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# Determinants of Bank Profitability in Turkey: An Empirical Analysis on Types of Banking from 2002 to 2012

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**Abstract:** In this study, we investigate the determinants of banking profitability related to their financial statements. A profitable banking sector is better able effect to stability of the financial system. The profitability of a financial institution is affected by a lot of factors. These factors include elements internal to each financial institution and several important external forces shaping earnings performance. In this study we analyses 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.

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. It is therefore important to understand the determinants of banking sector profitability in Turkey between all types of banks. This is essentially important in the light of the above notable changes that have occurred in the operating environment of banks in Turkey. An overview of previous studies indicates various ways that profitability was examined. Some studies were country specific and few of them considered panel of countries reviewing the determinants of 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 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 classification:** P17, P34, P52

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## 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 banks from foreign banks [Nandi, 2013]. Restrictions of application to work with foreign banks would impose 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 used of quality of service as a weapon [Swar and Sahoo, 2012].

Efficiency comparison between all types of banks which are include domestic privately owned banks (private), domestic state owned banks (public) and foreign owned banks (foreign) are bulky in emerging economies because the banks can operate in different institutional habitats like the constant full deposit insurance normally enjoyed by public banks may not cover to private banks. [Karas et al., 2010]

A profitable banking sector is better able effect to stability of the financial system. The profitability of a financial institution is affected by a lot of factors. These factors include elements internal to each financial institution and several important external forces shaping earnings performance. In this study we analyses 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. It is therefore important to understand the determinants of banking sector profitability in Turkey between all types of banks. This is essentially important in the light of the above notable changes that have occurred in the operating environment of banks in Turkey. An overview of previous studies indicates various ways that profitability was examined. Some studies were country specific and few of them considered panel of countries reviewing the determinants of profitability. In this study we examine 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 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	Equation
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 Hausman test, we accepted H<sub>0</sub> whether estimator of statistically significant in difference between fixed and random effect or not.

## Conclusions

We analyzed two dependent variables separately on panel regression with independent variables is 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

H0: Difference in coefficients not systematic

It is clear from Table 2 and Table 3 that are 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 each result. 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 to understand the determinants of banking sector profitability in Turkey between all types of banks. An overview of previous studies indicates various ways that profitability was examined. Some studies were country specific and few of them considered panel of countries reviewing the determinants of profitability. 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.

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