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## Determinants of Bank Profitability in Turkey: An Empirical Analysis on Types of Banking from 2002 to 2012<sup>\*</sup>

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**Abstract.** In this study, we investigate the determinants of banking profitability related to their financial statements. One of the major aim of financial systems is to make stability over the financial companies. Well known financial companies are Banks. If Banks make more profitable works, it can provide better effect to sector as an efficiency. The profitability of banks are more important for financial systems. Because of a lot of factors may affect to the banks as a widely way. Some researchers may emphasize banks earnings how it can improve which internal and external forces. Main studies are focused on banks financial statements. Therefore it is important how can we analyse their financial statements for evaluating profitability. With this current emphasis on financial statements are very important to both managing future and making new decision to guide. In Turkey, during from 2002 to 2012 period, bank's profitability approaches has been changed to new phenomenon. Because of regulative decisions and competitive market has to change profitability of banking sectors. Therefore banking sector profitability are substantial for Turkey which to understand the determinants of all types of banks. On the other hand, financial atmosphere give priority to above changes for evaluating their performances. Therefore many studies were analysed profitability with various methods like ratio analyses, predicting regression model, simulation methods and etc. Some learning from expert's experiences are rely on use of panel comparison with others about same historical infrastructure. In this study we examines types of banks as follows: 3 banks in state-owned banks, 12 banks in Private banks, 6 banks in foreign banks which has a branches in Turkey. In total 21 banks and 3 types analyses with cross-sectional panel data method during the from 2002 to 2012 period. In this study, we obtained data from Income Statements and Balance Sheets. As a result of panel data regression are statistically significant which Interest Income / Total Income and Consumer Loan/Total Loan are highly important to estimate ROE than estimating ROA.

**Keywords.** Determinants of Banking Sector, Profitability, Turkey Banking Sector  
**JEL.** P17, P34, P52.

## 1. Introduction

According to regulation on banking system around the world, it has been a numerous change in the banking industry such as types of instruments and focused on strategy about competitiveness.

Along the nationalization of the huge commercial banks in 1969, different regulatory measures were also undertaken to protect and preserve the domestic

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## Turkish Economic Review

banks from foreign banks (Nandi, 2013). Restrictions of application to work with foreign banks would imposed on the expansion of private banks.

While commercial banks have to change their short and medium term of financial requirements according to expansion of private banks. Public, private and foreign banks in finance sector, they are relatively use of quality of service as a weapon (Swar, 2012).

Efficiency comparison between all types of banks which are include privately owned banks (private), domestic state owned banks (public) and foreign banks are bulky in developing economies. There are only privilege for public banks as a like the constant full deposit insurance. Result of this advantage, public banks has a huge superiority over the other types of banks. But it does not cover to private owned banks. (Karas, 2010).

When financial system want to keep balance between financial institutions and related companies, it can be more effective and regulate it. Other way, banks have more important role in financial system as a profitable company. The profitability of banks is concerned with a several determinants. These components contains some elements as follow as internal and external parts. These elements can affect bank's financial performance. Especially, their earnings affected by such kind of elements. In this study we examines effects from financial statements to their profitability of each types of banks. With this current emphasis on financial statements are very important to both managing future and making new decision to guide.

## 2. Data and Methodology

In this study we analysed Turkey's Banking system during from 2002 to 2012 period in terms of bank's financial tables. The tables gives information about their financial performance to understand how is it affects profitability. Mostly of prior studies argue that a lot of elements affect to profitability. In fact, there are analysed as a panel regression in both country and time level to determine their profitability. In this study we examines types of banks as follows: 3 banks in state-owned banks, 12 banks in Private banks, 6 banks in foreign banks which has a branches in Turkey. In total 21 banks and 3 types analyses with cross-sectional panel data method during the from 2002 to 2012 period.

In this study, we obtained and calculated data from Income Statements and Balance Sheets as below:

**TABLE 1: Variables and Explanation**

Variables	Explanation	Role in Model	Equaiton
ROA	Return on Assets	Dependent Variable	Net Profit / Total Assets
ROE	Return on Equity	Dependent Variable	Net Profit / Total Equity
Is	Interest Income in Total Income	Independent Variable	Interest Income / Total Income
loan_deposit	Index of loan to Deposit	Independent Variable	Loan / Deposit
Consloan	Level of Consumer Loan to Total Loan	Independent Variable	Consumer Loan / Total Loan

In addition to this, obtained data was used in cross sectional panel regression analyse to estimate model with the variables. We have to determine which type of effect in panel data can estimate coefficient correctly. Initially, we analysed fixed and random effect each model to estimate panel regression model. According to the

## Turkish Economic Review

Hausman test, we accepted  $H_0$  whether estimator of statistically significant in difference between fixed and random effect or not.

### 3. Results and Discussion

We analyzed two dependent variables separately on panel regression with independent variables are listed below.

**TABLE 2:** *Result of Panel Regression Analysis for ROA in Random Effect*

Variables	Coefficient	Z	P Value
Is	-.0203831	-1.89	0.059*
loan_deposit	-.0146343	-3.26	0.001***
Consloan	.0351617	2.38	0.017**
Constant	3.516672	3.64	0.000***

Dependent Variable : ROA      R-sq : 0.288      F Test (11.73)\*\*\*

\*, \*\* and \*\*\* denote significantly difference from zero at 10%, 5% and 1% level, respectively

**TABLE 3:** *Result of Panel Regression Analysis for ROE in Random Effect*

Variables	Coefficient	Z	P Value
Is	.2249583	2.01	0.044**
loan_deposit	-.148507	-3.19	0.001***
Consloan	.2698751	1.76	0.078*
Constant	-.4861802	-0.05	0.961

Dependent Variable : ROE      R-sq : 0.408      F Test (20.05)\*\*\*

\*, \*\* and \*\*\* denotes significantly differences from zero at 10%, 5% and 1% level, respectively

**TABLE 4:** *Result of Hausman Test for Panel Regression*

Chi2	Prob
2.92	0.4035

$H_0$ : Difference in coefficients not systematic

It is clear from Table 2 and Table 3 that are a significant results in their p values among the variables. Is is refers to Interest Income / Total Income. When we analyzed Is to estimate in both ROA and ROE, the sign of coefficients are difference in each results. This expected sign and power of coefficient means percentage of Interest Income in Total Income is more important on Return on Equity than Return on Assets.

Second variable in Tables is Loan / Deposit and it obtained from Balance Sheets of Banks during the years. This variable represents main role of banking whether banks are successfully to get deposit and give credit or not. Expected result of this variable is much more credit level than loan. In analyse, we finds same level of each estimation on ROA and ROE.

Last variable of this analyse is Consumer Loan / Total Loan which represents in Consloan on Tables. Result of this variable from panel data analyse is difference in

## Turkish Economic Review

each results. Coefficient of this variable in estimating for ROE is higher than estimating for ROA. This expected result means level of Consumer Loan in Total Loan is more important to take account into calculate total income. Therefore, estimating the ROE is more important to all types of banks.

Consequently, in this study, we examined determinants of bank's financial tables and ratios to understand their profitability in Turkey between all types of banks. For this purpose, we determined which type of effect in panel data can estimate coefficient correctly for determine profitability of banks (Vyas, 2006). Initially, we analysed fixed and random effect each model to estimate such kind of panel regression model. In total 21 banks and 3 types analyses with cross-sectional panel data method during the from 2002 to 2012 period. In this study, we obtained data from Income Statements and Balance Sheets. As a result of panel data regression are statistically significant which Interest Income / Total Income and Consumer Loan / Total Loan are highly important to estimate ROE than estimating ROA. Result of this study are similar to (Shobhna, 2014) and (Jain, 2012) studies.

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