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Comparative Analysis of Profit Shares and Interest Rates

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Abstract

Within this study, profit shares and interest rates that were paid for various terms in Turkish Liras (TL), American Dollar (USD) and European Currency (Euro) by traditional and participation banks in Turkey, between January 2002 and May 2015 are comparatively analyzed. In order to find out differences between mentioned banks, t-test is used for empirical analyses.

As a result of these analyses it is found that profit share means in TL which traditional banks paid to their depositors are higher than the interest rates that are paid by participation banks. It is observed that so called difference is statistically significant. However; it is determined that participation banks distributes higher profit shares to the participation accounts in USD and Euro than deposit accounts' interest rates but no statistically significant difference was observed.

Keywords: *Interest Free Banking, Participation Banking, Profit Shares, Deposit Interest Rates, Behavioral Finance.*

Jel Classification : *G02, G14, G20, G21*

I. Introduction

Petro-dollars that accumulated in Gulf Countries which are rich in petrol, because of the increase in petrol costs during 1970s, are the main

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financial reason for the incidence of Islamic Banking which is accepted as Participation Banking in our country. Earnings are aimed to be determined by the banks which will be run in Islamic rules, instead of the banks which are run according to the conventional interest system. As a result of the studies done by Islamic Scholars, first interest free bank Islamic Participation Bank which gathers and distributed funds according to the profit and loss participation basis and whose one of the co- founders is Turkey, was founded in December 7th, 1973.

Interest Free banking was started to be found in Turkey well into 1980s. It was aimed to increase foreign currency inflow and export, to control inflation, have economic expansion and to have stronger economic structure as a result of stable economic decisions. In consequence of these decisions, studies for Islamic Banking in order to bring the interest free savings of investors from Gulf Countries were started.[2]

The development of Interest Free Banking in our country is affected by the idea of gaining inactive mattress savings of the individuals who do not want to deal with interest because of their religious precisions in to the economy in along with the economical needs.

In this context, legal aspects of Special Finance Foundations which are run according to the interest free basis, are formed with the 15 December 1983 dated and 83/7506 numbered executive order. In 2005, with the 5411 numbered Banking Law Special Finance Foundations name was turned in to Participation Banks. What is more, with the 07 / 11 / 2006 dated and 26339 numbered "Regulations about Deposit and Participation Funds Subject to Assurance and Insurance Funds Receivable Premiums by Saving Deposits Insurance Funds" that was published in the official gazette, parts of the deposits in Turkish Lira, Foreign currency and precious metal that are up to 100.000 Turkish Liras are taken into the deposit insurance. Thus, deposit insurance in classical banks are started to be performed in participation banks.

5 banks conduct activity in sector by the year of 2015 as a result of Bankrupt (İhlâs Finance Foundation), merger (Association of Turkey Finance Name and Family Finance and Anatolian Finance) , new foundation

2 Interest-free bank, Islamic bank and Participation banks used in study indicate the same thing. Conventional bank, traditional bank, deposit bank, classical bank, commercial bank and interest bearing bank terms are used behalf of each other.

(Ziraat Katılım) (Albaraka Turk Participation Bank Inc., Kuveyt Turk Participation Bank Inc., Türkiye Finans Participation Bank Inc., Bank Asya Participation Bank Inc.. and Ziraat Participation Bank Inc.)

According to the Participation Banks Association of Turkey, share of the participation banks in total banking sector is 6% in gathered funds, 5.4% in used funds, 5.2% for total active magnitude, 4.4 % for net worth magnitude and 3.2 % for net profit.

II. Participation Banks Process and Literature Review

In Interest free system, participation banks gather savings of investors under deposit and transactional accounts by meanings of interest free principals and use these funds in pursuant of profit-loss principals with the methods like profit-loss participation and leasing (Participation Banks Association of Turkey)

Profit share means distributing profit that is gained from capital used in economical activities at rates determined in expiry dates. 80% of the gained profit at the end of term is distributed to account holders according to their participation rates and residual 20% is taken as authority share. In profit share based interest free system, how much will be gained at the end of term is not significant and what is more supported projects can also end with loss.

While earnings are determined according to the productivity of given projects in interest-free system, in interest bearing systems earnings which will be gained at the end of the term from capital is assumed when money is paid in. In other words, there isn't any assurance for a stable earning related to capital or from capital in participation banks. Account holders are a party to the profit and loss which occurs as a result of managing the funds by the institutions. There is a portfolio diversification on the basis of sector and fund users for fund usage (Büyükdeniz, 2000).

Participation banks who give banking services in accordance with the Islamic rules, can perform lots of banking services. In respect to this, participation banks are alternatives for traditional banks. In other words participation banks do not perform some transactions which classical banks perform based on interest. In this context participation banks are

institutions that complete traditional banks and gives depth and instrumental variety to the finance sector (Özulucan and Deran, 2009).

There are lots of academic studies where participation and traditional banks are compared. When these studies are worked, it can be seen that each study have its own results. Studies generally consist of comparisons between banks' performances.

However, profit share rates of Islamic banks are nearly equal to the interest rates paid to the accounts in classical banks and it is known that these issue is a serious problem for the participation banks (Raphaeli, 2006 and 2009; Foster, 2009; Singh and Gupta, 2013). In scope of this study, the relation between profit shares and interest rates are researched and the difference is examined whether it is statistically significant or not.

Operating in the same sector is shown as a main reason for the closeness between the profit share rates that are paid for accounts in participation banks and interest rates that are paid to the deposit accounts in other banks (Participation Banks Association of Turkey, 2011). Interest and profit rates are determined by the market, so in the markets where competition is seen, profit and interest rates have to be nearly equal as a result of the competition. Under the conditions where profit rates are determined by real market economy, it is not possible to gain profit other than the normal profit that is determined by market. For instance; in case the profit share rates of the participation banks are higher than interest rates of commercial banks, individuals who will use funds will choose other banks instead of participation banks and this will make collected funds inactive. In an opposite situation because of the rates are low, investors who want to evaluate their funds can verge to the other banks and as a result participation banks may face with loss. As a result, competition conditions of the market requires a closeness between profit and interest share rates.

What is more, main difference between participation and other banks is that while interest rates are determined during paying money in the traditional banks, this rate is not determined during paying money in participation banks. In participation banks total funds are evaluated and the gaining is shared.

In the study of Iqbal (2001), where he compared conventional and Islamic banks' profit and liquidity performances in Bahrain, Saudi Arabia,

Jordan, Egypt, United Arab Emirates, Malaysia, Kuwait and Turkey between 1990-1998 years; he found out that Islamic banks are more effective than traditional banks in terms of profit and liquidity performances.

In another study Samad (2004) compared liquidity and profit performances of Islamic and Commercial banks work in Bahrain between 1991-2001 years. As a result, he indicated that there is not an important difference between liquidity and profit performances of Islamic and commercial banks.

According to the study results where commercial and participation banks' performances are compared in United Arab Emirates between 2006-2007 years, it is found that Islamic banks have higher profit and liquidity performance rates than commercial banks (Kader and Asarpota, 2007).

In the study where the differences between performances of Islamic banks and banks performs transactions with interest in Bangladesh between years 2004-2008 were searched; comparisons in terms of liquidity, paying loans and profit were done. Results of the study showed that banks that perform transactions with interest are more effective than interest free banks (Safiullah, 2010).

Ashraf and Rehman (2011) compared the entity structures, liquidity rates, credit risks and profit shares of the interest and conventional banks in Pakistan between years 2007 and 2010. Results of the study showed that classical banks are more effective than Islamic banks. In another study related with Pakistan, Jaffar and Manavri (2011) viewed performances of Islamic and traditional banks between years 2005-2009. Results showed that interest free banks perform better in terms of capital adequacy, liquidity than classical banks whereas classical banks perform better in terms of profitability. What is more, it is found that there isn't any important difference between Islamic and classical banks in terms of entity quality. In a similar manner Usman and Khan (2012), evaluated Islamic and classical banks' performances in Pakistan comparatively. Results of the study points out that interest free banks have higher developmental potential and profitability rates than classical banks. However, classical banks have higher liquidity rates than interest free banks.

Loghod (2010) compared liquidity, profitability and capital structure rates of Islamic and commercial banks function in Saudi Arabia, Ku-

wait, Bahrain, Qatar and Oman. Results of this study during 2000-2005 showed that there is not any statistically significant difference between Islamic and commercial banks' performances. In another study where performances of Islamic and traditional banks active in Gulf Arab States were compared, Siraj and Pillai (2012) searched the term between 2005 and 2010. Analysis results showed that deposit increase rates, liquidity rates and profitability rates of traditional banks are lower than Islamic banks.

In the study where Ryu and others (2012) compared profitability and risk rates of classical and Islamic banks in Malaysia between years 2006-2010, they found out that risk rates of Islamic banks are lower but their profitability rates are higher than conventional banks. On the other hand, it shows that Islamic banks have more stable and steady structure especially during crisis periods.

When we look at the studies related to Turkey;

Alpay and Hassan (2007) compared Islamic and traditional banks' performances with Data Envelopment Analysis. In the analysis, 4 Islamic banks and 49 traditional banks' financial tables between 1990-2000 years were viewed. . Study results showed that while Islamic banks have higher performances, their cost and gaining activities are also in a better position than other banks. In a similar manner, Arslan and Ergeç (2010), in their studies related to 2006 - 2009 years found out that Interest free banks show better performance than other banks.

In the study where the distinction between commercial and Participation banks in terms of their financial characteristics between 2003-2007 years is questioned, Parlakkaya and Çürük (2011), determined that participation banks have higher profitability and risk rates than other banks. On the other hands, it is showed that traditional banks are in better positions in terms of their entity qualities and liquidity values.

Er and Uysal (2012) viewed activity levels of traditional and interest free banks in Turkey between 2005 and 2010 years. Analysis results showed that during the investigation period participation banks were more active than traditional banks.

In the study where financial performances of traditional and interest free banks in Turkey were compared for years 2005-2011 Doğan (2013) measured performances of traditional and interest free banks by using li-

quidity, profitability, load payment and risk rates. Study results where t-test is used in order to determine performance differences showed that interest free banks have higher load payment ability, liquidity and capital efficiency rates and have lower risk rates.

In the study where financial performances of traditional and participation banks in Turkey for 2006 - 2011 years are compared, liquidity, income/outcome, profitability and productivity rates are used. Research results showed that profitability of the traditional banks are relatively higher than participation banks for 2008 - 2011 years. In other ways for 2006 - 2007 years, it is determined that profitability rates gained from investments of traditional banks are lower than participation banks (Ayrıçay and Demir, 2014).

Bilge (2015) tried to explain effects of global economic crisis in 2008 to the banking sector and development of participation banks in World and Turkish Banking sector during this financial crisis. In the study where conventional and interest free banks' performances are compared during this global crisis, it is seen that interest free finance practices are more successful in terms of performance and gainings. Interest free banking sector is more advantaged during crisis periods because risky financial products are forbidden and banking investments in these risky products are forbidden too. During crisis period where banks have serious capital loss and damages, developments in interest free banking is an indicator of this.

Buğan (2015) measured activity performance of Participation and traditional banks in Turkey for 2006 - 2012 years by using data envelopment analysis. According to this study that aimed to determine whether the funds are used more effectively or not in interest free banks than traditional banks, interest free banks have higher management skills and measurement activities. That is to say, participation banks use resources more effectively than traditional banks. What is more, it is seen that traditional banks cannot show enough success in functioning in an appropriate scale and gaining management effectivity especially during crisis terms.

Results of many studies (Viverita and Skully, 2007; Sufian, 2007; Mohamad et al., 2008; Johnes and Pappas, 2009; Bilal et al., 2011) give similar results with the studies above. Common results of the studies with regard to profit share can be summarized as Islamic banks have similar rates of profit shares with the interest rates that conventional banks pay for deposits.

III. Survey Data and Method

This study contains 161 months between January 2002 and May 2015 years. Study data means average interest rates of deposits by banks and profit share rates for participation accounts by participation rates. The rates consist of gross values.

Weighted average interest rates of the banking sector are calculated by relating deposit costs of deposit types on the basis of banks to the interest rates of each deposits on the basis of investor and making them yearly based. On demand and between banks deposits are not included. Data related to banking sector are gathered from Central Bank of Turkish Republic Data Delivery System.

Data about Participation banks were gathered from Participation Banks Association of Turkey (Albaraka Türk, Kuveyt Türk, Türkiye Finans and Bank Asya). Ziraat Participation is not included because of not having data yet. Profit share means of Participation Banks is calculated and used as average profit share distributed by Participation Banks in the study.

Aim of the study and main hypothesis is to find out whether a statistically significant difference between profit share and interest rates of participation and traditional banks that are paid to deposit and profit accounts in Turkish Lira (TL), American Dollars (USD) and European Currency (Euro). Hypothesis can be set like this;

H_0: There is not any statistically significant difference between interest rates paid by banks and profit shares distributed by Participation banks.

H_1: There is a statistically significant difference between interest rates paid by banks and profit shares distributed by participation banks.

Significance tests are made in order to test hypothesis. Hypothesis tests are techniques in order to find out if the data have statistically significant importance or statistically significant. T test is the most common method used in hypothesis tests. By doing T test, means of two groups are compared and it is found out that if the difference between groups is coincidental or statistically significant.

While determining whether the difference between two independent groups are statistically important or not, with the help of equation below by using T-test, hypothesis control is done (Sokal and Rohlf 1995, Sheskin 2003, Zar 2010).

$$t = \frac{\overline{X} - \overline{Y}}{\sqrt{S_T^2 \left(\frac{1}{n_X} + \frac{1}{n_Y} \right)}} \quad (1)$$

S_T^2 value in denominator is the total variance in the equation and calculated as follows;

$$S_T^2 = \frac{(n_X - 1)S_X^2 + (n_Y - 1)S_Y^2}{n_X + n_Y - 2} = \frac{\sum d_X^2 + \sum d_Y^2}{(n_X - 1) + (n_Y - 1)} \quad (2)$$

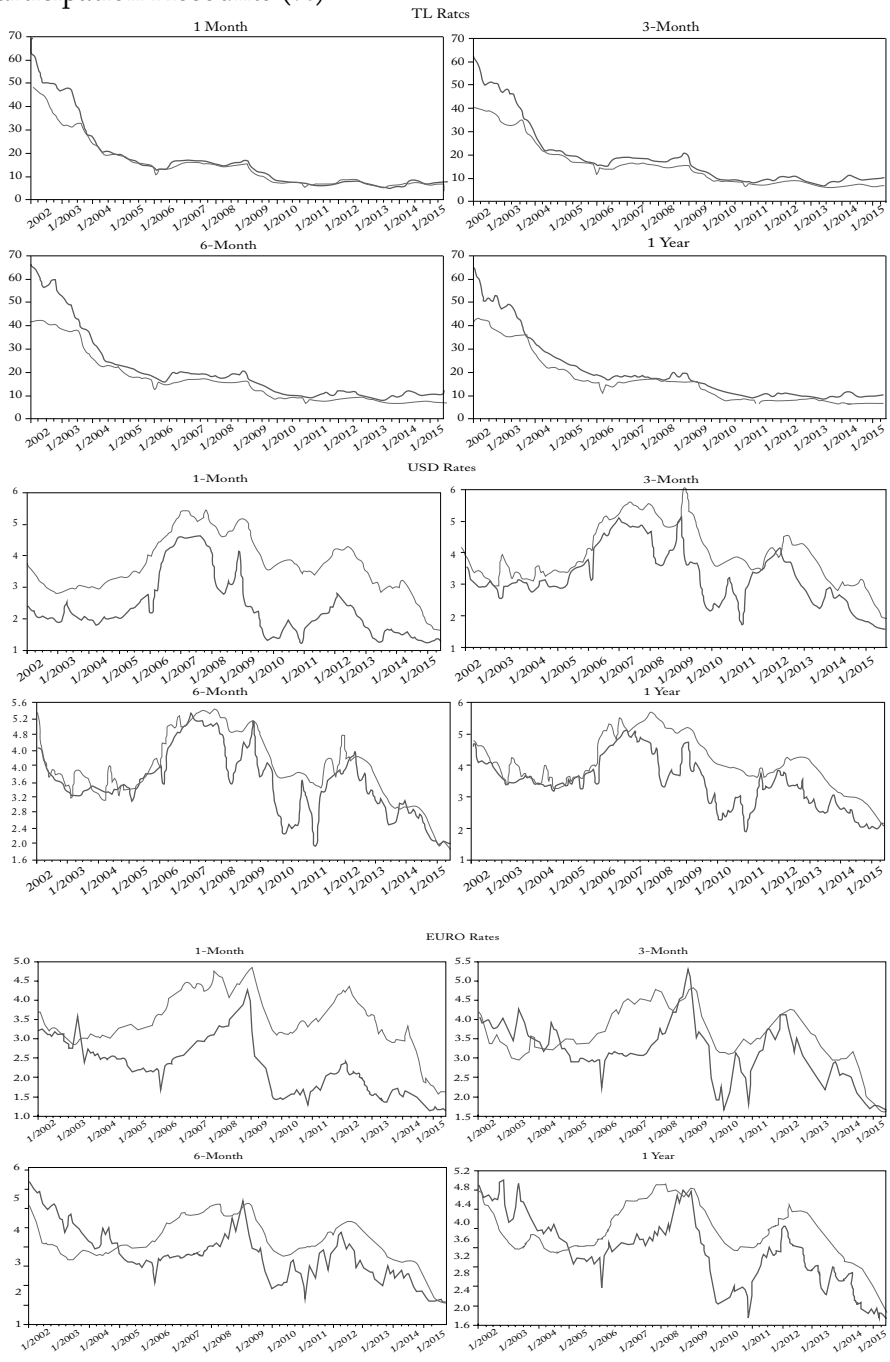
T test is used in order to find out whether the difference between interest paid by banks and profit shares distributed by participation banks is statistically significant or not. Confidence interval is determined as 95 % in the two-tailed hypothesis test. Besides statistical tests, monthly diagrams of profit shares and interest rates are shown and correlations between them were evaluated.

IV. Results

In scope of the study distributed profit share rates of Participation banks and deposit earnings of traditional banks were compared. Firstly, graphs related with these rates and correlations between different term rates are researched. In Graphic 1, average profit share rates and interest rates for 1-month, 3-month, 6-month and yearly terms in TL, USD and Euro are shown.

When the graphic is viewed it is seen that for TL, commercial banks' interest rates which are showed with blue, are higher than participation banks' profit share rates in all terms .However, a totally opposite situation is seen for USD and Euro. What is more, profit share rates have more stable structure than interest rates, while interest rates have more changeable structure.

Graphic 1: Profit Share and Interest Rates That Are Paid To Deposit and Participation Accounts (%)



* Blue lines represent the Commercial Banks rates. Red lines repre-

sent the Participation Banks rates.

Account owner who have funds in Participation banks do not know how much profit or loss they will have from the beginning of term. Loss is possible at the end of term. On the other side, such uncertainty is beside the point for conventional banks. So, account holders in participation banks have higher risk. According to the modern finance theory, having higher risk is explained by higher gaining rate. However, despite the gaining of the account holder related with participating bank is uncertain, the average gaining rates of the investors are lower.

In this context if Modern Portfolio Theory of Markowitz (1952) is have to be summarized;

- Individuals give investment decisions according to only risk and expected gainings. Gainings are measured as average expected gainings of the entities that forms the portfolio, for risks, portfolio gainings' variance is used.
- Individuals' aim is to maximize utility function. All of the investors act rationally.
- Investors' expectations about risk and gainings are homogeneous, that is, investors prefer higher gainings in a significant risk level.
- Investment scopes of individuals are identical
- Capital market is active, hence, information reflects on the prices fast and correctly. Market is always balanced and there isn't any limitation on information flow. In other words, investors can reach up the information simultaneously.

Traditional financial approaches accept investors as individuals who analysis data, aim to have maximum utility level and take over rational behaviors. So, related with the risk of participation banks, investors' gainings must be higher. Traditional models which are not sufficient to explain individuals' rationalization gave its place to a new scientific approach named Behavioral Finance.

Behavioral finance argues that most of the investors use simple methods instead of complex analysis while taking decisions about their investments and because of various reasons they take action without lateral thinking. Investors decide fast, without thinking analytically because of

ambition, sometimes courage, or sometimes environmental factors, social statutes. So, it is a mistake to reduce decisions of investors who saves in Participation banks to risk and gaining dimensions. The preferences of the investors who do not use traditional banks especially because of the religious interest concerns are important explanations in this aspect. In the study where the factors effect preferences of Islamic banks in England (Omer, 1992) showed that because of excessive religious precisions, individuals prefers banks function in accordance with Islamic rules.

Besides the profit - cost comparison, factors like service quality, social suggestions are effective for investors to choose Islamic banks. In study on Malaysia (Marimuthu et al., 2010) it is seen that friend /relative offers and service distribution factors are effective in preferences for Islamic banks.

Results of Lee and Ullah's (2011) study in Pakistan showed main reason behind investors choose Islamic banks is that the function in accordance with the sharia laws.

There are many studies which show interest-free banks are preferred because of religious reasons. (Erol and El-Bdour, 1989; Haron vd.,1994;, Metawa and Almossawi, 1998;, Naser et al..,1999;, Dusuki and Abdullah, 2007; Amin, 2008; Amin et al., 2011; Nawi et al., 2013; Ashraf and Sekhon, 2015)

Studies related to Turkey for preference reasons of Interest-free in other words participation banks shows similar results with the ones done internationally.

In the study where Karakaya and Karamustafa (2004) aimed to determine variables behind bank preferences of investors in Turkey, it is found out that religion is the main factor that effects bank preferences. Other factors are entity image, family and friend suggestions sequentially. In aforementioned study, gaining rates is in the last place. In another study (Okumuş, 2005) it is again seen that Islamic factors are the most important ones in participation bank investors. Giving nearly all the services same with the traditional banks and close attention to the investors are other important factors in preferences of Participation banks.

In the study of participation banks in Turkey, Apil (2009) found out that, closer attention to the investors, participation banks' image and quali-

ty of the services determine preferences for participation banks. Other factors for preferences are religious precisions, family and friend suggestions.

According to the study done by Sarı (2010); reliability, transaction speed, effectivity, bank image, number of branches and locations, having low transaction fees, physical opportunities, knowledge of employees and closer attention to the investors are important reasons in preference of participation banks.

According to the analysis results of 217 participation bank investors in the study where preferences for participation banks in Bolu is researched by Özsoy et al. (2013); service-product quality is the main reason that effect preferences for participation banks. Personnel quality, bank image and trust, religious and social factors are listed as other factors for participation bank preferences.

Study findings where relational marketing practices' effects on investor loyalty is determined; showed that the bank's relational marketing practices have positive and significant effects on investor loyalty , as investors positive evaluation on bank's relational marketing practices increase their loyalty levels increase too (Gümüş, 2014).

When the graphics of Interest rates that are paid to deposit accounts in USD and Euro with different terms and profit share rates that are distributed to profit accounts (Graphic 1), the situation is totally opposite. While classical banks make investors gain more in TL, participation banks provides higher gaining rates for every terms in USD and Euro.

During the interviews with participation banks it is said that USD and Euro fund usage costs are higher than other banks and as a result of this gainings are higher and higher profit shares can be offered to account holders.

For example; For American Dollar, traditional commercial banks pay average 2.40 % interest for a monthly term while participation banks distribute 3.70 % profit share for the same term. It is seen that difference between rates decreases as the terms extends. For a 1-month term this difference is 1.30% while it decreases 0.28 % for 6-month term.

On the other hand, according to the correlational results of deposit interests and profit shares of TL, USD and Euro presented in Table 1, there are higher-up relations for each terms in TL. Correlation coefficients are higher than 0.90.

Table 1: Correlations between Various Deposit Interest and Profit Shares in TL, USD and Euro.

		1 Month	3-Month	6-Month	1 Year
TL	1 Month	0.982			
	3-Month		0.963		
	6-Month			0.945	
	1 Year				0.929
USD	1 Month	0.842			
	3-Month		0.835		
	6-Month			0.731	
	1 Year				0.68
EURO	1 Month	0.608			
	3-Month		0.634		
	6-Month			0.514	
	1 Year				0.616

Correlation analysis is a statistical technique used to find out the level of the relation when there is a linear relation between two variable. Coefficient that show the level of relation between variables named as correlation coefficient and showed with "r". If correlational coefficient is near to 1 that means the relation is strong, if it is near to 0 then the relation is considered as weak. If variables increase or decrease together then correlation coefficient shows in positive numbers. If correlation coefficient is negative which refers the relation is negative that means while one of the variables is increasing, the other is decreasing (Orhunbilge, 2010).

When we look at the correlation coefficients between interest and profit share rates, the relation is seen positive. This situation is a general result of market conditions. While this relation is stronger in TL deposit and participation accounts, the relation between USD and Euro deposit accounts' interest rates in traditional banks and profit shares distributed to participation accounts in participation banks are relatively weaker.

T-testing results which is done to show whether the difference between profit shares and interest rates are statistically significant or not is presented in Table 2.

Table 2: T-Test Results of Average Deposit Interest and Profit Share Rates in Various Terms for TL, USD and Euro

			1 Month	3-Month	6-Month	1 Year
Commercial Banks	Mean (%)	TL	17.25	18.24	18.82	18.28
		USD	2.406	3.459	3.589	3.52
		EURO	2.289	3.141	3.219	3.316
	Standard Deviation	TL	13.56	12.81	14.09	13.39
		USD	0.931	0.881	0.851	0.856
		EURO	0.721	0.74	0.824	0.809
Participation Banks	Mean (%)	TL	15.53	15.85	16.83	17.39
		USD	3.705	3.797	3.875	4.012
		EURO	3.488	3.576	3.66	3.786
	Standard Deviation	TL	10.11	9.7	10.65	10.21
		USD	0.866	0.846	0.829	0.77
		EURO	0.708	0.699	0.688	0.627
T-Test for Equality of Means Significance Level (2-tailed)	TL		0.198	0.06	0.154	0.499
	USD		0.000	0.001	0.002	0.000
	EURO		0.000	0.000	0.000	0.000

Observation number 161, confidence interval 95 %.

In Table 2, besides the difference test results between profit shares and interest rates, average interest - profit share gaining rates of traditional banks which functions with interest for each term and participation banks which functions interest-free and their standard deviations. According to the observation findings for 161 month between January 2002 and May 2015, traditional banks provide higher gaining average than participation banks for TL deposit accounts. Results of T-test that was done to see whether the difference is significant or not, with 95 % confidence interval also showed that this difference is significant. Their significance level is found higher than 5 % by bi-directional analysis. Therefore, hypothesis which suggests there is not any significant difference between paid interest rates by banks and distrib-

uted profit shares by participation banks is rejected.

On the other hand, in all participation accounts for USD and Euro, participation banks provide higher gainings to their account holders. But, testing results showed that there is not any statistically significant difference between USD and Euro gainings.

V. Conclusion

With the increase in share that interest –free banking system take from market, the contribution of the system to economy is developed. Participation banks, by means of their presented interest-free banking instruments, evaluate savings of individuals who deliberate to interest because of their religious believers and as a result of this they mediate for providing important levels of resource to the economy.

Participation banks which function in accordance with the Islamic rules can perform many banking services of classical banks. However, they cannot perform some of the interest based transactions done by traditional banks. Thus, participation banks functions as the entities that completing the banking system and gives depth and variety to the sector.

Besides of the many studies where performances of participation banks and traditional banks are compared, in this study gaining rates provided by the banks to the investors are also evaluated.

In this context in this study that contains January 2012 - May 2015 term, the gaining rates of the classical banks that function with interest system base and the participation banks that function with interest-free base are presented and whether the difference between them is significant or not is tested by using T-test.

As a result of the analysis; it is determined that the profit - loss rates of the participation banks are statistically lower than interest rates of traditional banks for TL. On the other hand, while participation banks give higher gaining averages to the USD and Euro participation accounts than traditional banks, this difference is not found statistically significant.

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