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An Application of Mergers and Acquisitions of Banking Sector in Turkey

Türkiye'de Bankacılık Sektörü Birleşme ve Satın Almaları Üzerine Bir Uygulama

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ABSTRACT

Globalization has affected all systems around the world as well as financial systems. These effects were sometimes positive and sometimes resulted in negative results. In this context, companies in the banking sector have invested in a variety of ways to increase profit margins (acquisitions and mergers) and have begun to play an important role in the global market as a result of globalization. On the other hand, these acquisitions and mergers are not only a result of globalization but also contributed to the development of globalization itself.

Banks' purchasing and merging have increased in recent years. This increase has led to the need for further work on mergers and acquisitions. This work has also emerged as a result of this need.

In this study, between the years of 2002-2016 in Turkey it was also examined 11 banks being subject to mergers and acquisitions. In addition, 66 financial ratios are used from the Banks Association of Turkey recieved. By factor analysis, significant groups were formed from 66 financial indicators and the best representatives were identified. It is aimed to measure the performances of the banks subject to merger or acquisition by establishing the probit model with the most meaningful indicators in the direction of the result of factor analysis.

Key Words: Merger, Acquisition, Banking, Factor Analysis, Probit Model

ÖZET

Küreselleşme dünya üzerindeki tüm sistemleri etkilediği gibi finansal sistemleride etkilemiştir. Bu etkiler kimi zaman olumlu, kimi zamansa olumsuz sonuçlar ortaya çıkartmıştır. Bu bağlamda bankacılık sektöründe hizmet veren şirketler kar marjlarını arttırmak için çeşitli yollar ile (satın alma ve birleşmeler) yatırımlarını arttırmış ve küreselleşmenin bir sonucu olarak dünya pazarında önemli roller almaya başlamışlardır. Öte yandan bu satın alma ve birleşmeler küreselleşmenin bir sonucu olmasının yanında bizzat küreselleşmenin gelişmesine de katkı sağlamıştır.

Bankaların satın alma ve birleşmeleri son yıllarda artış göstermektedir. Bu artış birleşme ve satın almalar ile ilgili daha çok çalışma yapılması ihtiyacını ortaya çıkartmıştır. Bu çalışma da bu ihtiyacın bir sonucu olarak ortaya çıkmıştır.

Bu çalışmada 2002-2016 yılları arasında Türkiye‟ de birleşme ve satın almaya konu olman 11 bankalar incelenmiştir. Buna ek olarak Türkiye Bankalar Birliğinden alınan 66 adet finansal rasyo kullanılmıştır. Faktör analizi ile 66 adet finansal gösterge içinden anlamlı gruplar oluşturularak, bu göstergeleri en iyi temsil eden göstergeler belirlenmiştir. Faktör Analizinden çıkan sonuç doğrultusunda en anlamlı göstergeler ile probit model kurularak birleşme veya satın almaya konu olan bankaların performansları ölçülmesi amaçlanmıştır.

Anahtar Kelimeler: Birleşme, Satn Alma, Bankacılık, Faktör Analizi, Probit Model

1.INTRODUCTION

The banking sector plays a strategic role in the stability of the economy and the effects of the developments in this sector are felt in the sector as a whole. Therefore, the effects of the developments in the form of purchasing, merger or share transfer in Turkey, and the effects of the banks on the ratios constitute the aim of this research. In the functioning of the economy, the banks that constitute the backbone of the financial system play an important role in mergers and acquisitions, which are more frequent in recent years, in order to keep pace with changing market and competition conditions. Acquisitions in various sectors are carried out as in the whole world, especially in the financial sector in Turkey. Mergers and acquisitions, one of the banks' restructuring methods, have come to the fore in the Turkish Banking Sector as a result of the financial crisis in particular.

The research will firstly explain the definitions of merger and acquisition and illustrate why M&A is important of effect of the banks in banking sector in Turkey. In addition to other M&A applications of in the banking sector in other countries will be examined. It aims to search the different kind of merger and acquisition in terms of primarly objective in banking sector. Fundumental purpose of the banking merger is increasing the yields of shareholders. Moreover the growth of the bank‟s request is pushes to merger for various reasons such as synergy will be achieved through scale economies, administrative earnings and tax considerations. Banks that were subject to mergers and acquisitions between 2002 and 2016 are examined. By applying the Probit Model, performance change differences were determined after the merger date of 11 banks subject to research. It will analayse the data of Banking indicator with using Ewievs program. In this research, intended multiple research methods to explain of effects of M&A. We will comparsion a lot of data about indicator of banking sector. Moreover diffirent

measures and indicator will be identified from the privellige articals and study. I will make a study of banking indicator from The Bank Association of Turkey.

The ratios from the Banks Association of Turkey contain all banks operating in Turkey. However The fact that banks do not have a collective data set on mergers, acquisitions or share transfers is one of the difficulties in working. Moreover, these activities do not allow intensive long-term analysis in 2006 and 2007. For this purpose, the subjects such as the interpretation and the statistical significance of the rates which are meaningful in terms of analysts, managers or investors are examined.

The study consists of four parts. In the first part, examine to reason of study, second part of study is the growth strategies of the companies were emphasized; a conceptual framework has been established on mergers and acquisitions that are an external growth option. In this context, the reasons for the company acquisitions and the financial evaluation of mergers and acquisitions have been researched. The third part is the method part of the thesis and statistical and econometric methods are used for the 11 banks merged, bought or transferred to the share transfer process in 2002-2016 period. Using the probit model, the effects of the merger, acquisition or share transfer transactions on the bank balance were investigated using the dummy variable. The impact of acquisitions in this study, the performance of banks; mergers, acquisitions and the values realized before and after the share transfer were analyzed. And the last part you may see conclusion of meaningful bank output which is after the intergation. On the other hand the main prupose of this research is how M&A effected in the banking ratios in banking sector of Turkey.

2. THE FUNDEMENTAL CONCEPTS OF MERGER AND ACQUISITION

2.1 Merger and Acquisition

M&A is a term that describes the acquiring of a company or merging of companies (Cho, 2014). Also the term mergers and acquisitions (M&A) refers to the process of merging or acquiring all or part of another company's property right. In addition that an M&A is conducted under certain conditions in order to obtain controlling rights (Song and Chu, 2006). Moreover some research have been mentioned that a merger or acquisition is an important strategic move made by a company to improve its enterprise performance management. Successful mergers can produce many gains, including cost savings, increased profits, upscaling and freeing up abundant resources" (Halkos and Tzeremes, 2013b; Peyrache, 2013). "In many countries, global or multinational banks are extending their operations through mergers and acquisitions with the regional banks in those countries. These mergers and acquisitions are named as cross-border mergers and acquisitions in the banking sector or international mergers and acquisitions in the banking sector. By doing this, global banking corporations are able to place themselves into a dominant position in the banking sector, achieve economies of scale, as well as garner market share"(economywatch, 2010).

Consequently, numerous studies have been conducted in developed economies to examine the potential gains from mergers. However, to decrease the high failure rate of M&As, one of the critical steps a bidder company should take to try to identify suitable target M&A companies is to determine whether the prospective partner can offer synergies and relevant attributes to complement those of the acquiring company.

Eventhough they are used in place of each other, merger and acquisition in short, usually refers of two business combinning in some manner. Whereas many companies use M&A activities as way to achive growth, some of them may use to diversify to thier business.

2.2 Merger

Merger is to buy a company from another company or bringing more than one companies together under the same roof. With several reasons companies which is same, different or smilar sector, may merge with each other and they can change their share of market. As a result of unifiaction, they lose their legal personality both acquirer and target companies. Jang et al. (2004) represent that a merger is one of the strongest forms of integration, because it generally results in the complete unification of two companies‟ missions, strategies, and operation systems through combination.

2.2.1 Forms of Interaction

There are three thypes of interaction. They are. **statuory, sabsidiary** and **consolidation**. Statuory merge is made result of the acquiring companies acquires all of the assets and liabilities. Subsidary merge the target company becomes a subsidiary of the purchaser. Most of subsidiary merger be formed when target company has well known brand that the acquirer wants to retain. In a Consolidation, Both companies disappear in their previous forms and become an entirely new company. Consolidations come together to form an entirely new company, and tightness in mergers is widespread when both companies have a similar size.

2.3 Variety of Merger

Three primarly methodts in merger. These methods shows diversify according to the field of activity in firms.

2.3.1 Vertical Merger

If among the companies wich will be integrated, have buyer-seller relatioship or they will merge with their supplier, this is caled vertical integration. It is a good example of this types of integration is called as bankassurance that being together under the ne roof is bank services and the insurance. With this integration, deployment to customer base of bank and branches of insurance and product services is targeted. However Patrick (2007) mantioned that vertical merger may be done rectoactive with combine production proces that integration of the various inputs such as row meterals and semi products. Additionally for the prupose of more efficient final product distribution can be done looking forward. The primar reason of the vertical merger of big size companies is provide cost advantages in supply chains of row meterial and semi products with increases the integrations of the rectoavtive. Moreover according to Jhonson (1999) vertical merger should be used in scarcity of resource and find intermadiate goods stiuations.

2.3.2 Horizontal Merger

A horizontal merger is when a company merges with industry competitors in order to gain the competitive advantages that come with a larger scale and scope (Hill & Jones, 2004). Such as this mergers consist of between two companies in smilar or same business sector. Also they may often same geographical zone is operated. The underlying prupose of the horizontal merger as follows **;**

- To ensure effective use of resources

- To ensure specialize in management and saving in prodoction cost

- Gain advantages for spply chain and marketing

- Coorporate to production technology

- Gain advantages against competitors

In horizontal mergers due to negative effeccts on the competitive structure, they may subject to specific regulations from the goverments. Moreover according to Weston (2004) in the case of lack of regulations, the firms of in sector may have gain unjust gain and they may obtain monopolistic power. Also it caused to firms of reduce.

2.3.3 Conglomerate Merger

In a conglomerate merger, the two companies compeletly seperate industries. P&G is a good example for conglomerate merger. It has expanded product range for buying Gillatte due to its initiative which it has not any proficiency before. We can say two good examples of in this integations. First, providing to success for controlling against other firms who needs requires expertise about marketing, production, reseach. Second, diversification for seperad the risks by reducing fluctuitions in earning and sales the. According to Gabrielsen (2003). Moreover Levt& Sarnet caught the attention that the most important purpose of a conglomerate merger is typically the diversification of capital investment (Levy & Sarnat, 1970). In addition, with regard to the relationship this diversification between a firm‟s unrelated variety (i.e., conglomerate mergers) and firm performance, the study of Palich, Cardinal, & Miller (2000) suggests that moderate levels of diversification contribute to higher levels of firm performance than either single or unrelated diversification (i.e., the curvilinear relationship).

However, Cho (2013) showa that, in a rapidly changing market environment, a firm's unrelated diversification (e.g., conglomerate mergers, occurring between two extraneous firms with heterogeneous business sectors) can be more positively related to a firm's overall business performance than a firm's related diversification (e.g., horizontal mergers, occurring between two firms with homogeneous business sectors) through a firm's optimized dynamic capabilities.

Many motives has been forwarded in the literature for conglomerate mergers. One part of this literature has to do with tax incentives that propel conglomerate mergers, and difficulties of finding accounting principles to determine the conglomerate‟s profitability. A second set of arguments is that conglomerate mergers may be anticompetitive and therefore should be ruled against by antitrust authorities.

Such conglomerate mergers are in reality vertical mergers in disguise. On the basis of this view, it is shown that the agreements seen as mixed mergers actually fall into the definition of vertical mergers together with the use of the distribution channels of the target firm. Hence, it is stated that the mixed associations are a secret vertical merger.

Conglomerate mergers have three subgroups;

- Poduction extanding: They have no competition amoung the produced products. They show fonctionally resemble to distribution and production department.

- Geographic market extanding: they produce same product but marketing different geograpichal area which already merge. Thus they are able to deliver products to a wider area.

- Pure mixed merger: There is no relationships between the firms about marketing and production area. They are realized between companies engaged in different activities.

2.4 Acquisition

Acquisition is the most known definition is to one company buying only part of another company. It is changes to by purpose of buyer firms. An acquisition occurs when an acquiring company achieves the right to manage an acquired company by obtaining the acquired company's assets or stocks. In this case, "the acquiring and acquired companies remain two independent companies from a legal point of view even after the acquisition, although the acquiring company has control over the acquired company" (Jang et al, 2004: 7).

2.4.1Types of Acquisition

They are five most commonly used types of acquisitions

2.4.1.1Gold Coin

The most common method of protection of the target company is the parachute method. The method has evolved to help companies reduce the unemployment problem and reduce the damage created by employees in their interests after the company has taken control. In summary, it is committed that a certain amount of payment will be made to the employees who will be removed from the work after the purchase. This will increase the cost of acquiring the target company, which will increase the cost of the net profit of the activity will decrease and in this case the buyer is thought to create deterrence (Jhonson 2013).

2.4.1.2 Poison Pills

It is the method used to grant rights to ensure that shareholders have additional shares. In the method, shareholders of the target company are provided with a fairly large discount on the share of the target company (flip-in pill) or the buyer (flip-over pill). Therefore, the number of shares of the target and buyer firms is increased to create less cost for the target company shareholders, while for buyers, the cost increase effect is created for the buyer (Sudarsanam, 2000).

2.4.1.3 Green Mail

It is the target company to purchase the shares in fairly large blocks with high price from certain shareholders. It is proposed to buy a higher price for the shares held by an associate wanting to increase the ownership rate in the company by collecting stocks from the market. Thus, it is prevent the increases of ownership ratio in the company (Weston, 2003).

2.4.1.4 Alternation of Main Contract

In order to minimize the possibility of purchasing, for example, the members of the board of directors are trying to establish rules for their membership periods and changes. By amending the Articles of Association, the voting rate of the General Assembly for liquidation shall be changed, the number of votes to be used by the shareholders of the class shareholders determined by dividing the share certificates into classes shall be increased to the number of votes to be used for the general meeting. It is possible to recognize certain privileges by means of provisions. (Sarıkamış, 2003:137)

2.4.1.5 White Knight

The white knight method is to prepare a competitive environment between the firm that wants to seize itself by finding the target company more suitable candidate for itself and the company that it finds itself (Gitman vd, 1998:827).

2.5 Reasons of Merger andAcquisition

In the literature they have lots of theories about aims of merger and acquisition. One reason the merge for the banks go the the merge is that after the merger there is expectation that new customer will win. Other reason is the indivicual values find a value above market value with the merger of two firms. Between these two values the difference is be gain of the merger. Accordingly, let us denote the value of X bank by Vx an the value of bank Y by Vy, and value of

after this merger by Vxy. In this case the gain is Vxy-(Vx+Vy). If it is Vxy > Vx + Vy, it will be profitable. But this activities is must be does not condrict to antritröst law wich is in valid on other countries. We can line up the elements that encourage for M&A activities.

2.5.1 Synergies

Synergies: The most common cause of union is the idea that if the combined company operates separately, it will create a synergy that both companies will be worth. Generally synergy comes from reducing costs or increasing revenues. If the new unit can reduce combined fixed costs (by eliminating recurring functions), the average cost per unit will be reduced by spreading lower fixed costs. Revenue synergies are often created by increasing prices to take advantage of cross-selling products, increased market share, or lower incentives. Also synergies is expressed as 1+1> 2 in literatur.

We may connect the following reasons of synergies in mergers and acquisitions.

- Reduction of operating expenses and increace of profit margin due to the business efficiency,
- Increase of capital cost due to improvement of company‟s financial structure,
- Increase merket efficenc,
- Advantages of vertically and horizontally merging. may causes of reduce of the capital cost.

2.5.2 Achieving more rapid growth

External growth through Mergers and Acquisitions is often much faster than investing internally (organic growth) to increase managers' revenues. Growth through mergers and acquisitions is particularly prevalent in mature industries where organic growth opportunities are limited.

2.5.3 Increased market power

When a horizontal merger occurs in an industry with few competitors, the new merged company will generally leave a greater ability for to increase market share and to influence market prices. Vertical merges may also increase their market power by reducing of the dependency on the externals supliers.

2.5.4 Diversification

Diversification, another reason of diversificsrtion for mergers and acquisitions, may involve the risk of distributing company profits through periodicity or some other factors by buying a firm that is outside the scope of its activity (Horne, 1986).

The idea behind company level diversification is that company may be treated as a potfolio of investment in other companies. If a conglomerate invests in companies from various industries, the variability in conglomerate aggregate cash flows should be reduced, at least to the extent that the industries are unrelated. Altough this may seem like a significant reason, generally it may not be in the best according to the interests of the conglomerate shareholders. In a well function in capital market, investors may diversify their protfolios mose easily and at less expense. In addition the desire of diversification may lead some companies to lose their great compatitive power and to expand into business where they lack comperative advantages.

2.5.5 Tax considerations

When we look at the tax considerations, we will see such a important benefits with regard to M&A activities thouhg increases of taxes. However according to amprical studies, it can no be said that the most important factor motivating many merger activities is the tax advantages.

2.5.6 Unlocking hidden value

When a company struggles for a long time, a buyer may think that the company can pay a lower price for the purchase and can turn the secret value by improving management, adding resources, or improving organizational structure. In some cases, a purchase may be combined because the purchaser believes that they are buying at a lower cost than their replacement costs. For example, a manufacturing company may purchase less than the cost to develop the current production process at less cost than developing a process on its own in its own production process.

2.6 Financial Assesments of M&A

The most discussed and the must time conssuming issue related to mergers and acquisitions is the determination of the business value. Whether it is merger or acquisiton, these kind of desicions are long term and high-risk strategic desicions. Such desicions will be made errors for many years is the continue the influance and the company costs are high. For this reason, in this part of the study we will focus on the determination of the premium to be paid and valuatin methods.

2.6.1 Premium on Merger and Acquisition

They have three main methods to considered for method of payment when an acquirer is is negotiating with a target.

2.6.1.1 Risk and reward distribution of buyers and target partners

In a stock offer, the shareholders of the target company share the risk of ultimate value arising from the merger at the risk associated with the final value arising from the merger as they receive new shares in the company after the merger. In a bid made in cash, all risk borne with the value of the post-merger company is covered by the acquirer. As a result, the buyer is more inclined to cash offer when they are extremely confident of the synergy and value that will arise from the merger.

2.6.1.2 Relative valuation of companies involved

If the buyer's shares are considered overvalued by the market, we believe that the buyer will want to use the excessively expensive shares in the currency as currency for the merger. In fact, the share of investors interprets the offer, sometimes a stock offer, as a signal that the share values of the acquirers may be overvalued.

2.6.1.3 Changes in capital structure

Different payment structures affect the capital structure of the acquiring company. If the purchaser borrows money to create cash in a cash offer, the associated debt will increase the financial leverage and risk of the acquirer. Issuing new shares for a securities offer may alleviate the ownership interest for existing shareholders of the purchase area.

In most countries there have anti-trust laws which prohibit M&A that inhibit competition. The Herfindahl-Hirschman Index (HHI) is a widely used measure of market power in identifying potential antitrust violations.

HHI is calculated as the sum of square market shares (sales or output) for all industries applicable to an industry for an industry:

$$HHI = \sum (MSi * 100)2$$

Regulators initally focus on what the HHI computation would be after the merger takes places. If the post merger HHI is less than 1000, the industry is considered to be competitive and antitrust struggle is not possible. A post-merger HHI value of between 1,000 and 1,800 will place the industry in the "medium intensity" category. In this case, the regulators will compare the pre-merger and post-merger HHI. If the change is above 100 points, it is likely that the union will be challenged by antitrust reasons.

A post-merger HHI calculation greater than 1,800 implies an intense industry. The regulators will again compare pre-merger and post-merger HHI calculations, but in this case, if the change is greater than 50, the merger is likely to be challenged.

The total synergy will also be determinant of the Premium to be paid. There are a number of factors that affect premium payable. Synergy is at the beginning of these factors. Besides, many factors such as the performance of the company in the past, the quality of the management, the position of the target company on the market, the competition environment on the market, the type of payment to be made to the target company, the tax dimension are effective in determining the premium. Each element is shown as a factor in determining the price. However, the synergy factor is one of the most discussed topics. The synergistic gains or losses found in the primin are calculated taking into account possible future situations. The subjective performance expected from the target firm, which is based on the prediction, can be expressed as (Sirower,1997).

Net Present Value: Synergy – Premium.

2.6.2 Synergy ≥ Premium

It shows discount pozitive synergy equal to orgreater than prime. This is a indicator of succesfull buying activity. It seems that acquirer company has created value for shareholders.

2.6.3 0 ≤ Synergy ≤ Premium

Discounted synergy is positive shows that the amount less than the Premium which is already paid. It is known that the most common situation in the purchasing activies. Actually it is a failing activity. They have a positive synergy but when they are examined by the purchaser firms, it is clear that the managers overpaid and that the wealthy of the managers is decreasing as a result of this payment.

2.6.4 Synergy < 0

It is shows that the result of the actvity is not economic (negative synergy). There is a decline in value. From the point of view the purchaser firms, it is obvious that the target company transfer of wealthy to the sharesolders. In a good many purchasing activities, it is known that the target firm has a Premium over market value for shareholders. According to the results of Goldberg and Godwin (2001), the shareholders of the target company in mergers and acquisitions are found to have an average of 20% on friendly mergers and 35% on forced seizures. In this case, the primer achieves an accurate and fully calculated value, and the elements of the subjective factors in the accounts reveal the importance of the concept of valuation.

2.7. Valuation on M&A

Valuation is one of the most research on about mergers and acquisitions. If it is known the real value of business and the paid is appropriate to value which is have to be paid, this valuation of integration will be quite succesful. Expectation from good a valuation is the nearist final result is correct. When decision of m&a behalf

on restructuring, company book value, the value of functioning enterprises, should be well analyzied to liquidation value, real value, discounted cash flows and profitiability per share.

According to the Eccles(1999), Valuation is among the most important issues in mergers and acquisitions. The methods that are appropriate to the conditions for obtaining a value close to the correct value in merger and acquisition provide data for the decision-making process. It has been found that the successes of mergers and acquisitions in the 1970s have been higher in the research conducted, then this success has fallen. It has been shown that the main causes of this fall are due to overpayments on mergers and acquisitions. For the acquirer firm, projects with pozitive net present value is attractive.

Net Present Value = Earnings – Net Cost

It is the possible to obtain a pozitive net present value if the gain exceed the net cost. Two important factor stand out in this case. First of these determination of the acquirer firm value. and the other is determination of profit to be earned from this activitiy. If the target company is traded in the stock market, it is possible to find market market capitalization value of the marketable securities. Actually, the most important thing is calculated to growing cash flow (net cash flow) of m&a activities. This effect contained within both cash flows and cash outflows. However, due to different risks gorups in these cash flows, different discount rates may need reduced to the present value. The three basic methods that use to valuation methods. Discount cash flows, comparable company analaysis, comparable transaction analaysis.

2.7.1 Discount Cah Flow (DCF)

The basic appraisal approach in merger and acquisition is the discount cash flows method from the capital budget theory. DCF based on the firms performs of the future. Other methods based on the firms performs of the past or current. For

this reason we can measure more accurate with DCF methods. When we determine the value which is the most used among of the methods, future expected cash flows shold be estimated. These estimated also known as free cash flow. Free cash flows are founded by deducting the post-tax operating income, the working capital and the increases in fixed assets, by adding depreciation.

The discount rate to be used becomes more important when is calcucated the present value of these cash flows after the cash flow is estimated. When in m&a as approtriate discount rate of business valuation is ued weighted avarage cost of capital (WACC). The weighted average cost of capital (WACC) is the calculation of the cost of capital of a firm, to which each capital category is weighted proportionately. However, when we estimeted the WACC, we can see several complexity depends on wheather it is open to public, wheater stocks are traded frequently.

It is easier to calculate WACC of publicy traded companies in countries with developed markets, the WACC is may calcutating by formulating.

$$WACC = E/V * Re + D/V * Rd * (1-Tc)$$

Where:

E: Market value of the firms equity

D: Market value of the firms debt

V: D + E

Re: Cost of equity

Rd: Cost of debt

Tc: Corparate tax rate

Financail assest valuation model may be determined by cost of equity which is included in equity. Cost of equity is found by adding the operator‟s systematic risk (β) to the risk free securites return ratio multplied by the market risk Premium. The traditioanl formula cost of equity (COE) is:

COE = Rf+[E(Rm)-Rf]*βo

Rf = Risk free

E(Rm) = Expected return of market portfolio
E(Rm)-Rf = Market risk free βo = The systematic risk Premium of stock

2.7.2 Comparable Company Analaysis

This approach that investment banking uses the acquisition value is comparable comyany analaysis. It is alsa called relative valuation. Comparable valution analaysis uses relative vaiuation metrrics for smilar companys to forecast market value. Then add a takeover Premium to define a fair price for the acquirer for pay to propose. Relatie valuation involves five steps.

2.7.2.1 Identification of smilar companies that are the smilar to target firm.

Preferably, the sample of the other companies will come to the same industry target and have a similar size of capital structure.

2.7.2.2 Calculation of various relative value measures based on current market prices of the companies question.

Some analysts use relative measures based on enterprise value (EV), which is the minus value of the company‟s cash value of the company‟s debt and equity.

EV is short = market capitilazion + financial debt – cash

When we do comparable analaysis for want to compare to company in the same industries in investment banking, we may divide EV into EBITDA.

EBITDA is an indicator of a company's financial performance and is used as a proxy for a potential earning potential, but it also has drawbacks. In addition, EBITDA removes the cost and tax effects of debt capital by adding interest and taxes to earnings. And it is mean Earnings before Interest, Taxes, Depratiations, Amortization.

Simplest form for EBITDA calculate is

EBITDA = Operating profit + Depratiation Expense + Amortization Expense

2.7.2.3 Calculation of describtive statistic of relative value metrics and applying these measures to target firm.

Analysts typically calculate average and median values for selected relative measures and apply them to estimates of the target to determine the value of the target. Preferably, different relative measures of value generate similar estimates for the value of the target in order to gain confidence in the analytical valuation estimate. This appraisal when valuation estimates differ significantly when using different metrics, the analyst is used to decide which estimates are most accurate.

2.7.2.4 Estimation of Takeover Premium.

The objective of this phase is to estimate an acquisition premium, which is the amount that each of the target shares must exceed the market price of the acquisition price in order to persuade its shareholders to approve the merger agreement. This bonus is usually expressed as a percentage of the target stock price. The stock price of the company is subtracted from the deal price per share. The result is divided by the stock price of the company.

TP = (DP-SP) / SP

In order to estimate an appropriate spin-off premium, analysts usually look at the premiums paid in the premiums taken by the companies closest to the target firm.

2.7.2.5 Calculation of the target's take over cost as the sum of estimated share value based on comparable values and acquisition Premium.

The estimated takeover price is considered a "fair price" to pay for control of the target company. Once the takeover price has been calculated, the acquirer must compare it with the synergies obtained from the merger to make sure the price is economically reasoable.

2.7.3 Comparable Transaction Analyasis

This analaysis use the details of the recent acquisitions of smilar companies. These methodology is very simillar to comparable company analaysis approach, but all of the comparable firms are taken over. However, the biggest challenge in this approach is to find a sufficient number of takeovers for firms that are similar to the target being analyzed. There is noo need calculate trasaction analaysis sepereatly becasue use of the last transaction data means that the acquisation Premium is already included in fee.

This analaysis involves three steps

2.7.3.1 Identification a set of recent takeover transaction.

Preferably, all of the acquisition is relate the companies in the same sector as the target. Such agreements can be difficult to find, so the analyst will have to resort to some dispute that recent merger agreements are the most valid for analysis.

2.7.3.2 Calculation of relative value measures based on compated contract prise for the sample companies.

The measures used are based on the price of complated mergers and acquisitions rhater than a current market. However these measures used here may be the same as those used in comparable company analaysis.

We may use two basic value for in this measurement. These are Price/Equity and Price/Book Value.

2.7.4 Price/Earning Ratio

Price earning rate simply shows how many times the net profit of the company's market value has multiplied. In other words, investors express the price they are willing to negotiate for a unit gain provided by the shareholder. Moreover price earning ratio is one of the approaches in fundamental analysis which is based on the calculation of the ratio of share price per share with earnings per share and gives the indication of the timeframe required to return the funds at the level of share prices and company profits in a certain period. Price Earning Ratio is a kind of market appreciation on business performances or prospects of the company in the future. Investors believe that a company that will have good prospects in the future will have the high Price Earning Ratio of companies which is reflected in the share prices in the market.(Lufti,Arsitha, 2016) With this method, the firm‟s equity value is misleading for three reasons. First reason is, this approach which actual P/E ratio is do not change for future term is may not reflect correctly. Second reason, only earnings per share for the next years may not represent the future. Third reason, it is necessary to include the risk that the company has in future periods.

The price /earning ratio may be calculated as:

P/E Ratio = Market Value Per Share/Earnings Per Share

2.7.5 Price/ Book Value

According to Pandey (2005) of these financial statement variables, the price to book value ratio is the most common and widely used by investment advisors, fund managers and investors to determine the value of ordinary shares. However Marangu and Jagongo reasearch that he market value of an asset reflects its expected earning power of cash flows. Since the book value of an asset reflects its original cost, it might differ significantly from the market value if the earning power of the asset has increased or decreased significantly since its acquisition.

Book value may be mentioned as enterprise value. But specifying it as enterprise value may also be a disadvantage. This disadvantage can arise from the use of different accounting methods. The difference in accounting methods may make the value different even in the same business. It can be used if the book value is significantly higher than the market value of the operator. It may also be appropriate to use the book value if the acquirer is to acquire assets of the other entity that are intended to be merged or acquired.

Another situation where book value may be important is the fact that a significant portion of assets, such as banks, are monetary assets. In these types of businesses, the assets are considered to be closer to the current value due to their cash or cash equivalents. Market Value / Book Value is a method that is used to show whether the company is underrated or not. This rate also gives you an idea of what you would pay if you paid too much for the company to go bankrupt.
The formula of the value is the following expression.

Market Value/Book Value= Market price per share/book value per share

2.7.5.1 Calculate descripting statistic for relative value metrics and apply these measures to the target firm.

Analysts also calculate the averages of the selected relative value measures and apply them to the firm's statistics of the target to determine the value of the target.

The bank is also an excellent asset to be able to evaluate mergers, acquisitions or share transfers. It is important to determine the value of the banks most accurately since the economic value of the objective trade in appraisal is closest to reality and expresses the measure of future earnings.

3. MERGER AND ACQUISITION of BANKING SECTOR in TURKEY

3.1 Merger and Acquisition of Banking Sector in Turkey

A parallel development between the mergers and acquisitions experienced among the world's enterprises is also happening in Turkey. Business mergers and acquisitions in Turkey; is started for the prupose of more diffucult situation of business that aims to bring back to economy, afterwards it take places at public institutions and banking sector. The fundamental reson of merger and acquisitions in banking sector is growth in complience with other sectors and a desire to increase to market share.

Table 1.

Total Assets of Financial Sector (2016, TL billion)		
Sector	**Amount**	**Share in Total (Percent)**
Banks	2,731	81
Portfolio management companies	122	4
Unemployment insurance fund	119	4
Insurance companies	96	3
Real estate investment trusts	60	2
Pension investment funds	61	2
Individual pension funds	53	2
Financial leasing companies	49	1
Factoring companies	33	1
Financial companies	33	1
Intermediary institutions**	20	1
Reinsurance companies	3	0
Venture capital funds*	1	0
Securities investment trusts	0	0
Total	3,382	100
* Due to the amendments in the Communiqué, starting from 31.12.2013, venture capital investment trusts are no more liable to issue portfolio tables. **: Sep. 2016		

. Soruce: The Bank Association of Turkey

As shown in Table 1 the amount of the banking sector is considerably above all other sectors. In line with this momentum in the banking sector, it is a suitable market for foraign investor.

3.2 Bank Acquisitions in Turkish Banking System

TEB – BNP Paribas (2005)

Teb started its banking activities in 1927**.** Teb Has signed a partnership agreement with BNP Paribas. A 42% share of TEB was bought by BNP Paribas in 2005.

Koçbank J.S.C. –Yapı and Kredi Bank J.S.C.(2006)

In 2006, Unicredit- Koçbank bought Yapi Kredi Bank's entirety and decided to continue its operations under Yapı Kredi's roof, taking into consideration Yapı Kredi Bank and Worldcard brand values.

Sekerbank T.J.S.C. - Bank Turan Alem Securities JSC (2006)

Sekerbank established with the name of Beet Coorperatif Bnaks J.S.C. on October 12, 1953. In addition to in 2006 Sekerbank sold about 34% of its paid capital to Bank Turanalem, one of the biggest banks in Central Asia.

Akbank T.J.S.C. – Citigroup(2007)

In 2007, Citi Group purchased 20% of Akbank‟s shares and became a partner. Moreover Citi Group ending its retail banking services in June 2013, it transferred its individual customer portfolio to Denizbank.

OYAK Bank J.S.C. – INGBANK J.C.S. (2008)

The Oyak bank, which started operating in 1984, was bought by ING Bank of Holland on May 20, 2008 for about 2 million USD 600.

Turkish Garanti Bank J.S.C. – Banco Bilbao Vizcaya(2011)

Garanti Bank started operating in 1946 in Ankara. In 2011, BBVA started to purchase the shares of Doğuş Group. Last purchase was made in 2017. Therefore the majority of the guarantees are Banco Bilbao Vizcaya.

Denizbank J.S.C – Sberbank (2012)

DenizBank was established in 1938 as a state bank to provide financing for the developing Turkish maritime industry. It joined Dexia in 2006. DenizBank, which has been operating for 6 years with Dexia's main shareholding, has fallen under the Sberbank roof, which is a Russian bank as of September 28, 2012.

Tekfenbank J.S.C. – Burganbank (2012)

Tekfen bank was founded in 1989 and has been active in corporate banking and investment banking. In 2006, he entered into an agreement with Eurobank and changed his name to Eurobank Tekfen. On December 21, 2012,
99.26 per cent of shares were purchased by Burgan Bank Group.

Alternatifbank – The Commercial Bank(2013)

It was founded in 1991 under the name of Alternatif Banks and started its banking activities in 1992. In 1996, the Anadolu Group acquired 80% of the Alternatif Bank and entered the finance sector. Commercial Banking (PS.Q.C.), which bought 70.8 percent of the Anadolu Group in July 2013 and then increased to 75 percent of its stock through buybacks of the shares; The remaining 25 percent share on December 19, 2016 was purchased by the Anadolu Group for $ 222.5 million, and the entire bank was the owner.

Tekstil bank- ICBC(2015)

China's ICBC Bank (China Industrial and Commercial Bank) has signed an agreement with ICBC Turkey Bank J.S.C. with a 75.5% share starting from May 22, 2015, to 668.810.011,63 TL.

Finansbank J.S.C. – QNB Group(2016)

Finansbank is started the operating on october 28 1987. In June 2016, Finansbank was acquired by Qatar National Bank S.A.Q (QNB Group), Qatar's largest bank, the leading financial institution in the Middle East and Africa region.

4. METHODOLOGY and DATA

There is a concentration process in national and international banking systems in the light of recent economic and political globalization phenomenon. It is observed that banks are trying to maintain their assets in a strong way, taking advantage of economies of scale, in increasingly competitive conditions, through mergers and acquisitions. The sample group in this study is composed of eleven private and foreign banks subject to purchase, merger or share transfer transactions operating in the Turkish banking sector. Banks in which some or all of their shares are bought by foreigners are included in the study. In the analysis, it was benefited from the dataset titled 'Selected Ransos' (Table 2) published by the Banks Association of Turkey. This analaysis period covers a total of fifteen periods (2002-2016). The banks subject the anlaysis are listed. These are listed as
Turkish Garanti Bank J.S.C., Şekerbank T.J.S.C., Akbank T.J.S.C., INGBANK J.C.S., Denizbank J.S.C, Burgan bank, Alternatif bank, ICBC, QNB Finansbank J.S.C., Yapı and Kredi Bank J.S.C., TEB BNP Paribas.

Factor analysis will be used in this study. The independent values immediately following it will be tested with the probit model. First this terms will be explained in this study after that tha datas we find in Bank Association of Turkey will be analyzed (Table 2). Eventually meaningful varaibles will be examined one by one and which merged banks will be found to be significant.

4.1. Factor Analysis

Factor analysis is a technique that allows a small number of but independent variable sets to be obtained by combining moderately or highly related variables with each other. It is thus possible to reduce many variables to a few clusters or sizes. Each of these dimensions or clusters is called a factor. Factor analysis is a statistical technique that aims to explain the measurement by collecting variables that measure the same or by measuring the quality with a few

factors. Factor analysis is also defined as the process of finding new concepts (variables) called factoring or common factor, or obtaining the functional definitions of concepts using the factor loadings of the items. That‟s why we will use the factor anlaysis in this study for finding relation value among of merged banks. After this analaysis is used, variable reduced, no relation between new variables or factor produced and meaningful factors were obtained.

Table2. Ratios are used in factor alayasis

Capital Ratios, %	**Income-Expenditure Structure, %**
1.Capital Adequacy Ratio	34.Net Interest Income After Specific Provisions / Total Assets
2.Shareholders' Equity / Total Assets	35.Net Interest Income After Specific Provisions / Total Operating Income
3.(Shareholders' Equity-Permanent Assets) / Total Assets	36.Non-Interest Income (Net) / Total Assets
4.Shareholders' Equity / (Deposits + Non-Deposit Funds)	37.Non-Interest Income (Net) / Other Operating Expenses
5.On Balance-sheet FC Position / Shareholders' Equity	38.Other Operating Expenses / Total Operating Income
6.N(on+off) Balance-sheet Position / Total Shareholders' Equity	39.Provision For Loan or Other Receivables Losses / Total Assets
Balance-Sheet Ratios, %	40.Interest Income / Interest Expense
7.TC Assets / Total Assets	41.Non-Interest Income / Non-Interest Expense
8.FC Assets / Total Assets	42.Total Income / Total Expense
9.TC Liabilities / Total Liabilities	43.Interest Income / Total Assets
10.FC Liabilities / Total	44.Interest Expense / Total Assets

Liabilities	
11.FC Assets / FC Liabilities	45.Interest Income / Total Expenses
12.TC Deposits / Total Deposits	46.Interest Expense / Total Expenses
13.TC Loans and Receivables* / Total Loans and Receivables*	**Share in Sector, %**
14.Total Deposits / Total Assets	47.Total Assets
15.Funds Borrowed / Total Assets	48.Total Loans and Receivables*
Assets Quality, %	49.Total deposits
16.Financial Assets (Net) / Total Assets	**Share in Group, %**
17.Total Loans and Receivables* / Total Assets	50.Total Assets
18.Total Loans and Receivables* / Total Deposits	51.Total Loans and Receivables*
19.Loans under follow-up (gross) / Total Loans and Receivables*	52.Total Deposits
20.Loans under follow-up (net) / Total Loans and Receivables*	**Branch Ratios, %**
21.Specific Provisions / Loans	53.Total Assets / No. of Branches
under follow-up (gross)	
22.Permanent Assets / Total Assets	54.Total Deposits / No. of Branches
23.Consumer Loans / Total Loans and Receivables*	55.TRY Deposits / No. of Branches
Liquidity, %	56.FX Deposits / No. of Branches
24.Liquid Assets / Total Assets	57.Total Loans and Receivables* / No. of Branches
25.Liquid Assets / Short-term Liabilities	58.Total Employees / No. of Branches (person)

26.TC Liquid Assets / Total Assets	59.'Net Income / No. of Branches
27.Liquid Assets / (Deposits + Non-Deposit Funds)	**Activity Ratios, %**
28.FC Liquid Assets / FC Liabilities	60.(Person. Exp. + Res. for Emp. Terminat. Benefit) / Total Assets
Profitability, %	61.(Pers. Exp. + Reser. for Emp. Terminat. Benefit) / Num. of Per.l (Thous. TRY)
30.Average Return on Assets	62.Reserve for Emp. Termin. Benefit / Num. of Per. (Thous TRY)
31.Average Return on Shareholders‟ Equity	63.Personnel Expenses / Other Operating Expenses
32.Income Before Taxes / Total Assets	64.Other Operating Expenses / Total Asset
33.Net Profit (Losses) / Paid-in Capital	65.Total Operating Income / Total Assets
	66.Net Operating Income(Loss) / Total Assets

Source: The Bank Association of Turkey “Selected Ratio”

Table 3. KMO-Bartlett Statictic Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0,683**
Bartlett's Test of Sphericity	Approx. Chi-Square	5926,45
	df	253
	Sig.	0,000

First, the Kaiser Meyer-Olkin statistic and the Barlett sphericity test statistic, which are developed for consistency of variable values, are examined.

Bartlett statistic have χ^2 variabel. This variabel measure the level of relationship between variables. The Table 3. Shows that p-value is < 0,05 that the variabels are significant. There is a relatioship structure for factor analysis. Then, we need the look KMO statistic value to see if there is a enough sample. Due tho table 3 shows that, 0,683 > 0,67 which means the sample size is enough for factor analysis. Because For the fit to factor analysis, the condition of p value is to be bigger by 0.67 degrees. In this study seems to have provided this condition.

As shown in Table (4), Eigenvalues indicating the correlation between two variables were found to be more than eleven factors. This eleven factors account for about 90 % of the total variance. The maşn goal of using factor analysis inthis study is that 66 of the financial indicator were used in our study are related to each other. Another reason is that multivariate analysis such as probit, logit will cause multiple linear dependence. Therefore it is aimed to choose an objective method that might explain the majority of the 66 variables.

Table 4. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14,085	21,341	21,341	14,085	21,341	21,341
2	12,437	18,844	40,185	12,437	18,844	40,185
3	7,615	11,539	51,724	7,615	11,539	51,724
4	5,041	7,637	59,361	5,041	7,637	59,361
5	3,840	5,818	65,180	3,840	5,818	65,180
6	3,360	5,090	70,270	3,360	5,090	70,270
7	3,179	4,816	75,086	3,179	4,816	75,086
8	2,270	3,439	78,525	2,270	3,439	78,525
9	2,119	3,210	81,735	2,119	3,210	81,735
10	1,670	2,530	84,265	1,670	2,530	84,265
11	1,509	2,286	86,551	1,509	2,286	86,551
12	1,112	1,685	88,235	1,112	1,685	88,235
13	1,025	1,553	89,789	1,025	1,553	89,789
14	,966	1,463	91,252			
15	,744	1,128	92,380			
16	,714	1,082	93,462			
17	,579	,877	94,339			
18	,552	,836	95,175			
19	,446	,677	95,852			
20	,424	,642	96,494			
21	,333	,505	96,999			
22	,288	,436	97,435			
23	,255	,387	97,821			
24	,202	,306	98,128			
25	,174	,263	98,391			
26	,143	,217	98,608			
27	,121	,183	98,790			
28	,109	,166	98,956			
29	,094	,142	99,098			
30	,089	,135	99,233			
31	,077	,116	99,349			
32	,066	,100	99,449			
33	,048	,073	99,521			
34	,046	,069	99,591			
35	,041	,062	99,653			
36	,037	,056	99,709			
37	,032	,049	99,757			
38	,025	,037	99,795			
39	,021	,032	99,827			

40	,019	,029	99,855			
41	,018	,028	99,883			
42	,014	,022	99,905			
43	,010	,015	99,920			
44	,009	,014	99,935			
45	,008	,013	99,947			
46	,007	,011	99,958			
47	,005	,008	99,966			
48	,005	,007	99,974			
49	,004	,007	99,980			
50	,003	,005	99,985			
51	,002	,003	99,988			
52	,002	,003	99,992			
53	,002	,002	99,994			
54	,001	,002	99,996			
55	,001	,002	99,998			
56	,001	,001	99,999			
57	,000	,001	100,000			
58	,000	,000	100,000			
59	,000	,000	100,000			
60	,000	,000	100,000			
61	,000	,000	100,000			
62	,000	,000	100,000			
63	,000	,000	100,000			
64	,000	,000	100,000			
65	,000	,000	100,000			
66	,000	,000	100,000			

Extraction Method: Principal Component Analysis.

As a result, 11 definable, meaningful variables were obtained from 66 rations given in Table (4). The abbreviations in the first column are abbreviations for the 66 data from The Bank Association of Turkey. The data names marked in yellow are the data that will be used in the probit model. In this table, the ratios that represent the most relationship within each dimenson are chosen.

The names of the variabels in the table are as follows.

spt3: (Shareholders' Equity-Permanent Assets) / Total Assets

opse5: On Balance-sheet FC Position / Shareholders' Equity

bts7: N(on+off) Balance-sheet Position / Total Shareholders' Equity

fbta16: Funds Borrowed / Total Assets

tltd19: Total Loans and Receivables* / Total Deposits

arse31: Average Return on Shareholders‟ Equity

nita34: Net Interest Income After Specific Provisions / Total Assets

plta39: Provision For Loan or Other Receivables Losses / Total Assets

lite45: Interest Income / Total Expenses

ta47: Total Assets

tenb58: Total Employees / No. of Branches (person)

Table 5. Component Factor Analaysis

	Component Matrix[a]												
	1	2	3	4	5	6	7	8	9	10	11	12	13
car1	,426	-,275	,282	-,102	-,240	,110	-,305	,123	-,034	,341	-,068	,112	-,325
seta2	,347	-,075	,484	,155	-,234	-,128	-,095	-,147	,363	,425	-,391	,028	-,016
spt3	,238	,418	,635	-,082	-,238	-,052	-,149	,086	-,018	,274	-,131	-,165	-,272
sedf4	,387	-,132	,452	,207	-,212	-,126	-,062	,219	,324	,423	-,372	,063	,059
opse5	-,489	,038	,161	-,092	,377	,106	,215	-,026	-,403	,467	,176	,250	,028
nste6	,355	-,314	-,170	,080	,267	,011	,380	-,181	,327	,092	,388	-,006	-,024
bts7	,059	,264	,245	,020	-,329	-,235	-,042	-,271	,175	,237	,627	,003	,089
tata8	-,505	,204	,622	,381	,201	,189	-,140	-,120	-,130	,126	,050	-,037	,004
fata9	,505	-,204	-,622	-,381	-,201	-,189	,140	,120	,130	-,126	-,050	,037	-,004
tltl10	-,183	,111	,631	,507	-,037	,368	-,289	-,070	,089	-,163	,082	,066	,079
fltl11	,183	-,111	-,631	-,507	,037	-,368	,289	,070	-,089	,163	-,082	-,066	-,079
fafl12	,625	-,231	-,330	-,015	-,349	,123	-,148	,065	,254	-,341	,075	,097	,066
tdtd13	-,245	,478	,536	,359	-,079	,267	-,076	-,005	-,062	-,272	,078	,112	,006
tctl14	-,495	,386	,557	,290	,145	-,009	,020	,047	-,135	-,061	,005	-,042	,101
tdta15	-,050	-,580	,139	,175	,116	,087	,184	,384	,418	-,091	-,044	-,363	,001
fbta16	-,173	,346	,171	-,445	-,170	-,120	,081	-,340	-,426	-,016	,076	,341	,154
fata17	,408	-,487	-,042	,190	,091	,411	-,087	,010	-,247	,035	,089	,256	-,171

trta18	-,306	,817	,223	,025	,066	-,240	,104	-,046	,157	-,070	-,088	-,111	-,030
tltd19	-,257	,865	,068	-,111	-,008	-,228	,027	-,147	-,097	-,037	-,074	,107	-,046
lutl20	-,264	-,387	-,117	,389	,287	,174	,031	,389	-,107	,319	,054	,246	,261
lntl21	-,398	-,264	-,362	,180	,477	,336	-,050	,114	-,125	,205	-,170	,121	,057
splf22	,529	,047	,285	,117	-,244	-,159	,155	,289	-,191	,228	,068	,076	,128
pata23	,009	-,575	-,356	,234	,088	-,048	,100	-,232	,336	,033	-,179	,227	,318
cltr24	,351	,252	,270	,335	-,093	,186	,533	-,069	-,159	-,169	-,152	-,095	,078
lata25	,453	-,453	,112	-,323	-,498	,090	-,213	,133	-,263	,049	,054	-,106	,163
lasl26	,264	-,359	-,160	-,246	-,132	,234	-,107	,341	-,332	-,087	-,480	,088	,012
tclta27	,246	-,310	,458	-,011	-,320	,354	-,326	-,058	-,238	,101	,082	-,140	,060
ladf28	,474	-,472	,120	-,282	-,489	,054	-,187	,095	-,251	,088	,021	-,114	,199
fafl29	,391	-,334	-,024	-,212	-,463	-,051	-,155	,300	-,106	-,108	,116	,037	,291
V33	,548	-,106	,446	-,397	,504	,035	,047	-,046	,051	,011	,098	-,003	,103
arse31	,396	-,063	,369	-,481	,604	,089	-,016	-,050	,041	-,009	,109	-,031	,164
ibta32	,633	-,093	,503	-,388	,383	-,089	,001	-,025	,029	-,044	,021	,048	,007
nppc33	,598	,062	,318	-,391	,414	,068	-,030	,052	-,011	-,054	,029	-,127	,230
nita34	-,038	-,244	,541	-,369	-,226	,121	,529	,172	,193	-,043	,114	,076	-,132
nito35	-,279	,336	,176	-,517	-,276	,435	,395	,009	,080	,062	,080	-,088	-,044
nita36	,305	-,635	-,005	,328	,257	-,454	-,167	,038	-,119	-,057	,037	-,076	-,132
nioe37	,733	-,320	-,011	,286	,251	-,301	-,259	-,038	-,138	-,032	,016	-,036	-,070
oeto38	-,575	-,246	-,447	,193	-,154	,249	-,123	-,092	-,140	,256	,098	-,263	,049
plta39	-,266	-,099	,074	,525	-,067	,310	,225	,390	,022	,128	,184	,358	,092
iiie40	,013	,530	,525	-,048	-,163	-,169	,402	,257	-,136	,019	-,036	,112	,066
nine41	,734	-,315	-,009	,289	,249	-,292	-,264	-,036	-,140	-,033	,013	-,037	-,067
tite42	,664	,289	,468	-,034	,151	-,170	,146	,227	-,102	,071	,052	,134	-,021
iita43	-,167	-,767	,092	-,141	,125	,297	,261	,145	,205	,065	,122	,090	-,155
ieta44	-,139	-,795	-,189	-,054	,220	,328	,040	,008	,150	,054	,058	-,001	-,147
iite45	-,478	,348	,031	-,433	-,178	,518	,257	,033	-,160	,116	-,014	,166	,024
iete46	,279	-,247	,260	-,281	,299	,493	-,267	,138	,211	,106	,061	,166	,072
ta47	,861	,189	-,095	,282	,064	,208	,223	-,109	,028	,002	,011	,021	-,019
tlr48	,849	,137	-,089	,294	-,055	,171	,282	-,167	-,006	-,022	-,020	-,004	,004
td49	,856	,187	-,113	,299	-,057	,206	,232	-,085	-,009	-,011	-,007	-,034	-,017
ta50	,861	,192	-,098	,281	-,063	,208	,222	-,106	-,027	,003	-,011	-,021	-,018
tlr51	,853	,124	-,098	,290	-,053	,168	,282	-,166	-,002	-,018	-,024	,000	,005
td52	,856	,187	-,113	,299	-,057	,206	,232	-,085	-,009	-,011	-,007	-,034	-,017
tanb53	,337	,772	-,404	,028	,033	,037	-,121	,226	,056	,099	,080	,038	-,020
tdnb54	,361	,751	-,388	,078	,063	,045	-,089	,255	,140	,112	,076	-,042	-,007
trnb55	,297	,824	-,216	,177	,045	,111	-,089	,229	,058	,016	,081	,008	,010
fxnb56	,385	,581	-,527	-,038	,074	-,032	-,078	,252	,211	,202	,060	-,090	-,025
trnb57	,212	,827	-,357	-,006	,052	-,033	-,088	,261	,111	,073	,045	-,005	-,042
tenb58	,035	-,188	-,251	-,138	-,021	-,388	,341	-,406	-,020	,229	-,012	,046	,282
ninb59	,736	,396	,157	-,151	,369	,126	-,003	,042	,041	,088	,080	-,051	,113
peta60	-,537	-,556	,358	-,024	-,068	-,147	,009	,178	,190	-,053	-,004	-,053	,035

penp61	-,044	,849	-,250	,047	,033	-,004	-,234	,274	,116	,049	,039	,078	-,053
renp62	-,154	,255	,017	,057	-,017	,075	-,370	,274	,043	-,032	-,127	-,194	,132
peoe63	-,485	,269	,338	-,349	-,025	-,056	-,325	-,005	,230	,005	-,127	,116	,150
oeta64	-,379	-,701	-,039	,341	-,163	-,162	,259	,137	,000	-,012	,112	-,114	-,147
oita65	,156	-,650	,440	,092	,092	-,328	,267	,271	,042	-,012	,156	,101	-,154
olta66	,627	-,132	,519	-,422	,277	-,107	-,007	,024	,039	-,064	,005	,050	-,101

a. 13 components extracted.

Extraction Method: Principal Component Analysis.

As a result, 11 definable, meaningful variables were obtained from 66 rations given in Table (5). The abbreviations in the first column are abbreviations for the 66 data from The Bank Association of Turkey. The data names marked in yellow are the data that will be used in the probit model. In this table, the ratios that represent the most relationship within each dimenson are chosen. In addition to very closely related indicators have been eliminated.

4.1.1 Analysis of Bank Merging and Purchases by Selected Performance Indicators

Table 6. Ratios used for Akbank T.J.S.C. (Transfer date 2007) ;

DATE	spt3	opse5	bts7	fbta16	tltd19	arse31	nita34	plta39	lite45	ta47	tenb58
2016	10,2	30,3	-1,8	11,1	101,9	15,8	2,3	0,8	80,9	10,4	16
2015	10,2	43,3	-0,8	10,1	102,0	11,6	2,4	1,0	83,4	10,5	16
2014	11,1	61,5	1,1	10,2	111,1	13,6	2,6	1,0	83,0	10,9	16
2013	10,5	91,7	1,2	9,9	105,1	13,6	2,8	1,0	79,0	11,2	16
2012	13,0	38,3	3,7	9,0	101,8	14,9	2,9	0,7	81,2	12,0	17
2011	11,6	73,5	0,1	12,6	91,5	13,6	2,8	0,5	81,3	11,5	17
2010	13,9	30,8	0,2	9,2	78,8	18,0	3,5	0,5	79,5	11,8	17
2009	13,0	10,0	-0,7	8,6	71,1	21,5	3,8	1,2	82,0	11,9	17
2008	11,0	11,1	-1,0	13,2	85,0	15,6	2,9	1,3	83,6	12,1	17
2007	***13,3***	***8,5***	***-0,8***	***13,0***	***90,2***	***22,6***	***3,8***	***1,1***	***83,8***	***12,2***	***19***

2006	9,4	5,8	1,2	16,1	82,9	23,9	3,8	0,8	82,4	11,8	18
2005	9,9	23,0	-0,9	13,9	70,3	22,6	4,4	0,7	82,6	13,2	17
2004	14,7	15,8	3,2	13,9	65,0	16,4	6,8	0,6	82,9	11,4	16
2003	13,8	37,5	3,2	12,4	45,6	26,3	5,7	0,4	65,0	11,8	16
2002	10,1	65,8	2,2	13,2	37,9	21,1	6,4	0,3	78,2	11,5	14

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 7. Ratios used for Sekerbank T.J.S.C. (Transfer date 2006);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	2,7	144,3	-9,9	10,2	109,1	4,9	2,5	2,2	84,2	0,9	13
2015	3,6	136,1	-0,5	9,1	112,5	4,2	2,9	1,8	88,0	1,1	14
2014	4,6	125,2	0,1	5,5	108,1	10,1	3,4	1,4	84,0	1,1	14
2013	5,4	79,0	3,1	5,7	106,8	10,8	3,3	1,2	80,0	1,1	13
2012	7,8	55,8	0,4	5,2	98,4	14,6	4,0	2,3	80,5	1,1	13
2011	5,7	47,4	8,7	5,2	93,7	8,2	2,9	1,2	81,5	1,2	13
2010	8,2	60,3	-3,8	4,8	91,0	12,8	4,1	1,3	78,9	1,2	13
2009	9,5	113,2	2,1	3,2	73,9	13,7	5,9	2,6	89,8	1,1	15
2008	7,6	137,8	1,1	7,2	80,9	15,7	6,6	2,1	89,7	1,1	16
2007	9,8	99,7	1,9	7,5	87,0	18,9	5,2	3,0	81,1	1,1	16
2006	***6,2***	***32,3***	***2,1***	***1,4***	***65,5***	***13,2***	***3,8***	***3,8***	***66,6***	***0,8***	***16***
2005	6,9	38,4	83,8	1,0	46,0	10,6	5,4	5,2	75,9	0,8	17
2004	5,3	48,9	-3,2	2,7	56,7	27,8	7,5	3,6	81,4	1,0	17
2003	0,0	145,2	145,2	1,0	36,0	33,4	2,0	1,7	67,4	1,0	15
2002	-2,7	192,4	-192,4	1,5	26,6	10,0	3,4	0,8	86,3	1,0	15

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 8. Ratios used for TEB BNP Paribas (Transfer date 2005);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	7,9	165,8	-7,1	16,1	113,1	12,8	3,0	1,4	85,8	3,1	19
2015	7,8	130,4	8,0	16,1	119,9	13,7	3,2	1,3	88,9	3,2	19
2014	7,1	122,3	-13,1	14,4	115,1	11,1	3,3	0,9	87,3	3,3	18
2013	7,3	90,5	8,4	12,7	111,2	10,6	3,2	0,7	83,0	3,3	18

2012	8,3	85,1	8,4	11,9	103,3	10,8	3,9	0,6	87,4	3,4	18
2011	8,3	96,4	12,2	17,3	112,1	6,9	3,5	0,3	87,4	3,3	18
2010	7,6	60,4	1,4	18,9	98,0	17,3	3,4	0,9	75,9	2,0	17
2009	7,6	72,0	1,1	11,0	95,4	13,7	4,2	1,2	83,1	1,9	18
2008	6,8	33,5	4,4	16,6	91,7	14,1	4,1	0,9	85,9	2,1	19
2007	4,6	150,5	10,3	13,6	96,9	17,8	4,4	0,6	91,5	2,1	19
2006	3,6	193,4	-2,1	11,1	91,3	20,7	3,5	0,4	83,3	1,7	21
2005	***4,7***	***144,1***	***-9,6***	***12,0***	***90,6***	***16,8***	***3,9***	***0,3***	***82,1***	***1,4***	***23***
2004	5,5	52,6	-0,8	16,2	70,1	8,6	4,9	0,7	83,8	1,2	24
2003	5,2	39,9	-5,7	12,7	59,1	15,6	4,7	0,2	78,7	1,1	24
2002	4,4	46,1	-0,3	11,1	47,4	7,2	6,0	0,7	87,0	1,1	22

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 9. Ratios used for Yapı kredi (Transfer date 2006);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	5,9	59,0	2,1	11,1	111,9	11,9	2,2	1,1	83,8	9,7	20
2015	6,0	66,8	3,3	10,7	117,2	8,8	2,4	1,1	85,9	9,9	18
2014	7,0	51,7	-1,4	10,0	116,1	10,1	2,4	1,0	82,2	9,6	17
2013	7,6	91,6	0,7	11,0	111,3	18,7	2,4	1,0	77,3	9,1	17
2012	7,8	40,9	5,0	10,2	111,4	13,4	3,0	1,1	80,7	9,4	16
2011	6,2	79,3	-6,6	12,7	106,7	16,9	2,6	0,7	74,0	9,3	16
2010	6,6	23,7	-3,0	9,9	99,8	22,2	2,6	1,3	66,8	8,8	17
2009	5,7	27,2	2,7	8,2	92,7	17,9	3,4	2,4	76,1	8,1	17
2008	3,1	8,0	2,5	9,7	92,7	17,7	3,2	0,9	79,3	9,0	17
2007	1,4	39,7	0,6	8,4	88,6	17,2	3,7	0,8	76,2	9,0	21
2006	***-0,4***	***27,8***	***4,3***	***9,4***	***72,3***	***20,4***	***3,2***	***0,7***	***79,5***	***10,1***	***23***
2005	-2,5	22,7	-1,8	7,9	67,0	-178,6	3,1	6,6	78,1	6,0	25
2004	-0,6	16,4	-7,3	3,5	70,4	-1,3	2,7	2,0	80,8	8,0	26
2003	-2,6	11,7	-4,0	3,4	59,5	4,6	-0,6	0,5	69,7	8,4	26
2002	-4,7	15,1	-7,6	3,4	54,6	40,2	2,5	2,7	70,6	8,9	25

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 10. Ratios used for Alternatifbank (Transfer date 2007);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	4,7	17,3	0,2	18,2	118,7	0,8	0,9	1,4	79,8	0,6	18
2015	4,2	151,1	5,8	26,6	148,6	6,1	2,6	1,6	84,8	0,6	18

2014	5,7	143,5	1,4	18,8	138,9	16,7	3,3	1,2	91,9	0,6	17
2013	3,1	223,6	3,8	17,7	128,4	13,1	2,6	1,6	89,0	0,6	19
2012	4,9	183,1	0,4	12,9	124,5	12,9	2,9	2,8	90,3	0,6	20
2011	4,5	244,3	-3,5	16,5	119,0	6,0	2,8	1,3	90,3	0,6	19
2010	7,0	198,5	-4,9	15,1	132,9	6,2	3,2	1,3	73,1	0,4	20
2009	8,0	185,1	4,8	10,9	107,0	15,2	4,6	3,1	89,4	0,5	22
2008	6,8	175,7	6,8	14,2	89,3	17,1	4,0	1,8	87,8	0,5	22
2007	***7,1***	***251,0***	***11,9***	***13,3***	***109,4***	***29,7***	***4,9***	***1,6***	***92,0***	***0,5***	***22***
2006	7,2	237,5	4,7	28,2	119,1	17,7	4,7	1,4	89,7	0,4	23
2005	7,2	327,8	-4,5	23,9	123,3	13,6	3,3	1,1	77,8	0,4	23
2004	7,4	252,6	4,0	18,4	93,4	3,9	4,0	2,1	76,2	0,4	24
2003	5,5	417,3	6,0	14,3	54,3	11,3	-4,2	1,0	40,2	0,5	22
2002	-3,5	1.315,5	-3,4	11,4	35,3	24,9	2,8	1,2	107,5	0,6	21

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 11. Ratios used for Burgan Bank (Transfer date 2012);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	4,3	114,8	-10,9	16,1	128,6	6,8	2,2	0,5	95,4	0,5	20
2015	5,5	137,3	3,1	16,2	122,3	5,4	2,4	0,8	93,3	0,5	18
2014	6,7	138,2	-2,9	15,2	120,2	0,9	2,1	0,8	91,2	0,5	18
2013	5,5	209,8	1,5	19,8	133,5	-6,7	1,6	1,5	86,1	0,4	16
2012	***9,7***	***62,5***	***0,9***	***4,6***	***89,0***	***-0,2***	***3,3***	***1,9***	***87,1***	***0,3***	***16***
2011	8,0	4,8	0,3	19,6	102,4	6,9	2,0	0,4	80,7	0,4	16
2010	4,9	39,2	-0,3	21,9	85,8	3,4	2,0	0,5	86,5	0,4	16
2009	4,9	44,0	-5,0	22,4	68,3	6,2	1,3	1,4	85,5	0,5	18
2008	2,0	41,1	-2,1	27,7	60,8	4,5	1,7	0,6	92,6	0,5	16
2007	4,0	36,9	0,5	38,5	76,5	9,5	2,1	0,6	91,6	0,5	15
2006	7,1	91,9	0,0	11,8	75,8	11,6	2,7	0,7	76,8	0,2	18
2005	5,9	49,4	-2,0	8,3	58,8	2,2	2,9	0,3	74,3	0,2	19
2004	7,7	21,7	-1,4	10,1	59,1	5,3	4,0	0,6	77,3	0,2	19
2003	6,1	18,7	-13,6	6,8	37,9	9,7	5,7	0,3	81,3	0,2	18
2002	6,3	9,1	2,2	4,5	30,2	27,6	8,7	0,3	91,3	0,3	20

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 12. Ratios used for Denizbank A.Ş (Transfer date 2012);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	3,6	82,3	5,6	10,4	97,8	15,0	2,8	1,7	87,1	4,0	19

2015	3,6	138,2	6,3	12,7	110,2	10,9	2,6	1,4	89,8	3,8	19
2014	4,4	178,3	-12,5	10,8	100,0	10,7	3,1	1,3	87,6	3,7	18
2013	4,1	205,5	-1,9	15,4	108,4	9,1	3,2	1,6	83,4	3,6	19
2012	***7,0***	***86,6***	***5,6***	***12,2***	***105,6***	***18,1***	***3,9***	***1,5***	***82,1***	***3,4***	***17***
2011	7,2	139,5	-2,5	18,1	111,7	24,6	3,9	1,2	83,4	3,1	17
2010	7,7	167,6	10,2	21,1	116,9	15,9	4,4	1,7	85,2	2,9	17
2009	7,9	157,0	1,4	21,1	121,8	22,8	6,0	2,5	87,2	2,7	17
2008	6,8	195,7	-2,8	23,8	127,6	15,9	5,0	1,4	92,8	2,7	18
2007	5,8	103,4	-3,0	15,0	112,9	15,7	4,5	0,8	89,0	2,7	21
2006	7,7	76,7	15,3	18,7	94,5	24,2	4,4	0,8	79,8	2,4	21
2005	6,8	55,7	7,3	24,4	87,1	19,2	4,3	0,7	80,5	2,4	21
2004	7,4	44,1	-2,5	15,3	63,2	14,4	4,3	1,2	84,4	2,2	22
2003	4,3	23,3	2,2	7,5	49,1	18,4	2,3	1,0	72,8	1,9	20
2002	3,6	51,7	-66,1	5,8	32,2	4,3	3,1	1,6	85,4	1,6	18

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 13. Ratios used for Finansbank (Transfer date 2016);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	***6,5***	***170,7***	***-17,5***	***10,6***	***116,6***	***12,6***	***3,1***	***1,3***	***88,8***	***3,9***	***20***
2015	7,0	178,1	-2,6	6,6	117,8	8,0	3,6	1,4	89,8	3,8	20
2014	7,5	135,9	-14,8	6,5	119,4	10,8	3,0	1,4	81,6	4,0	19
2013	8,8	102,9	-1,6	5,1	111,5	9,8	3,5	1,6	83,1	4,0	21
2012	10,4	100,1	-6,0	4,7	110,7	13,9	4,0	1,8	84,1	4,2	21
2011	9,4	117,6	-6,7	5,7	103,4	15,6	4,5	0,7	85,4	4,0	21
2010	10,8	104,8	-8,1	9,2	101,8	20,7	5,4	0,7	88,0	4,0	23
2009	9,7	165,6	0,4	7,0	86,6	20,1	5,2	2,7	92,5	3,7	22
2008	7,8	213,7	2,6	16,0	112,2	13,3	4,7	1,9	89,9	3,8	22
2007	9,0	164,1	-4,2	13,7	109,4	23,1	5,6	1,3	86,7	3,7	22
2006	8,7	126,9	-4,2	16,4	97,5	41,7	4,6	1,8	67,6	3,7	25
2005	6,6	143,8	0,1	29,5	124,5	25,1	5,7	1,2	82,3	3,1	31
2004	5,5	92,8	-4,7	16,4	101,9	18,3	5,8	0,8	81,8	2,8	32
2003	5,4	82,1	-4,6	16,6	72,4	19,9	4,3	1,6	68,0	2,3	26

2002	0,4	6,0	-7,5	10,4	47,4	35,2	8,7	0,9	100,3	2,3	22

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 14. Ratios used for ICBC (Transfer date 2015);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	6,1	27,1	-4,0	45,9	149,9	2,3	2,3	0,5	93,7	0,3	18
2015	***7,4***	***152,9***	***-2,1***	***47,4***	***182,6***	***-2,8***	***2,1***	***0,7***	***97,5***	***0,3***	***19***
2014	14,1	107,4	-0,1	9,5	111,5	2,1	3,9	1,1	99,2	0,2	19
2013	13,5	93,2	-1,2	8,9	111,6	7,5	2,3	1,5	79,4	0,2	19
2012	11,4	78,0	0,0	6,8	98,0	4,9	3,1	1,1	91,8	0,3	19
2011	10,8	84,7	-1,0	6,9	101,6	4,4	2,6	0,7	85,8	0,3	20
2010	14,3	42,0	-1,3	2,6	104,5	3,0	3,2	0,9	82,7	0,3	21
2009	16,1	103,6	-0,1	6,9	108,7	2,8	3,7	2,6	84,8	0,3	21
2008	10,0	131,7	1,0	26,4	112,0	3,0	4,0	1,5	94,5	0,4	24
2007	8,6	168,3	5,1	24,6	137,5	11,9	4,8	0,3	93,5	0,5	26
2006	8,1	154,1	1,9	31,8	138,2	6,1	2,7	0,8	87,3	0,6	27
2005	3,9	261,2	-21,9	23,5	113,7	6,1	2,8	0,6	84,0	0,5	27
2004	3,5	154,6	-2,3	18,9	95,5	3,1	3,6	1,3	77,9	0,4	25
2003	2,6	148,8	12,3	12,3	68,6	5,4	3,0	1,4	75,3	0,5	24
2002	0,9	131,7	-0,7	10,4	42,9	61,8	4,8	0,5	85,8	0,5	24

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 15. Ratios used for ING (Transfer date 2008);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	8,2	148,1	1,6	27,7	138,1	12,0	3,4	1,2	87,6	1,9	20
2015	7,3	214,2	1,4	30,7	148,9	2,9	3,2	1,2	94,2	2,2	19
2014	7,1	204,1	0,0	29,3	146,9	5,1	3,7	1,1	92,5	2,0	19
2013	8,3	169,8	0,0	30,3	142,6	5,4	3,5	0,9	91,4	2,0	18
2012	9,8	98,4	0,0	23,6	130,6	9,3	4,9	1,0	88,1	1,9	17
2011	8,9	147,6	-0,1	26,2	133,4	3,6	4,4	0,7	93,9	1,8	16
2010	9,3	143,9	-0,3	26,0	130,6	5,5	5,6	0,6	104,5	1,8	18
2009	9,7	100,7	-0,5	16,7	115,2	10,5	6,8	1,3	103,7	1,9	17
2008	***7,2***	***139,6***	***-1,8***	***17,5***	***110,5***	***9,7***	***4,6***	***0,8***	***95,5***	***2,3***	***17***
2007	7,8	141,3	-0,2	7,6	95,6	12,0	4,6	0,4	94,6	2,2	16
2006	6,0	108,0	2,8	13,6	92,6	10,5	3,7	0,2	89,5	2,4	15

2005	9,2	41,6	-0,8	13,3	90,5	30,5	5,4	0,4	85,1	2,1	15
2004	7,6	31,8	1,6	5,9	75,1	16,1	6,1	0,4	88,5	2,0	14
2003	4,8	20,7	-1,0	5,8	62,1	11,9	5,1	0,3	83,0	1,8	14
2002	3,5	17,2	-5,2	2,6	38,7	9,0	5,1	0,2	93,1	1,7	16

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

Table 16. Ratios used for Garanti Bank (Transfer date 2011);

DATE	Spt3	Opse5	Bts7	Fbta16	Tltd19	Arse31	Nıta34	Plta39	Lıte45	Ta47	Tenb58
2016	8,8	66,1	3,5	14,2	115,4	15,2	3,1	1,0	84,9	10,9	20
2015	8,7	43,1	5,5	13,1	112,9	12,0	3,0	0,9	86,3	11,4	20
2014	9,3	55,8	-6,1	14,8	111,4	13,2	2,9	0,8	82,3	11,6	19
2013	8,8	20,6	1,2	15,0	111,5	13,7	2,8	0,8	78,8	12,0	19
2012	10,6	16,3	1,4	13,5	105,0	15,8	3,1	0,7	81,3	12,3	19
2011	***9,3***	***4,3***	***0,8***	***14,0***	***99,1***	***18,0***	***3,0***	***0,6***	***76,3***	***12,6***	***18***
2010	10,6	-1,3	-1,4	13,4	89,2	21,1	3,5	0,5	77,1	12,9	19
2009	10,1	23,6	0,4	12,3	79,2	26,0	3,7	1,5	78,4	13,2	21
2008	7,9	10,5	-2,6	12,2	94,7	21,4	3,1	0,6	81,8	12,6	23
2007	7,2	38,4	-1,7	12,7	95,2	40,1	3,9	0,5	77,2	12,0	25
2006	5,6	61,5	0,1	15,7	90,7	24,8	3,5	0,6	80,6	10,4	25
2005	4,4	12,7	-3,7	15,1	71,8	18,2	3,7	1,2	76,6	9,2	24
2004	0,5	19,4	-2,1	13,5	59,6	14,2	4,4	1,6	78,0	8,6	26
2003	-2,6	15,2	-3,9	12,9	47,7	12,3	0,0	0,6	63,9	9,0	26
2002	-5,1	16,5	-14,1	13,1	43,0	7,3	3,3	0,9	90,4	9,2	24

Source: https://www.tbb.org.tr/en/banks-and-banking-sector-information/statistical-reports/20

4.2. Probit Model

The probit model is the model is which the dependent variable has 2 values. This model specifies decision-marking or preference such as successfulunsuuccessful, pozitive-negative, buy-do not buy. For this reason such models called binary preferance models. Probit model is based on utility theory and rational choice approach. According to rational choice aproach, individuals

choose the one that will be most benefit them among the options they met.(Guris, Caglayan, 2010)

In this study, the ratios obtained by factor analysis of the banks bought, merged or debited in the 2002-2016 period from the official website of BAT were examined. In addition, probit analysis was performed with the eViews program for the model using the merger, which is a qualitative dependent dummy variable in the study.

This model will be used in this study to descirbe the probit model. It is given to 0 value to dummy for pre-merger banks an given to 1 to dummy for postmerger banks.

$$Factor_t = \alpha + \beta\ Dummy_t + U_t$$

$Dummy_t$ = 1 & Date

$Factor_t$ = 1 if return of factor > 0

$Factor_t$ = 0 if return of factor $\leq$ 0

The sample of Turkey, which is considered as a probit model application of qualitative preference models, covers the period of 2001-2012 and it is aimed to examine the effects of bank mergers, acquisitions and share transfer transactions on bank ratios in Turkey within this period. Dependent variables used in regression models can be quantitative or qualitative. The values 0 and 1 are used as dependent variables in the study, depending on the combination, realization and non-realization.

4.3 Data

Table 17. Meaingful probit model results

Bank&Factor	coeff. Value	t-value	pvalue
AKBRANCH*	-0,6	0,264	0,042
AKPROV**	-0,5	0,27	0,088
GARPROV*	0,625	0,213	0,012
GARTOTASS*	-0,625	0,213	0,012
GARAVARAGE*	-0,588	0,238	0,03
BURBRANCH*	0,555	0,24	0,039
ICEQUITY*	-0,833	0,284	0,012
SEKONB**	0,636	0,299	0,055
YAPTOTASS*	0,636	0,299	0,055
INGONB**	-0,444	0,24	0,088
ICINTER**	-0,666	0,36	0,088
ICTOTASS**	0,666	0,36	0,088
TEBTOTASS**	-0,5	0,27	0,088

PS: "*" and "**" means that our dummy varable is significant at 5% and 10%, respectivelly.

If we look at p-values at 5% and 10% signifiacance level in Table17;

-The merger decreased the probibility of an increase in the "Total Employess / No. Of Branches(person)" of Akbank J.S.C by 0,5.

-The merger decreased the probibility of an increase in the "Provision For Loan or Other Receivables Losses / Total Assets" of Akbank J.S.C by 0,10.

-The merger decreased the probibility of an increase in the "Provision For Loan or Other Receivables Losses / Total Assets" of Garanti Bank by 0,5,

-The merger decreased the probibility of an increase in the “Total Assets” of Garanti Bank by 0,5.

-The merger decreased the probibility of an increase in the “Average Return on Shareholders‟ Equity” of Garanti Bank by 0,5.

-The merger decreased the probibility of an increase in the “Total Employess / No. Of Branches(person)” of Burganbank J.S.C by 0,5.

-The merger decreased the probibility of an increase in the “Shareholders' Equity-Permanent Assets) / Total Assets” of ICBC by 0,5,

-The merger decreased the probibility of an increase in the “OnBalance-Sheet FC Position / Shareholder‟ Equity” of Şekerbank T.J.S.C. by 0,10,

-The merger decreased the probibility of an increase in the “Total Assets” of Yapıkredi Bank J.S.C. by 0,10,

-The merger decreased the probibility of an increase in the “OnBalance-Sheet FC Position / Shareholder‟ Equity” of ING J.S.C. by 0,10,

-The merger decreased the probibility of an increase in the “Interest Income / Total Expreses” of ICBC by 0,10,

-The merger decreased the probibility of an increase in the “Total Assets” of ICBC by 0,10,

-The merger decreased the probibility of an increase in the “Total Assets” of TEB BNP Paribas by 0,10.

As seen in Table 18 and Table 19 one unit increase in the ratio of the total employees to number of branches ratio and the ratio of provision for loan or other receivables losses to total asstes ratio have had an effect reducing the probibility of M&A for Akbank in 2007.

As the ratio of the provision for loan or other receivables losses to total assets ratio one unit increased, M&A became more avaiable due to Table 20, but as seen in Table 21 and Table 22 the ratio of total assets and the ratio of avarage return on shareholders‟ equity have had an effect on reducing the probibility of M&A for Garanti Bank in 2011.

As the ratio of the total employees to number of branches ratio increased, M&A became more avaiable for Burgan Bank in 2012 in Table 23.

As seen in Table 24 and Table 25, If we view for ICBC, one unit increase in the ratio of the shareholders‟ equity-parament assets to total assets ratio and the total asstes ratio have had effect on reducing the probibility of M&A.. Videlicet if the ratio of total assets increased, M&A became more avaiable in 2015.

If the ratio of on balance-sheet FC position to shareholders‟ equity ratio a unit increase, M&A also has boosting effect for Şekerbank in Table 26. We might see the same positive effect in Table 27 for Yapıkredi Bank‟s coefficient value.

In Table 28, a unit increase the ratio of on balance sheet Fx position to

Shareholders‟ equity has had an effect on reducing the probibility of M&A for ING Bank in 2008.

Eventually if we look at Table 29, total asstes ratio is increased, M&A became more avaiable for TEB in 2005.

5.CONCLUSION

When the conditions of the century we are in are examined; technological development and the rapid increase in structural investment costs caused by this rapid development, liberalization studies in the global arena, increasingly diversified instruments used in financial markets, and increasing numbers, competition, can make businesses stand alone. As a consequence, mergers, acquisitions and share transfer transactions, which have increased over time, have emerged as a way to meet growth targets. In addition, the contribution of initiatives to the creation of synergies should be noted as a very important reason for merger and acquisition. In such an environment, it is expected that the company will have beneficial results in the interests of mergers and acquisitions.

Mergers and acquisitions are carried out from three different perspectives:

value creation by buyer firms, value creation by target firms, and value creation by new firms. Apart from this general distinction, it is seen how the merging and acquisitions with the studies done in the sectoral context yielded results in the field. It is seen that the studies done in the sectoral field especially in the literature are intense. Horizontal joints are the focus of work. The concentration of mergers and acquisitions in Turkey has increased in the last decade.

Mergers, acquisitions or share transfer transactions between banks can be considered as important in terms of Turkey's emerging financial markets. Bank mergers, acquisitions and share transfer activities in Turkey have some difficulties in reaching the results. It is a big problem that a database in which all the information of mergers and acquisitions in particular is still not created in bulk.

The purpose of this study is to analyze the effects of bank mergers, acquisitions and share transfer transactions on the purchased bank, while explaining the concepts of mergers and acquisitions and factors driving mergers and acquisitions. For the analysis of the intensive foreign capital inflow in the Banking Sector, a study was conducted on the banks purchased in Turkey in the

period of 2002-2016 in the light of the ratios taken from the Banks Association of Turkey.

According the analaysis result made with probit model, the ratio of employees to number to branches and the ratio of provision for loan losses to total asstes for Akbank.S.J.C. is reduction observed after the acquisition by Citibank. As a result of this for Akbank, it seems that the union has had a positive impact on this data.

The result of M&A the ratio of provision for loan losses to total assets has seems enhancing effects for Garanti Bank due to probit model analysis result. But the ratio of total assets and the ratio of avarage return of sahareholders‟ equity seems reducing effect for Tukish Garanti Bank J.S.C.. It seems that there is no positive effect of Turkish Garanti Banks J.S.C. in purchasing by Banco Bilboa Vizcaya in the light of this data.

ICBC has been reducing effect the ratio of shareholders‟ equity to totasl assets and the ratio of interest income to total expenses after purchasing 75% of theTekstilbank. Moreover Burgan Bank has been reducing effect the ratio of total employeess to number of branches after purchasing of the Eurobank Tekfen. After the acquisition of Sekerbank in 2006, the ratio of FX position to shareholders‟ equity seems positive. As a result of which it seems to have a positive effect on the bank. We might see same positive effect on Yapı and Kredi Bank. Because the ratio of total assets after merger with Koçbank seems to increase. When we look the analysis of ING Bank after the M&A, there is a decreasing tendency in the ratio of Fx position to total assetes ratio. Finally, as a result of the probit model analysis, as a result of the purchase of TEB by BNP Paribas in 2005, there has been a decrease in the ratio of total assets of the bank.

In addition the these results, 66 ratios which is taken from the Bank Association of Turkey, are used in factor analysis. After the factor analysis be find eleven financial ratios which are the best represented to all 66 ratios. We find 7

significant ratios in significant at 5% and 10%. These are " Shareholders" equityParament assets/ Total asstes" ratio, " On balance-sheet Fx position/ Shareholders" equity" ratio, "Avarage return on shareholders" equity" ratio, "Provision for loan/Total expenses" ratio,"Interest income/ Total expenses" ratio, "Total assets" ratio, "Total employees/ Number of branches" ratio. However they have significant four other ratios in factor analysis which do not found meaningful in probit model. These four other ratios are "N(on+off) Balance-sheet Position/ Total shareholders"equity" ratio, "Funds borrowed/Total assets" ratio, "Total loans and receivables/ Total deposit" ratio and "Net interest invome after spesific provision/ Total deposit" ratio.

Although these 4 values are normally meaningful, probit has become meaningless when analyzed with 7 other variables in the model. These 4 variables that are meaningless can be meaningful in other models. But with the condition that these 7 variables are not in those models. Because each variable influences each other in terms of significance.

The information obtained from the research shows that some of the bank mergers, acquisitions and share transfer transactions are not successful. In studies, analyzed ratios belonging to banks are different. It is stated that in the studies that are considered as successful, there are some negativities in the ratios. As a result of all the analysis, small-scale banks are positively affected after mergers and acquisitions, while the same positive effect is not seen in large-scale banks.

In Turkey, the banking sector has the highest GDP share in the financial sector. The majority of mergers, acquisitions and share transfers in the banking sector are realized by foreign buyers. The companies that are in the position of buyers in the international markets tend towards the target firms outside the country with the aim of benefiting from synergy, obtaining competitive advantage and diversification. On the other hand, these activities bring mobility to the markets of the target country. Mobility, new financial instruments and new financial services enable demanders to be included in the country market. As a result, it is anticipated that merger, acquisition or share transfer activities will take place in the coming

years. It may be easier to identify long term effects and to make comparisons in the research that will be done according to this prediction.

6. BIBLIOGRAPHY

- Amendments made in Laws No. 4389 to the Laws No. 4491 and 4672

- Cho, Sik Young. - The impact of organizational citizenship behavior on synergy creation in mergers and aquisitions, according to levels of ocb and types of M&A. Academy of Accounting and Financial Studies Journal, Volume 18, Number 2,2014

- Eccles, R.G., Lanes, K.L. ve Wilson, T.C. 1999. Are you Paying Too Much for That Acquisition? Harward Business Review. June–July:136-137

- Economywatch, http://www.economywatch.com/mergers-acquisitions/international/banking-sector.html , 2010

- Gabrielsen, J.F. 2003. Conglomerate Mergers: Vertical Mergers in Disguise? International Journal of Economics of Business. Vol.10 No.1:1

- Gitman, L., Juchau,J.R.,Flanagen, J.,Pearson, K.ve Clemens, M. 1998. Financial Markets and Corporate Strategy. 2.nd ed. Mcgraw-Hill/Irwin. USA.

- Goldberg, S.R. and Godwin, J.H. 2001. Your Merger: Will It Really Add Value. Journal of Corporate Accounting & Finance. Vol.12:27-35 Gole

- Guris, S. And Caglayan, E. – Econometrics, fundemantal concepts, 2010, p:666 – 671.

- Halkos, G. E. and N. G. Tzeremes (2013b), „Estimating the Degree of Operating Efficiency Gains from a Potential Bank Merger and Acquisition: A DEA Bootstrapped Approach", *Journal of Banking & Finance*, Vol. **37**, pp. 1658–68. https://doi.org/10.1016/j.jbankfin.2012.12.009 CrossRef | Web of Science® Times Cited: 6

- Hill, C. W. L., & Jones, G. R. (2004). Strategic Management: An Integrated Approach (6th ed.). Houghton Mifflin Company.

- https://www.tbb.org.tr/en/banks-and-banking-sectorinformation/statistical-reports/20

- Jang, S. J., & M.M.C. (2004). Mergers and Acquisitions Strategies (1st ed.). Seoul: Pakyoungsa.

- Johnson, H.J. 1999. Corporate Finance Manual Mergers and Acquisitions A Framework for the Right Executive Decision. Pearson Education Limited, USA.

- Johnson, R. And Soenen, L. 2003.Indicators of Successfull Companies. European Management Journal. Vol:21, No:3:364-369

- Levy, H., & Sarnat, M. (1970). Diversification, Portfolio Analysis and the Uneasy Case for Conglomerate Mergers. The Journal of Finance, 25, 795802.

- Lutfi, Muslich and Arshita, Jessi. The Analysis of Factors Affecting Price Earnings Ratio on the Company Shares Registered in Jakarta Islamic Index M. Academic Journal of Economic Studies Vol. 2, No.3, September 2016, pp. 55–63 ISSN 2393-4913, ISSN On-line 2457-5836

- Marangu, K. and Jagonga A. Price to Book Value Ratio and Financial Statement Variables: A Study of Companies Quoted at Nairobi Securities Exchange, Kenya.
- Pandey, I. (2005). Financial Management, 9th Edition, KAS Publishing House, New Delhi

- Pasiouras, F. and C. Gaganis (2007), „Financial Characteristics of Banks Involved in Acquisitions: Evidence from Asia", *Applied Financial Economics*, Vol. **17**, pp.329–41. https://doi.org/10.1080/09603100600675524

- Patrick A. Gaughan, Mergers, Acquisitions and Corporate Restructurings, 4th. Ed., Wiley, 2007, p.32.

- Sarıkamış, C. 2003. Purchase and Restructuring Company Units. Avcıol Basım Publication, İstanbul.

- Sirower, M. 1997. The Synergy Trap, How Companies Loose the Acquisition Game. The Free Press, New York.

- Song, X. and Y. Chu (2006), „A Study on Financial Strategy for Determining the Target Enterprise of Merger and Acquisition“, *Journal of Modern Accounting and Auditing*, Vol. **2**, pp. 55–60.

- Sudarsanam, S. 2000. Corporate Governance, Corporate Control and Takeovers. Advances in Mergers and Acquisions. Vol:1:119-155

- Van Horne, 1986. Fundementals of Financial Management. Prentice-Hall, Englewood Cliffs, 6th Ed. New Jersey.

- Weston, J.F., Mitchell, M. L. Ve Mulherin, J.H. 2003. Takeovers, Restructuring, and Corporate Governance (4th Edition). Pearson/Prentice Hall. USA.

7.APPENDIX

Table 18.Ewievs result For Akbank

Dependent Variable: AKBRANCH
Method: Least Squares
Date: 10/23/17 Time: 15:31
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.000000	0.223607	4.472136	0.0008
SERIES02	-0.600000	0.264575	-2.267787	0.0426

R-squared	0.300000	Mean dependent var	0.571429
Adjusted R-squared	0.241667	S.D. dependent var	0.513553
S.E. of regression	0.447214	Akaike info criterion	1.360003
Sum squared resid	2.400000	Schwarz criterion	1.451297
Log likelihood	-7.520019	Hannan-Quinn criter.	1.351552
F-statistic	5.142857	Durbin-Watson stat	2.650000
Prob(F-statistic)	0.042608		

Table 19. Ewievs result for Akbank

Dependent Variable: AKPROV
Method: Least Squares
Date: 10/23/17 Time: 15:29
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.000000	0.228218	4.381780	0.0009
SERIES02	-0.500000	0.270031	-1.851640	0.0888

R-squared	0.222222	Mean dependent var	0.642857
Adjusted R-squared	0.157407	S.D. dependent var	0.497245
S.E. of regression	0.456435	Akaike info criterion	1.400825
Sum squared resid	2.500000	Schwarz criterion	1.492119
Log likelihood	-7.805773	Hannan-Quinn criter.	1.392374
F-statistic	3.428571	Durbin-Watson stat	1.300000
Prob(F-statistic)	0.088830		

Table 20. Ewievs result for Garanti Bank

Dependent Variable: GARPROV
Method: Least Squares
Date: 10/23/17 Time: 15:42
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.375000	0.139754	2.683282	0.0199
SERIES02	0.625000	0.213478	2.927700	0.0127

R-squared	0.416667	Mean dependent var	0.642857
Adjusted R-squared	0.368056	S.D. dependent var	0.497245
S.E. of regression	0.395285	Akaike info criterion	1.113143
Sum squared resid	1.875000	Schwarz criterion	1.204437
Log likelihood	-5.791999	Hannan-Quinn criter.	1.104692
F-statistic	8.571429	Durbin-Watson stat	2.208333
Prob(F-statistic)	0.012658		

Table 21. Ewievs result for Garanti Bank

Dependent Variable: GARAVAREGE
Method: Least Squares
Date: 10/23/17 Time: 15:56
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.750000	0.155902	4.810702	0.0004
SERIES02	-0.583333	0.238145	-2.449490	0.0306

R-squared	0.333333	Mean dependent var	0.500000
Adjusted R-squared	0.277778	S.D. dependent var	0.518875
S.E. of regression	0.440959	Akaike info criterion	1.331832
Sum squared resid	2.333333	Schwarz criterion	1.423126
Log likelihood	-7.322823	Hannan-Quinn criter.	1.323381
F-statistic	6.000000	Durbin-Watson stat	1.860119
Prob(F-statistic)	0.030622		

Table 22. Ewievs result for Garanti

Dependent Variable: GARTATASS
Method: Least Squares
Date: 10/23/17 Time: 15:43
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.625000	0.139754	4.472136	0.0008
SERIES02	-0.625000	0.213478	-2.927700	0.0127

R-squared	0.416667	Mean dependent var	0.357143
Adjusted R-squared	0.368056	S.D. dependent var	0.497245
S.E. of regression	0.395285	Akaike info criterion	1.113143
Sum squared resid	1.875000	Schwarz criterion	1.204437
Log likelihood	-5.791999	Hannan-Quinn criter.	1.104692
F-statistic	8.571429	Durbin-Watson stat	1.275000
Prob(F-statistic)	0.012658		

Table 23. Eviews result for Burgan Bank

Dependent Variable: BURBRANCH
Method: Least Squares
Date: 10/23/17 Time: 16:14
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.444444	0.143444	3.098387	0.0092
SERIES02	0.555556	0.240027	2.314550	0.0392

R-squared	0.308642	Mean dependent var	0.642857
Adjusted R-squared	0.251029	S.D. dependent var	0.497245
S.E. of regression	0.430331	Akaike info criterion	1.283042
Sum squared resid	2.222222	Schwarz criterion	1.374336
Log likelihood	-6.981292	Hannan-Quinn criter.	1.274591
F-statistic	5.357143	Durbin-Watson stat	1.888889
Prob(F-statistic)	0.039152		

Table 24. Ewievs result for ICBC

Dependent Variable: ICEQUITY
Method: Least Squares
Date: 10/24/17 Time: 13:42
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.833333	0.107583	7.745967	0.0000
SERIES02	-0.833333	0.284638	-2.927700	0.0127

R-squared	0.416667	Mean dependent var	0.714286
Adjusted R-squared	0.368056	S.D. dependent var	0.468807
S.E. of regression	0.372678	Akaike info criterion	0.995360
Sum squared resid	1.666667	Schwarz criterion	1.086654
Log likelihood	-4.967518	Hannan-Quinn criter.	0.986909
F-statistic	8.571429	Durbin-Watson stat	1.216667
Prob(F-statistic)	0.012658		

Table 25. Ewievs result for ICBC

Dependent Variable: ICINTER
Method: Least Squares
Date: 10/24/17 Time: 13:45
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.666667	0.136083	4.898979	0.0004
SERIES02	-0.666667	0.360041	-1.851640	0.0888

R-squared	0.222222	Mean dependent var	0.571429
Adjusted R-squared	0.157407	S.D. dependent var	0.513553
S.E. of regression	0.471405	Akaike info criterion	1.465363
Sum squared resid	2.666667	Schwarz criterion	1.556657
Log likelihood	-8.257543	Hannan-Quinn criter.	1.456912
F-statistic	3.428571	Durbin-Watson stat	1.916667
Prob(F-statistic)	0.088830		

Table 26. Ewievs result for Sekerbank

Dependent Variable: SEKONB
Method: Least Squares
Date: 10/23/17 Time: 15:35
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.97E-16	0.265908	-1.12E-15	1.0000
SERIES02	0.636364	0.299985	2.121320	0.0554

R-squared	0.272727	Mean dependent var	0.500000
Adjusted R-squared	0.212121	S.D. dependent var	0.518875
S.E. of regression	0.460566	Akaike info criterion	1.418843
Sum squared resid	2.545455	Schwarz criterion	1.510137
Log likelihood	-7.931903	Hannan-Quinn criter.	1.410392
F-statistic	4.500000	Durbin-Watson stat	1.337662
Prob(F-statistic)	0.055405		

Table 27. Eviews result for Yapıkredi Bank

Dependent Variable: YAPTATASS
Method: Least Squares
Date: 10/23/17 Time: 15:51
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.97E-16	0.265908	-1.12E-15	1.0000
SERIES02	0.636364	0.299985	2.121320	0.0554

R-squared	0.272727	Mean dependent var	0.500000
Adjusted R-squared	0.212121	S.D. dependent var	0.518875
S.E. of regression	0.460566	Akaike info criterion	1.418843
Sum squared resid	2.545455	Schwarz criterion	1.510137
Log likelihood	-7.931903	Hannan-Quinn criter.	1.410392
F-statistic	4.500000	Durbin-Watson stat	2.801948
Prob(F-statistic)	0.055405		

Table 28. Eviews result for ING Bank

Dependent Variable: INGONB
Method: Least Squares
Date: 10/23/17 Time: 16:28
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.000000	0.192450	5.196152	0.0002
SERIES02	-0.444444	0.240027	-1.851640	0.0888

R-squared	0.222222	Mean dependent var	0.714286
Adjusted R-squared	0.157407	S.D. dependent var	0.468807
S.E. of regression	0.430331	Akaike info criterion	1.283042
Sum squared resid	2.222222	Schwarz criterion	1.374336
Log likelihood	-6.981292	Hannan-Quinn criter.	1.274591
F-statistic	3.428571	Durbin-Watson stat	1.938889
Prob(F-statistic)	0.088830		

Table 29. Ewievs result for TEB

Dependent Variable: TEBTATASS
Method: Least Squares
Date: 10/24/17 Time: 13:56
Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.000000	0.228218	4.381780	0.0009
SERIES02	-0.500000	0.270031	-1.851640	0.0888

R-squared	0.222222	Mean dependent var	0.642857
Adjusted R-squared	0.157407	S.D. dependent var	0.497245
S.E. of regression	0.456435	Akaike info criterion	1.400825
Sum squared resid	2.500000	Schwarz criterion	1.492119
Log likelihood	-7.805773	Hannan-Quinn criter.	1.392374
F-statistic	3.428571	Durbin-Watson stat	2.100000
Prob(F-statistic)	0.088830		