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12 th Years

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# After 1980 the Increase of Foreign Capital Banks in the Turkish Banking System by Ownership Structure and Its Effects on the Financial Performance of the Sector

Müjgan DENİZ<sup>1</sup> Aylın HACIOĞLU<sup>2</sup>

#### **Abstract**

In the climate of rapid transformation in the Turkish economy and integration with global economies, new players have emerged in many sectors. For the last decades, the general economic outlook has begun to diversify and become an economy in which not only domestic companies but also foreign capital companies operate. Especially after 1980, policies involving financial liberalization have increased foreign capital inflows into the banking sector of Turkish economy over time. In this context, the ownership status of most of the national private banks has changed by mergers and acquisitions. Also, there is a rapid increase in the number of new foreign banks which were established and started to operate across the sector.

The aim of this study is to search the effects of foreign capital inflow into Turkish banking sector for the last decades. For this reason in the first place, a general information has been given about the economic policies and the change in the financial system in Turkey since 1980. After that, a variety of performance measurements have been examined in this study. Namely, apart from the public banks, state-owned commercial banks, privately-owned commercial banks and the banks owned by foreign capital in Turkey have been taken in to consideration and the selected ratios/indicators of the relevant banks have been compared with the sector averages. The observations and comparisons have been made mainly on a period of last ten years, between 2009-2019. While the reasons that attract multinational companies and foreign capital banks to the Turkish economy and the effects of the increase in the number of foreign capital banks in the sector are discussed, the financial performances of foreign banks are examined by comparing them with the performances of other public and private banks.

**Keywords:** Banking Sector, Foreign Capital Banks, Financial Performance, Mergers and Acquizations, Statistical Analysis.

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12 th Wears

# 2023, 12 (1), 233-256 | Araştırma Makalesi 1980 Sonrasında Mülkiyet Yapısına Göre Türk Bankacılık Sisteminde Yabancı Sermayeli Bankaların Artışı ve Sektörün Finansal Performansına Etkileri

Müjgan DENİZ<sup>1</sup> Aylın HACIOĞLU<sup>2</sup>

#### Öz

Türkiye ekonomisinde yaşanan hızlı dönüşüm ve küresel ekonomilerle entegrasyon ikliminde birçok sektörde yeni oyuncular baş göstermiş ve genel ekonomik görünüm de çeşitlenmeye ve sadece yerli sirketlerin değil yabancı sermayeli sirketlerin de çokça faaliyet gösterdiği bir ekonomi halini almaya baslamıstır. Nitekim böyle bir ortamda, Türk bankacılık sektörüne de uluslararası katılımcılar dahil olmaya baslamıs ve gelismekte olan bir ekonomiye ve onun finans sektörüne yabancı sermaye yatırım yapmaya başlamıştır. Ancak yabancı yatırımcılar, Türk bankacılık sektörüne giriş yaparken, bir banka kurmayı tercih etmek yerine daha çok, sektörde zaten faaliyet gösteren yerli ve özel bankaların hisselerini satın alarak sektöre girmeyi tercih etmişlerdir. Yaşanan bu süreçte nihayetinde Türk bankacılık sektöründeki yabancı hakimiyeti artmıştır. Çalışmada ilk olarak, 1980'den itibaren Türkiye'de ekonomi politikaları ve mali sistemde vasanan değisim, yabancı sermayenin ülkeye yoğun olarak girisi ve sisteme etkileri ile bankacılık sektöründe son on yıllarda yaşanan dönüşümün seyri hakkında bilgi verilmiş, ardından bankacılık sektöründen yabancı bankaların ne ölçüde pay aldıkları ve sisteme etkileri hakkında değerlendirmeler yapılmıştır. Daha sonra, Türk bankacılık sektörüne dair temel göstergelerin ve rasyoların analizi yapılarak, araştırma konusu olan temel hipotezlerin istatistiksel olarak sınanması yapılmış ve hipotez testi sonuçları yorumlanmıştır. Ana bankacılık grupları bazında, Türkiye'de faaliyet gösteren bankaların bilanço yapısı, sermaye yeterliliği, likidite, aktif kalitesi ve kârlılık durumuna ilişkin oranlar ile yabancı sermayeli bankaların bankacılık sektöründe söz konusu kalemlerde sahip oldukları payları, hacimleri ve büyüklükleri dikkate alınmıştır. Uygulamada esas alınan gözlem yıllarını ise 2009-2019 yılları arasını kapsayan on yıllık dönem teşkil etmiştir. Kısaca, çok uluslu şirketleri ve yabancı sermayeli bankaları Türkiye ekonomisine çeken sebepler ve sektördeki yabancı sermayeli bankaların sayısının artışının finansal açıdan meydana getirdiği etkiler ele alınırken, yabancı bankaların performansları diğer kamu ve özel bankaların performanslarıyla karşılaştırılarak incelenmiştir.

**Anahtar Kelimeler:** Bankacılık Sektörü, Yabancı Sermayeli Bankalar, Birleşme ve Satınalmalar, Finansal Performans, İstatistiksel Analiz.

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#### Introduction

In the last quarter of the twentieth century, with the various developments experienced as a result of the accelerated liberalization in global economies, a new process started in the Turkish economy, which started with the opening up to the outside and structural transformations after 1980. As a result of opening up and liberalization policies, the shares of foreign capital and therefore international banks in the banking sector, as in other sectors, started to increase gradually.

The main purpose of this article is to analyze the effects of foreign capital, which has increased inflow to our country over the years on the banking sector, how foreign banks developed after 1980, and whether they differed from the sector in general. In this study, in order to determine the effects of foreign capital on the sector, the reasons that lead foreign banks to our country were examined and compared with other banking groups in the sector on the basis of various ratios over the years.

In the climate of rapid transformation in the Turkish economy and integration with global economies, new players have emerged in many sectors and the general economic outlook has begun to diversify and become an economy in which not only domestic companies but also foreign capital companies operate. As a matter of fact, in such an environment, international participants started to be included in the Turkish banking sector and foreign capital began to invest in a developing economy and its financial sector. However, foreign investors entering the banking sector did not choose to establish a new bank. Instead, they preferred to enter the sector by purchasing the shares of domestic and private banks that were already operating in the sector, and eventually foreign dominance in the sector increased. However, there has been a rapid increase in the number of banks with foreign capital, which started to operate in the Turkish banking sector, especially in the last ten years, by obtaining the permission and license from the BRSA to establish from scratch.

After the November 2000 and February 2001 crises, the interest of foreign capital in the Turkish banking sector has increased again with the measures taken for the restructuring of the economy and the banking sector, the establishment of regulatory and supervisory institutions, the necessary legislative arrangements and the privatization policies followed by the state. At the end of this process started in 2001, 21 out of 49 banks became foreign banks. As of December 2020, there are 21 foreign-owned deposit banks in Turkey. In this study, it is aimed to analyze the reasons that attract foreign banks to the Turkish banking market and their effects on the financial system in Turkey. While foreign banks enter some countries mainly with the strategy of following their customers, they enter some countries with the aim of gaining new customers and growing. For this reason, increasing foreign bank inflows in the sector increases the competition among banks in some countries, while reducing it in some countries. In this case, increasing competition sometimes makes it easier for businesses to access credit opportunities, and sometimes it can make it difficult to access credit.

In this direction, firstly, a literature study was conducted on the effects of foreign capital inflows on the Turkish banking system. A lot of research has been done in the country and abroad on the effects of foreign capital on the banking sector. In these studies, it is seen that foreign capital banks increase the competition in the sector, service/product quality, diversity, accessibility to services, ensure the widespread use of more advanced/modern banking methods and technologies, and increase the stability and

efficiency in the credit/deposit markets with advanced risk management techniques. In addition to positive results, some negative effects are also put forward that foreign banks are selectively discriminating between customers and sectors, and that they can deepen the crisis with some decisions and policies they implement in times of economic crisis. These positive and negative effects are closely related to the level of development of the country where foreign capital enters.

The concept of performance has always been important in the banking sector. Profitability indicators (ratios) such as return on assets (ROA), return on equity (ROE) and net interest margin are widely used to measure the financial performance of banks (Mishkin, 2011: 327-28). In this study, the capital adequacy, balance sheet structure, asset quality, liquidity and profitability ratios of banks on the basis of main banking groups (public, private and foreign) and the share, volume and number of foreign banks in various items in the banking sector were taken into account. The last 10-year period between 2009-2019 was taken as the main observation year of the study.

Afterwards, it will be tried to present information about the types of banks with foreign capital, the factors that lead foreign banks to make cross-border investments, the way they enter the foreign countries in which they invest, and their effects on the financial system. Thus, it is aimed to reveal the strategies of foreign banks and their effects on the sector in general. Then, after 1980, the Turkish Financial System and the change in the banking sector, the route of foreign capital in banking and its effects on the system, and the course of developments in the banking sector in recent years will be examined, and evaluations will be made about the extent to which foreign banks take a share from the banking sector and their effects on the system. Finally, the main hypotheses that are the subject of research will be discussed in order to analyze the selected basic indicators and ratios for the Turkish banking sector. Thus, with this study, the hypotheses will be tested statistically and the results of the hypothesis test will be interpreted.

#### Literature Review

Since the eighties, studies have been carried out to measure the entry of foreign capital banks into the Turkish banking system and their effects on the sector in general. Especially after the 2001 crisis, the change and transformation in the banking sector began to be examined much more and became the subject of academic study. Academicians have tried to analyze the reasons for foreign banks' entry and investment in different countries more often, and the number of studies examining their contribution to national economies has increased for last decades. In this study, the literature on the subject was briefly reviewed.

One of the first studies to examine the effect of foreign bank entry on the financial sector in Turkey is the study by Denizer (1999). In this study, both the ratio of the total assets of foreign banks to the total assets of the banking sector and the ratio of the number of foreign banks to the total number of banks in the banking sector were used as the measure of foreign bank entry. In his analysis, Denizer used net interest margin, general operating expenses and return on assets as performance criteria in the banking sector. The results obtained in his analysis determined that the general operating expenses of domestic banks decreased in parallel with foreign bank inflows. A negative relationship was found between return on assets and foreign capital inflows. The aforementioned determination shows that although the share of foreign banks in the banking sector is low, they have a

significant competitive effect in the Turkish banking sector and foreign bank entry reduces the return on assets. In the study, it was also determined that foreign bank entry contributed to the development of the Turkish banking sector in the fields of financial and operational planning, credit analysis and personnel training.

Another academic study was carried out by Aktaş and Kargın (2007), in which national banks operating in the banking sector in Turkey and foreign banks were compared in terms of some financial ratios. According to the results of the research, it has been determined that foreign banks have higher capital adequacy and liquidity ratios compared to national banks. In the study, it was determined that national banks had higher interest income and interest expense ratios compared to their total income and expenses in the 2003-2006 period, and there was no significant difference between foreign banks and national banks in terms of asset quality and profitability ratios.

On the other hand, in the theoretical study of Çakar (2003) similarly, it is stated that foreign banks have increased very rapidly since the 1980s, together with the policies towards financial liberalization in the Turkish financial system, and the financial system has become integrated with international markets. As a matter of fact, in this study, the number of foreign banks, which was only 4 in 1980, increased to 15 in 2001; however, it is stated that the share of the banking sector in its assets remains at 3%. In the examination, it was concluded that foreign banks that entered the Turkish banking sector with the liberalization process, especially during the crisis periods, did not use their resources in a way to minimize the effects of the crisis, unfortunately, they acted in the direction of triggering the crisis by thinking of their own profitability and acting with the motive of gaining profit.

Another study comparing domestic and foreign capital banks in the Turkish banking sector in terms of their financial performance is the one made by H.A. Ata in 2009. In his study, Ata (2009) has tried to analyze how foreign capital inflows into the sector affect the performance of banks across the sector, while considering liquidity, efficiency, profitability, and risk factors for existing domestic and foreign banks. In the comprehensive analysis, data from domestic and foreign banks operating in Turkey during the 2002-2007 period were used, and as a result of the academic research, it was seen that domestic banks were more effective than foreign banks in terms of performance indicators. However, it has been determined that the efficiency of foreign banks has increased especially in terms of Non-Interest Expenses / Total Assets, Return on Assets and Operating Profit / Total Assets. As the reason for this; It has been shown that foreign banks have capital strengths and the ability to obtain funds from international markets more easily and at lower cost. It has been underlined that the statistical data indicate that the said banks operate with a more robust financial structure and low liquidity risk compared to domestic banks. According to the results of Ata's analysis, foreign banks traditionally have more corporate customers than domestic banks.

One of the significant studies on foreign capital banks in the Turkish banking sector is the study by İşeri and Ulusan (2007). İşeri and Ulusan have tried to determine the position of existing foreign banks in the sector in their study in which they examined the progress of foreign banks in the period covering 2003-2005 according to various criteria. As a matter of fact, the main reasons for the growth in the sector and the interest of foreigners in the sector after the banking crisis in 2001 are: "positive market expectations, the downward trend in inflation and interest rates, the demand for YTL, the increase in banks' own funds

and borrowing opportunities from international markets". Another important study on foreign capital banks in the Turkish banking sector is the study by İşeri and Ulusan (2007). In such an environment, where a new financial period was entered, parallel to the increase in the shares of foreign partnerships in banks under domestic capital control, the shares of banks under foreign capital control in the sector naturally increased. Similarly, in the study conducted by El-Gamal and İnanoğlu (2002) the stochastic limit approach based on probability was applied and the efficiency of the banks was examined by using the data of 53 banks in the Turkish banking system covering the years 1990-2000. As a result of the study, it has been determined that there is no difference in efficiency rates between private banks and public banks in the sector and that foreign banks, however, work more effectively than other banks.

#### Statistical Data and Analysis

First of all, it should be noted that the application includes 21 banks that have been operating continuously throughout the years 2002-2019 in Turkey in terms of statistics. In addition, only banks that accept deposits were taken into account in the study, and the ratios related to "capital adequacy, balance sheet structure, asset quality, liquidity, profitability and income-expense structure" taken into account by the Banks Association of Turkey regarding the activities and performance of the banks were the basis for the analysis. In the first stage, the ratios for the main areas that are considered in the study and which form the basis of the research will be given in tabular form, and then a three-stage analysis will be made.

#### Selected Indicators and Fundamental Ratios Analysis

In the analysis, in order to examine foreign capital banks, public banks and private banks in comparison with the sector averages, analysis studies were carried out on a total of 11 basic ratios/indicators under 5 main categories. The data used in the tables below and constituting the source of the study have been compiled from the website of the Banks Association of Turkey (TBB) for the relevant years.

In this section, after the research questions that statistical analysis aims to answer are created, the statistical method to answer these questions will be explained. Then, hypothesis tests of foreign banks, Turkish private banks and public banks and the banking sector will be created. Finally, the results obtained as a result of the hypothesis tests will be interpreted.

 Table 1. Capital Adequacy Standard Ratio-CAR

(Equity / (Credit + Market + Amount Subject to Operational Risk)

%	2002	2003	2004	2005	2006	2007	2008	2009	2010
Public	50,2	56,3	37,1	37,7	29,1	20,1	16,4	18,4	16,7
Private	19,7	23,5	22,3	17,2	17,5	17,2	16,4	19,7	18,2
Foreign	32,6	36,2	26,9	17,4	16	14,5	16,7	18,8	17,3
Sector	24,2	30,9	28,8	24,2	22	19,1	18,1	20,9	19,2

%	2011	2012	2013	2014	2015	2016	2017	2018	2019
Public	14,5	17,2	13,5	15,6	14,6	14	15	15,1	16,1
Private	15,5	17,1	14,8	15,3	14,6	14,5	16,1	16,9	18,5
Foreign	16,9	17,6	15,4	16,4	15,7	16,9	18,5	19	19,5
Sector	16,7	18,1	15,4	16,4	15,6	15,5	16,8	17,4	18,4

Source: TBB web page, https://www.tbb.org.tr

Table 2. Equity / Total Assets

%	2002	2003	2004	2005	2006	2007	2008	2009	2010
Public	9,9	11,5	9,4	10,6	10,4	10,3	8,3	9,4	9,9
Private	12,7	14,7	15,6	12,4	10,4	12,2	11,1	13	13,4
Foreign	21	24	21,1	15,9	12	13,2	12,6	14,7	13,6
Sector	12,1	14,2	15	13,5	12	13,1	11,7	13,3	13,4

%	2011	2012	2013	2014	2015	2016	2017	2018	2019
Public	9,1	11	9,3	10,7	10,1	9,8	9,5	9,2	8,9
Private	11,7	13,3	11,4	11,6	11	11	11,4	11,8	12,2
Foreign	11,9	13,3	10,3	10,4	10,9	11,3	11,5	11,6	12,2
Sector	11,9	13,4	11,3	11,8	11,3	11,1	11,1	11,1	11,2

Source: TBB web page, https://www.tbb.org.tr

Table 3. Analysis of Balance Sheet Structure: TL Assets / Total Assets

%	2002	2003	2004	2005	2006	2007	2008	2009	2010
Public	67,1	74,1	76,4	80,8	77,9	80,2	76,6	78,6	79,8
Private	46,1	52,2	55,1	61	59,9	64,6	62,5	67,7	68,7
Foreign	46,6	56,1	63,7	63,2	64,9	75,3	76,1	79,5	80,9
Sector	53,6	60,7	63,2	67,7	66,2	71,2	69	72,8	73,9

%	2011	2012	2013	2014	2015	2016	2017	2018	2019
Public	75,3	73,2	68,4	68,3	65,1	63,5	65,7	62,4	65,1
Private	64,4	65,9	62,6	62,3	60,3	59,2	61,1	57,3	57,2
Foreign	77	77,6	72	70,9	61,4	60,3	61,1	55,3	55,1
Sector	69,3	69,2	65,3	64,8	61,2	59,5	61	56,5	57,4

Source: TBB web page, https://www.tbb.org.tr

Table 4. Total Deposits / Total Assets

%	2002	2003	2004	2005	2006	2007	2008	2009	2010
Public	72,1	72,6	77,1	76,8	77,9	78,2	77,6	74,9	76,6
Private	69,7	64,7	61,7	61,4	61,6	60,5	62,8	61,6	62
Foreign	52,2	51,1	59,9	59,1	63,1	61	57,5	60,8	57,8
Sector	67	64,4	64,4	63,9	64,5	71,6	64,2	63,5	63,9

%	2011	2012	2013	2014	2015	2016	2017	2018	2019
Public	70,5	70,8	67,1	62,1	62,1	62	60,9	60,9	65,3
Private	59	57,6	57,6	56,9	58,1	59,5	58,3	59,4	62,2
Foreign	58,9	59,6	56,2	58	55,9	57,2	56,6	59,4	62,6
Sector	60,2	59,3	57,7	56	55,9	56,4	55,4	55,7	58,9

Source: TBB web page, https://www.tbb.org.tr

## Interpretation of Banking Sector Tables in terms of Basic Indicators

Considering the development of the share of cash and cash-like assets in the assets of banks in the period covering the years 2009-2019; It is observed that the relevant ratio for foreign banks remained close to the sector averages in general until 2018. On the other hand, in 2018, a new era in which liquidity management gained importance has

begun, with the slowdown in loan supply and demand, especially with the effect of the exchange rate shock in August and the subsequent interest rate hike. Therefore, it is observed that the sector, mainly foreign and private banks, tend to stay in cash-like assets by acting more cautiously.

Ratios for the relevant sector can be grouped into five (5) main groups. Among these, Capital Adequacy Standard Ratio – CY1 and (Equity + Profit) / Total Assets Ratio – CY2 ratios show Capital Adequacy. Capital adequacy has become the most important criterion in the banking sector, especially after the Basel Criteria. As a matter of fact, the capital adequacy ratio is important in terms of showing the sector's resilience against the systemic risks that may come to the sector. In this respect, the fact that foreign banks are higher on average than Turkish public and private banks and the sector in these ratios will mean that foreign banks have increased the sector's resilience to systemic risk in the period under consideration.

It should be noted that TL Assets / Total Assets - BY1, Total Deposits / Total Assets - BY2 and Loans Received / Total Assets - BY3 ratios are the ratios for the Balance Sheet Structure. Ratios regarding the balance sheet structure are important criteria in measuring whether banks are financed in a measured way, whether the safety margin of depositors and bank lenders is sufficient, and whether banks can meet their obligations. In addition, the average differentiation of foreign banks in the balance sheet structure ratios from Turkish private and public banks and the total of the sector is important in terms of showing the contribution of foreign banks to the trust in the banking system, the safety of depositors and lenders, and the fulfillment of obligations in the banking system.

Economically, overlending and consequently over-investment are important facts especially in the explanation of crises, and in such cases, Total Loans / Total Assets - AK1 and Non-Performing Loans (gross) / Total Loans - AK2 ratios affect Asset Quality and they are important ratios. Therefore, asset quality ratios are critical ratios that show both what percentage of total assets are given as loans in the banking system (AK1) and what percentage of these loans are at risk of payment (AK2). In short, these ratios give important signals for the banks in the sector. It should also be noted that the AK1 and AK2 ratios of foreign banks are expected to be lower than the sector. In this respect, the differentiation of foreign banks in the sector from other public and private banks in terms of asset quality is a valuable criterion in order to measure their contribution to the sector.

"Liquid Assets / Total Assets – L1 and Liquid Assets / Short-Term Liabilities – L2" are Liquidity Ratios. Liquidity Ratios are used in order to measure the short-term payment difficulties that may be encountered in the banking system, especially the capacity of banks to pay their short-term debts, and to determine whether their working capital is sufficient. Here, foreign capital banks are expected to have higher liquidity ratios than the sector average; The positive differentiation of foreign banks from the sector in these ratios means that foreign banks make a positive contribution to the overall sector in terms of liquidity.

The ratio expressed as K1, in other words, Net Period Profit/Average Total Assets and K2, that is, Net Period Profit (Loss)/Average Paid-in Capital are essentially profitability ratios. Profitability Ratios are important in terms of answering questions such as whether the bank's quarterly profit as a result of its activities is satisfactory or not. The

high level of profit is in parallel with the decrease in the general costs of the bank and the increase in the general revenues of the bank, in other words, the high operating efficiency. Therefore, it can be said that the profitability of foreign banks is higher than the sector, which also increases the profitability and efficiency of the sector.

#### **Basic Hypotheses of Research Subject**

In the study, three basic hypotheses have been defined in the context of the ratios given above;

Hypothesis I: In all banking categories, the sample averages of all ratios in the relevant period are indistinguishable from their medians.

The importance of Hypothesis I emerges when the banking sector ratios taken into account take extremely high values in some years and extremely low values in other years. If such extreme values are found within the sample set, the sample means may not be significant. Therefore, it is thought that the median represents the population mean better. In case the sample means are indistinguishable from the sample medians, it would be more appropriate to use sample means in the next hypotheses. If the hypothesis cannot be rejected, the means can be used in subsequent tests. Otherwise, if the hypothesis is rejected, it would be more appropriate to use the median instead of the mean. The test statistics that will be discussed in the Hypothesis test discussed in the study are as follows;

$$t_0 = \frac{\overline{x} - \delta_0}{\frac{S}{\sqrt{n}}}$$

 $t_0 \, = \, test \, \, statistic$   $\overline{x} = \, average \, of \, the \, ratio, \\ \delta_0 = median \, \, of \, the \, ratio$ 

s = standart deviation of the ratio, n = sample number of observations

The decision rule is created by comparing this test statistic with the critical value and can be summarized as follows:

$$\begin{array}{ll} H_0\colon \mu=\delta_0\\ \underline{H_0}\colon \mu\neq\delta_0 \end{array} \leftrightarrow t_0 > t_{n-1\frac{\alpha}{2}} \ \ \text{or} \ \ t_0 < -t_{n-1\frac{\alpha}{2}} \ \text{,in this case } H_0 \ \text{is rejected.} \end{array}$$

 $\mu = \text{mass average}$ 

$$\mathbf{t}_0 = \frac{\overline{\mathbf{x}_1} - \overline{\mathbf{x}_2}}{\sqrt{\frac{\mathbf{s}_1^2 + \mathbf{s}_2^2}{\mathbf{n}}}}$$

 $\begin{array}{c} t_0 = test \ statistic \\ \overline{x}_{1,2} = \ Averages \ of \ 1st \ and \ 2nd \ ratios, \end{array}$ 

 $s_{1,2}^2$  = variances of 1st ve 2nd ratios, n = sample number of observations

Hypothesis II: The sample averages of all ratios of Foreign Banks are indistinguishable from the sample averages of the same ratios of Turkish public, Turkish private banks and the total of the sector in the relevant period. The importance of Hypothesis II is that it gives the main result that the study wants to emphasize. The differentiation of foreign banks from Turkish private, Turkish public banks and the total of the sector in 11 basic ratios will show their positive or negative contributions to the performance of the sector. If the hypothesis cannot be rejected, it means that there is no positive or negative contribution from foreign banks. If the hypothesis is rejected, then it can be said that foreign banks differ from the sector and domestic banks in the relevant area.

The test statistic that will be considered in hypothesis testing is shown below:

$$t_0 = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{\overline{s_1^2} + \overline{s_2^2}}{n}}}$$
 
$$t_0 = \text{test istatistiği}$$
 
$$\overline{x}_{1,2} = \text{Averages of 1st and 2nd ratios,}$$
 
$$s_{1,2}^2 = \text{Variances of 1st and 2nd ratios, n} = \text{sample number of observations}$$

The decision rule is created by comparing the test statistic given above with the critical value and can be summarized as follows:

$$\begin{array}{l} H_0\colon \mu_1-\mu_2=0\\ H_1\colon \mu_1-\mu_2\neq 0 \end{array} \leftrightarrow t_0 > t_{v,\frac{\alpha}{2}} \ \ \text{or} \ \ t_0 < -t_{v\frac{\alpha}{2}} \ \ \text{if this is the case, $H_0$ is rejected.} \\ k \end{array}$$

 $\mu_{1,2}$  = Mass averages of the 1st and 2nd ratios

If the Hypothesis is rejected, this time a test is made that the population means are different. Depending on the content of the ration considered, one of the following two tests is performed:

$$\begin{aligned} & H_0\colon \mu_1-\mu_2 \geq 0 \\ & H_1\colon \mu_1-\mu_2 < 0 \end{aligned} & \leftrightarrow t_0 < -t_{v,\alpha} \text{ if this is the case, } H_0 \text{ is rejected} \\ & \text{or} \\ & H_0\colon \mu_1-\mu_2 \leq 0 \\ & H_1\colon \mu_1-\mu_2 > 0 \end{aligned} & \leftrightarrow t_0 > t_{v,\alpha} \text{ if this is the case, } H_0 \text{ is rejected} \\ \end{aligned}$$

$$-\mu_2 > 0$$
  $\leftrightarrow t_0 > t_{v,\alpha}$  if this is the case,  $H_0$  is rejected

Here v is degrees of freedom, and v = 
$$\frac{\left(\frac{s_1^2 + s_2^2}{n}\right)^2}{\left(\frac{s_1^2}{n}\right)^2 + \left(\frac{s_2^2}{n}\right)^2}$$

Hypothesis III: The sample variances of all ratios of foreign banks are indistinguishable from the sample variances of the same ratios of Turkish Public, Turkish Private Banks and Sector Total in the relevant period. The importance of Hypothesis III is that it shows that the variances of the 11 fundamental ratios of foreign banks are indistinguishable from the ratio variances of other sector banks and the sum of the sector. Variance can be used to measure instability in a series. If the sample variance of foreign banks in any ratio is lower than the sample variance of other banks and the sector, then it means that foreign banks have a stabilizing role in the sector in the category of interest; if the hypothesis is

not rejected, this indicates that foreign banks do not have any effect of increasing or decreasing the stability in the relevant ratio category in the sector. The rejection of the hypothesis also indicates that foreign banks have an effect that increases or decreases the stability in the relevant ratio category in the sector. The test statistic we will consider in hypothesis testing is shown below:

$$\begin{aligned} F_0 &= \frac{s_1^2}{s_1^2} \\ F_0 &= \text{test statistic} \end{aligned}$$

 $s_{1,2}^2$  = variances of the 1st and 2nd ratios

By comparing the test statistic mentioned above with the critical value, a decision rule was created and summarized as follows:

$$H_0: \sigma_1^2 = \sigma_2^2$$
  
 $H_1: \sigma_1^2 \neq \sigma_2^2 \leftrightarrow F_0 > F_{n-1,n-1,n-1,n-1}^{\alpha}$  if this is the case,  $H_0$  is rejected.

 $\sigma_{1,2}^2$  = Mass variances of 1st and 2nd ratios

On the other hand, if the hypothesis is rejected, a test is performed to show that the population variances are different.

$$\begin{array}{ll} H_0\colon \sigma_1^2 \leq \, \sigma_2^2 \\ H_1\colon \sigma_1^2 > \sigma_2^2 < 0 \end{array} \leftrightarrow F_0 < F_{n-1,n-1,\alpha} \quad \text{if this is the case, $H_0$ is rejected.}$$

## Statistical Testing of Hypotheses

In this section, hypothesis tests for each ratio and different banking categories will be shown in detail. At first, the hypothesis of equality of means and medians, namely Hypothesis I, will be tested.

#### Hypothesis I: Mean Does Not Differ From The Median

In Table 5, the test statistics of Hypothesis I, showing that the sample averages for each ratio of the banking sector categories are indistinguishable from the sample median are given.

Hypothesis I: Mean Does Not Differ From The Median

	Sector t - Statistic				
Ratio	Public	Result		Private	Result
		Cannot	be		
SY1	2,1276	rejected		0,5902	Cannot be rejected
		Cannot	be		
SY2	-1,4889	rejected		0,3386	Cannot be rejected
		Cannot	be		
BY1	-1,0057	rejected		-0,4598	Cannot be rejected
		Cannot	be		
BY2	-0,3454	rejected		0,1227	Cannot be rejected

1		Cannot	be		
BY3	1,4590	rejected		0,2297	Cannot be rejected
		Cannot	be		
AK1	0,2783	rejected		-0,2174	Cannot be rejected
		Cannot	be		
AK2	2,1158	rejected		1,1462	Cannot be rejected
		Cannot	be		
L1	0,0827	rejected		-1,1005	Cannot be rejected
		Cannot	be		
L2	0,9774	rejected		-0,0570	Cannot be rejected
		Cannot	be		
K1	-0,6433	rejected		0,2007	Cannot be rejected
		Cannot	be		
K2	-0,1591	rejected		-0,0945	Cannot be rejected

In the evaluation of the results of Hypothesis I, the hypothesis that the mean and median are indifferent cannot be rejected, except for the Total Loans in Foreign Banks/Total Assets-AK1 ratio. It is considered that it is more appropriate to use the median instead of the average for the Total Loans/Total Assets-AK1 ratio only in Foreign Banks. The confidence interval used when examining this situation was taken as ( $\alpha$ =0,05).

# Hypothesis II: Foreign Banks and Private, Public Banks and Sector Averages are No Difference

In this section, Hypothesis II, which states that the averages of the relevant ratios in the banking sector are indistinguishable in foreign banks compared to the totals of other banks and the sector, will be tested. First, however, the individual degrees of freedom must be calculated for each category and ratio. For this reason, the degrees of freedom are given in the table below.

Ratio Public Private Sector SY1 24 23 32 SY2 37 30 36 BY1 29 27 27 BY2 30 36 36 29 BY3 33 26 AK1 46 42 45 AK2 23 25 25 33 L1 37 31 L2 28 34 33 K1 36 45 46 K2 46

Table 6. Hypothesis II: Degrees of Freedom

The degrees of freedom required for testing the eleven (11) basic diets shown in Table 6 above, due to Hypothesis II, were obtained by rounding to the nearest whole number and

these values were calculated using the equation below.

$$v \text{ is the degree of freedom and } v = \frac{\left(\frac{s_1^2 + s_2^2}{n}\right)^2}{\left(\frac{s_1^2}{n}\right)^2 + \left(\frac{s_2^2}{n}\right)^2} \frac{\left(\frac{s_2^2}{n}\right)^2}{n-1}$$

Critical-t values were calculated for 11 ratios and 3 categories in the confidence interval using the calculated degrees of freedom ( $\alpha$ = 0,05). Critical values are given below.

RATIO	PUBLIC	PRIVATE	SECTOR
SY1	2,3910	2,3980	2,3600
SY2	2,3290	2,3600	2,3290
BY1	2,3640	2,3730	2,3730
BY2	2,3600	2,3290	2,3290
BY3	2,3600	2,3790	2,3640
AK1	2,3290	2,3290	2,3290
AK2	2,3980	2,3850	2,3850
L1	2,3290	2,3600	2,3600
L2	2,3680	2,3600	2,3600
K1	2,3290	2,3290	2,3290
K2	2,3290	2,3290	2,3290

Table 7. Hypothesis II: Critical Values- 1

By comparing the critical values in Table 7 with the calculated test statistics, the hypothesis of the indifference of the averages of the ratios of foreign banks, other banks and the sum of the sector has been tested. The following table shows the Hypothesis II test results:

Table 8. Hypothesis II: Foreign Banks and Private, Public Banks and Sector Averages are no Difference

	SECTOR t- STATISTIC					
RATIO	PUBLIC	RESULT	PRIVATE	RESULT	SECTOR	RESULT
		Cannot be		Cannot be		Cannot be
SY1	-1,0564	rejected	1,3445	rejected	-0,1687	rejected
				Cannot be		
SY2	5,4731	Reject	2,0386	rejected	2,7532	Reject
		Cannot be		Cannot be		Cannot be
BY1	-2,0159	rejected	2,2438	rejected	0,7018	rejected
BY2	-7,2975	Reject	-2,9331	Reject	-2,7567	Reject

BY3	12,0171	Reject	5,0737	Reject		4,8615	Reject	
		Cannot be		Cannot	be		Cannot	be
AK1	1,1647	rejected	-0,1563	rejected		0,1402	rejected	
		Cannot be	(	Cannot	be		Cannot	be
AK2	-1,9606	rejected	-0,8186	rejected		-1,6810	rejected	
				Cannot	be			
L1	3,4222	Reject	1,8272	rejected		2,5022	Reject	
		Cannot be		Cannot	be		Cannot	be
L2	0,7787	rejected	0,3820	rejected		0,2841	rejected	
		Cannot be		Cannot	be		Cannot	be
K1	2,0264	rejected	0,8555	rejected		1,8966	rejected	
		Cannot be		Cannot	be		Cannot	be
K2	-2,1511	rejected	-0,4662	rejected		0,9946	rejected	

# Hypothesis III: Variances and Sector Variances of Foreign Capital Banks and Public and Private Banks are no Difference

Finally, Hypothesis III, which claims that "the variances of the relevant ratios in the banking sector are indistinguishable in foreign banks compared to the sum of other banks and the sector" will be tested. The results of the tests performed to test Hypothesis III are as follows:

**Table 9. Hypothesis III Test Results** Hipotez III: Variances and Sector Variances of Foreign Capital Banks and Public and Private Banks are No Difference

	Sector F-Statistics						
Ratio	Public	Result	Private	Result	Sector	Result	Critical Value
SY1	0,2071	Cannot be rejected	5,7539	Reject	1,7748	Cannot be rejected	2,8600
SY2	2,8561	Reject	6,6141	Reject	3,3802	Reject	2,4600
BY1	2,4660	Cannot be rejected	3,2690	Reject	2,9434	Reject	2,8600
BY2	0,3969	Cannot be rejected	0,8909	Cannot be rejected	0,9178	Cannot be rejected	2,8600
BY3	1,8322	Cannot be rejected	4,0556	Reject	2,7950	Cannot be rejected	2,8600
AK1	0,8658	Cannot be rejected	1,8980	Cannot be rejected	1,4406	Cannot be rejected	2,4600
AK2	0,0102	Cannot be rejected	0,0463	Cannot be rejected	0,0370	Cannot be rejected	2,4600
L1	2,9564	Reject	4,4268	Reject	5,3028	Reject	2,4600
L2	0,3581	Cannot be rejected	0,8729	Cannot be rejected	0,7001	Cannot be rejected	2,8600
K1	3,2743	Reject	0,7757	Cannot be rejected	1,0761	Cannot be rejected	2,4600
K2	0,6666	Cannot be rejected	0,6259	Cannot be rejected	0,9071	Cannot be rejected	2,4600

In Table 9., the test results of Hypothesis III are given by considering eleven (11) basic ratios and according to three (3) main categories. Accordingly, Hypothesis III was rejected in the Turkish Private Banks category for the Capital Adequacy Standard Ratio – SY1, but not in the other two categories. On the other hand, although rejected in all three categories for (Equity + Profit) / Total Assets Ratio – SY2; TL Assets / Total Assets – For BY1 it was not rejected in the Turkish public banks category, but was rejected in the other two categories.

On the other hand, while it was rejected in the Turkish Private Banks category for Loans Received / Total Assets – BY3, it was not rejected in the other two categories. Liquid Assets / Total Assets - L1 were rejected in all three categories, while Net Period Profit / Average Total Assets - K1 was rejected only in the category covering Turkish public banks. For the remaining ratios and categories, Hypothesis III cannot be rejected. In such a case, according to Table 9., the second stage test results are only Capital Adequacy Standard Ratio – CA1, (Equity + Profit) / Total Assets Ratio – CA2, TL Assets / "Total Assets" – BY1, "Loans Received / Total Assets" – BY3, Liquid Assets / "Total Assets" – L1 and Net Profit for the Period / Average Total Assets – K1 will be applied to test the ratios.

Finally, in the second stage, the following test will be tested:

$$H_0: \sigma_1^2 \le \sigma_2^2$$
  
 $H_1: \sigma_1^2 > \sigma_2^2 < 0$   $\leftrightarrow$   $F_0 < F_{n-1,n-1,\alpha}$  in the case,  $H_0$  is rejected.

Here, the mass variance of the foreign banks ratio represented by the 1 subscript is the mass variance of the other category ratio, represented by the 2 subscript. If the hypothesis cannot be rejected, the relevant ratio of foreign banks is more stable, and if rejected, the relevant ratio of foreign banks is more unstable.

Table 10. Hypothesis III 2. Stage Test Results

		Sector F	Statistics				
Ratio	Public	Result	Private	Result	Sector	Result	Critical Value
SY1	0,2071	Reject	5,7539	Cannot be rejected	1,7748	Reject	2,4000
SY2	2,8561	Cannot be rejected	6,6141	Cannot be rejected	3,3802	Cannot be rejected	2,1200
BY1	2,4660	Cannot be rejected	3,2690	Cannot be rejected	2,9434	Cannot be rejected	2,4000
ВҰ3	1,8322	Reject	4,0556	Cannot be rejected	2,7950	Cannot be rejected	2,4000
L1	2,9564	Cannot be rejected	4,4268	Cannot be rejected	5,3028	Cannot be rejected	2,1200
K1	3,2743	Cannot be rejected	0,7757	Reject	1,0761	Reject	2,1200

The hypothesis test was rejected in only five (5) of the 18 second-stage tests performed in Table 10. These tests in detail; Capital Adequacy Standard Ratio – Hypothesis tests

conducted in Turkish Public Banks and Sector Total categories for SY1, Loans Received / Total Assets - Turkish Public Banks category for BY3 and Net Period Profit / Average Total Assets - Turkish Private Banks and Sector Total categories for K1. However, the other thirteen (13) tests could not be rejected. According to this result, the mass variances of the ratios of the foreign banks in question in the rejected tests were higher than the other category. In short, it was seen in these five tests that the H0 hypothesis was rejected, that foreign banks have an increasing effect on the instability in the relevant ratio. On the other hand, thirteen test results in which the hypothesis could not be rejected show us that the mass variances of foreign banks' ratios are lower than the other category. In other words, it can be said that foreign banks have an effect that reduces the instability in the sector in the relevant ratio.

### **Interpretation of Hypothesis Test Results**

Testing three main hypotheses based on practice in eleven basic ratios and four banking categories yielded certain results. It will be more summative to interpret the ratios examined here in terms of the basic values they represent.

First of all, two ratios are discussed in terms of "capital adequacy": Capital Adequacy Standard Ratio - CY1 and (Equity + Profit) / Total Assets Ratio - CAR2. Here, it was seen in the ratio analysis that; Capital Adequacy Standard Ratio of Foreign Banks - SY1 generally does not differ from the sector. In other words, in terms of international criteria, the ratio reflecting whether any bank has a capital level to carry out its business and cover possible risks and costs does not differ between foreign banks and Turkish private banks, Turkish public banks and the sector aggregate. However, when we look at the (Equity + Profit) / Total Assets Ratio - SY2 ratio, the capital adequacy of foreign banks is much higher than both Turkish public banks and the sector in general. According to this ratio analysis, it can be concluded that the Capital Adequacy Standard Ratio of foreign banks, which does not differ from the sector, is more unstable compared to both Turkish public banks and the sector in general. On the other hand, in the (Equity + Profit) / Total Assets Ratio - SY2, which shows higher values than the sector, it is understood that foreign banks do not have an effect that increases the instability. This is probably due to the fact that the capital values of foreign banks are affected by the long-term upward trend in the exchange rate and high volatility.

In general, in the study, the balance sheet structure of the sector, covering all banks operating in Turkey, has been examined with three ratios: TL Assets / Total Assets - BY1, "Total Deposits / Total Assets" - BY2, "Loans Received / Total Assets" - BY3 are the ratios. As a matter of fact, the BY1 ratio shows the ratio of Turkish Currency Assets held by banks to total assets. The results of the hypothesis test show that the Turkish Currency Asset ratio held by foreign banks is very different from the sector in general. This situation is not meaningless considering that foreign capital banks come to companies for both loans and funding the securities market. Again, the ratio of Total Deposits / Total Assets - BY2 was significantly below the Turkish Banking sector average for foreign banks. It is understood from this that foreign banks do not rely on domestic savings as much as domestic banks. This is clearly seen in the Loans Received / Total Assets - BY3 ratio. In short, in the BY3 ratio, foreign banks are at very high levels compared to domestic banks and the sector in general. It should be noted that foreign banks finance their loans with funds coming from their overseas centers, and therefore they do not need deposits as high as domestic banks.

Another important point is that in terms of stability in the balance sheet structure, it can be said that foreign banks play a role that increases the stability in the balance sheet structure of the sector. It should be said that only the variance of the Loans / Total Assets – BY3 ratio is higher compared to Turkish public banks. This situation should also be accepted as normal, since public banks have public authority and funds behind them, it is likely that these banks will have a more stable borrowing structure compared to both foreign banks and the sector in general.

On the other hand, it can be said that foreign banks do not differ from Turkish banks or the sector in general in terms of "asset quality". A similar situation is also valid in terms of both total loan production and stability in bad loans. The current situation in the sector is essentially a result of the guidance of the Turkish banking sector through national and international supervisory institutions, as well as the Basel criteria, the influence of which has increased in recent years. In addition, the "liquidity ratio" was analyzed through two main ratios: "Liquid Assets / Total Assets" – L1 and "Liquid Assets / Current Liabilities" – L2 ratios. It should be noted that; In terms of L1 ratio, it is seen that foreign capital banks have higher liquidity than both Turkish public banks and the sector in general.

When considered in terms of L2 ratio, which is another ratio, it is seen that foreign banks do not differ from the sector. The reason for this may be that foreign banks generally prefer to turn to short-term consumer loans rather than long-term investment loans. Therefore, it turns out that the banks in question prefer to make rapid and high profits in the short term rather than supporting the growth and development of the Turkish economy in the long term and making a positive impact. In addition, it can be said that the stability of the liquidity level of foreign banks creates an effect that increases the stability of the liquidity in the sector in general.

Finally, the ratios were compared in terms of "profitability" and the contribution of foreign banks to the sector was analyzed. In the examination, it is clearly seen that the profitability ratio of foreign capital banks does not differ from the sector in general. More importantly, in terms of profitability, foreign capital banks do not appear to have any negative impact on the stability of the banking sector.

#### Conclusion and Evaluation

In this study, it is aimed to evaluate the changes in time by examining the effects of foreign capital bank inflows on the Turkish banking sector on the basis of certain items and ratios, according to public banks and private banks and sector averages. In line with this goal, statistical studies were carried out on the data mainly for the years 2001-2019, compiled through the "statistical reports" available on the TBB website. The study covers the foreign-capital deposit banks operating during the relevant period, the number of which generally varies between 16 and 21, and a total of 21 as of the end of 2019.

The "profitability" ratios of banks, which play a key role in the Turkish economy as well as in other economies, and contribute to economic development by intermediating the transformation of savings into investments, are closely related not only to the financial sector but also to all segments. When compared in terms of the "Asset Profitability" (Net Profit for the Period / Avg. Total Assets-K1) ratio, which is used as the most common criterion in the literature in the evaluation of bank profitability and which shows how much profit the bank managements can generate with their current assets and how

effectively they can use their assets, foreign capital banks. In general, it is observed that it follows a course close to the averages of public banks, private banks group and the sector

Within the scope of this study, two basic ratios in terms of "Capital Adequacy (CA)" are discussed: Capital Adequacy Standard Ratio-CY1 and (Equity+Profit) / Total Assets Ratio-SY2. The results of the hypothesis considered in this study also showed that; the Capital Adequacy Standard Ratio (SY1) of foreign banks operating in Turkey in the analyzed period does not show any significant difference when compared to the total of public banks, private banks and the sector. On the other hand, when looking at (Equity + Profit) / Total Assets Ratio (TAR2); banks with foreign capital are at a higher level than both public banks and the sector in general. However, there is no difference between private banks and foreign capital banks in the related ratio. When we look at the share of equity and profitability in total assets, it can be said that foreign capital banks are in a strong position. Shortly, regarding the whole banking sector and financial proficiency, foreign banks which started to operate in Turkey after 1980 are better than public banks and the sector average.

Ratios related to "Balance Sheet Structure" are important criteria to measure and evaluate whether banks are financed in a measured way, whether the safety/precautionary share of depositors and bank lenders (creditors) is sufficient, and whether banks fulfill their obligations. Within the scope of this study, three basic ratios in terms of "Balance Sheet Structure (BC)" are discussed: "TRY Assets / Total Assets - BY1, Total Deposits / Total Assets - BS2 and Loans Received / Total Assets - BS3. When the "Loans Received / Total Assets (BS3)" ratio, which is another ratio related to the balance sheet structure of banks, is examined; In this ratio, it has been observed that foreign capital banks are at a higher level than especially public banks and the sector average. In connection with the interpretation made in the BS2 ratio above, it is understood once again that foreign banks mainly fund their assets with the resources coming from their main partners abroad. Therefore, foreign banks do not need deposits as much as public and private banks.

On the other hand, when the ratio of "Total Deposits / Total Assets (BS2)" addressed in the study is analyzed, it is seen that foreign banks are slightly below the sector from time to time. Instead of domestic deposits, banks with foreign capital fund themselves with different sources other than deposits such as subordinated loans from the main partner, loans obtained from abroad, syndication and securitization. Therefore, banks with foreign capital in Turkish banking sector do not need domestic savings as much as public and private banks. Also it can be stated that banks with foreign capital have a role that increases stability on the balance sheet structure of the whole banking sector.

"Liquidity" is the adjustment of assets to liabilities in terms of maturity by arranging them in a more fluid, shorter-term and easy-to-cash format. For a bank that can pay its debts, high liquidity may not be important. However, low levels of liquidity may lead to deposit outflows and failure to pay due debts. Within the scope of this study, two basic ratios in terms of "Liquidity (L)" are discussed: "Liquid Assets / Total Assets - L1 and Liquid Assets / Short-Term Liabilities - L2". It is observed that when the "Liquid Assets / Total Assets (L1)" ratio is analyzed; in general, foreign capital banks have a liquidity above both public banks and sector averages. This situation shows that the presence of foreign capital in the banking sector increases the average liquidity ratio of the Turkish banking sector. Among the reasons for this situation, the ability of foreign banks to reach

non-deposit fund sources without any problems can be stated. Therefore, it can be stated that banks with foreign capital have a role that increases stability on the balance sheet structure of the Turkish banking sector.

The "Profitability" status of banks, which play a key role in the economy and contribute significantly to economic development by mediating the conversion of savings into investments, is of interest not only to the financial sector but also to all segments. Within the scope of this study, two basic ratios in terms of "Profitability (P)" are discussed: "Net Period Profit / Avg. Total Assets (P1) and Net Period Profit / Avg. Paid Capital (P2)." When the "Asset Profitability" (Net Profit for the Period / Avg. Total Assets-K1) ratio, which is used as the most common criterion in the literature in the evaluation of bank profitability and shows how much profit the bank managements can generate with their current assets and how effectively they can use their assets, is examined. In general, it is observed that foreign capital banks follow a course close to the averages of public banks, private banks group and the sector.

After 1980 the increase of foreign capital banks in the Turkish Banking system by ownership structure; L1 ratio shows that the presence of foreign capital increases the average liquidity ratio of the Turkish banking sector. In other words, rapid entry of foreign capital into the banking sector in Turkish financial system has some prominent and positive effects on the financial performance of the sector. For the last two decades, the increase in the number of foreign capital banks has also increased their weight in the Turkish Banking system.

In summary, banks with foreign capital operating in the Turkish economy have relatively higher average in terms of "capital adequacy", "balance sheet structure" and "liquidity" ratios. However, it is observed that it had an effect that relatively lowered the sector average in terms of "profitability" ratios, and it can be concluded that this process in Turkish Banking sector did not create a significant differentiating effect in terms of "asset quality" ratios. Although there is a general belief that the most important reason for foreign capital to come to developing countries is high profitability rates, it is understood that foreign banks do not differ from the Turkish banking sector at this rate.

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