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Risk sharing financing of Islamic banks: interest free or interest based?

Mirzet Seho¹ and Mansur Masih²

Abstract

In theory, profit and loss or risk sharing financing (RSF) is considered as a corner stone of Islamic finance. In practice, however, this feature of Islamic financial products has been argued by many to be negligible. Instead, debt-based instruments, with conventional like features, have overwhelmed the Islamic financial industry. This study applied system GMM in modeling the determinants of RSF, and found that RSF is interest-free. We also found that, surprisingly, RSF is negatively related to the GDP growth. However, this is in accordance with those who argue that entrepreneurs in expectations of good economic conditions would take a fixed-cost financing, and thus reap the benefits of high return, rather than share the profit with banks. Similarly, in expectations of unfavorable economic conditions they would want to share their risk and loss with their financiers. Our results also imply a significantly very strong relationship between risk sharing deposits and RSF. However, the pass-through of these deposits to RSF is economically low and is about 0.40. In other words, only about 35-40% of the risk sharing deposits goes to the risk sharing financing. Thus, for practical implications, our findings suggest that through risk sharing products, Islamic banks can gain their 'independence' from the conventional banks and interest rates, the potential for which is enormous. Also, RSF seems to have countercyclical features that could enable policy makers to fight the unfavorable economic conditions through this banking channel.

Keywords: Islamic banks, profit and loss sharing, investment, deposits, financing, risk sharing,

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Risk Sharing Financing of Islamic Banks: Interest Free or Interest Based?

Introduction

The Islamic banking industry has been growing at a compound annual growth rate (CAGR) of 38.5% between 2004 and 2011 (IFSB, 2013) and 17% from 2009 to 2013 (Ernst & Young, 2014-2015). The Islamic banking sector has been the driving force of the global Islamic finance industry. In 2013, Islamic finance assets were estimated at US\$1.8 trillion and in 2014 are expected to surpass the US\$2 trillion mark, while Islamic banking assets are expected to hit US\$1.6 trillion (KFH Research Outlook 2014). However, Chong and Liu (2009) argue that this rapid growth of Islamic banking is largely driven by the resurgence worldwide rather than by the advantages of the PLS paradigm itself which is seen as the ideal mode of Islamic banking.

Estimates underline that there are currently over 300 institutions in 80 countries carrying out ‘interest-free’³ banking (Ergec and Aslan, 2012). Two countries, namely Sudan and Iran, operate fully under the Islamic system, while the other countries operate under the dual banking system. Within the dual banking system, there are countries which allow Islamic windows for the conventional banks such as Indonesia, Bahrain, Yemen etc. and those which do not allow the windows, such as Turkey, Kuwait etc. (Ergec and Aslan, 2012). The Islamic banking industry holds less than 2% of the banking assets worldwide (NBR)⁴. In most of the countries where Islamic banks operate parallel to conventional banks, the market share of Islamic banks is still very low. Except in Kuwait and Saudi Arabia, where Islamic banks hold about 60% and 35% respectively, in all other countries Islamic banks hold less than 25% market share (IFSB, 2013).

In theory, a unique feature of Islamic finance in general and Islamic banking in particular is its profit-and-loss sharing (PLS) or risk-sharing paradigm⁵. Most theoretical models of Islamic banking are based mainly on two partnership contracts, named Mudarabah or Musharakah. While Mirakhor (2009) sees risk sharing as the objective of Islamic finance, Askari (2012) argues that Islamic financial system should be structured on risk sharing and prohibition of debt financing. On the other hand, Abdul-Rahman et. al. (2014) argue that from the New Institutional Economic Theory context, PLS in the environment of Islamic banks as financial intermediaries is difficult to grow. They suggest that PLS contracts would best be positioned if Islamic banks play the role of genuine entrepreneurs instead of intermediaries as currently practiced. A risk sharing financial system would not have ‘anything’ to do with riba or interest. Because, as we know, in the PLS arrangements the return is determined ex-post. Only the sharing ratio between the partners is determined ex-ante.

However, due to supervisory and competitive pressures in the market place the current practices of Islamic banks have significantly diverged from the theoretical models initially envisaged (Rosly, 1999; Mirakhor, 2010; Archer et al., 2010; Farook et al., 2012). Only a negligible portion of Islamic banks’ financing is strictly PLS based (Chong and Liu, 2009) and to-date it comprises less than 3% of the

³ Islamic banks claim to be interest-free. This is so by the fact that they do not apply interest in their financing businesses. However, various studies have shown that Islamic financial products in general and banking products in particular are exposed to the interest rate risk, as we will see later in our literature review section.

⁴ The National Bureau of Asian Research.

⁵ These two are used interchangeably.

average of total financing in Malaysia (Abdul-Rahman et al., 2014). Instead, debt-like financing instruments such as Murabahah (mark-up or cost plus financing), Ijarah (Islamic leasing), Istisna (contract manufacturing), etc. are used, which Abdul Kader and Leong (2009) see very similar to conventional bank loans. Similarly, Chong and Liu (2009) see Islamic banking in Malaysia not very different from conventional banking.

Now, having a small market share accompanied with the debt-like instruments, which are interest rate benchmarked and are substantially not different from the conventional loans except in their contracts, Islamic banks are doomed to be price takers. Unless they can offer products that are in their nature completely different from their conventional counterparts, they would inevitably end up being exposed to the same or similar types of risks of the conventional banks, the major of which is interest rate risk. Islamic banks do have their unique products on both liability and asset sides. On the liability side, Islamic banks offer profit sharing investment accounts (PSIA) under the Mudarabah contract along other fixed income products. On the asset side, they have more varieties of products based on Mudarabah and Musharakah. Some of these products are financial instruments offered by the government, regulator and other institutions, but some are financing of the real sector activities. Real sector financings generally carry the potential for higher return, but they are also more risky than the financial instruments. Also, they are less liquid, because these are generally long term real projects and the investors might not be able to get out of them unless the project is completed.

In the literature, we find that a lot of studies have been done on the determinants of Islamic banks' assets or financings. Assets or financings are all put together and treated as one even though they may be completely different, at least in the case of Islamic banking. It is for this reason that we want to make a humble attempt to take PLS financings out and study them separately in order to find out its determinants. And also to see whether they are different from the determinants of Islamic financings/assets in total, which are dominated by debt-like instruments, as well as conventional loans.

Having said the above, the main objective of this paper is to determine whether PLS financing of Islamic banks is interest-free or interest-based. Also, we want to see how other factors, bank-specific and country-specific, may affect the PLS financing of Islamic banks. Lastly, we want to see how much of Profit Sharing Investment Deposits/Accounts goes into PLS financing.

The paper is organized as follows. The second section provides literature review. The third section will describe the data and methodology used in this study. In the fourth section, we shall analyze and discuss the empirical results. Finally, in the fifth section, the paper will conclude with suggested implications and recommendations for the industry practitioners and policy makers.

LITERATURE REVIEW

Due to short history of Islamic banking industry, it is noticeable that the literature on determinants of conventional lending is more available than on the Islamic bank financing. In general, it is found that determinants of conventional bank lending are divided into two main categories, i.e. microeconomic and macroeconomic factors. Microeconomic factors are those factors which are bank-specific as deposits, bank size, bank capitalization, collateral security, capital ratios, non-performing loans, type of ownership, liquidity, etc.. On the other hand, macroeconomic variables used include GDP, interest rate, inflation, stock prices, exchange rates, industrial indices, etc.

In studying bank-specific determinants of conventional bank lending, Chernykh & Theodossiou (2011) in their study of banks in Russia found that bank size, capitalization and provision for losses have positive power over determining the long-term business loans, while type of ownership was found to be insignificant. By studying six countries of Central African Economic and Monetary Community (CEMAC), Constant and Ngomsi(2012) found that bank size, long-term liabilities and capitalization positively affect the business loans, while non-performing loans have been found statistically insignificant. Hossain et. al. (2013) in their case study of RAKUB bank in Bangladesh found out that deposits positively affect the loans.

In the case of Islamic banks and the bank-specific determinants, Kader and Leong (2009) tested conventional lending rate and base lending rate as determinants of BBA property financing in Malaysia and found that they are both significantly positive. Rama and Kassim (2013) studied Indonesian Islamic banks and found that Islamic finance rate, Islamic and conventional deposit rates and conventional lending rate do not have any significance in determining the Murabahah financing. Karim et. al. (2014) in studying size and liquidity as the determinants of Islamic financing and conventional lending found that the effects are the same on Islamic and conventional, i.e. negative and positive effects respectively.

In studying macroeconomic variables as determinants of conventional bank lending, Kim and Moreno (1994) and Ibrahim (2006) tested stock price and both found it to be significantly positive in determining bank lending in Japan and Malaysia respectively.

Ibrahim (2006) also tested for GDP and found it significantly positive. The same results were obtained by Pruteanu-Podpiera (2007) for Czeck Republic, by Du (2011) for China, by Constant and Ngomsi (2012) for CEMAC, and by Karim et. al. (2014) for both conventional and Islamic banks.

Interest rate was found to have a significantly negative effect on conventional bank lending in Malaysia by Kader and Leong (2009) and in Turkey by Ergeca and Arslan (2011). However, these two papers found that the interest rate effect on Islamic bank financings is positive, while contrary to that, Adebola et. al. (2011) found the same effect as on the conventional bank loans in Malaysia.

The effects of inflation on conventional bank lending and Islamic bank financing are very mixed across the literature. Karim et. al. (2014) found it to have negative effects on conventional banks, but positive on Islamic banks, while Du (2011) studying conventional banks found it to have positive effects if it is less than 3.9% and negative if it is more than 3.9%. On the other side, it was found insignificant in the case of conventional banks by Pruteanu-Podpiera (2007), Constant and Ngomsi (2012) and in the case of Islamic banks by Rama and Kassim (2013).

Other variables such as exchange rate, industrial indices, producer price indices have been found mainly insignificant, see for example Ibrahim (2006), Adebola (2011), Rama and Kassim (2013).

MODEL, DATA AND METHODOLOGY

Model

To investigate the determinants of risk sharing financing of Islamic banks, with the main focus on relationship between risk sharing financing and interest rate, we propose the following empirical model based on the relevant literature:

$$RSF_{i,t} = \beta_0 + \beta_1 RSF_{i,t-1} + \beta_2 RSD_{i,t} + \beta_3 BS_{i,t} + \beta_4 INTR_{i,t} + \beta_5 GDPGR_{i,t} + \beta_6 INFL_{i,t} + \epsilon_{i,t}$$

Where:

‘i’ indicates the bank (i = 1, . . . ,132),

‘t’ indicates the annual time period (t = 2008, . . . ,2013)

RSF – Risk sharing financing (Mudarabah, Musharakah and Musharakah Mutanaqisah financings of the real activities, not financial instruments)

RSD – risk sharing deposits or profit sharing investment account (Mudarabah deposits)

BS – Size of the bank defined as the natural logarithm of total assets

GDPGR – GDP growth rate

INTR – Real interest rate

INFL – Inflation

The effects of the selected variables on either conventional bank lending or Islamic bank financing are summarized in Table 1.

Table 1. Effects of selected variables on bank financing/lending

Papers	Deposits	Size	GDP/GDP growth	Interest rate	Inflation
Hossain et al. (2013) for CB	+				
Chernykh & Theodossiou (2011) for CB		+			
Constant and Ngomsri (2012) for CBs		+			x
Ibrahim (2006) for CBs			+		
Pruteanu-Podpiera (2007) for CBs			+		-
Du (2011) for CBs			+		+if < 3.9% -if > 3.9%
Constant and Ngomsri (2012) for CBs			+		
Karim et al. (2014) for CBs & IBs		-	+		-/+
Kader & Leong (2009) for CB & IBs				-/+	
Ergeca and Arslan (2011) for CB & IBs				-/+	
Adebola et al. (2011) for IBs				-	
Rama and Kassim (2013) for IBs					x
Our expected effect on RSF	+	+/-	+/-	x/+/-	-

Note:

‘+’ indicates positive relationship

‘-’ indicates negative relationship

‘x’ –indicates no significant relationship

Data

The data used in our study is annual data for 2008-2013. It covers 132 fully-fledged Islamic banks from 28 different countries. The data for bank specific variables was obtained from Islamic Banking Intelligence,⁶ while the data for macroeconomic variables was obtained from the World Bank.⁷ Risk-sharing financing and risk-sharing deposits data will be used in its absolute values form, while the size is computed by using the natural logarithm of total assets. The macroeconomic variables are all in percentage points. Table 2 provides the summary of descriptive statistics for the selected variables. Table 3 provides the matrix of correlation coefficients that based on the results indicates a mixed correlation among the variables.

Table 2: Summary of descriptive statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
RSF	428	1.03E+09	2.49E+09	1620	1.58E+10
RSD	499	3.29E+09	5.65E+09	52254.77	3.61E+10
BS	686	20.86308	2.296893	13.17178	24.99047
INTR	641	2.140296	8.844543	-19.9269	47.05332
GDPGR	790	3.262196	4.286876	-15.08839	17.66303
INFL	791	10.22298	10.14223	-4.863278	39.26636

Table 3: Correlations

	RSF	RSD	BS	INTR	GDPGR	INFL
RSF	1					
RSD	0.827	1				
BS	0.5651	0.7089	1			
INTR	-0.28	-0.2095	-0.1831	1		
GDPGR	-0.2268	-0.1353	-0.0972	0.2075	1	
INFL	0.4778	0.3046	0.2468	-0.4648	-0.6452	1

⁶www.islamicbankingintelligence.com

⁷www.data.worldbank.org

Methodology

For our set of data, which is panel data with very low number of T's and quite a high number of N's, the most appropriate model to use is dynamic panel data. Dynamic panel data regressions are characterized by two sources of persistence over time, namely, autocorrelation due to the presence of a lagged dependent variable among the regressors and individual effects characterizing the heterogeneity among the individuals. The endogeneity problem associated with dynamic models is dealt with in this paper using the generalized method of moments (GMM) procedure proposed by Arellano and Bond (1991) which is more efficient than the instrumental variable (IV) estimation procedure suggested by Anderson and Hsiao (1981). Arellano and Bond (1991) demonstrate additional instruments can be obtained in a dynamic panel data model if one utilizes the orthogonality conditions that exist between lagged values of the dependent variable and the disturbances. Using these moment conditions, Arellano and Bond (1991) propose a two-step difference GMM estimator. Blundell and Bond (1998) demonstrate however that the instruments used in the difference GMM estimator become less informative in two important cases. Firstly, as the autoregressive parameter increases towards unity; and second as the variance of the parameter effect increases relative to the variance of the transitory shocks. Arellano and Bover (1995) and Blundell and Bond (1998) propose that an additional mild stationarity restriction on the initial conditions process allows for the use of an extended system GMM estimator. The system GMM estimation is found to be more appropriate in the presence of variables that are close to a random walk (Bond, 2002; Roodman, 2009). The difference GMM estimation under these conditions is found to suffer from a weak instrument problem (Sarafidis et al., 2009). The difference GMM approach also magnifies gaps in unbalanced panels (Roodman, 2009), which is unbalanced in our case. In view of the above, we run both the two-step difference and system GMM estimations for our panel data set (see the tables in Appendix). We follow up with post estimation specification tests, namely the Sargan (1976) test for over-identifying restrictions and the Arellano and Bond (1991) test for no autocorrelation in the first-differenced errors.

Having pointed out the strengths and weaknesses of each model and having our tests not completely fulfilling either of the two model requirements, i.e. standard and system GMM, we base our decision on the following:

Our data is unbalanced, and as such will have magnified gaps in our panels if the difference GMM is selected,

As a rule of thumb, the system GMM is more appropriate if N is greater than T, which is the case in our data. On the other hand, the standard GMM is more appropriate if T is greater than N and the autoregressive parameter is low. In our case, T is not greater than N, but the autoregressive parameter is lower than the required 0.8 by Roodman (2009) (ours is about 0.3),

The estimated coefficient of the lagged dependent variable for the two-step system estimator increases significantly on average relative to the two-step difference estimator (it increases from 0.04 to 0.29), which is a lot more than the required 50% by Windmeijer (2005) in order to correct the downward bias of standard errors,

Based on the above, we choose the system GMM as more appropriate for our type of data and variables. However, we should bear in mind that high persistence in the series is a necessary condition for

expectations of asymptotic efficiency gains using the system GMM (Blundell and Bond,1998; Roodman, 2009), which is not met in our case.

We apply the Windmeijer (2005) finite-sample correction to the reported standard errors in the two-step estimation, without which estimations of the standard errors tend to be severely downward biased. Specifying Windmeijer corrected (WC-robust) standard errors also produces variance–covariance estimates that are robust to heteroskedasticity. With regards to the instrument proliferation problem, we do not follow the Roodman(2009) rule of thumb that suggests collapsing the instrument matrix. It is however relevant to note given the time series dimension in this study, the number of instruments does not outnumber the individual units (number of groups). This suggests potential problems of instrument proliferation are not obvious. Issues associated with instrument proliferation are particularly suspected in system GMM estimations as a large instrument collection over fits endogenous variables even as it weakens the Hansen test of the instruments’ joint validity (Roodman, 2009).

EMPIRICAL FINDINGS

We begin our analysis by determining the variables that are relevant in explaining the variation in RSF for our sample. The basic results from the two-step system GMM WC robust regression are reported in Table 4, while the other reports are available in Appendix.

Table 4: Two-step system GMM WC-Robust

RSF	Coef.	WC-Robust Std. Err.	z	P>z	[95% Conf. Interval]	
RSF L1.	0.2956922	0.0287696	10.28	0.000	0.2393049	0.3520796
RSD	0.397399	0.0230105	17.27	0.000	0.3522993	0.4424987
BS	6.40E+08	2.05E+08	3.12	0.002	2.37E+08	1.04E+09
GDPGR	-7.92E+07	2.08E+07	-3.81	0.000	-1.20E+08	-3.84E+07
INTR	-4649784	6263446	-0.74	0.458	-1.69E+07	7626345
INFL	-5.48E+07	1.13E+07	-4.86	0.000	-7.69E+07	-3.27E+07
_cons	-1.29E+10	4.54E+09	-2.85	0.004	-2.18E+10	-4.04E+09
No. of observations	192					
No. of groups	58					
No. of instruments	20					

AR(1) Prob > z 0.5298

AR(2) Prob > z 0.9572

The very high significance of RSD in explaining the variation in RSF is expected. Islamic banks do not really have many choices when it comes to placement of RSD, and especially so if we take into account that a portion of RSD, i.e. restricted profit sharing investment deposits, goes into specifically determined activities or projects. Islamic capital and money markets in general are undeveloped, even more when it comes to capital and money market instruments based on profit and loss sharing basis. Thus, this is expected to be their main channel and as such is in accordance with our expectations. However, the pass-through or the amount of each RSD unit that is channeled towards RSF is quite low. This means that, on average, out of each dollar deposited into RSD, only about 0.4 or 40% goes into RSF. This ratio is considered very low if we take into account that profit and loss sharing type financings generally offer higher returns. The truth is, they also come with a higher risk. However, knowing the regulatory restrictions or burdens on RSF, it is not surprising that this pass-through of the RSD is very low. In calculation of the capital adequacy, the RSF is considered as very risky and as such the risk weight assigned can go up to 400%. If we add to this the fact that risk sharing financing by its nature requires entrepreneurial skills, which Islamic banks still do not have, rather than mere intermediation, we get a clearer picture why this pass-through is very low.

The result on bank size implies significant positive relationship with risk sharing financing. In other words, bigger banks practice more RSF than the small banks. This relationship can be explained intuitively that bigger banks can afford more risky assets in their portfolio and may also be better equipped for such endeavors.

A very interesting result is that reported on interest rate. All the papers that we have reviewed found that there is a significant relationship, which is negative with the conventional bank lending and mixed when it comes to Islamic bank financing. Interestingly, our test shows that there is no relationship between RSF and interest rate even at the 10% significance level. Looking at this from a traditional banking point of view, it is quite surprising that any banking product would be free from the interest rate influence. However, knowing that the nature of risk sharing financing is fundamentally equity-like, whereby the returns are determined ex-post, this result is not surprising at all.

Another interesting and unexpected result is the one on GDP. It implies very significant negative correlation of GDP growth with risk sharing financing. In other words, risk sharing financing increases when the GDP growth decreases, and vice versa. Normally, we would expect RSF to grow when the economy grows, and vice versa. All the previous studies that we have reviewed show positive relationship between GDP/GDP growth and bank financing or lending (Ibrahim 2006; Pruteanu-Podpiera 2007; Du 2011; Constant and Ngomsa 2012; Karim et.al. 2014). However, we have to look at the nature of risk sharing financing and its stage of development. RSF assumes that the financier bears the entire risk of mundane loss in case of Mudarabah financing and proportional risk of loss in case of Musharakah financing. Knowing this, the above result may imply that entrepreneurs would not want to take risk sharing financing when they expect high returns from their projects for which they need financing, because they do not want to share the 'high' returns. Similarly, when they are not sure of their expected

returns, they prefer to take risk sharing financing because they will not bear the loss (in case of Mudarabah), or they will bear it only partially (in case of Musharakah).

Another significant variable obtained by the tests is inflation, which implies negative relationship with risk sharing financing. The results confirm the previous studies done by Pruteanu-Podpiera (2007) and Karim et.al. (2014) who also found that the relationship between conventional loans and inflation is negative.

CONCLUSION

In Islamic economic and finance theories, risk sharing financing is a unique feature of Islamic financing and is the objective of Islamic finance (Mirakhor, 2009). By its nature, this type of financing should have nothing to do with interest. Some studies have been done on determinants of Islamic banks' financings in total and have found positive or negative relationship with the interest rate (Kader and Leong, 2009; Ergeca and Arslan, 2011; Adebola et.al., 2011). However, all the eggs were put in one basket and studied together as if all the eggs were the same. Islamic banking currently is predominantly involved in debt-like financing, whereby the profit rates are benchmarked to the interest rates. However, Islamic banks have risk sharing products that are not debt-like, but which so far, to the best of our knowledge, have not been studied.

This study uses previously established theories and models to investigate the relationship of risk sharing financing with other bank-specific and country-specific variables. We found that risk sharing financing of Islamic banks is interest-free. If Islamic banking wants to gain its 'independence' from the conventional banking, then this is the right way or one of the possible ways.

The study has also found that currently risk sharing financing faces the challenge of moral hazard and agency cost as is implied by the negative relationship between RSF and GDP growth. The agents or entrepreneurs take advantage of RSF when facing tough times, and ignore it when facing good times. Similarly, we found that the bank size matters in risk sharing financing and that inflation is not a friend of risk sharing financing.

We also found that risk sharing financing used by Islamic banks has not been up to the expectations. Our study has found that there exists a strong relationship between RSF and RSD, but also unexpectedly low channeling of RSD to RSF. Some of the possible reasons are:(i) inadequate regulatory framework which constrains RSF through imposition of high risk weight in capital adequacy computation, (ii) intermediary nature of Islamic banks which is not conducive for RSF. Therefore, in order

Overall, the findings of this study oppose earlier findings (Adebola et.al., 2011, Abdul Kader & Leong, 2009, Chong and Liu 2009) that Islamic banks financing is complementary, and not a substitute to conventional banks' lending. Risk sharing financing of Islamic banks has been proven to be unique and interest free. Hence, for the development of interest free Islamic banking and Islamic finance it is recommended that Islamic banks should accommodate more risk sharing products. Regulators may also see that high risk weight assigned for risk sharing financing is burdensome for Islamic banks and impedes their aspirations to become interest free.

References

- Adebola, Solarin Sakiru; Yusoff, Wan Sulaiman Wan and Dahalan, Jauhari (2011). The Impact of Macroeconomic Variables on Islamic Banks Financing In Malaysia. *Research Journal of Finance and Accounting*. ISSN 2222-1697 (Paper) ISSN 2222-2847. Vol 2, No 4.
- Anderson, T.W., Hsiao, C., (1981). Estimation of dynamic models with error components. *J. Am. Stat. Assoc.* 76, 598–606.
- Archer, S., Abdel Karim, R.A., Sundararajan, V., (2010). Supervisory, regulatory, and capital adequacy implications of profit-sharing investment accounts in Islamic finance. *J. Islamic Account. Bus. Res.* 1 (1), 10–31.
- Arellano, M., Bond, S., (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Rev. Econ. Stud.* 58 (2), 277–297
- Arellano, M., Bover, O., (1995). Another look at the instrumental variable estimation of error-components models. *J. Econom.* 68, 29–51.
- Blundell, R., Bond, S., (1998). Initial conditions and moment restrictions in dynamic panel data models. *J. Econom.* 87, 115–143.
- Bond, S.R., (2002). *Dynamic panel data models: a guide to micro data methods and practice*. Portuguese Econ. J. 1, 141–162
- Chernykh, Lucy and Theodossiou, Alexandra K. (2011). Determinants of Bank Long-term Lending Behavior: Evidence from Russia. *Multinational Finance Journal*, 2011, vol. 15, no. 3/4, 193–216.
- Chong, Beng Soon and Liu, Ming-Hua (2009). Islamic banking: Interest-free or interest-based? *Pacific-Basin Finance Journal* 17, 125–144.
- Farook, S., Hassan, M.K., Clinch, G., (2012). Profit distribution by Islamic banks: an empirical investigation. *Quart. Rev. Econ. Finance* 52, 333–347.
- Hossain Md. Belal, Bhuiyan, Md. Anowar Hossain and Rahman, Habibur (2013). Deposit Behavior and Its Impact on Loan: A Case Study on Rajshahi Krishi Unnayan Bank (RAKUB), Bangladesh. *Journal of Economic Cooperation and Development*, 34, 4, 47-60.
- Ibrahim, Mansor H. (2006). Stock Prices and Bank Loan Dynamics in a Developing Country: The Case of Malaysia. *Journal of Applied Economics*. Vol IX, No. 1, 71-89.
- Financing. *International Review of Business Research Papers*, Vol. 5, No. 3, 189-201.
- Karim, Mastura Abdul; Hassan, M. Kabir; Hassan, Taufiq; Mohamad, Shamsheer (2014). Capital adequacy and lending and deposit behaviors of conventional and Islamic banks. *Pacific-Basin Finance Journal* 28, 58–75.
- Pruteanu-Podpiera, Anca Maria (2007). The role of banks in the Czech monetary policy transmission mechanism. *Economics of Transition*, Volume 15, Issue 2, 393–428.

Rama, Ali and Kassim, Salina H. (2013). Analyzing Determinants of Assets And Liabilities In Islamic Banks: Evidence From Indonesia. *Review of Islamic Economics, Finance, and Banking*, Vol.1, No.1, April 2013, 34-53.

Roodman, D., (2009). A note on the theme of too many instruments. *Oxford Bull. Econom. Stat.* 71 (1), 135–158.

Rosly, S., (1999). Al-bay' bithaman ajil financing: Impacts of Islamic banking performance. *Thunderbird Int. Bus. Rev.* 41, 461–480.

Sarafidis, V., Yamagata, T., Robertson, D., (2009). A test of cross section dependence for a linear dynamic panel model with regressors. *J. Econom.* 148, 149–161.

Windmeijer, F., (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *J. Econom.* 126, 25–51.