

NON-TRADITIONAL ACTIVITIES AND FUNDING STRUCTURES: AN ANALYSIS OF COMMERCIAL BANKS IN TURKEY

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Abstract

The purpose of this paper is to identify the effects of bank characteristics on non-traditional activities and funding structures of commercial banks. Using data from 24 commercial banks operating in Turkey over the period 2006-2014, it is found that bank characteristics have an important role in explaining non-traditional activities and funding structures. According to the findings, bank size is statistically significant in explaining each component of non-interest income. Faster growth and higher profitability are essentially associated with higher trading income. Also, foreign ownership has a significant impact on fee and commission income and trading income. Findings regarding the funding structures of commercial banks show that foreign ownership and loan loss provisions are important factors in explaining the ratio of non-deposit funding to total liabilities.

Keywords: Non-interest income, Non-deposit funding, Bank characteristics.

JEL Classification: G21, G30, G32

GELENEKSEL OLMAYAN FAALİYETLER VE FİNANSMAN YAPILARI: TÜRKİYE'DEKİ Tİ- CARİ BANKALARIN BİR ANALİZİ

Öz

Bu çalışmanın amacı banka özelliklerinin, ticari bankaların geleneksel olmayan faaliyetlerine ve finansman yapılarına etkisini belirlemektir. Türkiye'de faaliyet gösteren 24 ticari bankanın 2006-2014 dönemindeki verilerinin kullanıldığı çalışmada, banka özelliklerinin geleneksel olmayan faaliyetleri ve finansman yapılarını açıklamada önemli bir role sahip oldukları belirlenmiştir. Bulgulara göre, banka büyüklüğü faiz dışı gelirlerin her bir bileşenini istatistiksel olarak anlamlı bir biçimde açıklamaktadır. Hızlı büyüme ve yüksek kârlılık esas olarak yüksek ticari kâr/zarar ile ilişkilidir. Ayrıca yabancı sahipliği net ücret ve komisyon gelirleri ve ticari kâr/zarar üzerinde önemli bir etkiye sahiptir. Ticari bankaların finansman yapılarına yönelik bulgular yabancı sahipliği ve kredi kayıp karşılıklarının mevduat dışı kaynak/toplam yükümlülükler oranını açıklamada önemli faktörler olduğunu göstermektedir.

Anahtar Kelimeler: Faiz Dışı Gelirler, Mevduat Dışı Kaynaklar, Banka Özellikleri.

JEL Sınıflandırması: G21, G30, G32

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1. Introduction

The recent financial crisis has led to an increasing interest in the effects of banks' business models on stability and performance. While some studies report that banks benefit from non-traditional activities in terms of stability and profitability (Edirisuriya et al., 2015), other studies don't support such a positive relationship (Delpachitra and Lester, 2013; Li and Zhang, 2013). Furthermore, the recent studies report that the type of bank specialization (Köhler, 2014; Lee et al., 2014; Köhler, 2015), the bank market power (Nguyen et al., 2012), bank size (Hidayat et al., 2012), bank ownership (Pennathur et al., 2012) as well as the types of non-traditional activities (Lepetit et al., 2008) affect the relationship between non-traditional activities and bank stability or profitability. These results on the interactions between the non-traditional banking activities and bank characteristics raise the question of which factors explain the cross-sectional differences in banks' non-traditional activities.

The determinants of non-traditional banking activities is also important due to the fact that the banks are shifting their businesses from traditional intermediation activities that depend mainly on interest income to non-traditional ones. Omairini (2014: 54) states that the share of non-interest income to net operating revenue (net interest income plus non-interest income) rose from 25 percent in 1987 to 43 percent in 2001 in the U.S. banking industry. The rising trend of non-interest income shares is also documented with a sample of listed banks from 17 European countries over the period 1989-2004 (Baele et al., 2007) and with a sample of banks from 101 countries between 1999-2007 (Demirgüç-Kunt and Huizinga, 2010). The declining role of traditional banking activities is generally attributed to financial innovations. Specifically, financial innovations increase competition in financial markets, as a result, profitability of traditional activities has diminished, and banks have begun to diversify into non-traditional activities that have higher returns (Edwards and Mishkin, 1995: 30).

Beside the non-interest income structures of banks, the funding structures are also of greater importance to the banks as soon as the banking industry became more complex, global and dependent on financial markets' developments (Curi et al., 2015: 2). Norden and Weber (2010) report that at many banks in Germany, deposits from customers decrease while interbank deposits increase as a source of funding over 1992-2002. According to Demirgüç-Kunt and Huizinga (2010), large and fast-growing banks tend to have higher non-deposit funding shares. This paper focuses on the Turkish banking sector and investigates the non-traditional banking activities and funding structures of commercial banks.

Prior studies document various bank characteristics as determinants of non-traditional banking activities. Rogers and Sinkey (1999) examine features common to banks that are heavily engaged in non-traditional activities using data from U.S. commercial banks between 1989 and 1993. They find that banks with higher levels of non-interest income tend to be larger, have smaller net interest margins, have relatively fewer core deposits, and exhibit less risk. Analyzing commercial banks in Barbados from 1985 to 2001, Craigwell and Maxwell (2006) report a decline in the non-interest income. They find that bank characteristics and market developments are the most influential factors shaping the pattern of non-interest income in the banking industry. Shahimi et al. (2006) analyze fee income activities of Malaysian Islamic commercial banks between 1994 and 2004. The results show that banks with higher levels of fee-generating activities tend to have higher assets, core deposits and less risk.

Hakimi et al. (2012) investigate the determinants of the non-interest income by the use of data of 10 Tunisian deposit banks during the period 1998-2009. According to the results, interest margin, the level of concentration, and the inflation rate have negative effects, while size, the credit quality, the banking strategy, the number of ATMs and the number of credit cards have positive and significant effects on non-interest income. Firth et al. (2013) examine the growth, determinants, and profitability of non-traditional activities of Chinese commercial banks between 1998 and 2007. They found that banks with narrow net interest margins have stronger incentives to develop non-traditional activities. However, banks located in regions with less local government intervention have fewer non-traditional banking activities. The ownership type of the bank has some influence on the non-traditional activities while non-traditional income has not led to improved bank profitability. Damankah et al. (2014) report that smaller banks with lower levels of deposits, banks with higher anticipated loan losses and high liquidity are mostly engage in non-interest earning activities using a data of 20 universal commercial banks operating in Ghana from 2002 through 2011. Aslam et al. (2015) analyze the determinants of income diversification using a dataset of 19 commercial banks in Pakistan over 2006-2012. They report that non-interest income is negatively associated with loan quality, and positively associated with business growth, bank size and return on equity (ROE).

In addition to non-traditional activities, this paper also investigates the determinants of bank funding structures. As a related study to this work, Ghosh (2011) investigates the activity mix and funding strategy of Indian banks using data from 1996 to 2007. According to the results, fee income is positively associated with firm size, asset growth, equity ratio, foreign bank ownership and profitability while non-deposit funding is only associated with asset growth. Kouassi (2013) analyzes activity and funding strategies of commercial banks in 28 transition and emerging countries

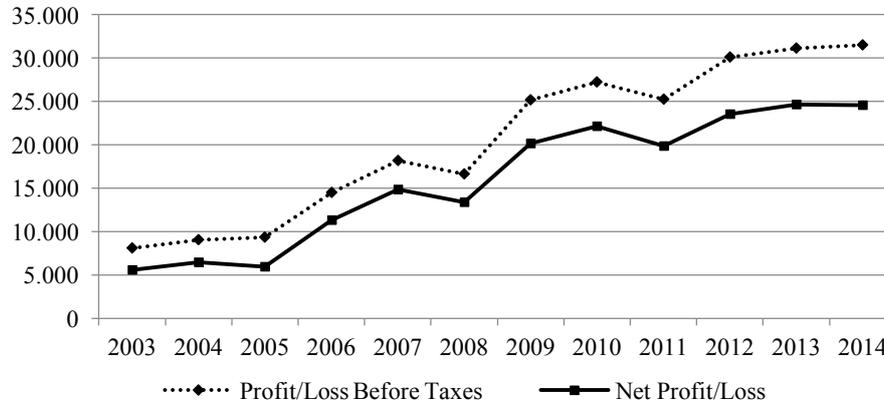
over 1998-2008 and reports that foreign banks rely more on non-interest income activities and non-deposit funding.

The purpose of this paper is to analyze the determinants of the non-traditional banking activities and bank funding structures. The empirical analysis is based on data from 24 commercial banks in Turkey between 2006 and 2014. The structure of the paper is as follows. In section 2, research methodology is detailed. The findings are shown and discussed in Section 3. Section 4 summarizes the study.

2. The Turkish Banking System

In Turkey, the financial liberalization process was launched in 1980s. This process led to a rapid expansion and generated a more competitive environment in the Turkish banking system. In addition to increasing competition, the deterioration of the macroeconomic situation and structural problems of the banking sector caused severe financial crises in 1994, 2000 and 2001. The initiation of an extensive banking restructuring program in 2001 played an important role in recovering from crisis. The restoration process of the banking sector continued until 2003 (TBB, 2012: 28). The number of banks decreased from 79 in 2000 to 55 in 2003 and, did not change significantly in the subsequent years. At the end of 2014, the Turkish banking sector comprises 34 commercial banks, 13 development and investment banks and 4 participation banks. Over 2003-2014 period, the asset size of the banking sector increased from TRY 250,7 billion to TRY 1.994 billion. Total bank assets to GDP ratio rose from around 70 percent to 114 percent.

Figure 1 shows the banking sector profits between 2003-2014. Net profits increased from TRY 5.608 million in 2003 to TRY 24.610 million in 2014. Also from Figure 1, the banking sector profits have been in a rising trend in general. As profitability measures, return on average assets (ROAA) is 1,33% and return on average equity (ROEA) is 12,25% in 2014. According to the work of Yıldırım (2014: 96, 103), there is an upward trend in profitability and the continuously high profit levels by international standards in the Turkish banking sector over 2002-2011. Moreover, the sector is small by international standards and demonstrate future growth potential.

Figure 1: The Earnings of the Turkish Banking Sector, 2003-2014, in millions TRY

Source: Banking Regulation and Supervision Agency (www.bddk.org.tr)

The profitability of the Turkish banking sector is based mainly on traditional interest-based activities. Over 2003-2014, interest incomes increased from TRY 38.823 million to TRY 138.667 million. On the other hand, non-interest income of the sector increased from TRY 7.189 million to TRY 37.552 million in the same period. Also, the ratio of non-interest income to interest income rose from 18,5% to 27%. In other words, the importance of non-interest based activities have increased in the banking sector.

Saldanlı (2013: 48) explains the increase in non-interest income as a reaction of banks to decreasing net interest margins over 2000-2012 period. According to Gürbüz et al. (2013: 12), banks reacted to increasing competition in the sector by widening their operations beyond traditional activities and increasing the share of non-interest income in their operating profits. Furthermore, they found that higher reliance on non-interest income generating activities is associated with a better risk/return based on data from 26 Turkish commercial banks over 2005-2011. Karakaya and Er (2013), however, found no association between non-interest income margin and return on assets (ROA) for 26 commercial and 4 participation banks in Turkey between 2005 and 2010.

Although the effect of non-interest income on bank profitability is still an important research question, the determinants of banks' non-traditional activities would be more useful in understanding this relationship. For example, Yıldırım and Kasman (2015) show that banks' market power in traditional intermediation affects their involvement in non-traditional activities based on data from 32 commercial banks in Turkey over 2003-2013. Specifically, banks with a limited market power in

the loan market and banks with a high market power in the deposit market are engaged more in fee and commission generating activities. This study contributes to the related literature by analyzing the determinants of non-interest based activities and by investigating the components of non-interest income separately. The determinants of banks' funding structures are also analyzed in the study to provide a more comprehensive framework in understanding the trends in banks' business lines.

3. Methodology

3.1. Data

The sample is composed of commercial banks operating in Turkey between 2006 and 2014. Only commercial banks are selected in the dataset because the bank specialization may affect the comparability. Data on income statement and balance sheet items is obtained from Banks Association of Turkey (BAT). Of the 34 commercial banks operating in Turkey, ten banks are excluded from the sample (six banks for being foreign-owned bank branches, one bank for being under the control of the Deposit Insurance Fund and three banks for having incomplete data for all years). The final sample consists of 216 bank-year observations.

3.2. Variables

Table 1 describes variables used in the study. Non-traditional banking activities are proxied by three major components of non-interest income, as in Köhler (2014). Specifically, fee and commission income, trading income and other operating income components of non-interest income are considered separately and used as measures of non-traditional activities in the study. On the other hand, two measures are used to analyze funding structures of commercial banks. Following prior literature, the ratio of non-deposit funding to total liabilities is used as a proxy for funding structures (Köhler, 2015). Based on Norden and Weber (2010) interbank deposits is used as another measure of bank funding structures.

Bank size is one of the bank specific variables which would affect the non-traditional activities and funding structures of commercial banks due to the economies of scale that larger banks have. Regarding non-traditional banking activities, prior studies document that banks with higher levels of non-interest income tend to be larger (Rogers and Sinkey, 1999; Hakimi et al., 2012; Damankah et al., 2014). Bank size is also expected to be a determinant factor of bank funding strategies. Amidu and Wolfe (2013) suggest that larger banks rely heavily on wholesale funds in financing their operations. In addition, Norden and Weber (2010) report that bank size is positively related to changes in interbank deposits. Therefore, size is expected to be positively associated with both non-traditional activities and funding structures of banks.

Asset growth is expected to have a positive sign for both non-traditional activities and funding structures since prior studies report that banks with faster growth tend to have higher fee income shares and tend to be heavily financed through non-deposit funds (Demirgüç-Kunt and Huizinga, 2010; Ghosh, 2011). In addition, Norden and Weber (2010) suggest that an increase in total assets is at least partially funded by an increase in interbank deposits.

Bank profitability is measured as net income divided by average assets (ROA). Craigwell and Maxwell (2006) use banks' relative return on assets as a determinant of non-interest income and find no significant relationship. Firth et al. (2013) report that banks' expansion into non-traditional activities has a mixed impact on profitability. Specifically, non-traditional business activities contribute to bank profitability only through the fee-for-service component. Aslam et al. (2015) analyze both return on assets and return on equity as determinants of non-traditional income activities. The results show a positive and significant sign for return on equity, however return on assets has a negative coefficient and weak significance level. Ghosh (2011) suggests that banks with focus on generating fee income tend to exhibit higher profitability, however greater reliance on non-deposit funding dampens profitability. As a result of the mixed findings mentioned above, the coefficient of return on assets could be in either direction.

Table 1: List of Variables

Variables	Description
FEES	abs(Net fee and commission income) divided by abs(Total operating income)
TRADING	abs(Net trading income) divided by abs(Total operating income)
OTHER	abs(Net other operating income) divided by abs(Total operating income)
NON-DEPOSIT	Non-deposit funding divided by total liabilities
INTERBANK	Interbank deposits divided by total liabilities
SIZE	The natural logarithm of total assets
GROWTH	Annual growth rate of total assets
DEPOSITS	Deposits divided by total assets
PROV	Loan loss provisions divided by total assets
ROA	Net income divided by average assets
FOREIGN	Dummy variable that is one for foreign banks and zero for domestic banks
INF	The annual percentage rates of consumer price index

The relationship between non-traditional activities and customer deposits is expected to be negative since banks with higher funds from non-traditional sources tend to engage less in traditional activities (Rogers and Sinkey, 1999). Provisions for loan losses is included in the study as a risk measure of banks. Prior studies report a negative relationship suggesting that banks with higher levels of non-traditional activities tend to exhibit less risk (Rogers and Sinkey, 1999). On the other hand, a theoretical prediction is not made for the effects of loan losses provisions and customer deposits on funding structures.

According to Damankah et al. (2014), foreign banks with more technological advancements in their home countries are more likely to engage in non-traditional activities relative to their local counterparts. In addition, Kouassi (2013) reports that foreign banks rely more on non-interest income activities and non-deposit funding. Therefore, foreign ownership is expected to be positively associated with both non-traditional activities and funding structures of banks. Finally, the last independent variable is included to control for inflation.

3.3. Trends in Data

When the operating income structure of sample banks is examined, it is seen that average levels of net non-interest income increased from approximately TRY 456 million in 2006 to TRY 981 million in 2014 (Figure 2). This growth does not seem to be associated with a growth in the average share of non-interest income to total operating income since this share fell from 42% in 2006 to 24% in 2014. On the other hand, the average change in total assets (19%) is higher than the average change in total operating income (%14). In a similar vein as Delpachitra and Lester (2013), the increase in average non-interest income might be due to an increase in asset volumes.

Figure 2: Net Interest Income, Net Non-Interest Income and Total Operating Income (2006-2014, in millions TRY)

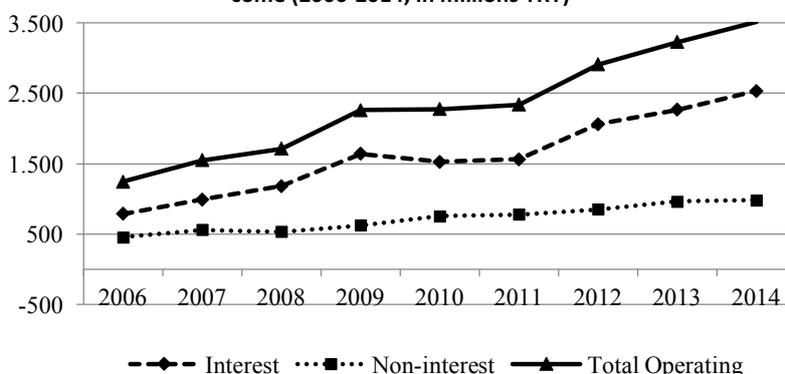
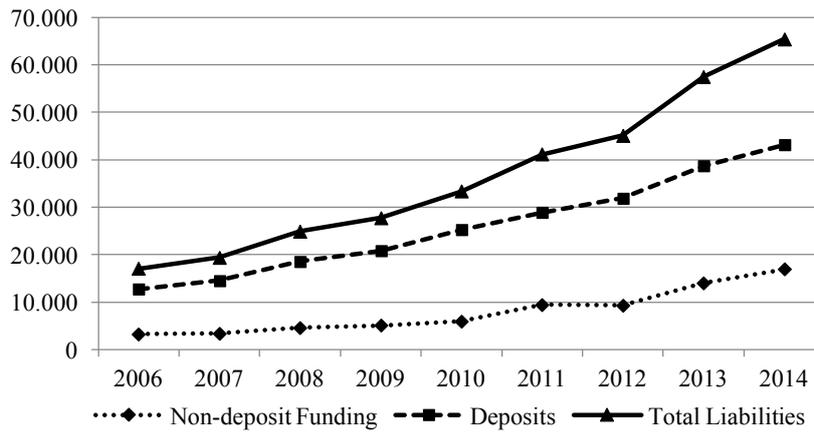


Figure 3 shows average levels of deposits and non-deposit funding as well as average levels of total liabilities for the sample banks over the period 2006-2014. Average non-deposit funding levels increased from approximately TRY 3.305 million in 2006 to TRY 16.924 million in 2014. However, the average ratio of non-deposit funding to total liabilities remained stable at around 22%. Average ratio of deposits to total liabilities is also stable at around 71%, suggesting that the sample banks are more likely to rely on traditional models of funding.

**Figure 3: Deposits, Non-Deposit Funding and Total Liabilities
(2006-2014, in millions TRY)**



3.4. Descriptive Statistics

Prior studies use non-interest income to proxy for a bank's involvement in non-traditional activities (Rogers and Sinkey, 1999; Firth et al., 2013). Non-interest income is a mixture of heterogeneous components that generate income other than interest income (Köhler, 2014: 182). Based on prior studies, three components of non-interest income are considered separately to provide deeper insights into the determinants of non-traditional banking activities (Lepetit et al., 2008; Köhler, 2014). Specifically, the ratios of fee and commission income, trading income and other operating income to total operating income are used as measures of non-traditional activities in the study.

Table 2: Descriptive Statistics and Correlation Matrix

Panel A. Descriptive Statistics						
	Obs.	Mean	Median	Std. Dev.	Minimum	Maximum
FEES	216	0,165	0,158	0,084	0,005	0,536
TRADING	216	0,107	0,050	0,198	0,000	1,450
OTHER	216	0,116	0,090	0,109	0,003	0,908
NON-DEPOSIT	216	0,218	0,206	0,141	0,000	0,781
INTERBANK	216	0,060	0,022	0,118	0,000	0,797
SIZE	216	23,103	23,192	2,039	17,650	26,235
GROWTH	216	0,238	0,189	0,316	-0,422	1,931
DEPOSITS	216	0,594	0,619	0,158	0,123	0,879
PROV	216	0,028	0,014	0,080	0,000	0,766
ROA	216	0,016	0,016	0,013	-0,033	0,082
INFL	216	8,134	8,170	1,548	6,160	10,450
FOREIGN	216	0,417	0,000	0,494	0,000	1,000

Panel B. Correlation Matrix							
	SIZE	GROWTH	DEPOSITS	PROV	ROA	INFL	FOREIGN
SIZE	1						
GROWTH	-0,01	1					
DEPOSITS	0,48**	0,06	1				
PROV	-0,38**	-0,14*	-0,41**	1			
ROA	0,20**	0,13	-0,09	0,11	1		
INFL	-0,07	0,25**	0,00	0,04	0,01	1	
FOREIGN	-0,21**	0,13*	-0,15*	-0,12	-0,02	0,00	1

Table 2 shows descriptive statistics and correlation matrix for the variables. ** and * indicate significance at the 1% and 5% levels, respectively. N=216. For a definition of the variables see Table 1.

The summary statistics for the non-traditional banking activities, bank funding structures and independent variables are presented in Panel A of Table 2. The average shares of fee and commission income (FEE), trading income (TRADING) and other operating income (OTHER) to total operating income are 16.5 percent, 10.7 percent and 11.6 percent, respectively. The average ratios of non-deposit funding (NON-DEPOSIT) and interbank deposits (INTERBANK) to total liabilities are 21.8 percent and 6 percent, respectively. Panel B displays the correlation matrix for the regressors, indicating that there are no serious multicollinearity problems in the dataset.

4. Results

Table 3 presents results of ordinary least squares (OLS) regressions with non-traditional banking activities as the dependent variable. Three regression models are used to examine the determinants of non-traditional banking activities. Specifically, FEES, TRADING and OTHER are separately regressed on a set of explanatory variables including bank size, asset growth, deposits, loan loss provisions, return on assets, foreign ownership and inflation.

From Table 3, the first model is estimated using the ratio of net fee and commission income to total operating income as the dependent variable. Size is positively and significantly (at the 1% level) related to FEES, indicating that larger banks have higher shares of fee and commission income to total operating income. Foreign ownership is also positively and significantly (at the 1% level) associated with fee and commission income proportions of sample banks. On the other hand, deposits and provisions for loan losses are negatively and significantly (at the 1% and 5% levels, respectively) related to FEES, implying that banks with lower ratios of deposits to total assets and provisions to total assets have higher fee and commission income proportions. Inflation has a positive and weakly significant coefficient (at the 10% level) while the coefficients of return on assets and asset growth are insignificant.

The second model in Table 3 presents regression results in which the dependent variable is TRADING. The ratio of net trading income to total operating income is negatively associated with DEPOSITS (at the 10% level) and PROV (at the 1% level), and positively associated with FOREIGN (at the 1% level). On the other hand, SIZE is negatively and significantly (at the 1% level) related to TRADING, implying that smaller banks have higher ratios of net trading income to total operating income. In addition, GROWTH and ROA are positively and significantly (at the 1% level) related to TRADING. Inflation is insignificant in explaining the trading income shares of banks.

In the third model in Table 3, the determinants of the ratios of net other operating income to total operating income (OTHER) are examined. Size is negatively and significantly (at the 5% level) related to OTHER while the ratio of deposits to total assets is positively and significantly (at the 1% level) related to OTHER. The coefficients of asset growth and inflation are positive and weakly significant (at the 10% level). The coefficients of loan loss provisions, return on assets and foreign ownership are insignificant in explaining the other operating income shares of sample banks.

Table 3: OLS Estimations with FEES, TRADING and OTHER as the Dependent Variables

	FEES	TRADING	OTHER
Constant	-0,254 ^{***}	0,701 ^{***}	0,152
	<i>-3,515</i>	<i>4,033</i>	<i>1,474</i>
SIZE	0,021 ^{***}	-0,026 ^{***}	-0,009 ^{**}
	<i>6,988</i>	<i>-3,566</i>	<i>-2,171</i>
GROWTH	0,017	0,129 ^{***}	0,040 [*]
	<i>0,998</i>	<i>3,235</i>	<i>1,665</i>
DEPOSITS	-0,215 ^{***}	-0,176 [*]	0,176 ^{***}
	<i>-5,679</i>	<i>-1,936</i>	<i>3,242</i>
PROV	-0,176 ^{**}	-0,598 ^{***}	-0,061
	<i>-2,410</i>	<i>-3,403</i>	<i>-0,580</i>
ROA	-0,332	2,767 ^{***}	-0,770
	<i>-0,839</i>	<i>2,904</i>	<i>-1,358</i>
INFL	0,006 [*]	0,003	0,009 [*]
	<i>1,828</i>	<i>0,416</i>	<i>1,944</i>
FOREIGN	0,031 ^{***}	0,069 ^{***}	0,019
	<i>2,965</i>	<i>2,718</i>	<i>1,227</i>
F-statistic	12.35 ^{***}	10.48 ^{***}	4.54 ^{***}
Adjusted R-square	0.270	0.236	0.103
D-W	2.435	1.795	1.709

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively. N=216. For a definition of the variables see Table 1. The numbers in italics represent t-values.

Table 4 presents the results of ordinary least squares (OLS) regressions with funding structure measures as the dependent variables. As stated before, two measures are used to proxy for bank funding structures. The first measure is the ratio of non-deposit funding to total liabilities where non-deposit funding comprises of funds borrowed, funds from interbank money market and funds from marketable securities issued. The second measure of bank funding structures is the ratio of interbank deposits to total liabilities. Independent variables are bank size, asset growth, loan loss provisions, return on assets, inflation and foreign ownership.

From Table 4, the first regression model is estimated with the ratio of non-deposit funding to total liabilities as the dependent variable. A strong negative association (at the 1% level) is found between the non-deposit funding and loan loss provisions. In addition, foreign ownership is positively and significantly (at the 1% level) associated with non-deposit funding. However, no association is observed between the non-deposit funding and other independent variables.

Table 4: OLS Estimations with NON-DEPOSIT and INTERBANK as the Dependent Variables

	NON-DEPOSIT	INTERBANK
Constant	0,215	0,465***
	<i>1,631</i>	<i>4,302</i>
SIZE	-0,003	-0,017***
	<i>-0,530</i>	<i>-4,036</i>
GROWTH	0,028	0,079***
	<i>0,941</i>	<i>3,202</i>
PROV	-0,473***	-0,305***
	<i>-3,669</i>	<i>-2,889</i>
ROA	0,886	1,759***
	<i>1,245</i>	<i>3,014</i>
INFL	0,004	-0,007
	<i>0,598</i>	<i>-1,494</i>
FOREIGN	0,069***	0,023
	<i>3,637</i>	<i>1,487</i>
F-statistic	6.63***	8,07***
Adjusted R-square	0,136	0,165
D-W	1,990	2,220

*** indicates significance at the 1% level. N=216. For a definition of the variables see Table 1. The numbers in italics represent t-values.

The regression results for second model with the ratio of interbank deposits to total liabilities as the dependent variable show that there is a strong negative relationship between the interbank deposits and bank size (at the 1% level). The interbank deposits is also negatively and significantly (at the 1% level) related to loan loss provisions. Asset growth and return on assets are positively and significantly (at the 1% level) related to interbank deposits. The interbank deposits is observed to have no association with other independent variables. The findings show that bank characteristics have a role to play in explaining non-traditional activities and funding

structures of sample banks. Bank size is important in explaining non-traditional activities, however, indicates a positive relationship only with fee and commission income, as expected. In contrast to predictions of the study, smaller banks have higher shares of trading income and other operating income. In addition, non-deposit funding is not associated with bank size while smaller banks have higher shares of interbank deposits.

Asset growth has a positive impact on trading income, other operating income and interbank deposits, as expected. Fee and commission income and non-deposit funding, contrary to predictions, are not related to asset growth. Higher shares of trading income to total operating income and interbank deposits to total liabilities are associated with higher profitability. Other measures of non-traditional activities and funding structures are not related to return on assets. Foreign ownership is found to have a significant impact on non-traditional activities as foreign banks are more likely to involve in fee and commission activities and trading activities. Foreign ownership is also positively associated with non-deposit funding, as expected. The negative link between the banks' non-traditional activities and deposits holds for fee and commission income and trading income. However, deposits as traditional sources of fund is positively associated with other operating income shares of banks. The findings regarding loan loss provisions support the prediction that banks with higher levels of non-traditional activities tend to exhibit less risk, with the exception of the other operating income shares as a measure of non-traditional activities. Furthermore, banks with higher levels of non-deposit funding and interbank deposits have lower loan loss provisions.

5. Conclusion

This paper analyzes the bank characteristics to explain the cross-sectional differences in non-traditional activities and funding structures using data from 24 commercial banks in Turkey between 2006 and 2014. According to the results, bank characteristics have a role to play in explaining non-traditional activities of sample banks. Specifically, size is important in explaining all types of non-interest income activities of banks. Faster growth and higher profitability are essentially associated with higher trading activities. Higher deposits are associated with lower fee and commission income shares and higher other operating income shares. Banks with higher fee and commission activities and trading activities tend to exhibit less risk that is proxied by loan loss provisions. Finally, foreign ownership has a significant impact on non-traditional activities since foreign banks are more likely to involve in fee and commission activities and trading activities.

Findings regarding the funding structures of commercial banks show that foreign ownership and loan loss provisions are important factors in explaining the ratio of non-deposit funding to total liabilities. Interbank deposits of commercial banks

are associated with bank size, asset growth, loan loss provisions and return on assets. Overall, these findings have important implications for the literature on non-traditional activities and funding strategies of commercial banks. First, a disaggregated analysis of non-interest income components may provide additional insights into the determinants and consequences of non-traditional activities. In addition, the interactions between the bank characteristics and non-interest income components could be taken into the account when analyzing the effects of non-traditional activities on bank performance and stability.

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