

# MEVDUAT BANKALARININ PERFORMANSININ CAMELS ANALİZİ İLE DEĞERLENDİRİLMESİ<sup>1</sup>

## EVALUATION OF DEPOSIT BANKS OPERATING IN TURKEY WITH CAMELS ANALYSIS

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### Öz

Bankacılık sektöru finansal sektörün büyümesi, ekonomik refahın yükselmesi ve yatırımların teşvik edilmesi gibi çok önemli faaliyetleri yerine getirmektedir. Yerine getirilen bu faaliyetlerden dolayı sektörün performansının sürekli analiz edilerek oluşabilecek problemlere karşı her zaman hazırlıklı olmak oldukça önemlidir. Bu çalışmada bankacılık sektöründe faaliyet gösteren 12 mevduat bankasının 2011-2021 yılları arasındaki performanslarının incelenmesi için CAMELS yöntemi tercih edilmiştir. Çalışma sonuçlarına göre kamu bankalarından olan Ziraat bankasının performansının 2011 yılında -2 olan seviyesinin 2021 yılında -15 seviyesine ulařtığı, Halk bankasının -6,4 olan performans seviyesinin 2021 yılında -25,5 seviyesine gerilediđi ve Vakıflar bankasının -15,5 olan performans seviyesinin -15,9 seviyesine gerilediđi görölmüştür. Diđer taraftan özel sermayeli bankalardan Akbank ve Citibank tüm yıllar itibariyle pozitif bir performans göstererek diđer bankalara göre daha olumlu bir görünüm sergilemiştir.

**Anahtar Kelimeler:** Bankacılık, Performans, CAMELS

**JEL Sınıflaması:** G21, L25, P27

### Abstract

The banking sector performs very important activities such as growing the financial sector, increasing economic welfare and encouraging investments. Due to these activities, it is very important to continuously analyze the performance of the sector and always be prepared for any problems that may arise. In this study, CAMELS method is preferred to analyze the performance of 12 deposit banks operating in the banking sector between 2011 and 2021. According to the results of the study, it was observed that the performance of Ziraat Bank, one of the state-owned banks, decreased from -2 in 2011 to -15 in 2021, the performance level of Halk Bank decreased from -6.4 to -25.5 in 2021, and the performance level of Vakıflar Bank decreased from -15.5 to -15.9 in 2021. On the other hand, Akbank and Citibank, which are privately owned banks, displayed a positive performance in all years and displayed a more favorable outlook compared to other banks.

**Keywords:** Banking, Performance, CAMELS

**JEL Classification:** G21, L25, P27

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## 1. Introduction

The financial sector is one of the most fundamental building blocks of modern life and plays a vital role for all countries. It is especially important for sustainable economic development and the right policies by performing many activities such as collecting savings, financing investments, managing risks and regulating the monetary supply (Saunders & Cornett, 2018; Kaushal & Ghosh, 2016, p. 1005; Demirgüç-Kunt & Huizinga, 2010, p. 628).

The financial sector refers to a large system that mainly includes banks, insurance companies, investment companies, capital markets and other financial institutions. In developed economies, other institutions play an active role and operate as much as banks, but in emerging economies such as Turkey, banks constitute almost the entire financial sector (Beck, Demirgüç-Kunt & Levine, 2002; Stiglitz & Weiss, 1981, p. 400).

The banking sector is one of the most important components of the financial sector. In today's modern societies, individuals and businesses constantly apply to financial institutions and benefit from banks in order to survive. Increasing the savings consciousness of the society through banks allows for supporting investments and increasing economic welfare (Bektaş, 2013; Kamath et al., 2003; Erdoğan, 2022a, p. 98).

Turkish banking sector has enjoyed rapid and stable growth in recent years, leading to an increase in the welfare of individuals and institutions. It is very important to measure the performance of banks in order to make this growth sustainable, create a stable structure, increase efficiency, improve risk management and enhance customer satisfaction (Erdoğan, 2022b, p. 61; Özkan, 2020, p. 148; Aydın, 2019, p. 56).

This study addresses the importance of the financial sector and the banking sector in Turkey and how these sectors contribute to the economical growth of the country. In explaining the importance of banks to the readers, the study highlights the social and economical impact of the banking system, pinpointing that banks play a vital role not only for businesses and individuals, but also for the overall economic development of a country.

In this study, the CAMELS method was used to analyze the performance of 12 deposit banks operating in Turkey between 2011 and 2021. Based on the results obtained, evaluations are made about these banks and the sector and recommendations for the future are presented.

The study is expected to contribute to the field in terms of analyzing and comparing both public banks, private capital banks and foreign banks. More comprehensive results can be obtained if the time period and the number of banks are increased in future studies.

The study consists of 5 sections: introduction, literature review, background information about Turkish banking sector, the study data and application of the methodology, and conclusion.

## 2. Literature Review

CAMELS method is frequently used in the literature as a preferred technique in financial performance analysis. Some of these studies can be expressed as follows.

The results of the analysis conducted to analyze the performance of the Bangladesh banking sector showed that DBBL and SIBL banks were found to be the best banks in terms of performance, while Sonali Bank was the worst bank in terms of performance (Ullah, Islam & Mamun, 2022, p. 76).

According to the results of the study analyzing the performance of banks operating in the Bulgarian banking sector, it was stated that Bulgarian banks need to be restructured, although they have achieved a positive trend after the country's accession to the EU (Prodanov, Yaprakov & Zarkova 2022, p. 204).

Studies conducted to analyze the performance of commercial banks listed on the Tanzanian stock exchange concluded that the variables that affect performance the most are management effectiveness and capital adequacy (Magoma, Mbwambo, Sallwa & Mwashu, 2022, p. 232).

The study, which analyzed the performance of public banks operating in Algeria, reported that the study did not yield positive results due to insufficient data on the sector (Gaoual & Geryville, 2021, p. 214).

As a result of the study conducted to analyze the financial performance of HDFC bank operating in India before and after the merging, it was stated that the bank was positively affected by the merging action and its performance was increased (Yadav & Yang, 2021).

In the study analyzing the impact of macroeconomic indicators and CAMELS analysis on the performance of Italian cooperative banks, it was stated that net interest margin was the most effective variable on performance (Paolicelli, Tregub & Byvshev, 2021, p. 1).

The results of the study conducted to analyze the performance of commercial banks operating in Sri Lanka indicated that capital adequacy, asset quality and liquidity variables had positive effects on performance (Thisaranga & Ariyasena, 2021, p. 183).

The study measuring the relationship between the financial performance of the Turkish banking sector and national risk reported a significant relationship between capital adequacy, asset quality and liquidity (Altay, 2021, p. 222).

In the work measuring the performance of the Vietnamese banking sector, it is stated that state-owned banks may experience difficulties in terms of performance and should take measures in this regard (Trung, 2021).

In an article conducted to analyze the effect of CAMELS ratios on the stocks of 4 public banks operating in the Indonesian banking sector, it was found that CAMELS ratios did not have a significant effect on stocks (Nugroho, Halik & Arif, 2020, p. 105).

According to the analyses on the performance of banks operating in the field of participation banking in Turkey, it has been stated that the proposed method does not show sufficiently sensitive results (Varga, Bánkuti & Kovács-Szamosi, 2020, p. 276).

In the study analyzing the factors affecting loan growth in the Vietnamese banking sector, it was stated that capital, assets and liquidity had positive effects on loan growth (Nguyen & Dang, 2020, p. 180).

The results of the study conducted to analyze the performance of banks in the Balkan countries revealed that banks have major problems in terms of asset quality and liquidity. It was also stated that the sector, which did not have any capital problems until 2008, experienced capital shortages after the crisis (Georgios & Elvis, 2019, p. 182).

In a study analyzing the performance of 10 banks operating in Ghana, it was stated that capital adequacy, asset quality, management effectiveness and liquidity are the most important variables (Boateng, 2019).

Analyses comparing the performance of Islamic banks and conventional banks operating in Pakistan reveal that Islamic banks are more successful in capital adequacy, management quality, profit potential, liquidity and risk sensitivity (Qureshi & Kalim, 2018, pp. 6-7).

The results of the study conducted to analyze the performance of foreign-capital banks operating in the Turkish banking sector indicate that banks experienced a decline in performance in 2016, profitability, management quality and capital level decreased after 2014, while liquidity and asset quality increased (Uslu, 2019, p. 200).

In a study analyzing the performance of commercial banks operating in Jordan, it was stated that management quality, income quality and liquidity have significant effects on performance (Bawaneh & Dahiyat, 2019, p. 1).

### 3. Turkish Banking Sector

The banking sector in Turkey is one of the most important actors of the financial system and is closely related to all other sectors. Banks, which are at the center of today's trade, undertake a vital task in terms of the transactions they perform.

Table 1 presents the general outlook of the Turkish banking sector. According to the statistics of the Banks Association of Turkey (TBB) for the period February 2023, there are 58 banks in Turkey, 35 of which are deposit banks, 17 development and investment banks and 6 participation banks. These banks have a total of 11,024 domestic and international branches and 206,040 employees.

**Table 1.** Figures of the Turkish Banking Sector<sup>2</sup>

| Group Name                           | Number of Banks | Domestic Branches | International Branches | Number of Employees |
|--------------------------------------|-----------------|-------------------|------------------------|---------------------|
| <b>Deposit banks</b>                 | <b>35</b>       | <b>9.524</b>      | <b>72</b>              | <b>182.987</b>      |
| Public capital Banks                 | 3               | 3.720             | 35                     | -                   |
| Private Capital Banks                | 8               | 3.468             | 27                     | -                   |
| Foreign Capital Banks                | 21              | 2.333             | 10                     | -                   |
| TMSF (saving deposit insurance fund) | 3               | 3                 | -                      | -                   |

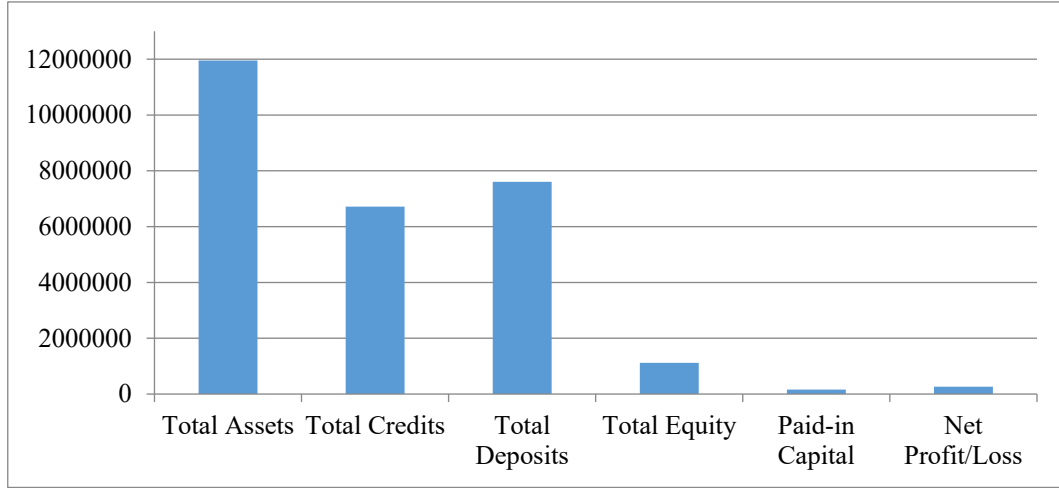
<sup>2</sup> Latest information published according to TBB Statistics on 02.05.2023.

|   |           |               |           |                |
|---|-----------|---------------|-----------|----------------|
| <b>Development and Investment Banks</b> | <b>17</b> | <b>72</b>     | <b>-</b>  | <b>5.673</b>   |
| <b>Participation Banks</b>              | <b>6</b>  | <b>1.352</b>  | <b>4</b>  | <b>17.380</b>  |
| <b>Total</b>                            | <b>58</b> | <b>10.948</b> | <b>76</b> | <b>206.040</b> |

Considering the financial outlook of the sector in Chart 1, total assets are 11,952 billion TL, total loans 6,713 billion TL, total deposits 7,605 billion TL, total shareholders' equity 1,115 billion TL, paid-in capital 159,400 million TL and net profit for the period 235,474 million TL.

In terms of asset size, the average of European countries is 29,420 billion TL and the Turkish banking sector ranks 13th among European countries.

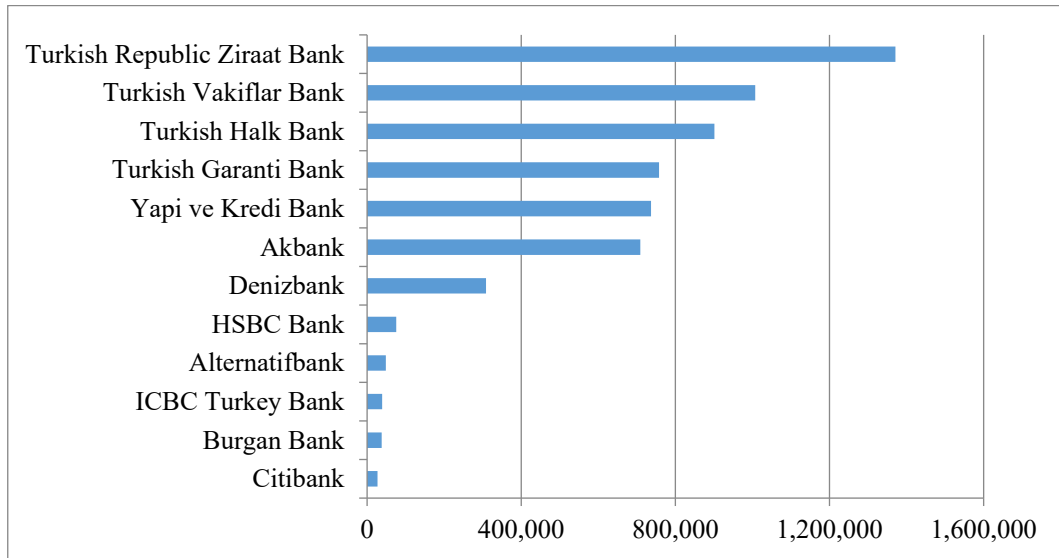
**Chart 1.** Financial Outlook of the Turkish Banking Sector<sup>3</sup> (Million TL)



**Source:** TBB (Turkish Banking Association, Statistical Reports 2023)

The asset sizes of the 12 banks examined in the study are as shown in Table 2. Among these banks, Ziraat Bank is the largest bank in the sector in terms of asset size, followed by Vakıflar Bank, Halk Bank and Garanti Bank, respectively.

**Chart 2.** Asset Sizes of the Banks Used in the Study (Million TL)



**Source:** TBB (Turkish Banking Association, Statistical Reports 2023)

<sup>3</sup> Latest information published according to TBB Statistics on 02.05.2023.

## 4. Data Analysis Using CAMELS Method

### 4.1. Study Data

In the study, the financial data of 12 commercial banks operating in the Turkish banking sector between 2011 and 2021 were used. The banks examined in the study are presented in Table 2.

**Table 2.** The Banks Examined in the Study

| Public Banks                 | Private Capital Domestic Bank | Private Capital International Bank |
|------------------------------|-------------------------------|------------------------------------|
| Turkish Republic Ziraat Bank | Akbank                        | Turkish Garanti Bank               |
| Turkish Halk Bank            | Yapi ve Kredi Bank            | Denizbank                          |
| Turkish Vakıflar Bank        |                               | HSBC Bank                          |
|                              |                               | Alternatifbank                     |
|                              |                               | Burgan Bank                        |
|                              |                               | ICBC Turkey Bank                   |
|                              |                               | Citibank                           |

### 4.2. CAMELS Analysis

CAMELS method is a frequently preferred method for analyzing the performance of banks in recent years. The method was first introduced in the US. It is preferred by credit rating agencies, auditors and bank regulators, especially in evaluating the performance of banks (Ege, Topalođlu & Karakozak, 2015, p. 110; Pasiouras, Gaganis & Zopounidis, 2006, p. 405; Kaya, 2001).

CAMELS evaluation method is applied under six headings. These include the following; (Bozdođan, Ersoy & Kaygusuz, 2018, p. 75).

C – Capital Adequacy

A – Quality of Assets,

M – Quality of Managment,

E – Earnings,

L - Liquidity

S - Sensitivity to Market Risk

CAMELS refers to the concepts of C (Capital), A (Asset), M (Management), E (Earnings), L (Liquidity), S (Susceptibility to market risk) in the evaluation method (Batr, 2019, p. 196).

CAMELS analysis is a type of ratio analysis using selected ratios of banks. The performance of the banks is evaluated by comparing the calculated financial ratios of the bank or group of banks to be analyzed with the calculated reference values (Cořkun & Karđın, 2016, p. 49-50). Banks subject to analysis are first evaluated separately for each CAMELS component. Financial ratios are used in this evaluation. In the evaluation, the scale is formed by giving grades between 1 and 5. While the best performance grade is "1", the higher the grade, the worse the performance of the banks. After the calculation is made for all components in this way, the overall grade of the bank is calculated by taking the weighted average of the grades of the components.

In CAMELS analysis, the ratios of the banks are prepared first. Then the reference values required for the analysis are calculated. The reference values are accepted as 100 and the analysis value of the banks is found by proportioning them with the ratio values of the banks.  $[(\text{Bank Ratio Value} / \text{Reference Value}) \times 100]$  If the direction of this base score is positive, 100 is subtracted from the base score; if it is negative, the bank's score is calculated by subtracting the base score from 100. The value is calculated by multiplying the previously determined ration by the percentage weight. Out of 6 groups, each group is summed separately and the group score is calculated. These calculated scores are multiplied by the percentage values of the groups and the bank score is calculated (Kaya, 2001; Cořkun & Kargin, 2016; Altetur, Karaca & Gıvemli, 2018, p. 60-61).

The main components and sub-ratios used in the analysis are presented in Table 3. A weight ratio was determined for each component. These weights are inspired by previous studies and their impact on performance is taken into consideration.

**Table 3.** Variables Used in the Study and CAMELS Weights

| Variables   | Component Weight | Ratio Weight | Correlation |
|---|------------------|--------------|-------------|
| <b>C – Capital Adequacy</b>                                       | <b>20</b>        |              |             |
| Capital Adequacy Ratio  |                  | 30           | +           |
| Share holders' Equity / Total Assets                              |                  | 30           | +           |
| (Equity -Non-Current Assets) / Total Assets                       |                  | 20           | +           |
| On Balance Sheet Foreign Currency Position / Shareholders' Equity |                  | 20           | +           |
| <b>A – Quality of Assets</b>                                      | <b>20</b>        |              |             |
| Financial Assets (net) / Total Assets                             |                  | 30           | +           |
| Total Loans and Receivables / Total Assets                        |                  | 25           | +           |
| Total Loans and Receivables / Total Deposits                      |                  | 25           | +           |
| FixedAssets / Total Assets  |                  | 20           | +           |
| <b>M – Quality of Management</b>                                  | <b>10</b>        |              |             |
| Non-performing Loans (gross) / Total Loans and Receivables        |                  | 30           | -           |
| Net Profit per Branch   |                  | 15           | +           |
| Total Deposits / Total Assets                                     |                  | 35           | -           |
| Non-Interest Income (net) / Other Operating Expenses              |                  | 20           | +           |
| <b>E – Earnings</b>   | <b>15</b>        |              |             |
| Net Profit for the Period / Average Total Assets                  |                  | 30           | +           |
| Net Profit for the Period / Average Shareholders' Equity          |                  | 30           | +           |
| Profit (Loss) Before Tax / Total Assets                           |                  | 15           | +           |
| Total Revenues/Total Expenses                                     |                  | 25           | +           |
| <b>L – Liquidity</b>  | <b>25</b>        |              |             |
| Liquid Assets / Total Assets                                      |                  | 40           | +           |
| Liquid Assets / Short Term Liabilities                            |                  | 25           | +           |
| TL Liquid Assets / Total Assets                                   |                  | 35           | +           |
| <b>S–Sensitivity to Market Risk</b>                               | <b>10</b>        |              |             |
| FX Assets/FX Liabilities  |                  | 30           | -           |
| Net Balance Sheet Position / Shareholders' Equity                 |                  | 40           | -           |
| Foreign Currency Position / Shareholders' Equity                  |                  | 30           | -           |

**Source:** (Kaygusuz, Ersoy & Bozdoğan, 2020, p. 81-82; Karaca, Altemur & Çevik, 2019, p. 136; Uslu, 2019, p. 128; Altemur, Karaca & Güvemli, 2018, p. 62; Ateşoğlu, Coşkun & Kargın, 2016, p. 51; Gümüş & Nalbantoğlu, 2015, p. 90)

The CAMELS values of 12 banks for the years 2011-2021 are presented in Table 4.

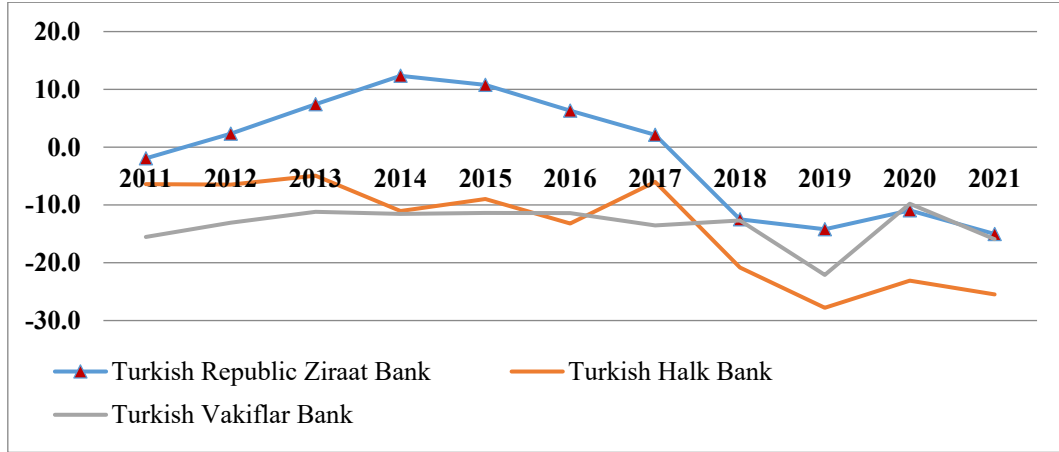
**Tablo 4.** CAMELS Values

|                              | CAMELS |       |       |       |       |       |       |       |       |       |       |
|------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              | 2021   | 2020  | 2019  | 2018  | 2017  | 2016  | 2015  | 2014  | 2013  | 2012  | 2011  |
| Turkish Republic Ziraat Bank | -15.0  | -10.9 | -14.2 | -12.5 | 2.1   | 6.3   | 10.8  | 12.3  | 7.4   | 2.3   | -2.0  |
| Turkish Halk Bank            | -25.5  | -23.1 | -27.8 | -20.8 | -6.0  | -13.2 | -9.0  | -11.1 | -4.9  | -6.5  | -6.4  |
| Turkish Vakıflar Bank        | -15.9  | -9.8  | -22.1 | -12.7 | -13.6 | -11.4 | -11.4 | -11.6 | -11.2 | -13.1 | -15.5 |
| Akbank                       | 11.5   | 5.3   | 3.9   | 3.4   | 11.3  | 6.7   | 5.9   | 6.7   | 6.2   | 10.0  | 17.9  |
| Yapi ve Kredi Bank           | 9.8    | 6.8   | 13.5  | 14.1  | -2.0  | -4.5  | -3.9  | -4.4  | 6.3   | -1.7  | -4.4  |
| Turkish Garanti Bank         | 21.4   | 7.2   | 10.4  | -0.9  | 0.2   | -0.2  | -2.6  | -3.4  | -2.7  | 4.8   | 5.5   |

|                  |       |       |       |       |       |       |       |       |       |       |       |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Denizbank        | 5.7   | 6.9   | 4.4   | 5.7   | -4.0  | 0.4   | 1.1   | -6.5  | -11.4 | 2.5   | 6.0   |
| HSBC Bank        | 28.0  | 22.8  | 73.7  | 43.9  | 3.4   | -21.0 | -19.5 | -1.8  | 4.0   | 1.6   | 10.5  |
| Alternatifbank   | -4.1  | 4.0   | 26.7  | 8.0   | -11.2 | -10.7 | -8.7  | -4.1  | -12.4 | -12.6 | -13.0 |
| Burgan Bank      | 4.3   | -20.3 | 22.2  | 19.9  | -13.0 | -19.0 | -15.5 | -11.8 | -12.3 | -11.7 | 11.1  |
| ICBC Turkey Bank | -11.9 | -3.2  | 8.1   | 21.1  | 2.6   | -4.5  | -6.7  | -10.6 | -0.8  | -12.9 | -11.5 |
| Citibank         | 94.8  | 260.4 | 192.8 | 186.4 | 36.6  | 44.6  | 45.3  | 49.8  | 47.0  | 18.6  | 8.7   |

The results presented in Table 4 are expressed separately below using charts for clarification.

**Chart 3. CAMELS Chart of Public Capital Banks**



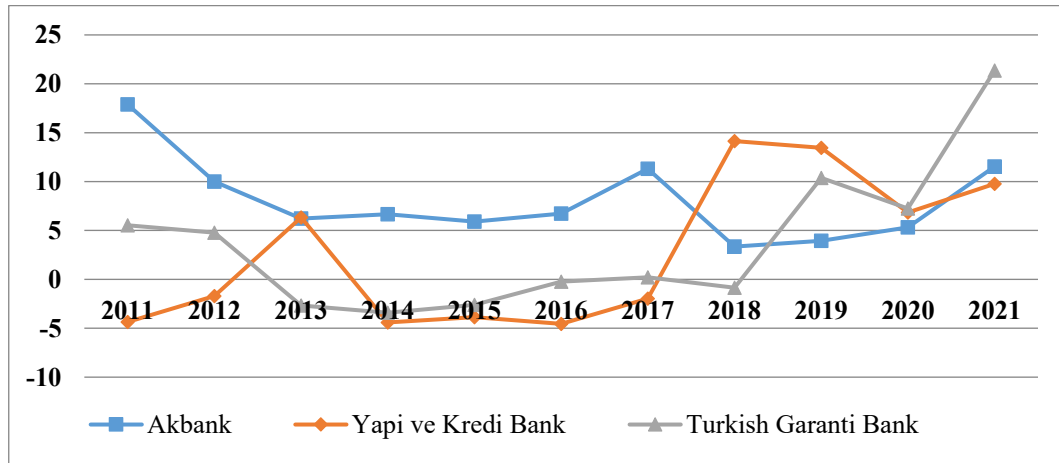
**Turkish Republic Ziraat Bank:** The bank's performance showed an upward trend between 2011 and 2014 and remained positive until 2017, albeit with a downward trend. After this date, the performance has been consistently negative and unfavorable.

**Turkish Halk Bank:** The bank's performance has been negative in all years and has been on a downward trend in recent years. In addition, the performance of Halkbank in the years under review was the lowest among the state-owned banks.

**Turkish Vakıflar Bank:** The performance of the bank has followed a negative course in all years and the negative outlook has continued during pandemic periods.

Chart 4 presents the CAMELS values of private capital banks. Based on the results in the chart, the following interpretations are made;

**Chart 4. CAMELS Chart of Private Capital Banks**

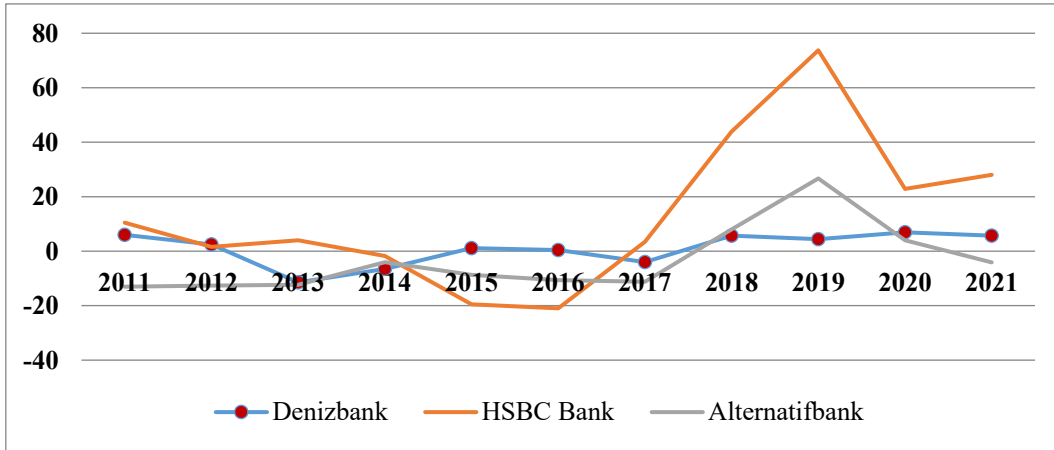


**Akbank:** It is seen that the bank has exhibited a positive and fluctuating performance in all years, but it has never reached its performance in 2011 in the following years, and as of 2021, it has exhibited the best performance after 2012.

**Yapı ve Kredi Bank:** The Bank's performance followed a negative and positive trend between 2011-2017, peaked in 2018-2019, and relatively declined in the last two years.

**Turkish Garanti Bank:** Garanti Bank has had a fluctuating performance chart until 2019 and performed very well after 2019, reaching its highest level in 2021.

**Chart 5. CAMELS Chart of Private Capital Banks**

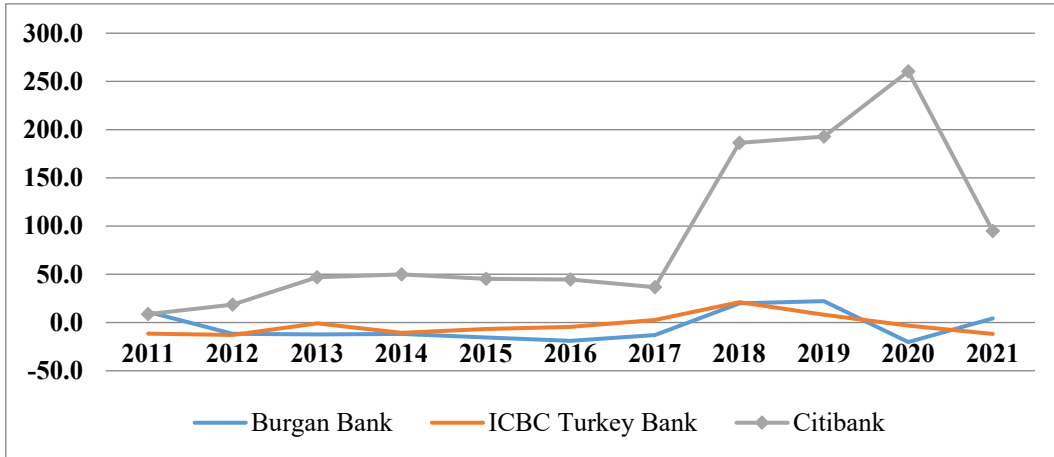


**Denizbank:** During the analysis period, Denizbank showed its lowest performance in 2013 and its performance trend has been positive after 2018.

**HSBC Bank:** Except for the negative outlook in 2014, 2015 and 2016, it is observed that the bank performed very well in general and achieved its best performance especially between 2018-2021.

**Alternatifbank:** The bank's performance was negative between 2011 and 2017, improved between 2018 and 2020, and then turned negative again in 2021.

**Chart 6. CAMELS Chart of Private Capital Banks**



**Burgan Bank:** Burgan Bank's overall performance has been volatile and has shown improving trends in recent years.

**ICBC Turkey Bank:** It was determined that ICBC Bank exhibited a positive performance only between 2017-2019 and had a negative outlook in the other years during the analysis period.

**Citibank:** It is observed that the bank has exhibited a positive and increasing performance over the years and that it has the highest performance among the banks included in the study.



Among private capital banks, only Akbank and Citibank have a positive performance in all years. In general, it can be stated that private banks positive perform public banks.

## 5. Conclusion And Implications

Banks play a vital role for all economies and the sustainability of today's social life. The activities and decisions taken by banks are closely related to the whole society and serve as a mechanism that determines the future of economies. Continuous monitoring of the performance of banks, which have penetrated so deeply into all aspects of society, is very important for them to be well-prepared against risks and to produce healthier policies.

In this study, data were analyzed within the framework of the components and sub-ratios determined in order to examine the performance of 12 commercial banks operating in the Turkish banking sector between 2011 and 2021.

The results of the study revealed that state-owned banks Ziraat Bank of the Republic of Turkey, VakıfBank of Turkey and Halkbank of Turkey exhibited a negative outlook in terms of performance. It can be stated that state-owned banks are adversely affected by high inflation and excessive fluctuations in exchange rates in the country and have experienced a negative situation in terms of performance, especially during the pandemic period.

When the results obtained for private capital banks are analyzed, it can be stated that a relatively better situation persists. In particular, Akbank and Citibank exhibited a positive performance in all periods analyzed, while other banks generally performed positively, which can be interpreted as better management of these banks compared to state-owned banks.

It is seen that the banking sector has problems in terms of performance and is not sufficiently prepared for possible risks. It is important that the strict banking policies implemented in developed countries are also implemented in the Turkish banking sector in order for banks to be prepared against crises and to protect resources. It should not be forgotten that the banking sector is vital for sustainable economic growth.

When the results of the study are compared with other studies in the literature;

When the results of the study conducted by Erdoğan and Uslu (2022) are compared with the results of this study, it is seen that the performance results of public capital banks are similar, but there are differences in terms of the results of private capital banks. The subjective nature of the selected criteria and the criteria weights may have produced different results.

According to the results of the study conducted by Güleç, Hazar and Babuşçu (2021), it was observed that the performance results of private capital banks were similar, but the results were different for Ziraat Bank, which is public capital.

When compared with the results of the study conducted by Uslu, Türk and Ertaş (2019), it was observed that although there were similarities in terms of public banks, the results differed especially for Vakıflar Bank. For Akbank, which is one of the privately owned banks, the results are completely different.

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