-statistic)	0,100	0,501	0,000	0,345	0,547	0,528
Akaike info criterion	7,839	7,852	7,560	7,911	7,853	7,852
Schwarz criterion	7,875	7,888	7,596	7,949	7,889	7,889
Hannan-Quinn criter.	7,854	7,867	7,574	7,927	7,867	7,867
Durbin-Watson stat	0,445	0,437	0,634	0,417	0,431	0,425

Source: Authors. (*,**,*** is significant at 1%, 5%, and 10% respectively)

Table .01 shows the assessment results of the relationship between the bank characteristics and PLSF. It is easy see that the model is acceptable in two cases only, one for the profitability and the other for liquidity.

Note, from the table, that the return on equity (ROE) can be considered as one of the determinants of PLSF, since the model was statistically acceptable for a significance level of 1%, according to Fisher statistic, using the pooled least squares (POLS) method, despite the deterioration of the explanatory power of the model, which was within 1 percent. Moreover, the tendency showed a positive value of 0.11 %, which confirms the existence of a relationship between PLSF and the return on equity (ROE); it showed a statistical significance at the level of 10 %, regardless of the characteristics of the country or the bank. The acceptance of the POLS model means that the correlation does not change with the location or time.

The value 0.11 indicates that when ROE increases by one unit, the PLSF increases by 0.11 unit, and from there, one can say that there is a positive correlation between ROE and PLSF financing in the Islamic banks under study, but the question that still remains to be asked is: Do these results change with the estimation method? The estimation results indicate that there is no relation between the return on assets (ROA) and PLSF, when the pooled least squares (P0LS) method is used, since the model was statistically unacceptable at the significance level of 1, 5 and 10 %, but the relationship appears to have a positive correlation, since the tendency is positive. This can be explained by the existence of individual fixed effects, random effects or cross-sectional effects. This is the issue that will be addressed in the next section.

It can be said that the profitability is one of the fundamental determinants of PLSF, in the light of the regression model which is based on the pooled least squares model, but the question remains about the nature of this relationship, and the degree of sensitivity in the light of fixed and random effects that show several special signs, especially in the light of the differences between banks, countries and other variables.

It appears to us, from the table .01, that there is a statistically significant relationship between the liquidity index, represented by net loans to total assets (NLTA), since the model is statistically acceptable, according to Fisher statistic, at the level of 1 percent, and the explanatory power that exceeds 25 %. In

addition, the relationship between the net loans to total assets (NLTA) and PLSF is an inverse relationship, as the tendency is negative with a value of 0.318, which means that every increase in the net loans to total assets (NLTA) index by 1 % leads to a decrease in the proportion of PLSF by 0.318 %.

Unlike the previous index, the relationship between the liquid assets to customer deposits and short-term financing (LACDSTF) and PLSF did not have any statistical significance which was confirmed by Fisher statistic. This was also true for the statistical significance of the estimator, although there is an inverse relationship between PLSF and this index, depending on the sign of the tendency. The existence of an inverse relationship between liquidity and PLSF may result from the application of that type of financing, which leads the bank to enter long-term financing operations. The interpretation of this relationship remains limited due to the integration of data; it may change when the fixed and random effects are considered. It can be said that the liquidity index is one of the determinants of PLSF, when the pooled least squares method is used, and regardless of any separation between the bank characteristics of the environment in which it operates, but the question that needs to be answered is: to what extent are these results stable when the time-fixed and cross effects are taken into consideration?

Based on the pooled least squares method, one can say that no relation was found between the capital adequacy indicators and PLSF in Islamic banks, during the study period; where the model was statistically unacceptable. The Fisher statistic did not have any statistical significance at the significance levels of 1, 5, and 10 %, despite the existence of an inverse relationship, since the tendency was found negative for the indices of equity to total assets (ETA) and total equity loans (TEL).

The capital adequacy index is one of the main determinants in PLSF, especially because this type of financing involves many risks. As previously mentioned, in the theoretical section, the model may have rejected the approved method since the fixed effects method may be the adequate solution to address this issue. This will be covered in the next section.

4.2 Testing the relationship between PLSF and the performance indicators, under the fixed effects (FE) model

The fixed effects model can be distinguished from the pooled least squares model by highlighting the impact of changes in the relationship, from one bank to another. The fact that the model is acceptable means that that relationship varies from one bank to another, which can be observed from the following table:

Dependent Variable: PLSF?
Method: Pooled Least Squares
Sample: 1997 2013
Included observations: 17
Cross-sections included: 13
Total pool (unbalanced) observations: 174

Table .3: Estimation results of the relationship between PLSF and the performance indicators, under the fixed effects model

Independents variables	Profitability		Liquidity		Capital adequacy	
	ROE?	ROA?	NLTA ?	LACDSTF?	ETA?	EL?
Constant	10,614	11,618	17,476	12,647	14,959	12,338
t-Statistic	9,898	13,161	4,449	16,698	11,296	17,507
Propensity	0,111**	5,526	-0,097	-0,007*	-0,263*	-0,004*
t-Statistic	1,805	0,868	-1,398	-2,639	-2,565	-2,614
Fixed Effects (Cross)						
_ALG—C	-12,010	-11,596	-11,189	-11,795	-11,619	-11,773
_BAH—C	-2,300	-2,481	-2,047		-2,144	-2,696
_BAN—C	-8,845	-9,262	-7,850	-9,936	-10,757	-9,758
_IND—C	-2,652	-2,468	-1,105	-3,009	-2,868	-2,824
_IRA—C	7,312	6,888	6,742	6,153	4,905	6,261
_JOR—C	-4,044	-4,030	-4,909	-4,553	-5,501	-4,588
_KUA—C	2,440	2,321	3,023	2,438	3,161	2,687
_MAL—C	4,855	4,801	3,138	4,167	3,361	4,789
_PAK—C	12,754	11,364	8,520	13,949	15,452	14,059
_QAT—C	-0,605	-0,402	0,700	-0,350	1,498	-0,111
_SAA—C	-6,937	-6,339	-4,065	-5,829	-4,160	-5,604
_SUD—C	17,068	18,066	14,169	18,172	18,197	18,422
_UEA—C	-1,662	-2,049	-1,105	-2,695	-2,294	-2,455
Effects Specification						
Cross-section fixed (dummy variables)						
Adjusted R-squared	0,417	0,408	0,412	0,431	0,429	0,472
F-statistic	10,523	10,173	10,341	11,246	10,987	11,023
Prob(F-statistic)	0,000	0,000	0,000	0,000	0,000	0,000
Akaike info criterion	7,375	7,390	7,383	7,410	7,355	7,353

Schwarz criterion	7,629	7,644	7,637	7,657	7,609	7,607
Hannan-Quinn criter.	7,478	7,493	7,486	7,510	7,458	7,456
Durbin-Watson stat	0,813	0,797	0,803	0,771	0,793	0,784

<div align="center">Source: Authors. (*, **, *** is significant at 1%, 5%, and 10% respectively)</div>

Table.2 indicates that the individual fixed effects model is acceptable for all six (06) independent variables, distributed in three types, i.e. profitability, liquidity, and capital adequacy. The acceptance of the individual fixed effects model means that the difference in the relationship depends on the constant only, which is estimated at 10.614. However, there is homogeneity in the tendency or the coefficient of the independent variable. It also shows that the explanatory power is nearly equal to the average, as it exceeds 40 % for all estimated models in general. The models are next analyzed, each one separately.

The relationship between the indicators of profitability and PLSF is characterized by a positive coefficient, since the coefficient of the return on equity and that of the return on assets are both positive. Each increase in the return on equity (ROE) by 1 % leads an increase of 0.11 % in the PLSF. This is a statistically significant relationship at the 5 % level, with an R squared of 41.7 %. This indicates that 41.7 % of the changes resulting in PLSF can be explained by the return on equity (ROE) and the remaining 54.3 % of the changes may be identified by other factors. The constant reached 10.61 %, and this was not found homogeneous throughout all banks; it differed by the fixed effect difference.

The banks in Algeria, Bangladesh, and Saudi Arabia, showed negative fixed effects. This means that the constant is smaller than the estimator, which is equal to -12, -8, and -6, respectively. However, the banks in Iran, Pakistan, and Sudan exhibited the highest individual positive fixed effects, equal to 7.31, 12.75, and 17.06, respectively. This may be due to the presence of a Islamic banking system in these countries. The impact of the banking systems issued by the Central Bank has been addressed in the theoretical side, along with the direct impact these banking systems have on the Investment deposits, and particularly on the statutory reserve, and also on what may result from the partial withholding of some of these deposits without investment. This would certainly affect the profitability of the bank.

Despite the positive relationship between the return on assets and PLSF, as shown in table (02), the statistical significance of the estimator was not significant, although the model was statistically acceptable, since the Fischer statistic was found to be different from 0 at 1 % level of significance. This can be explained by the lower rate of return on assets, or the lack of PLSF which was very small as compared to the total assets. This is supported by the result obtained in the fourth section of the study, where the status of PLSF in Islamic banks was studied. The overall average for all the banks under study reached 13.40 %.

The constant reached the value 11.61 in the return on assets (ROA) model. This value varied from one bank to another, since Algeria, Bangladesh, Sudan exhibited the largest individual negative fixed effect of -11.59, -9.26, and -6.33, respectively, while the largest individual positive fixed effect in Pakistan and Soudan showed the values of 11.56 and 18.05, respectively.

It can be said that the profitability is one of the most important specific indicators for PLSF in the Islamic banks under study, when using the individual fixed effects model. One can say that for each increase in the ROE index induces an increase in PLSF. This relationship is not different from one country to another and from one bank to the other, despite the application of the individual fixed effects model. However, there is a difference in the fixed constant value, with a homogeneous tendency, which means that any increase in ROE in Islamic banks leads to an increase in PLSF by 0.11 %.

The liquidity model is statistically accepted, according to Fisher statistic. However, the index of net loans to total assets did not show any significance in explaining the PLSF, where the calculated statistic was not statistically significant, though the high R squared, which exceeded 45 %. In addition, the negative effects of the estimator suggest the existence of an inverse relationship between the indices of net loans to *total assets and that of PLSF*, which is evidenced by the following index.

The LACDSTF index adversely effects on PLSF, since every 1 % increase in that index leads to a 0.007 % decrease in PLSF, which represents a small percentage of statistical significance at 5 % level; the R squared exceeds 43 %. This means that 57 % of PLSF changes are determined by other factors, while 43 % are determined by the LACDSTF index. Flexibility was found homogeneous in all banks, while the fixed limit, equal to 12.647, varied from one bank to another and from one country to another. There are countries, like Iran, Pakistan, and Sudan, where the constant was found to be high; however, Algeria, Bangladesh, and Saudi Arabia showed smaller values of the constant in the considered model. This is due to the different banking

and financial systems prevailing in these countries. Indeed, Pakistan, Sudan, and Iran have an Islamic banking system, while the other countries have a mixed banking system.

We can say that the liquidity factor is among the determinants of PLSF in Islamic banks, and every increase in liquidity leads to a decrease in PLSF, but with a very small degree of sensitivity; it is represented by LACDSTF only.

This relationship can be attributed to the risks in PLSF. This pushes the banks to maintain a certain level of liquidity, and not to risk entering in long-term placements, which is a common point between all the banks under study, depending on the country. This may be attributed to the common characteristic of work in Islamic banks, as well as the theoretical reference these banks rely on, in addition to the uniform systemic risks in the countries studied. The previous result was not found when using the pooled least squares method in the assessment; the variable NLTA showed a statistical significance, while LACDSTF did not. However, in the fixed effects model, one could see quite the opposite. This can be ascribed to the presence of an information content which had been ignored in the first model. Now, the question that needs to be answered is: Is this result different in the *time fixed effect* model or not?

The capital adequacy did not have a significant relationship with the PLSF when using the pooled least squares method. The assessment results varied with the model used; however, they showed that relationship in the individual fixed effects model. Indeed, the model was acceptable in both cases, with an R squared near the 50%, and the relationship had a reversed direction.

Table .3 shows that the ratio of equity to total assets is among the determinants of PLSF, encountered in Islamic banks. The individual fixed effects model is statistically acceptable at the significance level of 1 %, and the tendency or the degree of sensitivity has negative effects with a value equal to -0.26, which is statistically significant. This suggests the existence of a significant inverse relationship between PLSF and the ratio of equity to total assets (ETA). However, the constant was found equal to 14.95, which is a high value that is due to the imposition of precautionary laws or marginal efficiency of capital. One should note that this constant varies from one bank to another and from one country to another.

That Algeria, Bangladesh, Jordan and Saudi Arabia have large negative individual effects, as compared to the fixed constant of the model; while Pakistan, Sudan, and Iran showed positive individual effects, greater than the fixed constant of the model. This may be due to the difference in the indices that link these banks, such as legislation, laws, economic and banking systems, and others.
R squared of the model exceeded 42 %. This means that 42 % of the changes in PLSF, in the banks under study, may be explained by the ratio of equity to total assets. The remaining 58 % can be explained by other factors, not included in the model.

From table .2, it seems that the fixed effects model is statistically acceptable at the level of 1 %, according to Fisher's statistic. This indicates that the relationship between equity and total loans is characterized by the individual fixed effects, which means that the relationship is rejected when the pooled least squares method is used. The equity to loans (EL) variable may be used to clarify PLSF, but with a very low degree of sensitivity equal to 0.004, which means that every increase in EL by one unit induces a decrease in PLSF of 0.004. This relationship has a statistical significance at 5 % level, and the fixed constant is significantly different from zero at the level of 5 %. However, the fixed constant varies from one bank to another, and from one country to another. we can say that all of Sudan, Pakistan, and Iran, show a positive impact, and this can be attributed to the characteristics of each country and each bank, especially that these countries have an Islamic banking system. However, the rest of the countries, specially Algeria, Jordan, Bangladesh, and Saudi Arabia, which have an interest-based banking system, show negative individual effects. In the end, it can be said that the safety index is one of the determinants of PLSF, but this index has an inverse relationship PLSF, which is contrary to the reality, because participatory financing is characterized by high risks, and every increase in insecurity leads to the decline of funding in Islamic banks under study, during the selected period.

The results obtained under the individual fixed effects model are completely different from those reached using the pooled least squares method, probably because the characteristics of each bank and country were ignored, from one method to the other, while the individual and time fixed effects model would highlight the impact of the characteristics of each bank and country, and this what distinguishes it from other models, because the effects period effects were considered. Now the question which can be asked is whether these results are different when the time fixed effects are added. This issue will be addressed in the following sections.

4.3 Testing the relationship between PLSF and the performance indicators, using the dual (section and period) fixed effects model (DFE)

The inclusion of individual or period fixed effects only in the model may bring several criticisms, that is the possibility to have individual and temporal effects. This has been done in this section through the inclusion of period fixed effects, simultaneously; this is called the dual fixed effects (DFE) model. The estimation results are given in the next table.

Dependent Variable: PLSF?
Method: Pooled Least Squares
Sample: 1997 2013
Included observations: 17
Cross-sections included: 12
Total pool (unbalanced) observations: 163
Cross sections without valid observations

Table .4: Estimating the relationship between PLSF and performance indicators, under DFE model.

| Variable	Profitability		Liquidity		Capital adequacy	
	ROE?	ROA?	NLTA?	LACDSTF?	ETA?	EL?
Constant	10,449090*	11,710640	16,863510	12,698790	15,182440	12,373130
t-Stat	8,861156	12,414850	3,975243	16,242210	10,442830	17,108280
Propensity	0,123929**	4,399336	-0,086288	-0,007649*	-0,283391*	-0,004051*
t- Stat	1,747458	0,609564	-1,146482	-2,764691	-2,460861	-2,768666
Fixed Effects (Cross) (dummy variables)						
_ALG—C	-12,689050	-	-	-	-	-
_BAH—C	-2,762673	-3,054716	-2,589134	-2,821925	-3,029220	-3,476804
_BAN—C	-9,398426	-9,764197	-8,442586	-	-	-
_IND—C	-2,493377	-2,512938	-1,188060	-3,464575	-3,439753	-3,168106
_IRA—C	6,610703	6,126084	6,036164	5,208299	4,031298	5,386789
_JOR—C	-4,700905	-4,592686	-5,309749	-5,232344	-6,090580	-5,213398
_KUA—C	1,760081	1,985248	2,603414	1,754090	2,692755	2,111548
_MAL—C	5,066723	4,755071	3,404982	3,942922	2,750639	4,675357
_PAK—C	13,373500	11,447990	9,065132	14,441210	15,575160	14,659950
_QAT—C	-1,473667	-0,991556	-0,051097	-1,302137	0,858227	-0,975267
_SAA—C	-7,360314	-6,494675	-4,496070	-6,419158	-4,798925	-6,158676
_SUD—C	16,292760	17,676030	14,240080	17,520850	17,693980	17,880070
_UEA—C	-2,225355	-2,539013	-1,637480	-3,380239	-2,788225	-3,032891
Fixed Effects (Period) (dummy variables)						
1997—C	-0.908695	-2,528297	-3,001741	-3,229368	-3,475129	-3,337636
1998—C	0.841292	0,595366	0,909689	0,812942	-0,015565	0,743510
1999—C	0.358091	-0,601056	-0,483155	-0,497106	-1,454811	-0,553965
2000—C	4.079015	3,063461	3,005239	3,019440	2,174064	2,954791
2001—C	2.559165	1,946250	2,424590	2,296841	1,535243	2,214428
2002—C	-0.472393	-0,357417	-0,410463	0,063408	-0,269798	-0,183173
2003—C	2.814860	2,828803	2,618911	3,471067	2,683328	3,001254
2004—C	2.092486	2,520447	2,376069	2,730700	2,433801	2,665725
2005—C	1.267597	1,532806	1,249625	1,919450	2,418227	2,258479
2006—C	0.154330	0,431400	-0,044783	2,808607	2,937902	2,561711
2007—C	-2.098994	-1,851661	-1,822458	-1,712273	-0,749830	-1,838335
2008—C	-2.750375	-2,484145	-2,265816	-2,568522	-2,019145	-2,606483
2009—C	-1.716486	-1,755855	-1,725570	-2,023885	-1,547955	-2,036752
2010—C	-0.758515	-0,717798	-0,763330	-0,851529	-0,915608	-0,979709
2011—C	2.657694	2,670384	2,490724	2,481715	2,558365	2,404717
2012—C	1.961808	1,887764	1,887663	1,673102	1,553742	1,548030
2013—C	1.713973	1,199532	1,394884	1,133993	0,696574	1,334280
R-squared	0.485264	0.475701	0.479103	0.500792	0.495562	0.500916
Adjusted R-squared	0.381602	0.370113	0.374200	0.396480	0.393974	0.400406
F-statistic	4.681203*	4.505262*	4.567113*	4.800898*	4.878150*	4.983744*
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Akaike info criterion	7.512549	7.530956	7.524446	7.553567	7.492339	7.481669
Schwarz criterion	8.057214	8.075621	8.069111	8.103989	8.037003	8.026333
Hannan-Quinn criter.	7.733499	7.751905	7.745396	7.777032	7.713288	7.702618
Durbin-Watson stat	0.811934	0.790974	0.800474	0.754039	0.775167	0.769565

Source: Authors. (*, **, *** is significant at 1%, 5%, and 10% respectively)

From the table .3, we can see that the average coefficient of determination has dropped, and this can be attributed to the decline in the degree of freedom as a result of adding fictitious variables for the period dimension, as compared to the previous model. Moreover, the relationship between the indicators of profitability, liquidity, capital adequacy and PLSF has not changed despite the different models and interpretation methods. Here is the interpretation of the result of each variable of the studied variables.

It becomes evident, from table .3, that the Fisher statistic has a statistical significance for the profitability indices, which means that the dual fixed effects model is statistically significant with a significance at 1 % level, but the significance and the degree of impact are different from the return on equity (ROE) to the return on assets (ROA).

There is a significant correlation between the return on equity (ROE) and PLSF, since the tendency is positive. In addition, every increase in the ROE by one unit leads to a 0.12 increase in PLSF. Also, the individual fixed effects are not different from the previous model, but the time fixed effects were between positive and negative. This is highlighted in the following figure:

Figure .1: Period fixed effects for the relationship between ROE and PLSF, under the DFE
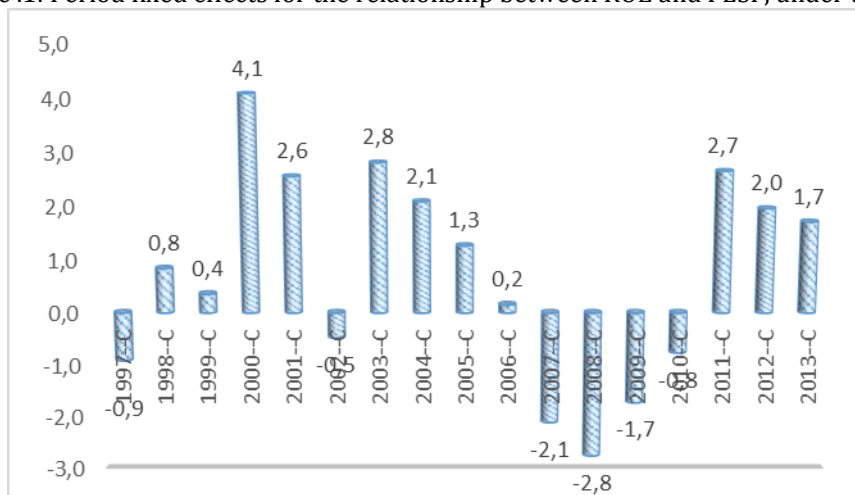
Source: authors.

Note that the year 1997 and the years from 2007 to 2010 showed negative time fixed effects. The peak was reached in 2005, with - 2.8. This can be explained by the repercussions of the financial crisis in those years. The year 1997 saw the debt crisis of Southeast Asia, the year 2002 with the Latin American crisis, as well as the subprime crisis which started from the United States of America.

So, one can say that the relationship between ROE and PLSF was actually affected by the repercussions of the recent financial crisis, with a negative impact because, on the one hand, the profitability drops of the studied Islamic banks and the PLSF activity on the other. This could be observed while studying the status of PLSF in Islamic banks.

The return on assets (ROA) characterized by a correlation no significance with PLSF, since the tendency was not different from zero, despite the overall significance of the model, which is referred to as Fisher statistic at the level of 1 %, with an R squared that exceeds 45 %. The year 1999 saw a negative time fixed effect as compared with the return on equity (ROE). Furthermore, the time and cross fixed effects did not differ from the previous model with regard to the return on equity, under the DFE model.

The liquidity relationship was not affected by changing the individual fixed effects model into the dual fixed effects model, since there was no significant relationship between the net loans to total assets (NLTA) and PLSF. However, there was a significant relationship between the PLSF and the LACDSTF, at the significance level of 1 %, with an R squared exceeding 50 %. This means that 50 % of the changes occurring in PLSF can be explained by the LACDSTF index and the remaining 50 % by the other factors. Each increase in LACDSTF index by 1 % induces a 0.007 % decrease in PLSF, which represents a very low sensitivity, but still has a statistical significance. We can say that liquidity is one of the determinants of PLSF in Islamic banks, but its impact is very weak, with one variable (LACDSTF) only. This issue remains a subject of controversy within the limits of the model. The question remains open about this result, under the random effects models.

Capital adequacy index showed a negative impact on PLSF, with a total statistical significance for the model and estimators. The sensitivity of the PLSF model to the equity of total assets (ETA) ratio was found higher than that of the index of equity to total loans (EL). Each increase in the EL by 1 % leads to a 0.004 % decline in PLSF, while each increase in the ETA by 1 % leads to a 0.28 % decline in PLSF. This can be attributed to the rate imposed by the responsible authorities, since the ETA ratio is not lower than 8 %. In addition, this makes the Islamic banks resort to restricting the investment deposits outside the budget, thus weakening their capital. This can be explained by the high constant which is equal to 15.18 for the entire

sample, with the existence of individual fixed effects which are highest in Sudan, with 17.69 % and lowest in Algeria with 12 %.

Moreover, the time fixed effects had an acceptable significance for the model expressed by Fisher statistic. The most severe ratio was in the year 1997, where the banks under study got high PLSF, during the crisis period. The years 1998, 1999, 2002, and the period from 2007 to 2010, had also an impact. All these years saw financial crises.

4.3 Testing Testing the relationship between PLSF and the performance indicators, using the using the individual random effects model (REM)

The individual or cross section random effects model uses the pooled least squares method, through highlighting the impact of changing the relationship from one bank to another, by studying the impact of changing the bank on the degree of sensitivity of the variable which depends on the independent variable. This may be seen in the following table.

Dependent Variable: PLSF?
Method: Pooled EGLS (Cross-section random
Sample: 1997 2013
Included observations:
Cross-sections included: 13
Total pool (unbalanced)

Table .5: Testing the relationship between PLSF and performance indicators under the individual random effects model (REM)

	Profitability		Liquidity		Capital adequacy	
	ROE?	ROA?	NLTA?	LACDSTF?	ETA?	EL?
Variable						
C	11.06205*	11.99020*	24.04682*	13.07206*	15.00395*	12.70354*
t-Statistic	4.312239	4.772385	7.131824	5.195971	5.601619	2.272914
Independent	0.103590***	4.772211	-	-	-	-0.003161*
t-Statistic	1.716493	0.766242	-3.867640	-2.421769	-2.275848	0.001352
Random Effects (Cross)						
_ALG--C	-11.45516	-11.05892	-8.621952	-11.32423	-11.20138	-11.16199
_BAH--C	-2.396060	-2.514799	-1.215141		-2.378600	-2.720979
_BAN--C	-8.585799	-8.926414	-4.781317	-9.589396	-10.24583	-9.306098
_IND--C	-2.638634	-2.462905	0.338038	-3.011002	-2.887022	-2.762590
_IRA--C	6.420668	6.061235	5.417778	5.273221	4.344116	5.414469
_JOR--C	-4.118728	-4.092741	-4.580037	-4.655003	-5.401493	-4.579185
_KUA--C	1.973443	1.938237	2.384543	1.848697	2.479833	2.125864
_MAL--C	3.885943	3.848159	0.956596	3.186979	2.648716	3.695285
_PAK--C	10.43677	9.310866	3.735056	11.07200	12.16552	11.02356
_QAT--C	-0.842049	-0.604546	1.017891	-0.731130	0.783522	-0.448585
_SAA--C	-6.398929	-5.813301	-1.852906	-5.542020	-4.262815	-5.239474
_SUD--C	15.62310	16.53265	7.143892	16.36683	16.49863	16.55820
_UEA--C	-1.904561	-2.217523	0.057557	-2.894952	-2.543199	-2.598477

Effects Specification

	S.D.	Rho	S.D.	Rho	S.D.	Rho	S.D.	Rho	S.D.	Rho	S.D.	Rho
Cross-	8.430852	0.4511	8.478392	0.4501	4.532114	0.1907	8.262483	0.4323	8.297602	0.4482	7.746509	0.4149
Idiosyncratic	9.299566	0.5489	9.371776	0.5499	9.336925	0.8093	9.468885	0.5677	9.206474	0.5518	9.199426	0.5851

Weighted Statistics

	ROE?	ROA?	NLTA?	LACDSTF?	ETA?	EL?
R-squared	0.016967	0.003433	0.077978	0.034993	0.029213	0.030521
Adjusted R-	0.011251	-0.002361	0.072618	0.028999	0.023569	0.024884
F-statistic	2.968641***	0.592496	14.54655*	5.838084**	5.175886**	5.414824**
Prob(F-	0.086690	0.442511	0.000190	0.016801	0.024137	0.021132
Durbin-	0.760528	0.747247	0.747657	0.715429	0.739083	0.722889

Unweighted Statistics

	ROE?	ROA?	NLTA?	LACDSTF?	ETA?	EL?
R-squared	0.014764	0.001983	0.227157	-0.001938	-0.012021	-0.007744
Durbin-	0.443980	0.436670	0.581149	0.405298	0.415077	0.410399

Source: Authors. (*, **, *** is significant at 1%, 5%, and 10% respectively)

Fisher statistic refers to the acceptance of the random effects model at the level of all the performance indicator variables under study, where the Fisher statistic has a statistical significance different from zero in all cases. The acceptance of the random effects model indicates that that the relationship between the PLSF and performance indicators vary randomly from bank to another, or the degree of sensitivity is randomly. However, it seems that the determination coefficient is very low, i.e. less than 4 %, which means that the dependent variable (PLSF) changes by 4 % only of the changes that occurred in the independent variable. The remaining 96 % of the changes are explained by other factors. This was explained by 50 % of the fixed effects model. Also, The *Durbin–Watson statistic* indicates the presence of a self-correlation between the errors of the model in all cases, which would raise the problem of trade-offs between the DFE and REM models. This issue will be addressed, by using Hausman test through the following table.

Table .6: results of Hausman test

Correlated Random Effects - Hausman

Pool: POOL01

Test cross-section random effects

	ROE?		NLTA?		ETA?	
	Chi-Sq.	Prob.	Chi-Sq.*	Prob.	Chi-Sq.	Prob.
	0.371584	0.5421	7.262991	0.0070	2.095805	0.1477
	ROA?		LACDSTF?		EL?	
	Chi-Sq.	Prob.	Chi-Sq.	Prob.	Chi-Sq.*	Prob.
	0.324016	0.5692	2.611090	0.1061	3.656366	0.0559

Source: Authors. (*, **, *** is significant at 1%, 5%, and 10% respectively)

The Hausman test indicates that all the studied variables do not have random effects; they have fixed effects except for the NLTA and EL variables, since its Chi-squared is not significantly different from zero. The acceptance of the individual fixed effects model can also be noted, by going back to the adjusted coefficient of determination which was nearly 50 % in all cases.

5. Conclusions

This research was concerned with the issue of profit and loss sharing PLSF and performance indicators of Islamic banks, in some selected Islamic countries. The internal variables of bank's environment were distributed in three categories, namely profitability, liquidity and capital adequacy in thirteen banks, located in thirteen countries, during the period extending from 1997 to 2013. The following conclusions can be drawn:

- There is a significant relationship between the return on equity (ROE) and PLSF, at the 10 % level. Also, every one-unit increase in ROE leads to an increase of 0.12 in PLSF. This relationship depends on the characteristics of the bank and the country and on time also, because the dual fixed effects model has been accepted. we can have explained the sensitivity weak by the lack of contribution of the banks under study in PLSF.
- The relationship between the return on assets (ROA) and PLSF is no significant. This means that PLSF does not contribute greatly to the income generation of the banks under study, during the selected period of time, as compared to the other operations. These findings support the previous result.
- From the first and second previous conclusion we can say that there is a relationship between profitability and PLSF, the alternative hypothesis H11 is accepted.
- The net loans to total assets (NLTA) ratio does not have any significance in explaining PLSF. This can be assigned to the nature of the long-term PLSF, which is completely different from the short-term funding. This was evidenced by the test results of the three models used in the study.
- The LACDSTF ratio has a negative impact on PLSF, since each 1 % increase leads to a 0.007 % decrease in PLSF (PLSF). This is a low sensitivity. The negative relationship indicates that the trend of banks towards short-term financing led to a decline in PLSF (PLSF) in the Islamic banks under sample, period of study.

From the third and fourth previous conclusion we can say that there is a relationship between liquidity and PLSF, the alternative hypothesis H^1_1 is accepted.

- The equity to total assets (ETA) ratio is one of the determinants of PLSF in Islamic banks, the sensitivity is statistically significant, with the negative value equal to -0.26. This indicates the existence of a significant inverse relationship between PLSF and the equity to total assets (ETA) ratio. This may be attributed to the high risks resulting from these methods, which affects the security degree within these banks.
- The EL ratio is considered as an explanatory factor in PLSF, but with a very low sensitivity, equal to 0.004. Indeed, every one-unit increase in this factor leads to a decline in PLSF. This indicates that an increase in this percentage means an increase in the ratio of total equity to net loans coverage, and this would increase the degree of security within the banks. Consequently, this should reduce the ratios intended for long-term operations.

From the fifth and sixth previous conclusion we can say that there is a relationship between capital adequacy and PLSF, the alternative hypothesis H^1_1 is accepted.

The subject under study is a complicate topic that may be addressed in several ways, depending on the objectives of each researcher, so that various aspects of the subject may be investigated. Some topics, which can be titles or issues to be addressed in future research, are:

- To re-conduct the same research study, with a separation between PLSF, Mudharaba and Musharaka.

- To re-conduct the same research study using the dynamic panel data model, while adding the effect of moving from one region to another, or from one country to another.
- To use ratios and performance indices that are specific to the functioning in Islamic banks, in order to achieve more accurate results from the analysis of long-term PLSF within this type of banks.
- To re-conduct the same research study, with Taking into account the financial markets and Macroeconomic Variables.

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