Evaluating the Performance of Public, Private and Foreign Banks Operating in Turkey

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ABSTRACT

This study attempts to compare the financial performance of public, private and foreign banks operating in Turkey from 1997 to 2010, as well as conducts a pre and post global financial crisis performance analysis for public, private and foreign banks. The following profitability proxy indicators were used; Return on Assets (ROA), Return on Equity (ROE), Profit per Employee (PPE), Profit per Branch (PPB), Net interest Margin (NIM) and Growth in Net Profit (GINP). For this purpose, data of three public, three private and three foreign commercial banks were used. There were not significant differences of profitability among public, private and foreign banks before and after 2008. However, there is a significant difference in Net interest Margin before and after 2008 global financial crisis which shows that the financial crisis has affected the interest income of banks.

On the other hand, other profitability indicators appear to remain unchanged after the global financial crisis. This indicates that banks compensated their decreased interest earnings with an increased income from financial services such as fees, commissions and other income.

Keywords: Bank profitability, state banks, private banks, foreign banks, Turkey.

ÖZ

Bu çalışma Türkiyede faaliyet gösteren kamu ,özel ve yabancı bankaların finansal performansını karşılaştırmak, ayni zamanda kamu, özel ve yabancı bankalar için önceki ve sonraki kriz performansını analiz etmek için yapilmistir. Aşağı da karlılık göstergeleri kullanılmıstır: aktif karlılık (ROA), özkaynak karlılık (ROE), çalışan başına düşen kar (PPE), şübe başına düşen kar (PPB), net faiz marjı (NIM), ve net kardakı büyüme. Bu maksatla, 3 kamu verisi, 3 özel ve 3 yabanıi ticari bankalar kullanılmıştır. 2008 den önce ve sonra, yabancı, özel ve kamu bankaları arasında önemli bir karlılık farki yoktu. Nitekim 2008 oncesi ve sonrasi net faiz marjindaki önemli karlılık farki finansal kriz bankaların faiz gelirini etkiledigini gösterdi.. Diğer bir değişte, diger karlılık göstergeleri dünya çapında mali krizlerden sonra değişilmemiş görülmektedir. Bu bankalarin azalmiş faiz gelirlerini harç, kamisyon ve bütçe gibi finansal hizmetlerden telafi etdigini gösterir.

Anahtar Kelimeler: Banka karlılık, kamu bankaları, özel bankalar, yabancı bankalar, Türkiye.

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Chapter 1

INTRODUCTION

Banking industry has always been the foundation of the economic stability in every country. No country can develop a strong economy without a strong and healthy banking sector, therefore, the success of the banking sector is considered as a country's success. It is widely accepted that the banking sector is a leading sector that promotes the national economy in any country. As a result, measuring and monitoring bank's performance is very vital in any economy. One of the most important performance measures is profitability. Bank's profitability is usually measured by its return on assets and return on its shareholders' equity.

The Turkish banking sector (TBS) plays an important role for the Turkish economy. Where, advance technologies, financial services and products and market competition affect banks' performance, the government policies also have a big impact on banks' performance.

This study aims to evaluate the financial performance of commercial banks operating in the Turkish banking sector between 1997 – 2010 by making comparisons between three public banks (Ziraat bank, Halk bank and Vakif bank), three private banks (Garanti Bank, Iş Bank and Yapi ve Kredi Bank) and three foreign banks (Deniz Bank, HSBC Bank and ING Bank). We use standard profitability ratios "return on assets", "return on equity", "profit per employee", "profit per branch", "net interest

margin" and "growth in net profit". This study also aims to compare banks' performance between pre and post global financial crisis that took place in 2008. There is no doubt that there are strong differences in management between state, private and foreign banks. But does this observable fact affect the performance of these banks differently and in a significant way? That is the interesting research questions that this study tries to address. This study tries to investigate empirically if one type of banks has consistently outperformed another in recent years in Turkey. Moreover, this study investigates the performance of these banks during global financial crisis in 2008. In other words, this study tries to find if there are any noticeable differences in the performance of state, private and foreign banks in usual times and in crisis times in Turkey.

The Turkish banking sector consists of 36 commercial banks (in the year of 2010 it had been 31). The study includes three domestic, three private and three foreign commercial banks that existed for the duration of the analysis from 1997 to 2010. The selection of banks was based on the data availability mainly obtained from the audited financial statements of commercial banks published by Bank Association of Turkey ("The Banking Sector in Turkey," 2014)

The entire study is categorized in six chapters, and they would be organized as follows: This chapter discusses the aim of the study; the second chapter provides a detail review of existing research in the area of performance of state, private and foreign banks and about Turkish banks' performance. Third chapter covers the detailed background of Turkish banking sector; this is followed by a chapter explaining the research methodology, while the fifth chapter presents the findings and analysis. In last, the entire study is finalized with a conclusion in chapter six.

Chapter 2

LITERATURE REVIEW

This chapter presents the previously done comparative analysis of private, public and foreign banks of different countries, in terms of their profitability and performance. Different researchers use the different measurement techniques such as CAMEL rating system, SERVQUAL model, and profitability ratio analysis.

A comparative study analysis of UAE banks has been performed to evaluate their financial performance prior and after crises. In this study all Abu Dhabi stock exchange banks have been taken into account for the period of 2005 to 2010. The period was categorized into before crisis, during crisis and after crisis period. The leverage, liquidity and profitability ratios of UAE banks have been measured to evaluate banks' performance. A Wilcoxon test used to find out the final results that concludes that the recent global crisis has impacted the UAE bank's financial performance specially the profitability measured by Return on Assets and Return on Equity. All profitability ratios of bank have decreased during the crisis period. Liquidity of banks has also decreased during the crisis period especially in terms of cash & portfolio Investments to deposits. On the contrary the Leverage ratios of UAE's baking sector have increased during the crisis period as compared to the pre-crisis period (Mehta, 2012).

A comparative performance analysis between state-owned and privately-owned commercial banks of Turkey was carried out over the period between 1997 and 2006 by (Unal, Aktas, & Acikalin, 2007). The main goal of this study was to discover whether there was any performance difference between state and private banks in Turkey. Profitability and operating efficiency were chosen to test the hypotheses, net profit-loss (NPL), return on assets (ROA) and return on equity (ROE) used to measure profitability indicator. Net profit and net asset efficiencies relative to total employment and total number of branches are used to measure operating efficiency. The study suggested that state-owned banks are as efficient as private banks, and even more efficient at some aspects (Unal et al., 2007).

(Muda, Shaharuddin, & Embaya, 2013) analyzed the differences in profitability determinants of domestic and foreign banks operating in the Lebanon between 1993 and 2003.The study finds that foreign banks are more profitable than all domestic banks despite they were operating in the same market. In addition, the domestic banks and foreign banks' profitability determinants have been observed to be different. The study also reveals that foreign banks are less affected by the macroeconomic factors of the host country than domestic banks.

(Mian, 2003) used a panel data of over 1,600 banks in 100 emerging economies, to identify the strengths and weaknesses of the three dominant organizational designs in emerging markets. This data is then merged with financial data to create a bank-level panel covering a total of eight years from 1992 to 1999. Using country fixed effects, he document systematic cross-sectional differences between the three types of banks. The analysis reveals that all three types of banks are well represented throughout the world with significant market shares. Whereas, private domestic and foreign banks

have similar size and age distribution across the developing world, government banks tend to be both bigger and much older than their private counterparts.

(Chaudhary & Sharma, 2011) performed a comparative study of Indian public sector banks and private sector banks to analyze their performance based on their nonperforming assets (NPAs). In their study they have used an empirical approach with statistical tools for projection of trend. The findings suggested that an efficient management information system should be developed. The bank staff involved in authorizing the advances should be trained about the proper documentation and charge of securities and motivated to take measures in preventing advances turning into NPA. Public banks must pay attention on their functioning to compete private banks (Kajal C & Monika S, 2011).

In another study the financial performance of state and private sector banks during war and post war scenarios of Sri Lanka have been investigated by (Velnampy & Anojan. 2014). The study was initiated by using ratio, descriptive and independent samples T-Test analysis for the financial year 2007 to 2012. The descriptive analysis confirmed that private banks had higher financial performance than state banks during war, and post war. While, the independent samples t-test stated that there is significant mean difference between years and financial performance of state and private banks during the war period than post war. Overall, the Sri Lankan commercial banks have great opportunities to improve and state banks needs to focus to increase their financial performance to compete and survive successfully in the current world and also private commercial banks needs to achieve their target financial performance for their long survival (T. Velnampy, 2014).

The performances of Indian public and private sector banks have been evaluated in terms of their profitability by (Cheenu & Chitwan, 2013). For this purpose three major public sector and three private sector banks were selected on the basis of their total assets from the year 2009 to 2012.Return on Assets (ROA), Return on Equity (ROE) and Net Income Margin (NIM) ratios were used as performance indicators. The empirical analysis concludes that new banks are more efficient than old ones. The public sector banks are not as profitable as private banks. It means that efficiency and profitability are interrelated (Goel, 2013).

An assessment of the service quality gaps between Indian public banking sector and foreign banks operating in India has been done by (Gautam and Singh 2014). In their study service quality perceptions and expectations for the Indian banking customers have been examined by using SERVQUAL model. In this regard, a questionnaire has been used for the sample size of 150. The final results have been retrieved with the help of T-test. The finding shows that the service quality gap between perceptions and expectations in public sector banks is more as compared to the foreign banks operating in India (Gautam & Singh, 2014).

Analyzing efficiency and productivity of Malaysian domestic and foreign commercial banks from 1994 till 2000, (Economics, Papers, Matthews, & Ismail, 2006) figure out that efficiency is related to the size whereas the profitability and productivity is based on technical change. The authors conclude that foreign banks are in a better position than domestic banks in the case of efficiency.

Fotios and Kyriaki (2007) examine how bank specific and macroeconomic conditions and financial structure could affect the profitability of 584 commercial

domestic and foreign banks in the 15 EU countries during the period 1995–2001.The results indicate that the liquidity is significant and positively related to the profitability of domestic banks, but it is significantly negatively related in the case of foreign banks. They also found that the impact of concentration on profitability is different between foreign and domestic banks. In addition, the study also found that the GDP growth and inflation rates are significant and positively related to the profitability of domestic banks, but it is a negative significance in the case of foreign banks.

Ilhomovich (2009) investigates the relationship between domestic and foreign banks in Malaysia from 2004 to 2008 (5 years). The statistic show that domestic banks are very profitable but he found the foreign banks have stronger capital. Also he found in Malaysia, foreign banks are affecting the quality of financial services. In a great competition, all banks offer better services for customers.

Yevati et.al (2004) argued that state-owned banks should be evaluated by their function on stabilizing effect but not by their profitability. The researchers underline the importance of causality issue that exists between government bank ownership and such variables as economic development, growth, and corruption. Furthermore, they also introduce new findings which suggest that state bank ownership's negative effects on financial development and growth are not as robust as thought earlier. Their study provides evidence showing that state-owned banks may play a positive role in reducing credit pro-cyclicality as in the case of Latin American economies.

(Sufian, 2009) analyzed the factors influencing bank profitability in Malaysia covering the period 2000-2004 and focusing specially to foreign and domestic

commercial banks. He comes up with the results that there is a negative relationship between credit risk and loan concentrated for Malaysian banks. According to his findings, the higher the credit risks of a bank, the more its exposure to loan payment which will result consequently in a low level of profitability. He also found that capital size, income from non-interest sources and operating expenses have a positive effect on Malaysian banking profitability.

(Azam, 2012) analyze and compare the profitability of domestic and foreign banks based on a quarterly data sample of 36 commercial banks in Pakistan during the period 2004 and 2010. The sample was split into three categories, namely domestic banks under Government control, domestic banks under private control, and foreign banks. They find that foreign banks are more profitable than both types of domestic banks together. Their results also show that factors which are important in determining the profitability of domestic banks are not necessarily important for the foreign banks.

Chapter 3

OVERVIEW OF TURKISH ECONOMY & BANKING SECTOR

3.1 Turkish Economy

The economy of Turkey is considered as one of the dynamic and growing economies. A combination of multi culture, modernized business and trade environment and traditional agriculture, Turkey has got a special attention of tourist and business people. Textile is not a major export of Turkey but still its one-third population works in textile industry. With rapid growth rates and a young and increasing population of over 70 million, Turkey proved to be a largest economy in OECD after Germany and the most populous if it should be accepted into the EU. Turkey became member of the G20 club of important economies, and it is almost on par with the emerging giants of the BRIC club (Brand, 2011).

Turkey's economic freedom score is 63.2, making its economy the 70th freest in the 2015 Index. Its score has decreased by 1.7 points since last year, with declines in five of the 10 economic freedoms, including labor freedom, business freedom, the control of government spending, and property rights, outweighing improvements in freedom from corruption and investment freedom. Turkey is ranked 32nd out of 43 countries in the Europe region, and its overall score is higher than the world average (Score, Trend, & Comparisons, 2015).

Turkey has made considerable advances in competitiveness over the past decade, moving ahead 16 spots to number 43 in the World Economic Forum's Global Competitiveness Index, for example. During this time Foreign Direct Investment (FDI) has grown from just over $1 billion to an average of $13 billion in the past five years (World Bank, 2015).

3.1.1 The Global Financial Crises and Turkish Economy

The Turkish economy has faced numerous economic crises since the 1990s, including three major crises between 1990 and 2001. After the 2001 crisis, Turkey implemented the Transition to the Strong Economy Program within an agreement it reached with the IMF and moved into a period of macroeconomic stability supported by following strict monetary and fiscal policies. Furthermore, the government proceeded to privatize several state companies and to reform the banking system into a more transparent one. Between 2002 and 2007, Turkey's GDP grew at an annual average rate of 6.8% and the government exhibited important improvements in public deficits and control of inflation. Nonetheless, unemployment increased substantially and contrasted with the good performance of their macroeconomic indicators (Giddings, 1998).

The global financial crisis hit Turkey's economy in 2008-2009 by trade channels, setting back trade with Turkey's main trading partners in the European Union, and it resulted in a sharp fall in exports. Although capital inflows contracted, and private investment and the consuming of durable goods declined, there was no fundamental damage to Turkey's economy. Due to the reforms in the Turkish financial sector and tighter regulation, Turkey's economy recovered swiftly, and growth in 2010 was estimated at over 8% (IMF), mostly attributed to growing domestic demand. Inflation was just below the 2010 target and capital inflows

intensified driven by wide interest rate gaps and increased political certainty (D. Roby & Gilad B., 2011).

Macroeconomic indicators

3.1.2 Interest Rate

The benchmark interest rate in Turkey was last recorded at 7.50 %. Interest Rate in Turkey averaged 60.07 % from 1990 until 2015, reaching an all-time high of 500 % in March of 1994 and a record low of 4.50 % in May of 2013. Since May 18, 2010 the main interest rate is 1 Week Repo Lending Rate (TCB, 2015).

Table 1: Interest Rates from 1997 - 2010

Years	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Interest Rate	79.49	80.11	78.43	47.16	74.70	50.49	37.68	24.26	20.40	21.65	22.56	22.91	17.65	15.27

Source: The Banks Association of Turkey (2015)

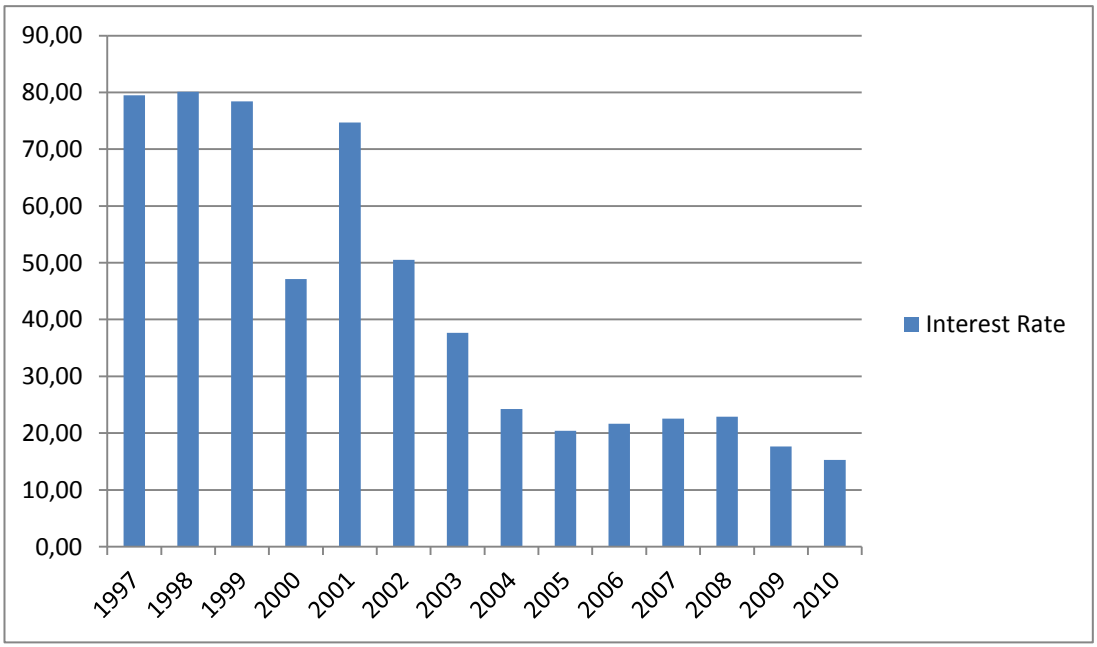

Figure 1: Interest Rates from 1997 - 2010

Source: The Banks Association of Turkey (2015)

3.1.3 Inflation Rate

In Turkey, the most important categories in the consumer price index are food and non-alcoholic beverages (24.5% of total weight); housing, water, electricity, gas and other fuels (16.4% of total weight) and transportation 15.5 %. Others include: furnishings, household equipment and routine maintenance 7.5% clothing and footwear 7.2% hotels, cafes and restaurants 6.6% alcoholic beverages and tobacco 5.3%. The index also includes communication 4.7% miscellaneous goods and services 4.3% recreation and culture 3.4% health 2.4% and education 2.3%. The inflation rate in Turkey was recorded at 7.61% in March of 2015 (TSI, 2015).

Table 2: Inflation Rates from 1997 - 2010

Years	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Inflation Rate	84.46%	86.66%	64.76%	56.43%	53.46%	47.20%	21.94%	8.60%	8.19%	9.59%	8.78%	10.43%	6.28%	8.58%

Source: The Banks Association of Turkey (2015)

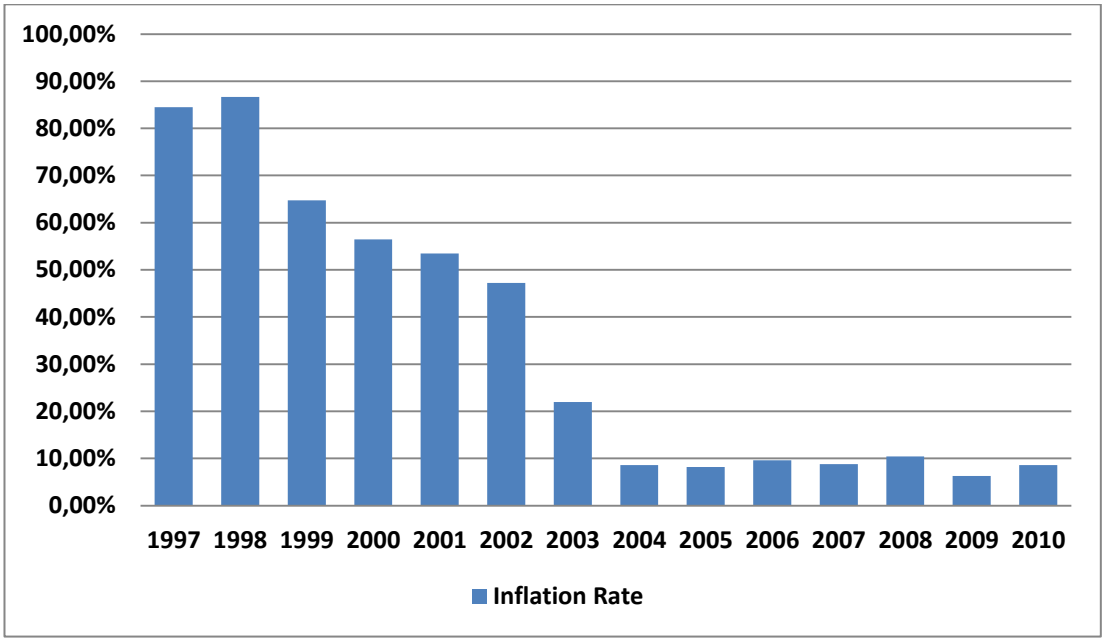

Figure 2: Inflation Rates from 1997 - 2010

Source: The Banks Association of Turkey (2015)

3.1.4 Gross Domestic Product (GDP)

The gross domestic product (GDP) measures the national income and output of a country's economy. The GDP is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time. The Table 3 below shows the annual GDP (gross domestic product) for the past 15 years (1996 to 2010). It clearly illustrates a consistent growth in Turkish GDP from 2001 to 2010 except 2009 that has minor decrease in GDP ratio ("Turkey GDP Growth Rate | 1998-2015 | Data | Chart | Calendar | Forecast," n.d.).

Table 3: Gross Domestic Product (GDP) from 1996 - 2010

Years	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP ($)	243.9	255.1	269.1	249.8	266.4	195.5	232.3	303.3	392.2	482.7	529.2	649.1	730.3	614.4	735.5

Source: The Banks Association of Turkey (2015)

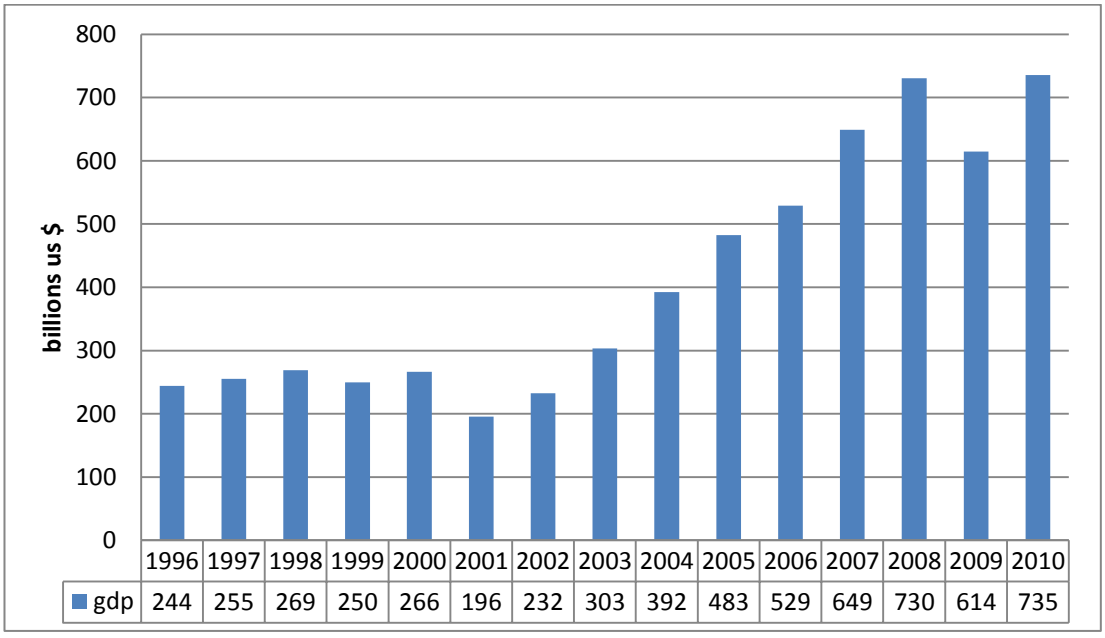

Figure 3: The annual GDP of Turkey 1996 -2010

Source: The Banks Association of Turkey (2015)

In 2013, the Turkish GDP was worth 820.21 billion US dollars. The GDP value represents 1.32 % of the world economy. GDP in Turkey averaged 197.27 USD Billion from 1960 until 2013, reaching an all the time high of 820.21 USD Billion in 2013 and a record low of 8 USD Billion in 1961 (Trading Economics, 2015).

3.2 Turkish Banking Sector

The banking sector forms a great part of the Turkish financial system in its dynamic economy. Most of the transactions and activities of money and capital markets are carried out by banks. Most State banks were established to finance a particular industry such as agriculture for example (Ziraat Bank), but private banks generally have close connections to large industrial groups and holdings.

First banking activities started in early 1800s with the so-called money-changers and the Galata bankers. During this period, all quasi-banking activities were carried out by money-changers, and The Galata bankers consisted mostly of the ethnic-minorities in Istanbul. With the deterioration of the Ottoman Empires' financial situation after the Crimean war, the Empire needed external financial support. It was during this period when representatives of several foreign banks came to Istanbul with the purpose of extending credits to the Empire at high interest rates. The Ottoman Bank (Osmanli Bankasi) was established in 1856 with its head office in London and served as the Central Bank until the 1930's.

The Central Bank, founded in the early 1930s, has the usual central bank responsibilities, such as issuing banknotes, protecting the currency, and regulating the banking system and credit. The Central Bank also finances the government's

budget deficits and makes loans to public and private banks. But after 1983 the Central Bank began to reduce lending and stepped up its supervisory functions.

Before 1980 there were only 4 foreign banks in Turkey, but their number grew rapidly during the 1980s as the Turgut Ozal government liberalized conditions and today there are almost 50 of them. During these years a series of reforms were adopted to promote financial market development; interest and foreign exchange rates were liberalized, new entrants to the banking system were permitted and foreign banks were encouraged to operate in Turkey.

The new Law brought the Banking Regulation and Supervision Agency (BRSA, or Turkish BDDK) into life to safeguard the rights and benefits of depositors. The Banks Association of Turkey (BAT) is the representative body of the banking sector in Turkey established for protecting and promoting the professional interests of its members ("Banking system - All About Turkey," n.d.).

3.2.1 Banking Sector Size

The number of banks operating in Turkey was 45 at the end of March 2010 with 32 in deposit banks group and 13 in non-deposit banks group (development and investment banks). Among deposit banks, there were 3 state-owned banks, 1 SDIF bank, 11 privately-owned banks and 17 foreign banks. The number of branches per bank was 318 in deposit banks. The number was 979 in state-owned deposit banks, 452 in privately-owned deposit banks and 121 in foreign banks. The average number of employees was 5,697 in deposit banks, 16,731 in state-owned banks, 8,115 in privately-owned banks and 2,307 in foreign banks (TBB, 2015) .

Table 4: Turkish Banks Size As of 2010

	Names	Ownership	Total Assets (USD Million)	Total Deposit (USD Million)	No.of Branch Offices	Bank size (%)
1	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	State-owned Deposit Banks	83,052	67,469	1,340	15.28
2	Türkiye İş Bankası A.Ş.	Privately-owned Deposit Banks	77,708	49,854	1,099	14.30
3	Türkiye Garanti Bankası A.Ş.	Privately-owned Deposit Banks	69,597	43,456	791	12.80
4	Akbank T.A.Ş.	Privately-owned Deposit Banks	65,713	39,262	856	12.09
5	Türkiye Vakıflar Bankası T.A.O.	State-owned Deposit Banks	45,907	31,945	547	8.45
6	Yapı ve Kredi Bankası A.Ş.	Privately-owned Deposit Banks	44,033	27,884	838	8.10
7	Türkiye Halk Bankası A.Ş.	State-owned Deposit Banks	41,868	30,903	680	7.70
8	Finans Bank A.Ş.	Foreign Banks	19,597	13,428	461	3.61
9	Denizbank A.Ş.	Foreign Banks	14,568	8,108	450	2.68
10	ING Bank A.Ş.	Foreign Banks	10,278	6,045	334	1.89
11	Türk Ekonomi Bankası A.Ş.	Privately-owned Deposit Banks	10,086	6,175	334	1.85
12	HSBC Bank A.Ş.	Foreign Banks	9,583	6,046	336	1.76
13	Fortis Bank A.Ş.	Foreign Banks	8,466	3,706	294	1.55
14	Şekerbank T.A.Ş.	Privately-owned Deposit Banks	6,165	4,253	256	1.13
15	İller Bankası	Dev't and Inv't Banks	5,560	0	19	1.02
16	Türkiye Sınai Kalkınma Bankası A.Ş.	Dev't and Inv't Banks	4,701	0	4	0.87
17	Türk Eximbank	Dev't and Inv't Banks	4,309	0	2	0.79
18	Citibank A.Ş.	Foreign Banks	3,551	2,433	38	0.65
19	Anadolubank A.Ş.	Privately-owned Deposit Banks	2,523	1,431	86	0.46
20	Eurobank Tekfen A.Ş.	Foreign Banks	2,454	1,235	46	0.45
21	Alternatif Bank A.Ş.	Privately-owned Deposit Banks	2,286	1,486	47	0.42
22	Tekstil Bankası A.Ş.	Privately-owned Deposit Banks	1,288	791	44	0.23
23	İMKB Takas ve Saklama Bankası A.Ş.	Dev't and Inv't Banks	1,074	0	1	0.19
24	Deutsche Bank A.Ş.	Foreign Banks	1,000	558	1	0.18
25	BankPozitif Kredi ve Kalkınma Bankası A.Ş.	Dev't and Inv't Banks	959	0	4	0.17
26	Türkiye Kalkınma Bankası A.Ş.	Dev't and Inv't Banks	835	0	1	0.15
27	The Royal Bank of Scotland N.V.	Foreign Banks	803	486	8	0.15
28	Turkland Bank A.Ş.	Foreign Banks	784	582	27	0.14
29	Millennium Bank A.Ş.	Foreign Banks	668	552	18	0.12
30	Turkish Bank A.Ş.	Privately-owned Deposit Banks	612	295	23	0.11
31	Arap Türk Bankası A.Ş.	Foreign Banks	588	107	6	0.11
32	Birleşik Fon Bankası A.Ş.	Banks Under the Dep.Ins.Fund	534	18	1	0.10
33	Société Générale (SA)	Foreign Banks	475	122	16	0.09
34	Bank Mellat	Foreign Banks	392	174	3	0.07
35	Aktif Yatırım Bankası A.Ş.	Dev't and Inv't Banks	388	0	6	0.07
36	Merrill Lynch Yatırım Bank A.Ş.	Dev't and Inv't Banks	264	0	1	0.05
37	WestLB AG	Foreign Banks	233	101	1	0.04
38	JPMorgan Chase Bank N.A.	Foreign Banks	129	7	1	0.02
39	Nurol Yatırım Bankası A.Ş.	Dev't and Inv't Banks	122	0	3	0.02
40	GSD Yatırım Bankası A.Ş.	Dev't and Inv't Banks	63	0	1	0.01
41	Diler Yatırım Bankası A.Ş.	Dev't and Inv't Banks	59	0	1	0.01
42	Habib Bank Limited	Foreign Banks	48	9	1	0.01
43	Credit Agricole Yatırım Bankası Türk A.Ş.	Dev't and Inv't Banks	42	0	1	0.01
44	Adabank A.Ş.	Privately-owned Deposit Banks	33	4	1	0.01
45	Taib Yatırım Bank A.Ş.	Dev't and Inv't Banks	17	0	1	0.00
	Total		543,416	348,926	9,029	

Source: The Banks Association of Turkey (2015)

Table 5: Number of Turkish Banks and Branches 2011-12

	March 2011		Dec 2011		March 2012	
	Banks	Branches	Banks	Branches	Banks	Branches
Deposit Banks	31	9,539	31	9,792	31	9,844
State-owned Banks	3	2,793	3	2,909	3	2,936
Privately-owned Banks	11	4,896	11	4,944	11	4,969
Banks in Fund	1	1		1	1	1
Foreign Banks	16	1,849	16	1,938	16	1,938
Development and Investment Banks	13	42	13	42	13	42
Total	44	9,581	44	9,834	44	9,886

Source: The Banks Association of Turkey (2015)

3.2.2 Total Assets and Equities

The reform process fixed the country's banking system, with total assets rising from $130 billion to $465 billion between 2002-2008. The shareholders' equity in the sector rose from $16 billion to $54 billion in the same period, and the capital adequacy ratio also steadily increased. Today, Turkey has a concentrated banking market with three state-owned banks and 37 private banks, while the top seven banks control 80% of the sector's assets. The figure below shows the Public and Private Banks' share in total loans, deposit and assets (Market, Trend, Kemal, Europe, & East, 2013)

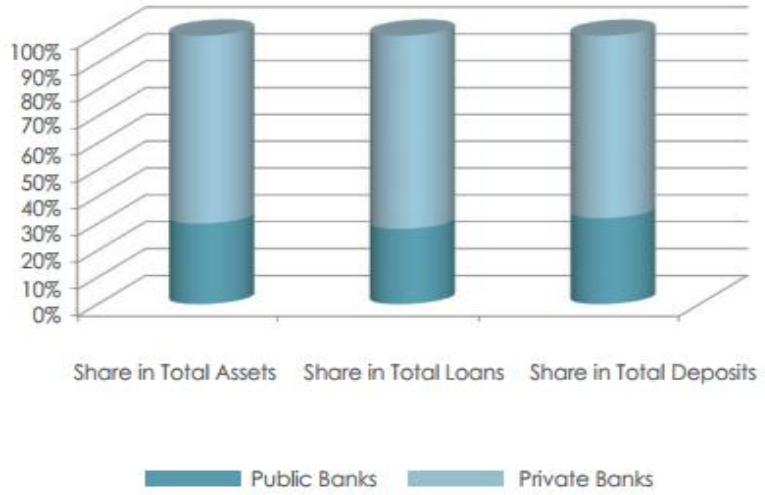

Figure 4: Public and Private Banks' Share in Total Loans, Deposit and Assets
Source: Turkish Banks Association (2013)

3.2.3 Balance Sheet

Total balance sheet size of the banking sector increased by $ 75 billion in 2012. 49 percent ($ 37 billion) of this increase stemmed from deposits; 6 percent ($ 4 billion) from non-deposit resources; 26 percent ($ 19 billion) from shareholders' equity; and 19 percent ($ 15 billion) from other liabilities. 75 percent ($ 59 billion) of the resources were allocated to loans facilities, and 25 percent ($ 20 billion) to liquid assets. Balance sheet is mention below:

Table 6: Balance Sheet 2010 - 12 (in billion USA dollars)

	Assets		
	2010	2011	2012
Liquid assets	-4	29	20
Financial assets	16	-2	-7
Loans	81	95	59
Other assets	13	2	3
Total	106	124	75
-Turkish lira	130	92	97
-Foreign exchange	34	105	42
	Liabilities		
	2010	2011	2012
Deposits	62	46	37
Non-deposit funds	23	65	4
Shareholders' equity	15	6	19
Other liabilities	6	7	15
Total	106	124	75
-Turkish lira	123	74	98
-Foreign exchange	41	124	41

Source: Turkish Banks Association (2015)

3.2.4 Foreign Banks

Today, Turkish banks have a relatively large achievement in the sale of products in small base quantities, new knowledge and wide offshoot networks, which makes it hard for foreign investors to find business in turkey. The share of market in foreign banks of Turkey is low. HSBC is the biggest foreign bank functioning in Turkey, has a market share of 2%. All the foreign bank have a share of market less than 2%. Only 2 foreign banks have a offshoot network with more than one hundred and fifty offices and more than three thousands employees. Six foreign banks from 13 merely had one branch office since 2005. As mentioned above the largest group with 60% of total assets are privately owned banks. Since 2001, Foreign banks declare a small access in shares of total assets, loans and deposits. But, foreign banks have as a group a very small market share 5.6% in total assets.

3.2.5 Private Banks

The owner of the largest privately owned bank İşbank is the CHP system of government (28.1%) and its fixed wages paid at regular to a person dependents in consideration of past services, age, etc. (41.54%). Sabancı Group by 66.35% hold Akbank, the second largest privately owned bank. Sabancı Holding has majority of Aksigorta's shares (insurance company) and Exsa Corporation is a Sabancı Group export company. General Electric Consumer Finance (GECF) in December 2005 bought a 25.5% share in Turkey's fourth largest private commercial bank, Garanti Bank. GECF achieved Dogus Group has 1/2 of common shares of Garanti Bank. Çukurova Group (44.5%) and SDIF (12.9%) in September 2005 held 57.4% of Yapı Kredi Bankası shares were negotiated to Koçbank, which is possessed by Koç Financial Services. Koç Holding and UniCredit Jointed with Koç

Financial Services. In terms of assets, Yapı Kredi and Koçbank together with 33.6 bln TL rank place four (Dabaghi, 2013).

Chapter 4

DATA AND METHODOLOGY

4.1 Sample

As the study aims to analyse the profitability performances of foreign, private and public banks operating in Turkish banking sector comparatively. With this purpose, a data set has been formed by utilizing financial ratios of 3 states owned, 3 private and 3 foreign banks of Turkey for the period of 1997 - 2010. These banks are mention in the Table 7 below:

Table 7: Public, Private and Foreign Banks of Turkey

State Owned Banks	Private Domestic Banks	Foreign Owned Banks
1. Türkiye Cumhuriyeti Ziraat Bankası	1. Türkiye Garanti Bankası	1. Deniz Bank
2. Türkiye Halk Bankası	2. Türkiye Iş Bankası	2. HSBC Bank
3. Türkiye Vakıflar Bankası	**3.** Yapı ve Kredi Bankası	3. ING Bank

Source: The Banks Association of Turkey (2015)

4.2 Data Sources

Most of the data are collected from the balance sheet and income statement of each bank available on their official websites and from the Turkish Bank Association website. It is important to underline that the data are annual data.

4.3 Control Variables: The Profitability Indicators

Profitability of any bank can be analysed by its Return on asset (ROA), Return on equity (ROE), and various other sources that directly benefit the banks' owners and regulators. For our study we use ROA, ROE, profit per branch (PPB), net interest margin (NIM), growth in net profit (GINP) and profit per employee (PPE) ratios to assess the ability of the banks to generate earnings in comparison with its all expenses and other relevant costs during a specific time period. These all ratios are evaluated to compare how well one banking sector is doing relative to another in terms of profit. These ratios are defined as follows:

A) Return on Assets (ROA)

Return on Asset (ROA) ratio is obtained from the division of the Net Income by the Total Asset, and expressed in percentage. It is a key indicator of profit and asset management efficiency. Therefore, it indicates how well the bank's assets are managed to bring profit for each one dollar of asset that has been invested to the company or the bank (Gul et Al 2011). This ratio can be calculated as:

Return on Assets (%) = Net Income or Profit/Average Total Assets

Table 8: Return on Assets from 1997 - 2010 (%)

	STATE BANKS			PRIVATE BANKS			FOREIGN BANKS		
YEAR	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	Türkiye Halk Bankası A.Ş.	Türkiye Vakıflar Bankası T.A.O.	Türkiye Garanti Bankası A.Ş.	Türkiye İş Bankası A.Ş.	Yapı ve Kredi Bankası A.Ş.	Denizbank A.Ş.	HSBC Bank A.Ş.	ING Bank A.Ş.* (Oyak Bank)
1997	0.3	0.4	4.1	5.0	6.0	5.0	2.2	4.9	13.7
1998	0.4	0.5	4.2	5.5	5.7	3.5	2.7	2.6	13.4
1999	0.3	1.2	18.4	4.0	5.3	4.3	2.8	9.5	12.6
2000	0.4	0.0	7.8	3.1	3.3	3.4	0.8	1.4	7.2
2001	-0.2	-5.8	-6.7	-1.4	-4.6	-5.8	-3.5	1.9	14.4
2002	0.4	3.4	2.4	0.6	1.3	5.9	0.5	0.9	-5.3
2003	2.3	2.5	1.4	1.3	1.4	0.8	2.0	2.7	1.4
2004	2.7	2.1	2.6	1.7	1.6	-0.2	1.8	2.0	1.9
2005	2.8	2.0	1.7	1.9	1.5	-12.6	2.1	3.0	3.7
2006	2.9	2.5	2.1	2.1	1.5	1.0	2.4	2.7	0.9
2007	2.9	2.8	2.4	3.4	2.1	1.4	1.4	2.7	1.1
2008	2.0	2.0	1.4	2.0	1.5	1.6	1.4	1.7	0.8
2009	2.8	2.7	1.9	2.8	2.1	2.1	2.5	1.8	1.2
2010	2.5	2.8	1.6	2.5	2.3	2.4	1.7	1.4	0.6

Source: The Banks Association of Turkey (2015)

B) Return on Equity (ROE)

Return on Equity (ROE) is obtained by the ratio of Net Income to Total Equity and expressed in percentage. It shows the ability of the management to utilize the shareholder's Equity whether to improve the return earning or to keep the bank in good position. Thus the better the management of the shareholder's Equity, the more efficient or the more profit the bank will generate in term of Return on Equity. This ratio can be calculated as:

Return on Equity (%) = Net Income or Profit/Net-worth

Table 9: Return on Equity from 1997 - 2010 (%)

	STATE BANKS			PRIVATE BANKS			FOREIGN BANKS		
Years	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	Türkiye Halk Bankası A.Ş.	Türkiye Vakıflar Bankası T.A.O.	Türkiye Garanti Bankası A.Ş.	Türkiye İş Bankası A.Ş.	Yapı ve Kredi Bankası A.Ş.	Deniz bank A.Ş.	HSBC Bank A.Ş.	ING Bank A.Ş.* (Oyak Bank)
1997	0.1	0.1	1.0	0.9	0.7	0.6	0.1	0.8	0.4
1998	0.1	0.1	0.9	0.8	0.5	0.4	0.3	0.5	1.0
1999	0.1	0.5	0.5	0.4	0.4	0.5	0.4	3.1	1.8
2000	0.2	0.0	0.2	0.3	0.2	0.2	0.1	0.3	0.2
2001	0.0	-1.0	-1.8	-0.2	-0.2	-0.6	-0.3	0.1	0.3
2002	0.0	0.3	0.4	0.1	0.1	0.4	0.0	0.0	-0.1
2003	0.2	0.2	0.2	0.1	0.1	0.0	0.2	0.1	0.1
2004	0.3	0.2	0.3	0.1	0.1	0.0	0.1	0.1	0.2
2005	0.3	0.2	0.1	0.2	0.1	-1.8	0.2	0.2	0.3
2006	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1
2007	0.3	0.3	0.2	0.3	0.2	0.1	0.1	0.2	0.1
2008	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
2009	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1
2010	0.3	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0.1

Source: The Banks Association of Turkey (2015)

C) Profit Per Employee (PPE)

This ratio reveals the profit on over the operational expenses and per employee. If the income per employee ratio is higher than the productivity per employee, it approves the better operational cost management by the bank. This ratio can be calculated as:

Profit per employee = Net Profit/Total No of Employees

Table 10: Profit Per Employee of Each Bank from 1997 - 2010 ($)

	STATE BANKS			PRIVATE BANKS			FOREIGN BANKS		
Years	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	Türkiye Halk Bankası A.Ş.	Türkiye Vakıflar Bankası T.A.O.	Türkiye Garanti Bankası A.Ş.	Türkiye İş Bankası A.Ş.	Yapı ve Kredi Bankası A.Ş.	Deniz bank A.Ş.	HSBC Bank A.Ş.	ING Bank A.Ş.* (Oyak Bank)
1997	1,556	2,248	20,939	56,777	26,412	30,390	7,010	297,607	205,738
1998	1,830	3,215	25,149	77,029	29,048	28,069	17,014	221,381	324,329
1999	1,972	11,001	17,288	62,674	29,327	38,773	27,615	866,730	349,011
2000	2,953	460	8,693	64,635	23,581	36,926	7,141	141,283	133,935
2001	-1,728	-48,104	-61,480	-30,245	-39,126	-73,866	-58,942	10,245	165,990
2002	4,086	39,237	24,563	10,133	12,745	64,372	3,683	5,199	-58,053
2003	34,771	40,955	22,682	26,568	19,529	11,048	20,992	19,554	11,560
2004	54,102	35,434	65,302	36,937	29,619	-4,181	21,139	22,152	20,525
2005	65,924	37,711	55,673	50,170	41,622	-218,688	29,568	42,337	50,031
2006	72,231	56,568	71,314	63,554	42,135	27,039	35,565	39,785	13,771
2007	97,165	84,955	102,192	137,592	75,614	42,932	27,468	54,789	19,705
2008	65,846	53,674	51,734	70,353	47,403	46,307	24,775	23,942	14,477
2009	106,344	87,699	82,858	118,363	70,979	63,552	45,903	25,757	20,525
2010	106,330	97,211	67,939	122,671	81,002	92,980	34,710	24,029	12,400

Source: The Banks Association of Turkey (2015)

D) Profit Per Branch (PPB)

Profit per branch can be calculated by net income over total number of bank branches. For each bank this ratio also shows the better profitability performance based on each branch. This ratio can be calculated as:

Profit per branch = Net Profit/ Total no of branches

Table 11: Profit per Branch of Each Bank from 1997 - 2010 ($)

	STATE BANKS			PRIVATE BANKS			FOREIGN BANKS		
Years	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	Türkiye Halk Bankası A.Ş.	Türkiye Vakıflar Bankası T.A.O.	Türkiye Garanti Bankası A.Ş.	Türkiye İş Bankası A.Ş.	Yapı ve Kredi Bankası A.Ş.	Deniz bank A.Ş.	HSBC Bank A.Ş.	ING Bank A.Ş.* (Oyak Bank)
1997	40,957	41,427	593,075	1,624,566	481,422	797,307	174,700	13,689,900	6,583,600
1998	51,912	58,216	705,214	1,834,725	513,963	636,946	342,628	10,404,900	10,054,200
1999	56,816	201,594	466,887	1,432,939	546,802	907,612	597,479	58,070,943	11,168,344
2000	82,891	8,570	234,077	1,148,848	447,045	897,183	145,251	2,220,164	4,955,602
2001	-37,948	-800,267	-1,552,091	-613,202	-723,019	-1,709,517	-1,017,021	190,522	5,477,681
2002	81,259	663,149	622,251	246,897	225,925	1,603,157	65,432	112,422	-1,509,381
2003	670,521	661,737	562,520	691,366	359,806	282,016	412,200	427,601	166,551
2004	999,520	558,576	1,577,389	966,079	558,138	-108,244	461,452	508,802	294,149
2005	1,171,956	678,611	1,307,688	1,222,090	813,941	-5,513,644	633,837	1,120,043	747,200
2006	1,198,096	1,044,774	1,744,002	1,566,734	885,681	609,410	750,390	1,034,419	213,193
2007	1,621,124	1,653,597	2,455,997	3,396,983	1,563,324	904,934	569,444	1,325,331	319,706
2008	1,105,167	1,075,807	942,741	1,584,400	954,627	795,715	456,844	489,770	251,451
2009	1,793,787	1,639,281	1,543,596	2,527,526	1,459,387	1,086,989	794,533	492,909	349,331
2010	1,725,907	1,844,129	1,183,274	2,381,312	1,698,356	1,543,708	595,137	474,078	225,161

Source: The Banks Association of Turkey (2015)

E) Growth in Net Profit (GINP)

To compare the change in their profitability performance of all three types of banks over the period of 1997-2010, their profit growth is also evaluated.

Table 12: Growth in Net Profit from 1998 - 2010 (%)

	STATE BANKS			PRIVATE BANKS			FOREIGN BANKS		
Years	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	Türkiye Halk Bankası A.Ş.	Türkiye Vakıflar Bankası T.A.O.	Türkiye Garanti Bankası A.Ş.	Türkiye İş Bankası A.Ş.	Yapı ve Kredi Bankası A.Ş.	Denizbank A.Ş.	HSBC Bank A.Ş.	ING Bank A.Ş.* (Oyak Bank)
1998	29	44	21	41	9	-10	338	-24	53
1999	11	249	-33	-19	8	44	98	458	11
2000	45	-96	-53	-9	-18	-3	-65	-73	-56
2001	-153	-10502	-769	-159	-260	-287	-919	140	11
2002	267	150	137	141	131	194	119	-51	-128
2003	708	-4	-11	188	60	-83	546	271	3101
2004	49	13	180	56	57	-138	35	19	90
2005	17	0	-15	57	50	-4969	63	119	166
2006	11	55	37	43	11	116	31	13	-68
2007	36	59	62	164	86	68	-7	57	57
2008	-31	-31	-44	-42	-32	12	0	-48	-21
2009	68	64	70	73	61	33	96	1	36
2010	2	19	-11	3	22	47	-17	-5	-42

Source: The Banks Association of Turkey (2015)

F) Net interest Margin (NIM)

The interest paid to the depositors and the interest received from borrowers creates a spread called interest margin on banks, because they pay lower interest to the depositors and receive higher interest from borrowers as usual. In this sense, net interest margin is the difference between interest earned and interest expended by a bank divided by its total assets.

Net interest Margin = (interest received – interest paid) / total assets

Table 13: Net Interest Margin from 1997 - 2010 (%)

	STATE BANKS			PRIVATE BANKS			FOREIGN BANKS		
YEAR	Türkiye Cumhuriyeti Ziraat Bankası A.Ş.	Türkiye Halk Bankası A.Ş.	Türkiye Vakıflar Bankası T.A.O.	Türkiye Garanti Bankası A.Ş.	Türkiye İş Bankası A.Ş.	Yapı ve Kredi Bankası A.Ş.	Denizbank A.Ş.	HSBC Bank A.Ş.	ING Bank A.Ş.* (Oyak Bank)
1997	0.5	6.5	1.2	1.0	1.0	1.0	0.1	0.4	0.0
1998	0.9	17.6	1.5	1.5	1.2	1.4	0.4	0.7	0.3
1999	1.1	24.7	1.5	1.3	1.4	1.2	0.6	0.7	0.2
2000	46.9	21.5	0.7	1.0	1.1	1.6	0.7	0.1	0.1
2001	6.2	4.9	0.4	0.8	1.2	0.4	0.6	1.3	0.1
2002	2.3	7.9	0.5	0.6	0.9	1.1	0.6	2.7	0.1
2003	3.0	7.0	0.6	0.1	1.0	-0.1	0.7	2.8	1.6
2004	3.3	6.0	2.1	1.4	2.0	1.3	1.8	3.4	2.8
2005	2.6	4.0	2.3	1.8	2.5	1.8	2.3	4.3	-0.9
2006	2.9	4.2	2.7	1.9	2.3	2.8	2.8	5.0	3.1
2007	3.8	4.6	3.5	3.5	3.3	4.2	4.4	7.1	5.1
2008	3.2	4.2	3.1	3.0	3.1	3.6	4.9	8.1	5.2
2009	4.9	4.4	4.9	4.9	4.2	5.3	7.6	8.4	7.8
2010	4.2	3.9	4.2	4.4	3.8	4.7	7.1	7.4	6.6

Source: The Banks Association of Turkey (2015)

4.4 Research Hypotheses

The following hypotheses are tested in order to find if there is any difference between foreign, private and public banks of Turkey:

Ho1: There is no significant difference of ROA between foreign, private and public banks

Ho2: There is no significant difference of ROE between foreign, private and public banks

Ho3: There is no significant difference of PPB between foreign, private and public banks

Ho4: There is no significant difference of PPE between foreign, private and public banks

Ho5: There is no significant difference of GINP between foreign, private and public banks

Ho6: There is no significant difference of NIM between foreign, private and public banks

Chapter 5

ANALYSIS AND RESEARCH FINDINGS

By using the data that are presented in Chapter 4 we first calculated the averages of the profitability indicators for public, private and foreign banks separately for the duration of our analysis.

Then we used t-test to check the significance of mean differences between private, foreign and state owned banks. The paired t-test was used to compare first for the period before crisis from 1997 to 2007 and then the period after the crises 2008-2010.

Independent sample t-test was used to check whether there is any significant difference with regard to Return on Assets, Return on Equity, Profit per Employee, Profit per Branch, Growth in Net Profit, and Net Interest Margin between State, Private and Foreign banks operating in Turkish banking sector within the period of 1997-2010 or not.

Table 14: The results for the duration between 1997 to 2010

	from 1997 to 2010		p-value	from 1997 to 2010		p-value	from 1997 to 2010		p-value
	Foreign Banks	Private Banks		Foreign Banks	State Banks		State Banks	Private Banks	
ROA	0.0305	0.0187	0.2440	0.0305	0.0207	0.2887	0.0207	0.0187	0.8337
ROE	0.3003	0.1725	0.3888	0.3003	0.1767	0.4075	0.1767	0.1725	0.9725
Profit per Employe	0.0791	0.0368	0.1990	0.0791	0.0398	0.2280	0.0398	0.0368	0.8466
Profit per Branch	3.2104	0.7745	0.1593	3.2104	0.7686	0.1568	0.7686	0.7745	0.9851
Net Interest Margin	0.0283	0.0205	0.3509	0.0283	0.1568	0.2709	0.1568	0.0205	0.2430
Growth in Net Profit	1.1297	-1.0910	0.1913	1.1297	-2.3966	0.2751	-2.3966	-1.0910	0.6911

Source: The Banks Association of Turkey (2015)

5.1 Return on Assets (ROA)

a) Foreign and State Owned Banks

H_0= There is no significant difference of ROA between foreign banks and state owned banks.

T-test of ROA between Foreign and State Banks

t-statistics	t-critical	p-value	Hypothesis
-1.0831	+/- 2.16	0.2887	Accepted

The test result gives us a t-value of -1.08, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we can conclude that there is no significant difference of ROA between foreign and state banks.

b) Foreign Owned Banks and Private Domestic Banks

H_0= There is no significant difference of ROA between foreign banks and private domestic banks.

T-test of ROA between Foreign and Private Banks

t-statistics	t-critical	p-value	Hypothesis
-1.1921	+/- 2.16	0.2440	Accepted

Similarly, in this case also the t-value of -1.19 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of ROA between foreign and private banks.

c) Private and State Owned Banks

H_0= There is no significant difference of ROA between state owned banks and private domestic banks.

T-test of ROA between Private and State Banks

t-statistics	t-critical	p-value	Hypothesis
0.2121	+/- 2.16	0.8337	Accepted

Like the other two cases, as t-value of 0.21 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of ROA between state and private banks.

5.2 Return on Equity (ROE)

a) Foreign Owned Banks and Private Domestic Banks

H_0= There is no significant difference of ROE between foreign owned banks and private domestic banks.

T-test of ROE between Foreign and Private Banks

t-statistics	t-critical	p-value	Hypothesis
0.8763	+/- 2.16	0.3888	Accepted

The test result gives us a t-value of 0.88, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of ROE between foreign and private banks.

b) Foreign and State Owned Banks

H_0= There is no significant difference of ROE between foreign and state owned banks.

T-test of ROE between Foreign and State Banks

t-statistics	t-critical	p-value	Hypothesis
0.8418	+/- 2.16	0.4075	Accepted

Similarly, in this case also the t-value of 0.84 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null

hypothesis and we conclude that there is no significant difference of ROE between foreign and state banks.

c) State Owned Banks and Private Domestic Banks

H_0= There is no significant difference of ROE between state owned banks and private domestic banks.

T-test of ROE between State and Private Banks

t-statistics	t-critical	p-value	Hypothesis
0.0348	+/- 2.16	0.9725	Accepted

Like the other two cases, as t-value of 0.03 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of ROE between state and private banks.

5.3 Growth in Net Profit (GINP)

a) Foreign Owned Banks and Private Domestic Banks

H_0= There is no significant difference of Growth in Net Profit between foreign owned banks and private domestic banks.

T-test of Growth in Net Profit between Foreign and Private Banks

t-statistics	t-critical	p-value	Hypothesis
1.3446	+/- 2.179	0.1913	Accepted

The test result gives us a t-value of 1.34, which we have to compare to a critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.179, which tells us that we cannot reject the

null hypothesis. Thus, we cannot conclude that there is a significant difference of Growth in Net Profit between foreign and private banks.

b) Foreign and State Owned Banks

H_0= There is no significant difference of Growth in Net Profit between foreign and state owned banks.

T-test of Growth in Net Profit between Foreign and State Banks

t-statistics	t-critical	p-value	Hypothesis
1.1169	+/- 2.179	0.2751	Accepted

Similarly, in this case also the t-value of 1.11 lies between the significance intervals of +/- 2.179 i.e. critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Growth in Net Profit between foreign and state banks.

c) State Owned Banks and Private Domestic Banks

H_0= There is no significant difference of Growth in Net Profit between state owned banks and private domestic banks.

T-test of Growth in Net Profit between Private and State Banks

t-statistics	t-critical	p-value	Hypothesis
0.4021	+/- 2.179	0.6911	Accepted

Like the other two cases, as t-value of 0.40 lies between the significance intervals of +/- 2.179; we cannot reject the null hypothesis. Consequently, the test results indicate

that there is no significant difference of Growth in Net Profit between state and private banks.

5.4 Net Interest Margin (NIM)

a) Foreign Owned Banks and Private Domestic Banks

H_0= There is no significant difference of Net Interest Margin between foreign owned banks and private domestic banks.

T-test of Net Interest Margin between Foreign and Private Banks

t-statistics	t-critical	p-value	Hypothesis
-0.9498	+/- 2.179	0.3509	Accepted

The test result gives us a t-value of -0.94, which we have to compare to a critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.179, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of Net Interest Margin between foreign and private banks.

b) Foreign and State Owned Banks

H_0= There is no significant difference of Net Interest Margin between foreign and state owned banks.

T-test of Net Interest Margin between Foreign and State Banks

t-statistics	t-critical	p-value	Hypothesis
1.1248	+/- 2.179	0.2709	Accepted

Similarly, in this case also the t-value of 1.12 lies between the significance intervals of +/- 2.179 i.e. critical value of t-distribution with 12 degrees of freedom at a signi-

ficance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Net Interest Margin between foreign and state banks.

c) Private Domestic Banks and State Owned Banks

H_0= There is no significant difference of Net Interest Margin between state owned banks and private domestic banks.

T-test of Net Interest Margin between Private and State Banks

t-statistics	t-critical	p-value	Hypothesis
1.1947	+/- 2.179	0.2430	Accepted

Like the other two cases, as t-value of 1.19 lies between the significance intervals of +/- 2.179; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of Net Interest Margin between state and private banks.

5.5 Profit Per Employee (PPE)

a) Foreign Owned Banks and Private Domestic Banks

H_0= There is no significant difference of Profit per Employee between foreign owned banks and private domestic banks.

T-test of Profit per Employee between Foreign and Private Banks

t-statistics	t-critical	p-value	Hypothesis
1.3179	+/- 2.16	0.1990	Accepted

The test result gives us a t-value of 1.32, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of Profit per Employee between foreign and private banks.

b) Foreign and State Owned Banks

H_0= There is no significant difference of Profit per Employee between foreign and state owned banks.

T-test of Profit per Employee between Foreign and State Banks

t-statistics	t-critical	p-value	Hypothesis
1.2346	+/- 2.16	0.2280	Accepted

Similarly, in this case also the t-value of 1.23 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Profit per Employee between foreign and state banks.

c) Private Domestic Banks and State Owned Banks

H_0= There is no significant difference of Profit per Employee between state owned banks and private domestic banks.

T-test of Profit per Employee between State and Private Banks

t-statistics	t-critical	p-value	Hypothesis
-0.1953	+/- 2.16	0.8466	Accepted

Like the other two cases, as t-value of -0.19 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of Profit per Employee between state and private banks.

5.6 Profit Per Branch (PPB)

a) Foreign Owned Banks and Private Domestic Banks

H_0= There is no significant difference of Profit per Branch between foreign owned banks and private domestic banks.

T-test of Profit per Branch between Foreign and Private Banks

t-statistics	t-critical	p-value	Hypothesis
-1.4491	+/- 2.16	0.1593	Accepted

The test result gives us a t-value of -1.45, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of Profit per Branch between foreign and private banks.

b) Foreign and State Owned Banks

H_0= There is no significant difference of Profit per Branch between foreign and state owned banks.

T-test of Profit per Branch between Foreign and State Banks

t-statistics	t-critical	p-value	Hypothesis
1.4580	+/- 2.16	0.1568	Accepted

Similarly, in this case also the t-value of 1.46 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Profit per Branch between foreign and state banks.

c) State Owned Banks and Private Domestic Banks

H_0= There is no significant difference of Profit per Branch between state owned banks and private domestic banks.

T-test of Profit per Branch between State and Private Banks

t-statistics	t-critical	p-value	Hypothesis
0.0188	+/- 2.16	0.9851	Accepted

Like the other two cases, as t-value of 0.02 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of Profit per Branch between state and private banks.

5.7 Pre and Post Performance Analysis 2008 – 2010

T test was applied to data to see if there is any significant difference between pre and post-performance of 2008 crisis. This is done for the six ratios with each ratio done to three different types of banks foreign, state and private. The results are summarized in the table below. The table consists of six lines with each ratio has line. Each line consists of three columns for private, state and foreign banks. In each column there are three values mean of values pre 2008, mean of values post 2008

and p value. The p value shows if the difference between the two means is significant or not. More explanation for each cased is provided below.

Table 15: The Results Pre and Post 2008

	Private banks		p-value	State Banks		p-value	Foreign banks		p-value
	Before 2008	After 2008		Before 2008	After 2008		Before 2008	After 2008	
ROA	0.0179	0.0215	0.8442	0.0203	0.0219	0.9189	0.0348	0.0146	0.2438
ROE	0.1702	0.1806	0.9622	0.1602	0.2370	0.7307	0.3313	0.1130	0.4530
Profit per Employee	0.0387	0.0796	0.0956	0.0312	0.0793	0.0935	0.0938	0.0253	0.3716
Profit per Branch	0.5605	1.5590	0.0942	0.5887	1.4280	0.0805	3.9608	0.4586	0.4092
Net Interest Margin	0.0149	0.0412	0.0007	0.1883	0.0412	0.6164	0.0169	0.0700	0.0002
Growth in Net Profit	-1.4767	0.1949	0.6055	-3.1511	0.1183	0.6640	1.4683	0.0008	0.5743

Source: The Banks Association of Turkey (2015)

As we notice that the results of the test show that based on the p-values there are not any significant difference before and after 2008 at 5% level of significance between the Return on Assets, Return on Equity, Profit per Employee, Profit per Branch and Growth in Net Profit. But there is a significant difference in Net interest Margin which shows that the financial crisis has affected the interest income but it has not affected net income. The reason of this is that a change in noninterest income has happened after the crisis. This leads to no change in overall all net income.

5.8 Return on Assets (ROA)

a) Private Domestic Banks

H_0= There is no significant difference of ROA for private banks before and after 2008.

T-test of ROA for Private Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.2007	+/- 2.16	0.8442	Accepted

The test result gives us a t-value of -0.20, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we can conclude that there is no significant difference of ROA for private banks before and after 2008.

b) State Owned Banks

H_0= There is no significant difference of ROA for state owned banks before and after 2008.

T-test of ROA for State Owned Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.1039	+/- 2.16	0.9189	Accepted

Similarly, in this case also the t-value of -1.10 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of ROA for State owned banks before and after 2008

c) Foreign Owned Banks

H_0= There is no significant difference of ROA for foreign banks before and after 2008.

T-test of ROA for Foreign Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
1.2258	+/- 2.16	0.2438	Accepted

Like the other two cases, as t-value of 1.22 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of ROA for foreign banks before and after 2008.

5.9 Return on Equity (ROE)

a) Foreign Owned Banks

H_0= There is no significant difference of ROE for foreign banks before and after 2008.

T-test of ROE for Foreign Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.7736	+/- 2.16	0.4530	Accepted

The test result gives us a t-value of -0.77, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of ROE for foreign banks before and after 2008.

b) State Owned Banks

H_0= There is no significant difference of ROE for state banks before and after 2008.

T-test of ROE for State Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.3523	+/- 2.16	0.7307	Accepted

Similarly, in this case also the t-value of -0.35 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of ROE for state banks before and after 2008.

c) Private Domestic Banks

H_0= There is no significant difference of ROE for private domestic banks before and after 2008

T-test of ROE for Private Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.0484	+/- 2.16	0.9622	Accepted

Like the other two cases, as t-value of -0.04 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of ROE for private banks before and after 2008.

5.10 Growth in Net Profit (GINP)

a) Foreign Owned Banks

H_0= There is no significant difference of Growth in Net Profit for foreign banks before and after 2008

T-test of Growth in Net Profit for Foreign Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
0.5789	+/- 2.179	0.5743	Accepted

The test result gives us a t-value of 0.57, which we have to compare to a critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.179, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of Growth in Net Profit for foreign banks before and after 2008.

b) State Owned Banks

H_0= There is no significant difference of Growth in Net Profit for state owned banks before and after 2008

T-test of Growth in Net Profit for state owned Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.4463	+/- 2.179	0.6640	Accepted

Similarly, in this case also the t-value of -0.44 lies between the significance intervals of +/- 2.179 i.e. critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Growth in Net Profit for state banks before and after 2008.

c) Private Domestic Banks

H_0= There is no significant difference of Growth in Net Profit for private domestic banks before and after 2008

T-test of Growth in Net Profit for Private Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.5316	+/- 2.179	0.6055	Accepted

Like the other two cases, as t-value of -0.53 lies between the significance intervals of +/- 2.179; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of Growth in Net Profit for private banks before and after 2008.

5.11 Net Interest Margin (NIM)

a) Foreign Owned Banks

H_0= There is no significant difference of Net Interest Margin for foreign banks before and after 2008.

T-test of Net Interest Margin for Foreign Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-5.1795	+/- 2.179	0.0002	Reject

The test result gives us a t-value of -5.18, which we have to compare to a critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.179, which tells us that we can reject the null hypothesis. Thus, we can conclude that there is a significant difference of Net Interest Margin for foreign banks before and after 2008.

b) State Owned Banks

H_0= There is no significant difference of Net Interest Margin for state owned banks before and after 2008

T-test of Net Interest Margin for State Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
0.5142	+/- 2.179	0.6164	Accepted

Similarly, in this case also the t-value of 0.51 lies between the significance intervals of +/- 2.179 i.e. critical value of t-distribution with 12 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Net Interest Margin for state banks before and after 2008.

c) Private Domestic Banks

H_0= There is no significant difference of Net Interest Margin for private domestic banks before and after 2008

T-test of Net Interest Margin for Private Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-4.5018	+/- 2.179	0.0007	Reject

Like the other two cases, as t-value of -4.50 lies between the significance intervals of +/- 2.179; we can reject the null hypothesis. Consequently, the test results indicate that there is a significant difference of Net Interest Margin for private banks before and after 2008.

5.12 Profit Per Employee (PPE)

a) Foreign Owned Banks

H_0= There is no significant difference of Profit per Employee for foreign owned banks before and after 2008

T-test of Profit per Employee for Foreign Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.9282	+/- 2.16	0.3716	Accepted

The test result gives us a t-value of -0.93, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the null hypothesis. Thus, we cannot conclude that there is a significant difference of Profit per Employee for foreign banks before and after 2008.

b) State Owned Banks

H_0= There is no significant difference of Profit per Employee for state owned banks before and after 2008.

T-test of Profit per Employee for State Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-1.8217	+/- 2.16	0.0935	Accepted

Similarly, in this case also the t-value of -1.82 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null

hypothesis and we conclude that there is no significant difference of Profit per Employee for state banks before and after 2008.

c) Private Domestic Banks

H_0= There is no significant difference of Profit per Employee for private domestic banks before and after 2008.

T-test of Profit per Employee for Private Domestic Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
1.8088	+/- 2.16	0.0956	Accepted

Like the other two cases, as t-value of 1.80 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of Profit per Employee for private banks before and after 2008.

5.13 Profit Per Branch (PPB)

a) Foreign Owned Banks

H_0= There is no significant difference of Profit per Branch for foreign owned banks before and after 2008.

T-test of Profit per Branch for Foreign Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
-0.8551	+/- 2.16	0.4092	Accepted

The test result gives us a t-value of -0.85, which we have to compare to a critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. This critical value is +/-2.16, which tells us that we cannot reject the

null hypothesis. Thus, we cannot conclude that there is a significant difference of Profit per Branch for foreign banks before and after 2008.

b) State Owned Banks

H_0= There is no significant difference of Profit per Branch for state owned banks before and after 2008

T-test of Profit per Branch for State Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
1.9089	+/- 2.16	0.0805	Accepted

Similarly, in this case also the t-value of 1.90 lies between the significance intervals of +/- 2.16 i.e. critical value of t-distribution with 13 degrees of freedom at a significance level of 5% for a two sided test. Again, we cannot reject the null hypothesis and we conclude that there is no significant difference of Profit per Branch for state banks before and after 2008.

c) Private Domestic Banks

H_0= There is no significant difference of Profit per Branch for private domestic banks before and after 2008.

T-test of Profit per Branch for Private Domestic Banks Before and After 2008

t-statistics	t-critical	p-value	Hypothesis
1.8171	+/- 2.16	0.0942	Accepted

Like the other two cases, as t-value of 1.82 lies between the significance intervals of +/- 2.16; we cannot reject the null hypothesis. Consequently, the test results indicate that there is no significant difference of Profit per Branch for private banks before and after 2008.

5.14 Trend Analysis of the Profitability Performance of Public, Private and Foreign Banks

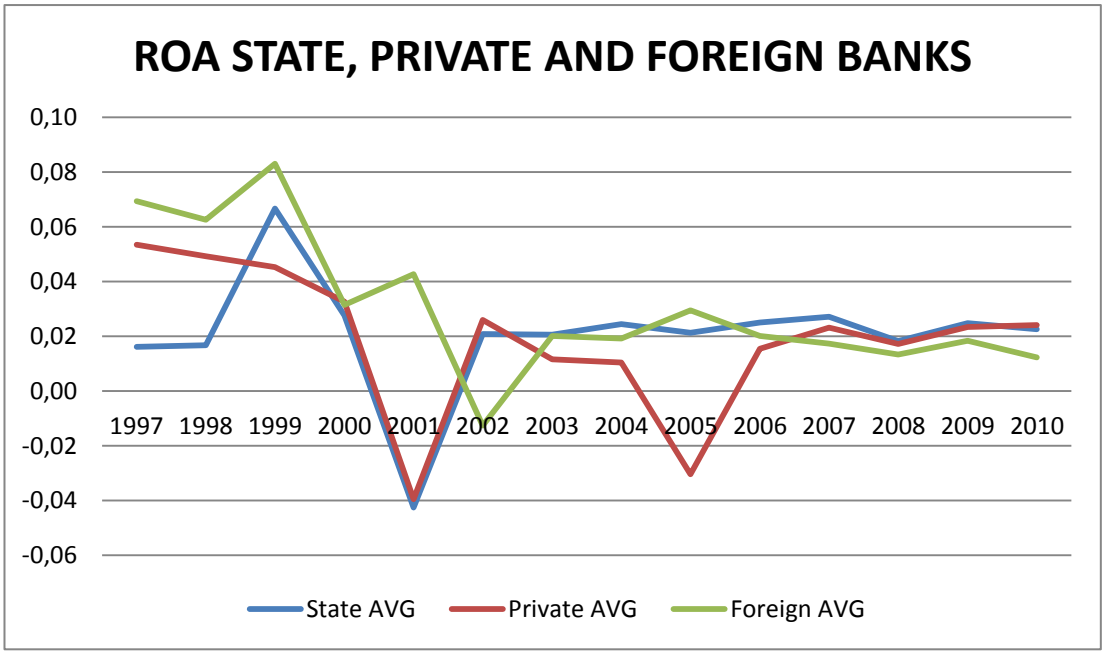

Figure 5: ROA Ratio Analysis of Banks
Source: The Banks Association of Turkey (2015)

The three averages moved in the same trend. Due to economic crisis all of them have decreased from 1999 to 2001 then they increased after 2002 to stay at stable level till 2010. However, they did not get to same level of 1997. In most years, foreign banks average was the highest then state then private. The private and state averages have declined sharply in 2001, but foreign banks average has declined in 2002, and private average has declined in 2005.

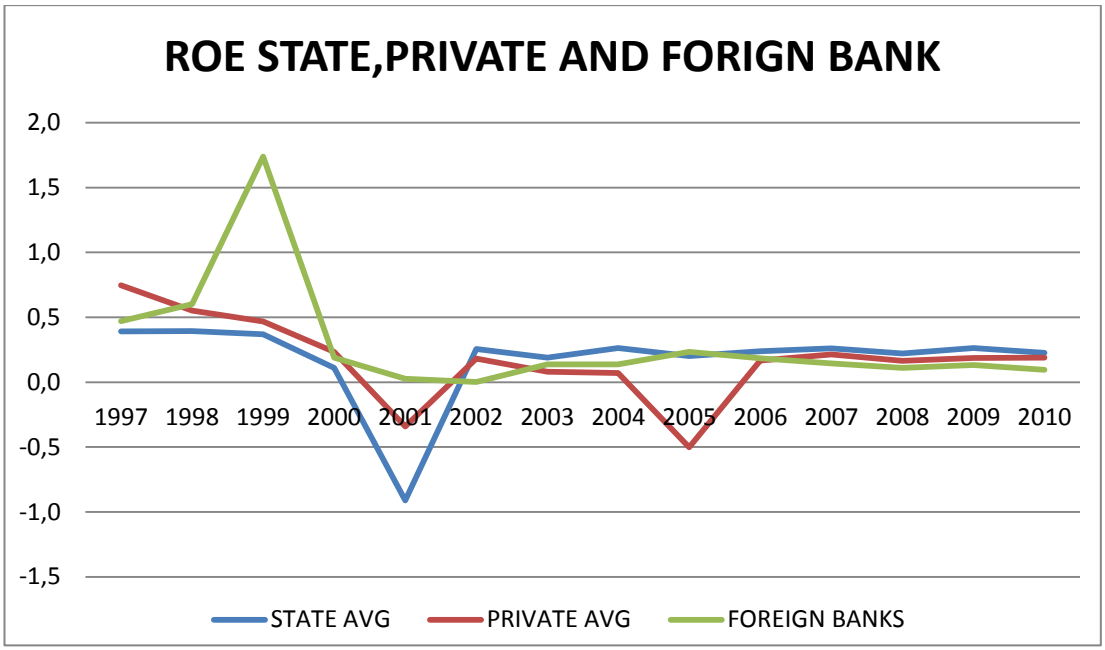

Figure 6: ROE Ratio Analysis of State, Private and Foreign Banks of Turkey
Source: The Banks Association of Turkey (2015)

The average return on shareholders' equity for state, private and foreign banks from the period of 1997 to 2010 is shown in Figure 6. The figure clearly demonstrates that there is no significant difference in shareholders' equity between state, private and foreign. However in 1999, foreign banks earned much higher return on equity's than state and private banks. It's visible that foreign banks are performing better than state and private banks. During 2001 private and state averages dropped respectively due to Turkish economic crisis. In 2005 private banks' average ROE decline, but revived back after 2006 and balanced at almost the same level with state and foreign averages.

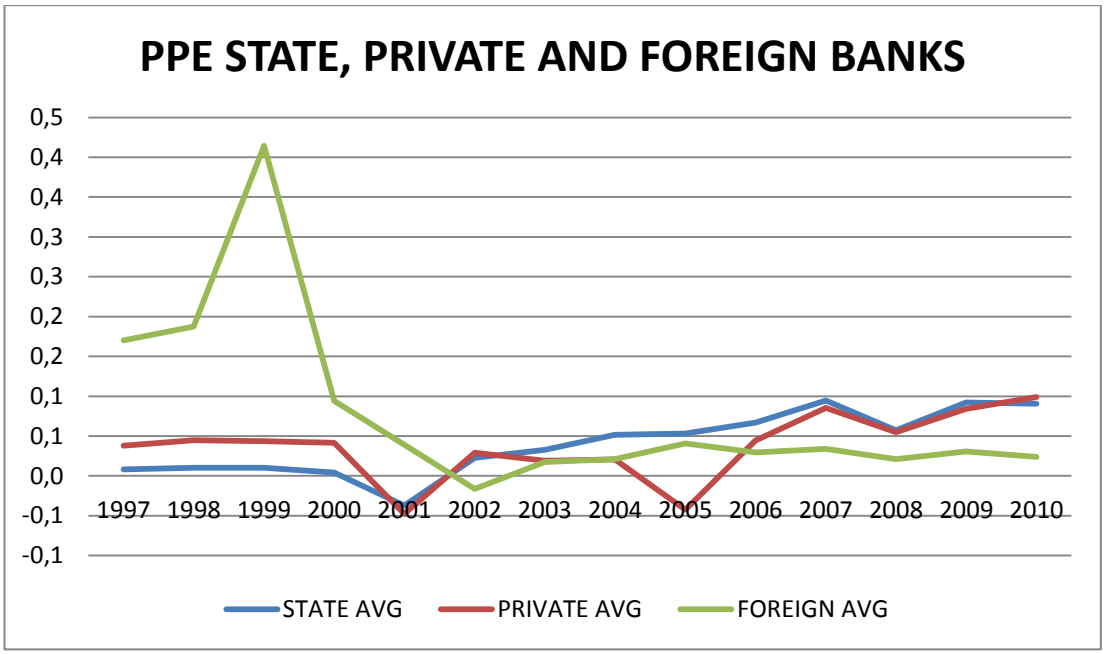

Figure 7: Profit Per Employee (million $)

Source: The Banks Association of Turkey (2015)

The Figure 7 shows that the foreign banks is earning much better than state and private banks on the basis of profit per employee According to the Figure 7, foreign banks' average in 1999 shows enormous increase in trend but after it declined till the end of 2000 and in 2002 it reduces, after that it becomes steadily moving with private and state averages. Private and state averages declined together in 2001 due to economic crisis and in 2008 global financial crisis.

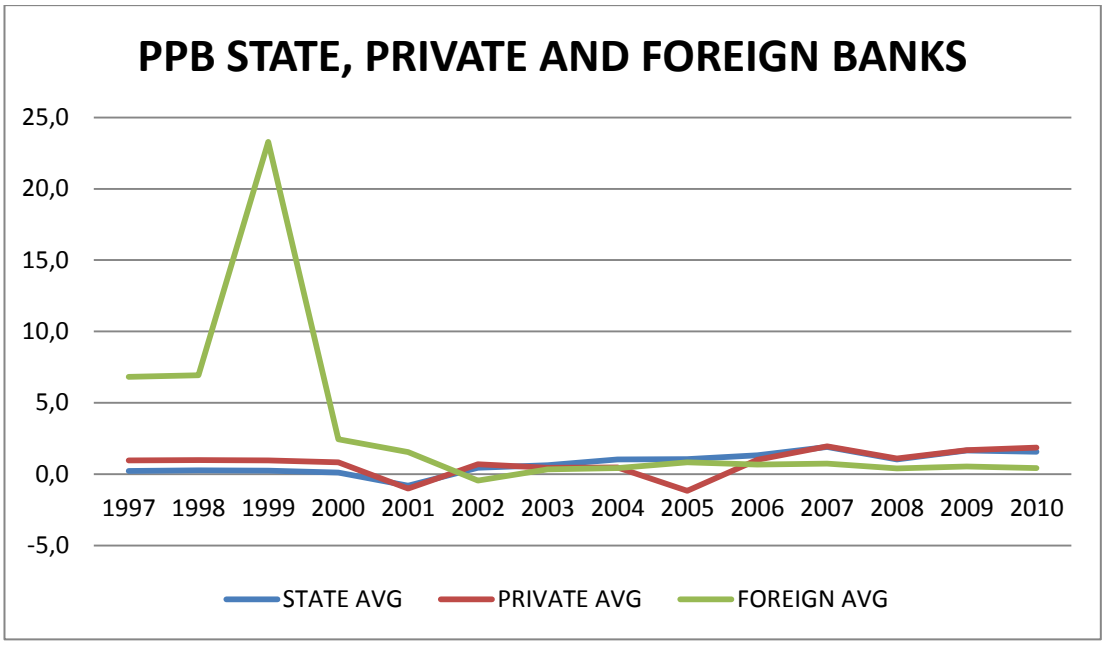

Figure 8: Profit Per Branch (million $)

Source: The Banks Association of Turkey (2015)

The three averages moved in the same direction. Private and state averages have declined in 2001, and then they increased after 2002 to stay at stable level till 2010. In 1999 foreign banks average was the highest profit per branch. The private average has declined in 2005 then increased after 2006 to stay at stable level till 2010.

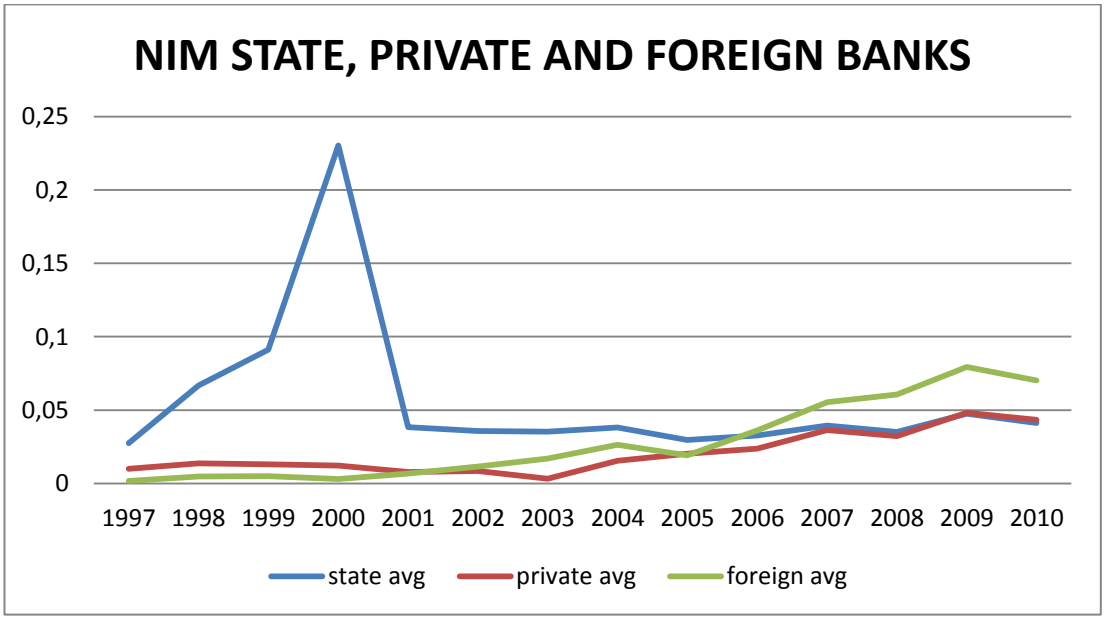

Figure 9: Net Interest Margin

Source: The Banks Association of Turkey (2015)

Figure 9 presents the Net interest Margin (NIM) ratios of state, private and foreign banks. We see that state, private and foreign banks' NIM averages moved in the same trend, from 1997 to 2010. Whereas state average shows enormous increase in trend in 2000 and in 2001 it reduces, after that it becomes steadily moving with private and state averages till the end of 2010.

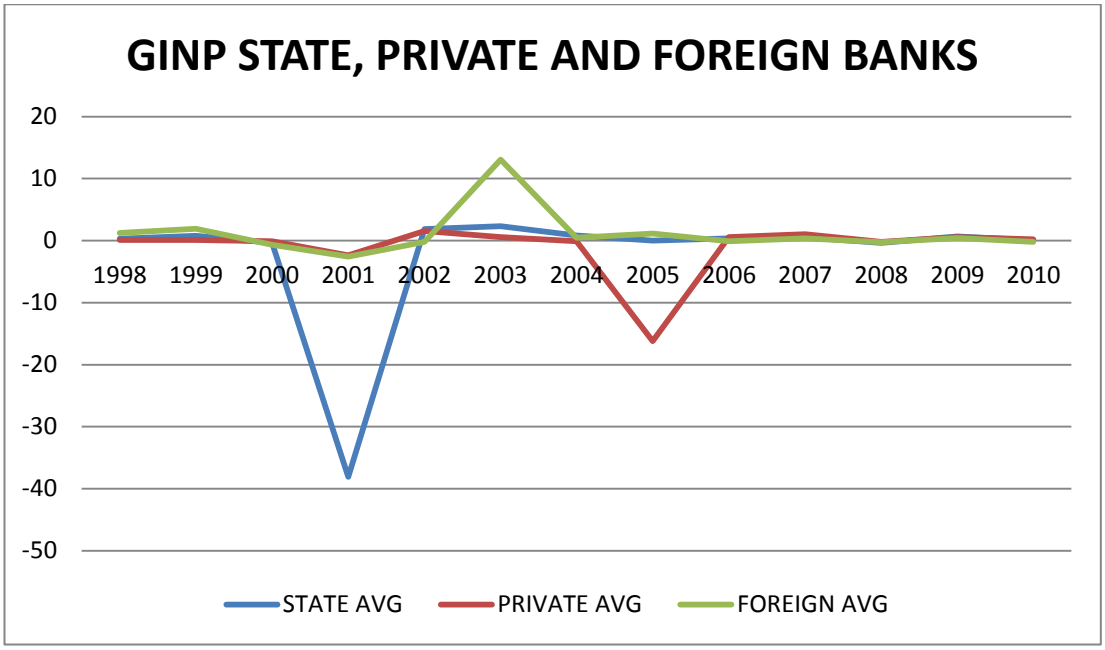

Figure 10: Growth in Net Profit
Source: The Banks Association of Turkey (2015)

As in Figure 10 the three averages moved in the same trend. During Turkish economic crisis in 2001 state average has decreased. However, they did not get to same level of 1997. In 2003 foreign banks average was the highest. The private banks' average has declined in 2005, revived back after 2006 and balanced at almost the same level with state and foreign averages.

Chapter 6

CONCLUSION

The purpose of this study was to implement a comparison of performance between public, foreign and private banks that operated in Turkey from 1997 to 2010, also to compare their performance before and after financial crisis 2008. This has been done using t test as statistical tool and trend analysis as graphical tool. The t test shows that there are no significant differences in the profitability of public, foreign and private banks operating in Turkey. This profitability was measured using six different ratios: return on assets (ROA), return on equity (ROE), profit per employee (PPE), profit per branch (PPB), net interest margin (NIM), and growth in net profit (GINP). In addition to t test result trend analysis reinforces the same conclusion that there are no significant differences between the three types of banks. Moreover, the trend analysis shows that the bank's profitability have been affected in the same direction and magnitude by different financial crisis. For example, all the six ratios for the three types of banks have decreased considerably in 2001 in response to the economic crisis of Turkey. However, there is some distinct response in few years for foreign banks like year 1999. In this year foreign banks profitability has increased considerably while the other two types of banks did not. Moreover, although all the banks have been affected by 2001 crisis the effect was considerably larger for state banks. This may be due to the nature of crisis itself. In general all the ratios have moved together in same trend. However, there are some notable exceptions like in year 2000 the state bank interest margin has increased while the other five ratios

have showed no noticeable change. This may be due to the fact that increased in interest margin does not necessary lead to increase in net income since net income depends also on non interest margin.

T test was used to compare the six different ratios before and after 2008 crisis for the three types of banks. The result shows no significant differences for five ratios for the three types of banks. This means that the five ratios have not been changed as a result of financial crisis. This may shows the good ability of the banks to absorb crisis so it was not reflected in net income. This does not necessary mean that the banks were not affected at all by the financial crisis but it means that banks have managed to neutralize this effect in order for it to not be reflected in net income. This can be understood by looking at the sixth ratio which is NIM. The t test shows significant differences in NIM before and after financial crisis 2008 for foreign and private banks. Although the interest margin was affected by the financial crisis the net income was not because the banks have managed to use non interest margin in order to absorb the crisis. That is it. The banks have increased the non interest margin like different services in order to counter the decrease in interest margin. One of the reasons that banks were successful in doing so maybe due to the previous financial crisis in Turkey which gave the banks the required experience to adapt with financial crisis.

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