

TURKISH BANKING SECTOR PERFORMANCE ANALYSES



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ABSTRACT | This study evaluates the weaknesses and strengths of the Turkish banking sector by using the techniques of DuPont analysis and CAMELS rating from 2001 to 2017. The effects and results of the banking sector reconstruction program implemented after the 2001 financial crisis and Turkey's attempt to become European Union member are also investigated and evaluated under the same time span. In general, due to financial recovery policies implemented after the 2001 economic crisis, the banking industry has had improvements and has become stronger as the performance gap between the analyzed units have converged over time. Traditional ratio analyses are found to be consistent with advanced models. Foreign banks performance is the worst of all. State owned deposit banks in the Turkish banking sector are performing better than their competitors. In order to maintain a solid and sustainable system, successful policies must continue. Also, supervisory transparency should be increased.

Keywords: CAMELS, Financial Crisis, Risk and Regulation

Jel codes: G17, G18, G21

Scope: Finance

Type: Research

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TÜRK BANKACILIK SİSTEMİ PERFORMANS ANALİZLERİ



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ÖZ Bu çalışma, DuPont analizi ve CAMELS derecelendirme tekniklerinden yararlanarak 2001 - 2017 yılları arasında Türk bankacılık sektörünün zayıflıklarını ve güçlü yönlerini değerlendirmektedir. Türkiye'nin Avrupa Birliği üyeliği hedefleri kapsamında 2001 finansal krizi sonrasında uygulanan güçlü ekonomiye geçiş programının etkileri ve sonuçları incelenerek değerlendirilmiştir. Genel olarak, 2001 ekonomik krizinden sonra uygulanan finansal iyileşme politikaları sayesinde, bankacılık sektörü güçlenerek gelişmiş ve analiz edilen birimler arasındaki performans boşluğu daralmıştır. Geleneksel oran analizlerinin ileri modellerle tutarlı olduğu bulunmuştur. Yabancı bankaların performansı en kötüdür. Türk bankacılık sektöründeki devlete ait mevduat bankaları rakiplerinden daha iyi performans göstermektedir. Sağlam ve sürdürülebilir bir sistemi korumak için başarılı politikalar devam etmelidir. Ayrıca, denetleyici otorite şeffaflığı artırılmalıdır.

Anahtar Kelimeler: CAMELS, Finansal Kriz, Risk ve Regülasyon

JEL Kodu: G17, G18, G21
Alanı: Finans
Türü: Araştırma

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1. INTRODUCTION

In the history of Turkish Banking System, the 1990s were the years of excessive risk taking in a highly volatile environment. Banks were increasingly investing in government bonds, taking huge currency mismatches and opening substantial amounts of credit lines to their holding companies. The high and volatile inflation rates of 1990s, the boom-bust cycles of economic growth and the fragility of external capital inflows all contributed to uncertainties and led to a domination of “short-term” behaviors. This excessive risk taking cost a lot to the system when the Turkish economy experienced two major crises in 1994 and 2001. The effects of the crisis, coupled with other structural problems in the banking system resulted in: inadequate capital bases; small and fragmented banking structure; dominance of state banks in total banking sector; weak asset quality (concentrated credits, group banking and concentrated risks, mismatch between loans and provisions); extreme exposure and fragility towards market risk (maturity mismatch, FX open position); inadequate internal control systems, risk management and corporate governance; and a lack of transparency (BRSA, 2001, p. 5).

In those times, the regulation and supervision of the banking system had a fragmented structure. The Undersecretariat of Treasury (UoT) was responsible for issuing banking regulations, carrying out on-site supervision and enforcement. On the other hand, the Central Bank of Turkey was responsible for off-site supervision and managing the Savings Deposit Insurance Fund (SDIF), which provided insurance to saving deposits (BRSA / Institutional Communication and Foreign Relations Department, 2015, p. 5). In 2000, Turkish Government decided to remove the fragmented structure in banking regulation and supervision, and establish an independent body, which would act as the sole authority in the banking sector (BRSA / Institutional Communication and Foreign Relations Department, 2015, p. 5).

In the year 2000, the total number of banks in Turkish banking sector was 79, and 11 of these were under the management of SDIF and 18 of them were development and investment banks. Excluding these brings the total number of deposit banks to 50. Of these 50 deposit banks, 4 were state owned banks, 28 were privately owned banks and 18 were foreign banks. As of 2016 the number of banks in Turkish banking sector decreased to 52, and there is currently only 1 bank under the management of SDIF. There is also a decline in the number of development and investment banks which stands at 13. By 2016, the number of deposit banks were 34 and 3 of these were state owned banks, 9 were privately owned banks and 21 were foreign banks. Compared with the 2000s only the

number of foreign banks has increased in the Turkish banking sector. Since the year 2000, the banking sector in Turkey faced a multidimensional expansion and banks gradually adapted to a new environment. From 2000 to 2016, total assets of the sector multiplied more than 26 times, shareholders' equity multiplied by nearly 40 times, and total loans multiplied by more than 54 times.

According to the Copenhagen criteria of the European Union, one of the preliminary condition to become a member is the existence of a functional free-market economy and the ability to cope with market pressures. Turkey's intention to join the European Union within the scope of 10th Development Program also lays supportive goals and targets related to the financial markets. In the mentioned program, the governmental body exerts strict rules and policies on the capital adequacy ratios and implementing risk measurement techniques to increase the performance of banks ("Conditions for membership - European Commission," n.d.; T.C. Kalkınma Bakanlığı, 2013).

Empirical research on the banking sector performance topic is one of the attraction points of academicians and practitioners throughout the evolvement stages. Some studies can be given as (Akıncı, Matousek, Radic, & Stewart, 2012; Albayrak & Erkut, 2005; Aysan & Ceyhan, 2008; Çinko & Avcı, 2008; Fukuyama & Matousek, 2011; George Assaf, Matousek, & Tsionas, 2013; Isik & Hassan, 2002, 2003; Ozkan-Gunay & Tektas, 2006; Seyrek & Ata, 2010; Taşkın, 2011) which examined bank performances in the Turkish banking sector. Each evolvement stage, which has its own special conditions and changes should be discussed when considering these factors. These recent studies cover the period until the 2010 using annual data. In the last quarter of 2000, the Turkish banking sector faced a liquidity crisis, which deepened in 2001, and in 2008 Turkey struggled with the global crisis. We may reach positive conclusions like expected recovery and long term strengthening of the sector by evaluating the limited effects of the crises on the Turkish banking sector. Addressing the reason of using Non Performing Loans (NPLs) could have lead to a right treatment of this important problem. There also is another important topic on the banking sector, which is about the ownership of banks and their effects on the system. Bank ownership as foreign or domestic and the impacts on performance results are widely discussed in many studies, for example, (Berger, Deyoung, Genay, & Udell, 2000; Das & Ghosh, 2006; Fries & Taci, 2005; Sarkar, Sarkar, & Bhaumik, 1998). Particularly in Turkey, limited to their analyses periods (Akıncı et al., 2012) amongst others, defends domestic banks as being better than their foreign competitors. Their study does not include the most recent period, hence we extended the period and searched for confirmatory evidence on state banks'

dominance. Shortcomings of performance evaluation with only a traditional ratio analyses are addressed in several studies (Aysan & Ceyhan, 2008; Bowlin, Charnes, Cooper, & Sherman, 1985; Mercan, Reisman, Yolalan, & Emel, 2003; Ozkan-Gunay & Tektas, 2006).

In this paper, we examine the outcomes of these policies inaugurated after 2001 crisis and try to answer the following questions

1. Do the policies introduced after the 2001 crisis recover the economy and strengthen the sector in the long term?
2. What is the main reason of Non-Performing Loans in the sector?
3. Do foreign banks have a positive impact on the sector?

In order to answer these questions, we conducted a two-stage analysis methodology. At first the DuPont Analysis schema is implemented to quarterly data gathered from the Turkish Banking Association of Turkey for the periods between 2001 and 2017. ROE, ROA and lower breakdowns are analyzed for the banking sector (Koch & MacDonald, 2015). Another contribution of the study is implementing CAMELS analysis with all available data important for the banking sector rather than the selected ratios implied in (Çinko & Avcı, 2008; Türker Kaya, 2001). The literature part of the study will be given in section 2. In section 3, data and methodology will be explained. In section 4, findings from the analyses will be presented. In section 5, conclusions will be drawn and future studies will be recommended.

2. LITERATURE REVIEW

Studies related to financial institutions performance and bank performances are going to be addressed, regardless of the methodology and/or approach they employed, allowing for a more comprehensive review.

Demirgüç-Kunt (1999) discussed the macroeconomic and bank specific factors of efficiency in the Turkish banking industry between 1995 and 2009 and showed that micro factors are relatively more explanatory than macro factors in the assessment of bank performance.

In the study of Kaya (2001), the Turkish banking sector was analyzed with CAMELS for the periods between 1997 and 2000. A worsening of all the components of composite rating is observed from 1997 to 2000. BRSA of Turkey utilizes CAMELS rating system but neither the rating notes, nor the methodology is disclosed to the public (Banking Regulation and Supervision Agency, 2011). This remains a gap for the evaluation of performance with CAMELS rating.

Another study shows that prediction of bank failures using CAMELS analysis is almost impossible and constructed a different model. For the evaluations on the CAMELS and predicting failures refer to the study (Çinko & Avcı, 2008).

Albayrak and Erkut (2005) studied the financial and non-financial data of the Turkish banking sector for the year 2002, and applied an analytic hierarchy process approach.

Shortcomings of performance evaluation with only traditional ratio analyses are addressed in several studies (Aysan & Ceyhan, 2008; Bowlin et al., 1985; Mercan et al., 2003; Ozkan-Gunay & Tektas, 2006), but ratio analyses as a part of performance studies are still thought to be a supportive tool and mostly; ROE, ROA and NIM ratios are used for profitability and efficiency checks (Ariff & Can 2008; Aysan & Ceyhan 2008; Barros et al. 2012; BRSA 2010; Berger & Mester 1997; Berger et al. 2000; Bhaumik & Dimova 2004; Park & Weber 2006; Sarkar et al. 1998; Taşkın 2011; Fukuyama & Matousek 2011).

Under the performance topic, some studies suggest that foreign banks performance is worse than the nationals (Berger et al., 2000; Claessens & van Horen, 2011), and some suggest that foreign banks are better (Berger, 2007; Duygun Fethi & Pasiouras, 2010; Fries & Taci, 2005; Sarkar et al., 1998). There are also some studies that found no evidence on the performance difference between these banks (Aysan & Ceyhan, 2008; Berger, 2007; Ozkan-Gunay & Tektas, 2006). Domestic and foreign banks comparative performance differences are also addressed in other studies around the world and for a more detailed research, see (Sensarma, 2006). Particularly in Turkey, foreign banks are observed to be less efficient than domestic banks for the years between 1991-2007 (Akıncı et al., 2012). Isik and Hassan's (2003) study covering the 1987 – 1990 period state that foreign banks were performing better with higher efficiency scores than the state owned banks (Isik & Hassan, 2003). Another study conducted by Isik and Hassan (2002) showed that between the 1988 – 1996 period, domestic banks are outperformed their foreign competitors (Isik & Hassan, 2002).

3. THE METHODOLOGY AND MODELS

In order to test the performance of banking system in Turkey, ratio analyses and CAMELS rating system were implemented.

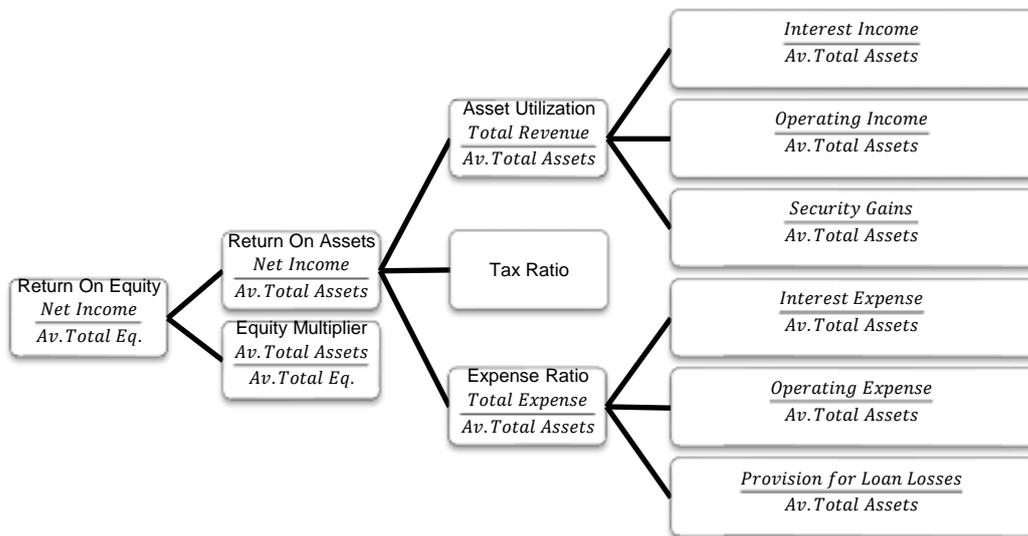
a. Ratio Analyses

Ratio analyses in the banking sector play a vital role on the performances. The data source of the banking system in Turkey is the Banks Association of

Turkey. Bank clusters consists of deposit banks, development and investment banks, state owned deposit banks, privately owned deposit banks, foreign banks and banks under the management of fund. Related quarterly data downloaded for the period of 2001 to 2017 constructed the initial DuPont analysis. Yearly grand averages are calculated from these data. A graphical illustration of DuPont scheme is given as follows: A type of DuPont analysis is made with minor touches to fit the system to banking sector data as seen in the

(Koch & MacDonald, 2015). While conducting ratio analyses, the balance sheet data is used. The nature of DuPont analysis makes it possible to compare ratios one by one and this leads to a more informed decision making and better judgments.

Figure 1 DuPont Scheme



Source: Edited from (Koch & MacDonald, 2015: 92).

b. CAMELS Rating

CAMELS is the abbreviation made of six letters from the following words: Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity. Sensitivity, which is the publicly referred name of Uniform Financial Institutions Rating System (UFIRS). CAMELS rating notes of banks are not available to

public in Turkey (Banking Regulation and Supervision Agency, 2011).

By using the publicly available data received from The Banks Association of Turkey, CAMELS ratings of banks are calculated for the following years 2001 – 2016. In order to estimate the CAMELS ratings, 66 ratios are classified: 14 ratios are used for capital adequacy, 9 for asset quality, 11 for management, 11 for earnings, 6 for liquidity and 15 for sensitivity to market risk. Each component is weighted equally, and index values for each ratio are calculated by using the 10% trim mean to eliminate the extreme value effects. CAMELS rating uses 1, 2, 3, 4 and 5 as a scale, where 1 represents best performance and 5 shows the worst.

4. THE FINDINGS

There is a coding rationale of the Table 1 and the other ratios used in the study. The acronyms of the ratios are followed by a number. Each number represents a cluster. Number 1 is used for the sector, number 2 is used for the deposit banks, and 3,4,5,6 sequentially represents development and investment banks, state owned deposit banks, privately owned deposits banks and foreign banks. Return On Equity is abbreviated to ROE, Return On Assets is abbreviated to ROA, Net Income is abbreviated to NI. In the trend line equations dependent variable is defined with the letter y and the independent variable is defined with the letter x. According to the Table 1 **Hata! Başvuru kaynağı bulunamadı.**, sector (denoted by 1) has a declining trend line where the $y = -0.0061x + 0.1974$ equation is used. Deposit banks (denoted by 2) have nearly the same slope with the equation $y = -0.0063x + 0.2083$. ROE of development and investment banks (denoted by 3) fall less than the sector and the deposit banks with the equation $y = -0.0053x + 0.116$. When we look at deposit banks, state owned banks (denoted by 4) ROE fall more than privately owned deposit banks (denoted by 5) and foreign banks (denoted by 6). State owned deposit banks, privately owned deposit banks and foreign banks equations are sequentially found as follows; $y = -0.0179x + 0.3403$; $y = -0.0024x + 0.1611$; $y = -0.0042x + 0.1861$. The main reason of this steep fall is, because at the beginning of the analyses state owned deposit banks have ROE higher than any compared unit. There is a steep rise in 2006 following a steep fall in ROE of foreign banks. Each of the compared units have a similar rise and fall trend through 2005 – 2007, but it is visually sharp for foreign banks. Ratio calculations are sensitive to last period values. In 2006, ROE6 component NI6 increased about 4 times the 2005 average value whereas in the same period ROE1 to ROE5 components NI1 to NI5 values increased about 1.2 times to 2 times the value, generating a sharp visual. Another important determinant is average total equity of foreign banks. Other banks average total equities increased 1.06 to 1.20

times in 2006 and in 2007 1.11 to 1.21 times, whereas average total equity of foreign banks increased 1.7 times in 2006 and about 2 times in 2007. In order to capture the effects of 2008 crisis' pre-crisis period, crisis and post crisis periods were analyzed. Pre-crisis period decline in the sector is lower than the overall period decline. In specific, the development and investment banks' decline in this pre-crisis period is significantly higher than the post crisis period. According to ROA, the sector has a declining trend with the equation $y = -0.001x + 0.027$ throughout the period.

Table 1: Average ROE in 2003 – 2016

	ROE1	ROE2	ROE3	ROE4	ROE5	ROE6
2003 Average	19.4131%	19.7616%	16.7995%	41.4792%	10.6341%	18.3963%
2004 Average	18.3149%	19.2563%	11.4139%	32.5879%	15.0933%	14.6795%
2005 Average	13.3482%	14.0864%	8.0626%	21.2257%	10.6917%	13.6071%
2006 Average	20.9237%	21.7244%	10.7505%	23.4811%	19.8633%	31.7825%
2007 Average	16.4555%	17.6788%	7.4973%	21.7125%	17.2893%	12.0260%
2008 Average	16.4907%	18.1136%	6.0572%	21.4245%	16.8209%	16.8066%
2009 Average	21.0166%	22.9655%	6.6775%	26.1082%	23.0360%	18.0501%
2010 Average	14.9214%	16.2548%	4.6500%	20.5120%	15.9722%	11.0215%
2011 Average	12.0837%	13.1925%	3.2641%	14.6198%	12.5028%	12.7060%
2012 Average	10.1082%	10.4255%	4.9589%	14.0915%	9.5073%	8.7979%
2013 Average	14.1210%	15.1865%	5.3162%	16.3038%	14.6118%	14.4568%
2014 Average	9.7125%	9.9881%	5.3904%	10.6628%	9.1336%	11.3481%
2015 Average	12.5109%	13.0689%	7.8876%	10.2709%	12.1886%	17.9763%
2016 Average	13.1973%	13.7092%	7.6417%	13.7650%	13.2175%	14.3912%
2017 Average	8.0576%	8.6518%	3.3488%	10.3898%	7.4806%	8.0506%

Trend line equations of deposit banks, development and investment banks, state owned deposit banks, privately owned deposit banks and foreign banks are $y = -0.0009x + 0.0257$; $y = -0.0035x + 0.0557$; $y = -0.0016x + 0.0319$; $y = -0.0005x + 0.0217$; $y = -0.0017x + 0.0344$ respectively.

According to these findings, development and investment banks fall more than the banking sector with foreign banks and state owned deposit banks. Privately owned deposit banks have declined less than the banking sector average and therefore, covering the deposit banks' overall fall. Development and investment banks have the highest ROA in the beginning period, so effect of the decline can be seen clearer than others. As in ROEs, ROAs have a steep rise and fall between 2005 and 2007. In 2006, ROA6 component NI6 increased about 4 times the 2005 average value, whereas in the same period ROA1 to ROA5 components NI1 to NI5 values increased about 1.2 times to 2 times the value, generating a sharp visual. From the denominator side, development and investment banks have about 3.23% of the banking sector assets, resulting in a relatively small change in the value of average assets, causing higher volatility in the ROA. This explains the development and investment banks' change more clearly.

Both the numerator and the denominator of equity multiplier rose in the period, but when the ratio is considered, state owned deposit banks followed a declining trend line, whereas the others increased. The sector had an increasing trend with the equation $y = 0.1217x + 7.1109$ throughout the period. Trend line equations of deposit banks, development and investment banks, state owned deposit banks, privately owned deposit banks and foreign banks are sequentially $y = 0.0931x + 7.951$; $y = 0.1755x + 1.5202$; $y = -0.0688x + 10.712$; $y = 0.1224x + 7.2501$; $y = 0.3627x + 4.9336$. According to findings, the equity multiplier of foreign banks increased the most.

Both the total revenue and average total assets increased in time, but a declining trend of asset utilization shows that assets create lower proportions of revenues than before. The sector has a declining trend with the equation $y = -0.0056x + 0.123$ throughout the period.

Trend line equations of deposit banks, development and investment banks, state owned deposit banks, privately owned deposit banks and foreign banks are sequentially $y = -0.0055x + 0.1236$; $y = -0.0053x + 0.0969$; $y = -0.007x + 0.1355$; $y = -0.0048x + 0.1146$; $y = -0.0065x + 0.1408$. State owned deposit banks starts with about 18% income generation from their assets, ending with about 4%.

According to expense ratio, the sector has a declining trend with the equation $y = -0.0045x + 0.095$ throughout the period. Trend line equations of deposit banks, development and investment banks, state owned deposit banks, privately owned deposit banks and foreign banks are sequentially $y =$

$-0.0046x + 0.0968$; $y = -0.0017x + 0.0401$; $y = -0.0053x + 0.1027$; $y = -0.0042x + 0.0919$; $y = -0.0047x + 0.1047$. A higher ratio shows a more difficult situation to control expenses, therefore less efficiency in controlling them. During the analysis period, the trend lines show that, as time goes by, banks improve.

During the full period, CAMELS component averages are sequentially; 2.77; 4.20; 2.34; 2.42; 3.79; 3.12 with composite average, 3.03.

Table 2: 2001 - 2016 CAMELS Results

	C	A	M	E	L	S	Com p.
	Av.	Av.	Av.	Av.	Av.	Av.	Av.
Banking System in Turkey	3.63	5.00	1.00	2.88	4.38	4.00	2.94
Deposit Banks	3.69	5.00	1.00	2.69	4.25	4.00	1.38
State-owned Banks	2.94	5.00	1.00	1.25	3.88	3.94	2.25
Privately-owned Banks	3.44	5.00	1.00	2.88	4.19	3.69	2.75
Foreign Banks	1.94	4.75	3.13	2.50	1.81	2.00	4.13
Foreign Bank Founded in Turkey	1.94	4.75	3.13	2.50	1.81	2.00	4.13
Foreign Banks Having Branches in Turkey	3.75	1.38	4.50	2.44	2.69	3.00	3.38
Development and Investment Banks	1.69	5.00	1.00	2.13	4.81	2.69	2.50
State-owned Banks	1.63	5.00	1.50	2.00	4.31	2.31	2.88
Privately-owned Banks	3.25	2.94	4.25	1.94	4.88	3.13	3.69
Foreign Banks	2.56	2.38	4.19	3.44	4.69	3.56	3.31

Capital adequacy of overall foreign banks, foreign deposit banks founded in Turkey, overall development and investment banks, state owned development and investment banks, foreign development and investment banks are better than the average of the whole sample. Asset quality component of foreign banks having branches in Turkey, privately owned development and investment banks and foreign development and investment banks are outperforming the others, but

when the other components are investigated rating scores imply that asset quality is in the worst case. Management component has an average of 2.34 but the overall composition is in the best case excluding foreign banks. Average Earnings component is 2.42 and state owned deposit banks are the best with an average of 1.25. Liquidity component average is 3.79 where overall foreign banks and foreign banks founded in Turkey have the best grade with 1.81 followed by 2.69 points. Sensitivity to market risk component average is 3.12, and excluding all foreign banks all deposit banks performed worse than this. Composite average calculated from components averaged 3.03 points, and Turkish banking sector deposit banks' average, state owned deposit banks, privately owned deposit banks performed better than average. Also development and investment banks' averaged better than the overall average. Only state owned development and investment banks performed better than the average in development and investment banks group.

In order to capture effects of 2008 crisis pre-crisis period, crisis and post crisis periods are analyzed.

After the 2008 crisis, the overall composite average got worse, but the banking systems composite average increased to 2.78 from 3.14 and it also rose over the 2008 – 2016 periods' overall composite average score of 3.06. In this period, asset quality of foreign banks having branches in Turkey were better than others and the average asset quality was 4.29 points. The management quality of foreign banks was worse than others and the average management quality was 2.27. Liquidity component rating is worse than the 2001 – 2008 period. Foreign development and investment banks, were better in the 2001 – 2008 periods. Capital adequacy level of an institution is important, especially for external shocks. Minimum total capital is considered to be at 8% level according to BASEL regulations. Foreign banks (having branches in Turkey) ratings impose the biggest vulnerability to external shocks is in this group. Asset quality is mostly associated with the credit risk of a bank, and the credit risk is composed of expected loss and unexpected loss. According to BASEL II standard approach, the minimum capital requirement for credit risk is in a main part of risk weighted assets, according to the counterparty type and rating. According to rating scores, foreign banks (having branches in Turkey) to manage credit risk the best amongst all. Management ratings are perhaps the most subjective ratings among others, and foreign banks are found to be the worst performing ones along with privately owned development and investment banks. Earnings ratings according to CAMELS system are given to reflect how much earning is there and whether it is sustainable. According to findings, the best rated banks in the system are state

owned deposit banks. Liquidity rating is given according to institutions ability to fulfill its obligations in all conditions. Overall foreign deposit banks and Foreign deposit banks founded in Turkey are the ones scored the best. Sensitivity to market risk component is monitored to capture market conditions, such as FX rates, interest rates, etc. changes the effect on institutions' earnings. State-owned deposit banks are found to be the worst performing amongst others. In the yearly composite ratings, deposit banks and state owned deposit banks are found to be performing the best whereas foreign banks are performing the worst. Banking system followed nearly the same path with deposit banks in the capital adequacy rating notes. Development and investment banks are in a better condition than both the system and deposit banks. Effect of the 2008 crisis is seen by the worsened ratings.

During the analysis period, the asset quality of Turkish banking sector whether components are deposit or development and investment banks are found to be performing badly. This gives rise to a challenging question when it is compared to management quality. During the analysis period, the asset quality of Turkish banking sector whether components are deposit or development and investment banks are found to be performing perfectly. How can a top rated management have poor quality assets under the management control? (Berger & DeYoung, 1997), in page 851, states "banks' management ratings were more strongly related to their asset quality ratings than to any of their other examination ratings". Findings seem conflicting, but asset quality is considered very strict in the analysis and management quality is evaluated just according to ratios, answer to arising question lies here. Liquidity ratings of deposit banks are generally better than development and investment banks. In 2013, sector and main breaks get the same in the worst rating note.

In the sensitivity to market risk component, development and investment banks seem to manage the FX exchange, interest rate change like effects better than deposit banks. Overall ratings are represented by composite ratings and when this is inspected, deposit banks are found to be the best performers in the Turkish banking sector. Capturing deposit banks from a closer point, breaks deposit banks into state owned, privately owned and foreign bank nodes. State owned deposit banks are the riders of deposit banks, followed by privately owned banks. Foreign banks are found to be the worst performers amongst all. Foreign banks asset quality rating declined gradually and after 2006 it got equal with others. Foreign banks management ratings were in the worst scenario from 2001 to 2004. Then it gradually got better and in 2007 it got equal to others in the best state.

Best rating in the earnings component is in state owned banks. Foreign banks are in a worse state than the deposit banks after 2006. Privately owned banks were better than the deposit banks in 2001 and in 2002, but after that they would not get a better grade than deposit banks. None of the banks have well developed management practices or strong liquidity levels about funds and all of the banks must improve either their management practices or liquidity levels according to these results. This is consistent with the asset quality rating notes. In the UFIRS (1996), sensitivity to market risk is defined by “management’s ability to identify, measure, monitor, and control market risk; the institution’s size; the nature and complexity of its activities; and the adequacy of its capital and earnings in relation to its level of market risk exposure.” Findings state that improvement must be made in order to get to a better state, as most other components indicate.

According to composite rating scores, deposit banks as a whole seem to do well, but foreign banks must be monitored closer because they are the most fragile ones under deposit banks node.

5. SUMMARY AND CONCLUSIONS

When analysis periods’ grand averages are investigated, ROE of state owned deposits banks are the highest with about 20 percent, whereas the lowest ones are the development and investment banks with about 7 percent. However, when we look at the ROA concept, development and investment banks earn about 3 percent return, whereas the state owned banks earn about 2 percent. State owned deposit banks have above 8 percent asset utilization ratio, where deposit and development and investment banks are below 8 percent, but expense ratios of development and investment banks are lower than the state owned banks, which are sequentially about 3 percent and 6 percent. When foreign banks are compared to the banking sector of Turkey, ROE of the sector is about 15 percent and foreign banks have a slightly higher ratio with just below 15 percent. Exact percentages are 14.7117 and 14.9398. About a 2 percent return on assets can be observed for both of them showing that foreign banks are functioning similar to the sector. In the asset utilization ratio, the highest result belongs to foreign banks with about 9 percent while the sector averaged about 8 percent. In the expense ratio, foreign banks have about 7 percent where the sector has about 6 percent, implying that foreign banks are less efficient in controlling their expenses while generating higher income from its assets. An equity multiplier is a sign of financial leverage and shows risk. Foreign banks are expected to have lower equity multiplier to compensate for their risk stated above. As expected, foreign banks have about 8 percent equity multiplier ratio, whereas the sector has about 9 percent.

Development and investment banks have about 5 percent equity multiplier ratio and state owned deposit banks have about 10 percent. This is consistent with the ROE results and reveals that state owned banks manage the leverage better than development and investment banks and also better than the others. According to ROE, state owned deposit banks can be given as examples to be the best practice firms in the sector. Until 2014, ROE of state owned deposit banks are the highest of all and the gap between the units analyzed converged in time. During the analysis period, the overall assessment using the DuPont analysis states our point of view that the foreign banks perform the worse tellers.

According to CAMELS results, the grand averages of ratings supported that foreign banks perform worse than deposit banks. However, it is important to note that due to asset quality and sensitivity to market risk components, even when the foreign banks are in a bad state, they are slightly better than privately owned and state owned banks, but these component results are not enough to dominate privately owned and state owned banks. Another important finding is where management and asset quality of deposit banks and development and investment banks are the same, development and investment banks have better rating in the earnings component. Even when they manage capital adequacy and sensitivity to market risk components better, they were outscored on the overall composite assessment. CAMELS rating calculating methodology should be tailored to development and investment banks, in order to give more valuable and sensible information. In the development and investment banks group, state owned banks outperform others. CAMELS composite rating developments by years can be summarized as follows; deposit banks started with a bad rating and got better in time. In 2002 and 2016, ratings were worse. For development and investment banks, the period started with the best ratings and ended with the bank sector average rating showing a worse performance than the beginning period. CAMELS ratings for the banking system, deposit banks and development and investment banks were sequentially 5, 3 and 1 in the beginning and at the end of the period, they are 3, 2 and 3 showing the gap as closing between them. Unfortunately, in the last years the banking system and deposit banks worsen. When deposit banks are broken into state owned, privately owned and foreign nodes, foreign banks worsen in time but both the state owned and privately owned banks improve. The same conclusion for all CAMELS ratings in 2014 and also in 2016, which is the worsening of the composite rating notes. State owned deposit banks are found to be the best and this is consistent with the DuPont results. CAMELS rating scores used in the study do not include human judgement, because it's done according to ratios, which are publicly available. Including surveys into the CAMELS system may yield different results but this

is an issue for future studies. DuPont results are similar to CAMELS rating notes. Gap between the units analyzed converged in time. In 2007 and 2008 Turkey managed through a big crisis. According to CAMELS results, state owned, privately owned and foreign banks ratings did not change in these years but in 2009 foreign banks improved and privately owned banks worsened. Privately owned banks turned to the 2007 – 2008 states in 2010. After 2014 there is one point decline in the ratings but, implementation of an economic recovery program strengthened the sector and the 2007 – 2008 crisis effects were no longer in the sector. These findings can also be observed from DuPont scheme.

As a result, DuPont analysis results are consistent with the CAMELS analysis results and the quarterly data findings are in line with Akıncı et. al. (2012), suggesting that state banks perform better than foreign banks in Turkey on average performance. State owned deposit banks are noted for their best practices in the sector. But this study extended this understanding to that foreign banks overall performance is not better than state owned banks. Foreign banks are found to manage their assets better than domestic competitors. Also, foreign banks are found less vulnerable to market risks. From these points, foreign banks are required for the overall stability of the financial system. The financial system of a country is composed of nearly all the units functioning in it. The better scores of foreign banks in the asset management and sensitivity to market risk areas than their domestic competitors would help to lower the fragility of the system. Also domestic competitors of the foreign banks would have a chance to learn from the best practices of their rivals. This would help the global strengthening of the financial system.

The answer to the question, what is the main reason of Non-Performing Loans in the sector can be summarized by looking at the CAMELS rating scores. In the analysis period, political and economic environment was favorable for development and CAMELS rating scores associated with the management component do not represent any problem. Bad luck and bad management hypotheses are eliminated so that the remaining problem is skimping hypothesis, which assume non-performing loans are related to not giving enough effort in control and monitoring of loans. This may be due to the lack of adequate trained employees in risk departments in the Turkish banking sector. However, this statement remains unconfirmed and an issue for a further study.

With the new financial and economic design implemented by the economic recovery program and the banking sector restructuring program after the 2001 crisis, the banking sector in Turkey shows better performance and lower fragility than at the beginning of the millennium. This can be observed from the 2008

global crisis period. Together with the European Union membership procedure and the goals and targets of the 10th Development Program, the stability of Turkish economy is considered crucial. In particular, the Istanbul International Finance Center project, investigated bank performance indicators and found the top twenty five international finance centers are in a better state. As an example, the asset size of the Turkish banking sector passed the GDP value in 2013 with weaker banks moving out of the sector. But in addition to quantity, quality is also considered very important. It must be noted that an increase in the number of strong firms is important for the success of the Istanbul International Finance Center project. Relative weaknesses found in this study for the Turkish banking sector are mainly related to asset quality and liquidity management and steps to improve these weaknesses should be planned and implemented. For the transparency, financial institution tailored performance measures should be developed and results should be disclosed to the public, even if they have an influence on the perceptions of financial actors, because performance assessment can change. It is the process that is important. The total, the weak asset quality, lack of transparency, risk ambiguity that promulgated the 2001 crisis still exist in part.

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