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Factors Affecting the Profitability of Deposit Banks in Turkey

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Extensive Summary

Introduction

Banks that have undertaken financial intermediation functions between savers and investors are one of effective institutions of the financial system in both emerging and developed country economies. Banks constitute the largest part of the financial system in Turkey. The recent financial crisis at global level has shown that a well-functioning financial system is of great importance for economic stability and sustainable growth (Taşkın, 2011; Demirhan, 2013). In order to obtain high profits, banks are exposed to different risks such as credit risk, liquidity risk, operational risk, interest rate risk and currency risk in fulfilling its functions in the financial system (Alper and Anbar, 2011; Turgutlu, 2014). Both the structural problems related to the banking sector and the instability in the macroeconomic environment caused the banking crisis in Turkey during 2000-2001 period. However, compared to the banks operating in other countries, the restructuring of the banking sector after domestic banking crisis of 2000-2001 and the effective risk management policies adopted have caused the Turkish banks to be relatively less affected from the 2007 global economic crisis (Gürbüz et al., 2013; Yıldırım, 2014; Akhmedjonov and Balcı-Izgi, 2015). Therefore, it is very important to determine the factors affecting the profitability of the deposit banks operating in the Turkish banking industry in terms of evaluating the effects of the recent economic crisis and stabilizing the financial system. For this purpose, our study aims to investigate the internal and external factors affecting the profitability of 20 deposit banks operating in Turkey during the period covering 2006-2014.

Data and Econometric Model

The aim of this study is to determine the factors influencing profitability of 20 deposit banks in Turkish banking sector during 2006-2014. The financial ratios of banks in our sample are obtained from the official web page of the Turkish Banking Association and the data regarding macroeconomic indicators are taken from the official web page of the Central Bank of the Republic of Turkey and the Turkish Statistical Institute. Following the studies of Pasiouras and Kosmidou (2007), Sufian and

Habibullah (2009) and Alper and Anbar (2011), we estimate an econometric model as follows:

$$BP_{it} = \alpha_0 + \alpha_1 BSV_{it} + \alpha_2 MEV_t + \alpha_3 CRISIS_t + \mu_i + \epsilon_{it} \quad (1)$$

WhereBP_{it} is , ROAA, the independent variable used to measure profitability of bank i at year t; α is a constant term; BSV_{it} refers to bank-specific variables; MEV_t donates macroeconomic indicators; $CRISIS_t$ represents a financial crisis dummy variable taking the value of 1 if the years are 2007, 2008 and 2009, otherwise 0. μ_i is unknown bank-specific effect and ϵ_{it} is a random disturbance; the coefficients α_1, α_2 and α_3 are the parameters to be estimated. The definitions of the variables are presented in Table 1.

Table 1. Variables Used in Analysis

Variables	Notation	Description	Expected effect
Panel A: Bank Profitability			
Return on assets	ROAA	Net return / Average Total Assets	
Panel B: Bank specific variables			
Bank size	SIZE	Natural Log of Total Assets	?
Liquidity management	LIQ	Loans and receivables / Total deposits	+
Bank capital	CAR	Equity / Total Assets	?
Credit risk	CR	Non-performing loans (gross) / Total Loans	-
Interest income	NIM	Net Interest Income / Total Assets	+
Non-interest Income	NII	Non-Interest Income / Total Assets	+
Panel C: Macroeconomic variables			
Inflation	INF	Consumer Price Index (% change)	?
Economic growth	GDP	Gross Domestic Product (% change)	+
Consumer Loan Interest	CCI	Weighted average interest rate applied to commercial loans	?
Panel D: Crisis control variable			
Global economic crisis	CRISIS	Dummy variable for the years 2007, 2008 and 2009	-

Findings

According to the results from diagnostic tests (i.e. F-test, Breusch-Pagan's Lagrange multiplier test and Hausman test) fixed effect estimator is used to estimate our model.

In Table 4, the positive and statistically significant coefficient of the first size variable (SIZE) supports the scale economies theory and shows that large banks can reduce their costs and increase their profitability. but, negative and statistically significant coefficients of the second size variable ($SIZE^2$) indicate that large banks may face the problem of scale inefficiency. This result is in line with the results of studies conducted by Lee and Kim (2013) in the Korean banking sector, but different from the results of studies conducted by Athanasoglou et al (2008) in Greece and Trujillo-Ponce (2013) in Spain. Contrary to expectations, the negative coefficient of the LIQ means that there is a positive relationship between the LIQ and the profitability of the deposit banks. In other words, an increase in loans indicates that the liquidity decreases, but the liquidity risk increases. As a result, a rise in liquidity risk leads to an increase in profitability. Coefficient of bank capital (CAR) is found to be positive and

statistically significant. According to this result, banks with sufficient capital perform better in terms of profitability compared to banks with low capital ratio. This finding supports the findings of earlier studies in the banking sector (Pasiouras and Kosmidou, 2007; Liu and Wilson, 2010; Ongore and Kusa, 2013).

The effect of CR variable, measured as ratio of the non-performing loans to total loans, is negative and statistically significant. This finding is consistent with previous studies supporting the view that banks with higher credit risk may be less profitable (Liu and Wilson, 2010; Ongore and Kusa, 2013; Al-Jafari and Alchami, 2014). There is a statistically significant and positive relationship between net interest income (NIM) and ROAA, suggesting that the banks with higher interest incomes are more profitable. This result parallels the findings of Kaymak and Bektas (2008), but is different from the results reported in Alper and Anbar (2011). The effect of the income diversification (NII) on the ROAA is positive and significant. This finding suggests that banks increasing non-interest generating activities are more profitable. The result is similar to the results of studies by Sanya and Wolfe (2011), Alper and Anbar (2011) and Gürbüz et al. (2013), but different from the results of studies by Trujillo-Ponce (2013) and Liu and Wilson (2010).

When the results are evaluated in terms of macroeconomic indicators, it is found that only the economic growth (GDP) is a significant determinant of profitability. The positive effect of economic growth on bank profitability is statistically significant. This result is in agreement with Trujillo-Ponce (2013) and Turgutlu (2014), but is different from Sufian and Habibullah (2009) and Al-Jafari and Alchami (2014). However, there is no statistically significant association between the other macroeconomic indicators (inflation and interest rate) and the profitability. As regards the influence of crisis, the results suggest that there is no link between crisis and profitability

Discussion

Both the 2001 domestic banking crisis experienced in Turkey and the 2007 global economic crisis have shown that the banking sector is of great importance for the stability of financial markets and the financial system as well as the current and potential investors. The negative consequences of banking activities due to risky transactions can spread throughout the economy and lead to a crisis in the economy. In this context, determining which factors influence bank profitability is crucial to the overall performance of the economy. Estimation results obtained from fixed effect estimation method suggest that greater capital to assets ratio, net interest margin to total assets ratio, non-interest income to total assets ratio and higher economic growth significantly increase profitability of banks, whereas greater non-performing loans and loans to deposits ratio significantly lower bank profitability. When the results of the analysis are analyzed in terms of the size of the bank, we have found that there is an inverted U-shaped association between bank size and its profitability. In other words, bank size increases profitability of banks significantly. However, this effect is nonlinear. More clearly, when the size of banks exceeds a threshold, bank size is negatively and significantly associated with profitability. On the other hand, there are no statistically significant effects of inflation rate and interest rate on profitability. A crisis dummy variable to evaluate the effect of the latest global economic crisis on the profitability of the bank is included in the profitability model. We found a positive

relationship between the crisis dummy variable and the bank profitability. But this relationship is not statistically significant at any significance level.