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Islamic Price Index Offer and Effects of Consumer Price Index on Islamic Banks*

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Abstract

There are arguments on presenting positive revenues at a rate of inflation in lending transactions in Islamic economics based on inflation. Many scholars agree that offering extra payment at a rate of inflation is applicable according to their Islamic economics and interest-free practices. However, these scholars do not reference which inflation index to take account. Moreover, there is no consensus on the units that will be taken into consideration in general inflation indices. Although the viewpoint claiming that “offering positive revenues at a rate of inflation is not unfavorable in the Islamic economics” is open to debates; if a new Consumer Price Index (CPI) that is specific to this system is not presented, the system will face problematic situations. . The findings that were obtained in Turkey may be generalized for the other regions of the world. This research offers a new and unique Consumer Price Index for Islamic economics. Also with this research the effects of CPI on participation banks’ net profit share margin (NPSM) regressed with an econometric model. And the results show correlation between NPSM and CPI. CPI is a significant determinant and effects net profit share margin of participation banks.

Key Words: *Islamic finance, Islamic banking, Islamic Consumer Price Index, Inflation, Performance*

JEL Classification: *G20, G21, G29*

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1. Introduction

Inflation is the name given to the continuous increases in the general levels of the prices. It has a determining role among the economy and economic indicators. Although there are various viewpoints claiming that it also has negative sides (Kara, Orak, 2008; 11), a mild inflation level is the basic need of economies, and is influential on investments and consumption appetite. Mild increases in the general level of prices are generally encouraging on making investments (Dinler, 2011; 230).

In the long run, the increase in investment costs and the expectations on the increase of the value of the product, which is the outcome of the investment, trigger investments, again in the long run. The same situation supports the demand by raising the need of not delaying the consumption demands. With the supported demands, an additional motivation is ensured for investments. In this way, a mild inflation makes it possible for a sustainable growth by activating the investment and consumption mechanisms, which are the basic need of the economy.

Inflation is also the basic determinant of the borrowing in modern economic system. The cost of the relation between the borrowers and lenders is determined by the inflation rate. The most common field where the loaning proceedings that are also known as lending proceeding are used is the banking sector. The reference in determining the interest rates by the banking sector is the inflation rates. In this context, it is the aim to satisfy those who receive loans by presenting high costs and those who receive loans by presenting low revenues. Lending transaction is considered as being legal in Islamic economic system, which is also the case in all financial systems. However, the issue of giving and receiving interest, which is considered as a right in the modern financial system, is not considered to be legal in Islamic system.

Recently, there are some viewpoints in the Islamic economic system claiming that the additions made to the lending transactions to prevent the creditors lose their rights may be considered as legal (Karaman, Question 134). In this context, the creditor may preserve the value of his/her assets in the face of inflation, and his/her assets will not be eroded because of the time that passes between the lending and repayment. Some scholars even think that the part of the interest covering the inflation cannot be called as interest in any way (Uludağ, 1998; 289).

However, the notion claiming that the inflation that is considered as a source of additional revenue is legal has not been stated by any of the abovementioned scholars.

Inflation has several types, and different values are calculated for different sectors. For example, although the generally accepted inflation rate is the Consumer Price Index (CPI), the Producer Price Index (PPI) is calculated for manufacturers. In addition to

these, different sector may calculate different inflation rates or the rates may have different variations (Berument, 2002; 2).

The index that is associated in the minds of many people when inflation is mentioned is the Consumer Price Index (CPI), which is generally accepted (TUIK, 2008; 2) and which covers the changes in the prices of many products. Some of the products that are not considered as being legal in Islamic Law are also included in the CPI.

This situation requires that some of these products are excluded from the calculations in case the inflation rate that is accepted by the scholars that consider the notion of “revenue as much as the inflation rate” as the basis or when the CPI is taken as the basis.

Since the generally accepted reference inflation rate is the CPI in economy, the evaluations and recommendations hereafter will be made over the general CPI.

Although the debate is important for interest-free banking, it needs to be considered as a separate debate issue because private current accounts are accepted as consignment or loan contract. According to AAOIFI, which is one of the basic institutions that develop the standards on interest-free banking, “*it is not legal for interest-free financing institutions to associate the cash debt amount to price indices during loan proceedings*” (2012; 550). According to Bayındır, the debts are paid with its similar kind, i.e. equal assets of the same value, in environments where there is inflation; however, interest-free banking proceedings are exempt from this (2007; 330). Because of these viewpoints, the interest-free banking sector has been excluded from the scope of the debates. However in last section the effects of CPI on participation banks argued with an econometric model since inflation is a macro effect that none of the actors in the economy can avoid.

2. Inflation and Inflation Types

It is a general rule that prices are determined in market conditions in liberal economies. The prices in a market are determined according to supply and demand rates. Increases and decreases in the supply or demand influence the prices and thus lead to establish a balance in the market. The general price levels are regularly increasing in general economic system except for very few countries. The regular and mild increases in general price levels may stem from the increases in the demand, and the bottlenecks in the supply chains, which are basic sources (Dinler, 2011; 230), or may stem from uncontrolled monetary policies (Kesbiç et al., 2005; 82).

Inflation can occur due to supply shocks. The emergence of inflation due to supply shock is the result of the left-wards inclination of the *supply curve*. This inclination of the supply curve

means a bottleneck in the supply. When there is a bottleneck in the supply, no changes occur in the demands in an economy whose current supply amount is in a balanced position; however, this situation causes that less products are sold with higher prices.

This situation means the increase of the general price levels. One of the basic reasons of the shocks in supply is the increase in input costs. Higher input costs mean expensive product outcome. Right at this point, the *Cost Inflation* appears. This type of inflation is calculated with PPI. Once the cost Inflation-Cost Inflation appears, the demand curve moves towards the right of its prior balanced level. The increases in the demand due to the expectations that the prices will increase are influential in this point. The right-wards movement of the demand curve gives rise to a situation in which a new balance appears over a higher price. This situation, which is called as the Demand Shock, consumes the stocks, and feeds a new supply shock. In this way, a cycle is established. These two factors trigger each other in a continuous manner, and turn into a continuous increase in the general price levels (Please refer to: Dinler, *İktisat*, 2011, Ünsal, *İktisada Giriş*, 2011, Ünsal, *Makro İktisat*, 2011).

TUIK Inflation has been defined as the continuous loss in the value of the currency due to the increases in the general price levels in an efficient manner, and as a result, the loss of the purchase power of the consumers. (TUIK, 2008; 1)

This definition explains the inflation that is described with supply and demand dynamics. It has been pointed out in the definition that the currency loses value. Because, another influence that gives rise to inflation occurs with the increases in the money supply. We can explain this with an example. Let there be a king that holds the authority of print money in an economy. Let us assume that the king has 200 golden money each of which is worth 4 grams of gold. Let the only sold product be a bag of flour in this economy. Let us again assume that the value of a bag of flour is 1 gold.

Consider that the King is preparing for a war, and has to bear certain expenses. The King must find gold sources in order to increase the money supply in the economy. Or, he may *melt* all the money, i.e. the 200 golden coins, which are constantly circulated, in the purchase-sell-tax chain between the producer-consumer-state in the economy. He may also change the composition of the golden money and re-print money that has the same nominal value each of which having 2 grams of gold. In such a situation, the money supply in the market increases to 400 golden coins from 200.

In this situation, it seems that the King has obtained revenue of 200 golden coins. This type of revenue is called as *seniorage* (Levent, 2006; 3).

In the economy, on the other hand, the producers have to sell the bag of flour, which they sold previously for 1 golden coin with the value of 4 grams of gold, for 2 golden coins with 2-gram value. In this stage, an inflation of 100% emerges. In other words, the revenue obtained by the King at an amount of 200 golden coins is in fact the extra costs that are the burden on the consumers as inflation. The same thing happens in today's world. The Central Banks print money in return for their liabilities that are included in liabilities of the balance sheet. Their increasing the monetary supply even if their liabilities do not increase, results in the decrease of the value of the currency. This gives the result in which the producer sells the same product with the same amount of money with higher nominal value just like in the example. Inflation occurs right at this point.

The definition of TUIK includes all of the inflation scenarios. The three inflation effects can be examined over the cost inflation and the changes in the prices of the consumed products. As it may be understood in the scenarios, making calculations over the changes in the prices of the consumer goods may be more consistent.

Two basic indicators are calculated for inflation, which is defined as the increases in the general price levels, and they are CPI and PPI. It is possible to conclude that the relation between CPI and PPI affect each other (Saraç, Karagöz, 2010; 225), because, the Cost Inflation is reflected in the consumer goods in the end. This situation shows that PPI is a function of CPI.

However, there may not be always a strong correlation between PPI and CPI. When inflation is mentioned, the first thing one recalls is CPI. The agreements in economy are generally made over CPI.

2.1. Consumer Price Index (CPI)

CPI is considered as the key indicator for inflation by Turkish Statistical Institution (TUIK), which is the authorized institution to calculate and release CPI data. CPI is an index that calculates the change of the prices of a good or service within a certain reference period and reflects the average consumption patterns of individuals (TUIKa). When TUIK is calculating the index, it considers the changes in the price, quality and amount of the goods. In this context, CPI is a strong index.

CPI measures the changes in the prices of the goods and services intended for the use by household in time. The basic purpose in calculating CPI is calculating the inflation rate by measuring the changes in the process of the consumer goods and services in the market. For this purpose, all the final monetary expenses made by the household, foreign visitors and corporate population in domestic environments are considered (TUIKb).

The aim of the Consumer Price Index is to measure the changes in the general price levels of the goods and services that are purchased by household in order to cover their needs. However, since it is not possible to monitor the prices of all of the goods and services in the market are impossible, the services and goods that have the biggest share in consumption expenses of the household are taken into consideration. The consumption expenses are classified according to their purposes (for example, food expenses, clothing expenses, health expenses, transport expenses, etc.), and it is ensured that none of the goods and service groups are excluded from the evaluations. Then, the goods and services that represent each group are put in order from the biggest to the smallest, and the goods and services that have higher values than a certain value (for example 1/1000) are included in the index. (TUIK, 2008; 3-4)

The price scope of the index is determined as the purchase prices. The prices are determined as the cash payments in which the taxes are included, the pricing made over installments or the prices that are based on mutual agreements are not taken into consideration.

In this scope, as of 2008, TUIK formed a “basket” with 454 goods (TUIK, 208; 56). Although the number of the goods changes in terms of items, the groups of the goods that are the bases of calculation of the index are as follows;

- Food and soft drinks,
- Alcoholic beverages and tobacco,
- Clothing and shoes,
- Housing,
- Houseware,
- Health,
- Transport,
- Communications,
- Entertainment and Culture,
- Education,

- Restaurants and Hotels,
- Various Goods and Services.

TUIK calculates the general index and eight other indicators with specific coverage over these product groups. The indicators with specific coverage are also known as inflation indicators, and are the CPI types that are calculated by excluding several groups from the *basket*. The power of these indicators in estimating the future is high. The CPI indicators with specific coverage are helpful in calculating the inflation inclination and forming monetary policies.

The CPI indicators with specific coverage are as follows;

- (A) Except for Seasonal Products,
- (B) Except for Non-Processed Food Products,
- (C) Except for Energy,
- (D) Except for non-processed food products and energy,
- (E) Except for Energy, alcoholic beverages and tobacco products,
- (F) Except for Energy, alcoholic beverages, tobacco products, and the other products whose prices are managed/directed and except for indirect taxes,
- (G) Except for Energy, alcoholic beverages, tobacco products, and the other products whose prices are managed/directed, and except for indirect taxes and non-processed food products,
- (H) Except for non-processed food products, energy, alcoholic beverages, tobacco products and except for gold.

The sample contents of the product and service groups that are excluded in the definitions are as follows.

- Energy: Water, electricity, tube, heating oil, coal, wood, gasoline, LPG, diesel, engine oil
- Alcoholic beverages and tobacco products: Raki, whisky, beer, wine, tobacco and cigarette
- Non-processed food products: Meat, specialty meals, fish, milk, egg, fresh fruit and vegetables

- Managed/directed prices: Municipality bread, wastes, various health services in state hospitals, highway fees, various public transportation fees, various communication services, chance games, university fees, notary fees (TUIK, 2008; 12).

There are some products that are not accepted as being legal in Islam among the general index product groups. These cover the alcoholic beverages, tobacco main group products and chance games. Although these products are excluded in one part of the CPI indicators with specific coverage, some legal products like energy and public transportation fees that influence inflation are excluded from these calculations. Although there is the G Index, which includes all of these items, some of the legal products are excluded in this group.

In lending transaction, an important group that consider the additional revenues as being legal up to the inflation rate has not stated which inflation calculation method they have taken into consideration.

Generally, when inflation is mentioned, CPI Index is meant. However, it is known that the general index includes some products that are considered as not being legal in Islam and many of these products come to the forefront as the basic determiners on inflation in many periods.

3. The Islamic Legality of the Additional Revenues at a rate of Inflation in Lending Proceedings

Interest has been rejected with the greatest objection in Islam and has been damned (Hossain, 2009; 241). In Islam, income may be ensured through effort, risk-bearing, or by claiming a right (Belalalh, Ellouz, 2004; 570). The income that comes with interest is the subject matter of rights. The Islamic legal dimension of adding value at a rate of inflation in lending transactions is being debated in order to comprehend this important matter over the discussions of what the right is and where it is limited.

Inflation may be concisely defined as the loss in the real purchase power. Inflation erodes the monetary assets without the fault of the creditor in a lending transaction (Huq, 1987; 45). It is known that these kinds of effects of erosion are observed throughout history. In Islamic sources, the changes in the purchase power of the money are expressed with the terms *rahs* (fall) and *gala* (escalation).

The upwards and downwards changes in the value of the money are not considered in paying the debts, which is a topic considered and commented by Ebu Hanife, İmam Şafi, Ahmet bin

Hanbel and İmam Malik after the issue of additional revenues at a rate of inflation due to the erosion was considered (Döndüren, 1987; 67). In the same work of Döndüren, it was stated that Ebu Yusuf commented that the inflation accounting is legal for the money in the form of representative money. Today, the debates on the purchase power of money are performed only by considering the inflation rate. It is understood that the scholars have made some determinations for the devaluation issue. The issue of interest is discussed under the umbrella terms of “*riba*”. The terms “*riba*” is handled as interest in Turkish language usage (Yavuz, 1991; 230).

The basic principle of paying the debts is considered as equality (Bayındır, 2007; 328). Some of the scholars today stated their viewpoints which claimed that additional revenues at a rate of inflation are not considered as interest in paying debts. Zineldin declared his viewpoint by claiming that *riba* meant unjust capital increase, and nominal interest should be allowed to protect the purchase power of money in the face of inflation (1990, 50). There are some criticisms on this viewpoint claiming that interest should not be separated into two as nominal - real interest (Farooq, 2009;12). According to Bayındır, the debt is paid with an equal asset, and the fungible equal amount of the money is given value over the purchase power (2007; 330).

Uludağ has the viewpoint claiming that interest at a rate of inflation is a right (1998; 289). Uludağ also claims that unjust interest is accepted as being haram i.e. prohibited in Islamic Law (1988; 41). With this definition, he assessed pawn breaking and similar activities in the scope of interest. He considers the amount of the interest in his debates. The situation of a pawnbroker that demands an interest at a lower level from an institution that provides legal interest has not been assessed in his work. There is the viewpoint in the criticisms claiming that the inflation agreement and interest agreement should be separated from each other (Yavuz, 1991; 230). These scholars have not stated any viewpoints on incomplete repayment in deflation situations, which emerges with decreasing purchase power.

According to Gafoor, additional revenues at a rate of inflation are normal in lending transactions, and the term *riba* has different meanings; therefore, it is not proper for Islamic Law with only one single meaning (2005; 13). According to Gafoor, the interest additions, which mean *the cost of the loan*, are not *riba* (2005; 15). Özdemir considers that inflation accounting is not considered as interest in lending transactions (2012; 19). According to Karaman, covering the loss in the value that incur in lending transactions comply with the Islamic Ethics (Karaman, 2003; 289).

It is defended with various definitions that any types of interest are forbidden, and debates are still ongoing about what, in reality, *riba* is. No matter legal or illegal, real or nominal, *fadl* or *nasiah*, rejecting any types of interest is generally accepted (Sharawy, 2000; 163). According to Amin, the term *riba* covers all types of interest (1986; 25).

Unlike the viewpoints of the majority of prior Islamic scholars, today's scholars claim that adding assets at a rate of inflation in lending transactions is legal. Although the state of deflation was dealt with in the past by Islamic scholars, today's scholars have not stated their viewpoints on incomplete repayment in devaluation.

4. Recommendations on Reference Inflation Rate

The debates on the issue of which inflation rate will be taken as the basis in determining the interest difference are few in number. Karaman has recommended that the indices calculated by the Government might be taken as the bases or that the average of necessity goods may be taken or the changes in the prices of industrial goods might be considered in lending transactions in commercial lending transactions (Karaman, 2003; 289).

It is important that Karaman considered the index as a reference in his viewpoints. However, we have shown that present indices also include some goods that are not considered as legal in Islam.

In debates about the inflation being legal, there are some objections claiming that inflation consists of an *imaginary goods basket* (Çetiner, 2011). The debates occur around the legality of the issue in a manner independent from the issue of which goods are included in the basket. Although it is not stated clearly, the inflation rate that is taken as basis in these debates is CPI. Islamic viewpoints that aim to prevent losses that may stem from loss of the purchase power use the basic argument of “*the money that can buy one kilo of rice when lent must purchase one kilo of rice when paid back*” (Karaman, 2008). Although the truth of this approach is open for debates among scholars, it is easily understood that it refers to CPI general index, which is generally accepted, because it has not given any clue about which reference point it takes into consideration.

An opposite claim may be considered with the inclusion of the goods in CPI general index as “*the money that can buy a bottle of wine when lent must purchase a bottle of wine when paid back*”, which is disturbing. It might be commented as CPI general index must in no way be accepted because it is open to make assessments with alcoholic beverages, cigarette and chance

games. Of course, the scholars cannot be in such an intention.

However, in order to prevent this situation, an indicator with specific coverage must be selected. Or forming another indicator with specific coverage will be more beneficial. Current indicators with specific coverage exclude some goods that may be consumed in daily life by any kind of people and that are influential on the increase in the prices together with some other products that are considered as illegal in Islam.

For this reason, a new CPI indicator with specific coverage may be more accurate. According to AAOIFI, *“It is free to use indices in order to see the change rates in the market”* (2012; 548); however, it is the general rule to *“consider the Islamic rules as well as technical rules when determining the contents and usage of the index”* (2012; 550).

Using CPI with specific coverage in inflation calculations is an acceptable method used in our country and in many other economies in the world. In this context, different design of the *basket of goods* in CPI calculations will be reflected as specificity not as a problem.

If in returning the loans at a rate of inflation, making additions will be considered as legal, an indicator over the CPI basket must be designed and it must be declared that this indicator can be taken as reference. It is observed that the goods that are not considered as legal in Islam are included in general index calculated in many inflation periods.

Although PPI may be taken as reference for commercial debts, a new CPI indicator that will be taken as the reference in Islamic economy must be prepared.

4.1. CPI Indicator with a Specific Coverage that Excludes Alcoholic Beverages, Tobacco Products, Chance Games

There are Verses of the Quran declaring that alcoholic beverages, tobacco products and chance games are not allowed in Islam. The Verses of the Quran declaring that alcoholic beverages and chance games are forbidden clearly in the Quran are as follows;

They ask you about wine and gambling. Say “There is a big sin, and there are some benefits for humans in both of them. However, the sin of both is bigger than their benefits.” Again, they ask what they will spend for the sake of good. Say “More than you need.” Allah explains the verses so that you may think. (Bakara, 2/219).

Oh you who believe! Wine, gambling, standing pillars (idols) fortune-telling and chance games

are the filth of Satan; stay away from these so that you may be saved. Satan wants to place hostility and grudge among you, and prevent you from mentioning Allah and performing the Prayer through alcoholic beverages and gambling. You give (these) up from now on, will you? (Maide, 5/90,91).

Chance games are considered in the scope of gambling. Gambling comes to the forefront in Islamic Economics Theory as an area that has to be avoided (Sarker, 1999; 14).

The issue of alcoholic beverages and chance games being forbidden, and the ends of the people who violate these bans have been mentioned in the Hadiths of the Prophet (PBUH). The provisions on cigarette have been developed with common reasoning in Islam (Icma).

In this context, it is abominable to consume the products that are harmful for human health in Islam. Consuming a product that is harmful for human health is not considered as proper in Islamic Law. According to the Fatwa of Religious Affairs Management, cigarette is abominable or is close to strictly forbidden (haram) (Religious Affairs Management, 2011, 68).

Because the above-mentioned products are not considered as being legal, the indicator that will be taken as the basis in lending transactions in Islamic economy must be calculated by excluding alcoholic beverages, tobacco products and chance games. The changes in the prices of the products must not be problematic in terms of Islamic Laws. This new indicator may be named by adding the term “*alcoholic beverages, tobacco products and chance games are excluded*”.

5. Method

The arguments on compensation of inflation in lending transactions do not point an opportunity for Islamic banks as mentioned before. However, how inflation affects Islamic banks is a common question asked for. An econometric model can answer this question to understand the effect.

There are many empirical researches based on banking and Islamic banking. Some of them are shown below Table 1. The researches mostly use regression to put which variables have effect on dependent variables. Net interest margin (NIM) is used as dependent variable at Beck et al.’s research. The equivalent of NIM for Islamic banks is net profit share margin (NPSM). In this research NPSM is used as dependent variable. The independent variables are mainly common performance ratios of banks. GDP is also added as independent variable. CPI as the main issue of this research is also added as independent variable and general equity of the model is developed.

In the context of model both figures from balance sheet and income statements and macro variables are included.

General equality of this research is shown below;

$$\text{NPSM} = \alpha + \beta_1 \text{TCTD} + \beta_2 \text{NPL} + \beta_3 \text{GDP} + \beta_4 \text{CPI} + \beta_5 \text{CoR} + \beta_6 \text{TCTA} + \beta_7 \text{TDTA} + \beta_8 \text{LITA} + \mu_t$$

The general equality of Tunay's research on banks is followed. (2009; 42) NPSM ratio is dependent variable which is also used as dependent variable at both Beck et. al. and Chantapong's research on bank efficiency shown at the summary literature table. For NPSM dependent variable, the model is regressed and the results are reported. Symbols in the model represent;

α constant for the model

β vector for the coefficients

μ vector for the error vector.

Table 1. Summary Literature

No	Writer	Title	Method	Time/Place	Results	Year
1	Bashir, Abdel Hameed	Assessing the Performance of Islamic Banks: Some Evidence from the Middle East	Regression	Middle East, 1993-1998	*High leverage and higher rates for credits brings higher profitability. *Foreign banks are more profitable than domestic banks.	2001
2	Hassan, K.,M., Bashir, A.,H.	Determinants of Islamic Banking Profitability	Regression	21 Countries, 1994-2001	*Profitability performance of Islamic banks is positive correlated with equities on the other hand correlation with credit ratios are negative. *Consumers attitude, maturity and non-profit share income are indicators of profitability. *Tax are efficient, provisions are inefficient on profitability of Islamic banks. *Economic conjuncture effects higher profitability.	2003
3	Yudistira, Donsyah	Efficiency in Islamic Banking: an Empirical Analysis of Eighteen Banks	Data Envelopment Analysis	18 Banks, 1997-2000	*Islamic banks are less efficient compare to conventional banks as competitors. *Islamic banks suffered in crisis but performed very well soon after the crisis. *Diseconomies of scale is true for Islamic banks. *Mergers should be supported.	2004

No	Writer	Title	Method	Time/Place	Results	Year
4	Haron, Sudin	Determinants of Islamic Bank Profitability	Panel Data Regression	Islamic Banks	*Balance sheet factors is determining on profitability. *Market and scale value are effective on profitability. *Current accounts, equity and profit share ratio are effective on profitability.	2004
5	Chantapong, Saovanee	Comparative Study of Domestic and Foreign Bank Performance in Thailand:The Regression Analysis	Panel Data Regression	Thailand, 1995-2000	*Foreign banks are performing better compared to average domestic banks. *Both foreign and domestic banks' performance increased soon after the crisis.	2005
6	Pratomo, W. A., & Ismail, A. G.	Islamic bank performance and capital structure.	Panel Data Regression	Malaysia, 1997-2004	The higher leverage or a lower equity capital ratio is associated with higher profit efficiency.	2007
7	Cihak, M., Hesse,	Islamic Banks and Financial Stability: An Empirical Analysis	Regression	20 Countries, 1993-2004	*Small scale Islamic banks are financially stronger than small scale conventional banks. *Large scale conventional banks are stronger than large scale Islamic banks. *Small scale Islamic banks are financially stronger than large scale Islamic banks. *Islamic banks market share is inefficient on conventional banks financial sustainability.	2008

No	Writer	Title	Method	Time/Place	Results	Year
8	Al-Tamimi, H., & Hussein, A.	Factors influencing performance of the UAE Islamic and conventional national banks	Panel Data Regression	UAE, 1996-2008	*Liquidity and concentration were the most significant determinants of conventional national banks' performance. *Cost and number of branches were the most significant determinants of Islamic banks' performance.	2010
9	Beck, T., Demirgüç-Kunt, Merrouche	Islamic vs. Conventional Banking Business Model, Efficiency and Stability	Panel Data Regression	141 Countries, 1995-2007	*There is very little significant differences between Islamic banking and conventional banking in business orientation, efficiency, asset quality, stability *Islamic banks are more cost-efficient. *Conventional banks are more cost-efficient but less stable in Islamic banking dominated markets. *Strong equity structure of Islamic banks support higher liquidity and brings better performance in crisis period.	2013
10	Baele, L., Farooq, M., & Ongena, S.,	Of Religion And Redemption: Evidence From Default On Islamic Loans	Duration	Pakistan, 2006-2008	*The default rate on Islamic loans is less than half the default rate on conventional loans *Islamic loans are less likely to default during Ramadan *Religion--either through individual piousness or network effects--may play a role in determining loan default	2014

6. Findings

In this study, monthly balance sheet and income statement data were received from Banking Supervision and Regulation Agency, Turkish Statistical Institute and Turkish Central Bank archives. 120 observation points cover January 2005 - December 2014 period.

Descriptive statistics, correlation matrixes, and regression results are driven. Descriptive statistics and the results of the correlation matrices are given below.

Table 2. Descriptive Statistics

	NPSM	TCTD	NPL	GDP	CPI	CoR	TCTA	TDTA	LITA
N of cases	120	120	120	120	120	120	120	120	120
Minimum	0.030	0.904	0.022	0.010	0.059	0.016	0.632	0.614	0.077
Maximum	0.072	1,120	0.068	0.033	0.105	0.049	0.821	0.856	0.172
Range	0.042	0.216	0.045	0.023	0.046	0.033	0.190	0.242	0.095
Median	0.045	1,023	0.031	0.019	0.084	0.023	0.725	0.755	0.127
Mean	0.046	1,016	0.034	0.020	0.083	0.025	0.726	0.740	0.124
Std. Error	0.001	0.005	0.001	0.001	0.001	0.001	0.004	0.006	0.002
Standard Dev	0.010	0.060	0.011	0.006	0.011	0.006	0.043	0.064	0.023
Variance	0.000	0.004	0.000	0.000	0.000	0.000	0.002	0.004	0.001
Skewness(G1)	0.112	-0.077	1,220	0.368	-0.158	1,699	0.020	-0.353	-0.014
SE Skewness	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221
Kurtosis(G2)	-1,030	-1,360	0.642	-1,041	-0.395	2,786	-0.189	-0.748	-0.683
SE Kurtosis	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438

Descriptive statistics for participation banks are given above in the Table 2. Standard deviations of ratios are less than 10%. Applied normality test for variables shows that variables are normally distributed except TCTD, TCTA, and TDTA ratios for participation banks.

Table 3. Pearson Correlation Matrix

Pearson correlation matrix									
	NPSM	TCTD	NPL	GDP	CPI	CoR	TCTA	TDTA	LITA
NPSM	1,000								
TCTD	-0.546	1,000							
NPL	0.631	-0.794	1,000						
GDP	-0.917	0.672	-0.681	1,000					
CPI	0.499	0.006	0.126	-0.330	1,000				
CoR	0.482	-0.329	0.632	-0.527	0.080	1,000			
TCTA	0.704	-0.190	0.288	-0.721	0.300	0.323	1,000		
TDTA	0.810	-0.754	0.700	-0.945	0.193	0.545	0.687	1,000	
LITA	0.086	-0.594	0.246	-0.250	-0.108	0.005	-0.225	0.330	1,000

Pearson correlation matrix show 49.9 positive correlation between NPSM and CPI while TCTA, TDTA ratios are highly positive correlated. GDP is highly negative correlated and also TCTA ratio is 54.6 negatively correlated with NPSM.

A two-step process was followed in estimating the multi-variable regression models. Firstly, the reference model that included all the variables was estimated, and then the variables that produced meaningless coefficient estimations were eliminated one-by-one, and the model that gave the most meaningful coefficient values was achieved. Since almost all of the models that were estimated gave extremely high r-square values, it is observed that the explanation power of them is high. High F values, and the F values at 1% significance level indicate that the general significance of the models is also high. The first delay of the dependent variable was used as the additional explanatory variables in order to consider the dynamic effects of the time on profitability performance in the models. For this reason, the issue of whether the successive autocorrelation is a problem or not was tested with Durbin-h Test instead of Durbin-Watson Test. Although the results of this test show that there is a successive regression problem in some models, this is not a problem in many other situations. However, it was also observed that the coefficient estimations of the models with or without successive regression problem were consistent at an important level. In this context, no drawbacks were considered in estimating the meaningful model coefficients. The model which had the most meaningful variables was used. The findings in Table 4 for Participation Banks reached the meaningful model with NPSM value, which was selected as performance criteria.

The results of regressions are shown below. According to the results NPL, CoR, and TCTA

ratios are not covered in the most meaningful model. Non-performing loans and provisions of non-performing loans as CoR ratio is excluded while total credits to total assets ratio as TCTA is also excluded that three of them is credit related ratios. Credit based ratios illustrates assets of bank balance sheet and income for NPSM. On the opposite side of banks balance sheets deposit ratios like TCTD, TDTA ratio has effect on dependent variables.

Table 4. Regression Results

Independent Variables	NPSM					
	Coefficient	t Test		Coefficient	t Test	
Constant	0.135	5.239	***	0.139	6.946	***
TCTD	-0.029	-1.948	*	-0.022	-2.537	***
NPL	0.013	0.214				
GDP	-1.684	-10.696	***	-1.751	-11.629	***
CPI	0.156	5.305	***	0.152	5.261	***
CoR	0.066	0.923	**			
TCTA	0.025	1.617				
TDTA	-0.073	-3.765	***	-0.056	-3.532	***
LITA	-0.041	-2.101	**	-0.060	-3.897	***
R Square	0.910			0.908		
Adj R Square	0.904			0.904		
F Test	141.055			224.670		
	[0.003]			[0.003]		
Durbin Watson Testi	1.494			1.455		
Standard Error	0.001			0.002		
Durbin-h Testi	2.773			2.987		
Gözlem Sayısı	120			120		

(***) %1, (**) %5, (*) %10 meaning for t tests

TCTA and TDTA ratios illustrates expense side of NPSM. That shows the effects on NPSM emerge from expenses. GDP is also included in the most meaningful model that shows macro indicators has affect on Islamic banks. Since the business model of Islamic banks depend on real economic activity towards production macro variables has strong effect.

In this context results show the CPI has effect on NPSM of Islamic banks in Turkey. The effects of CPI emerge from the credit side of the financing process of Islamic banks that proves strong effect on the end side of the process on profit share of deposits. Since the issue of compensation of inflation is beyond deposits of Islamic banks, inflation has certain effect on deposits via business model that start with credits and end with deposits.

7. Result

Inflation causes that the purchase power of money is eroded in time. For this reason, the issue of whether the money should be evaluated at a rate of purchase power in the payment of loans is one of the important debate issues in Islamic Economic System.

In debates, usually the inflation is considered; however, there are no evaluations on deflation. Some of the Islamic scholars think that repayment should be made in an amount considering the purchase power of money. They think that inflation indices may be taken as reference for the purchase power ratio of money. Although PPI indicator may be taken as reference for commercial lending transactions in Turkey, CPI indicators do not have the quality of being reference in individual lending transactions because they include some products that are not considered as legal in Islam or they exclude some non-legal products together with compulsory products.

Those who think that additions are legal in loan re-payments at or up to the rate of inflation must define which inflation rate they mean.

A reference rate in which alcoholic beverages, tobacco products and chance games are excluded may be recommended for those who would like to use this viewpoint.

It is necessary that Islamic scholars make a separate assessment for interest-free financing instructions because the interest-free banking special current accounts investors may have the urge for consignment or lending. These findings that were obtained in Turkey may be generalized for the other regions of the world.

The results of regression model show that inflation has effect on deposits of Islamic banks. The effect emerges from the business model that process begins with credit and ends with deposit. Since inflation has effect on credits rates of Islamic banks, it also has strong effect on profit rates of deposits of Islamic banks.

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